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FREEDOM TO LEARN

The roles of play and curiosity as foundations for learning

Peter Gray

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Learning Requires Freedom: Introduction to a New Blog about Play, Curiosity, and Education

More time in school is not the answer.

Published on July 9, 2008 by Peter Gray in Freedom to Learn

Everywhere we turn these days we find pundits and politicians arguing for more restrictive schooling. Of course they don't use the word "restrictive," but that's what it amounts to. They want more standardized tests, more homework, more supervision, longer school days, longer school years, more sanctions against children's taking a day or two off for a family vacation. This is one realm in which politicians from both of the major parties, at every level of government, seem to agree. More schooling or more rigorous schooling is better than less schooling or less rigorous schooling.

"Schooling" and "education" (which in today's usage is usually a synonym for "schooling") are terms with halos around them. They are *a priori* good; by the logic we commonly hear, nothing counts as evidence against the value of more schooling. If children learn, we thank the schools. If children don't seem to learn much, that means they need more schooling. If the economy isn't doing well, it must be because we aren't putting enough effort into schooling. If the economy is doing well, that confirms the value of schooling and suggests we could do even better with more of it. If knowledge is expanding at an ever-growing pace, then we must require students to study more subjects. If today's world requires critical thinking, then we must add critical thinking to the long list of what we teach and test. If we believe that human beings have "multiple intelligences," then we must enumerate them and teach to each of those intelligences in every person. If we value equality, then we must believe that everyone should study the same curriculum and take the same tests, so we can *make* them equal (forget the idea of our democracy's founders that people can be different yet equal in worth).

Whatever happened to the idea that children learn through their own free play and exploration? Every serious psychological theory of learning, from Piaget's on, posits that learning is an active process controlled by the learner, motivated by curiosity. Educators everywhere give lip service to those theories, but then go ahead and create schools that prevent self-guided play and exploration. Every one of us knows, if we stop to think about it, that the most valuable lessons we have learned are not what we "learned in kindergarten," nor what we learned in courses later on. They are, instead, the lessons that we learned when we allowed ourselves the luxury of following through on our own interests and our own drives to play, fully and deeply. Through those means we acquired skills, values, ideas, and information that will stay with us for life, not just for the next test. And, perhaps most important, we discovered what we most enjoy, which is the first step in finding a satisfying career.

Every time we add another hour to the time that children must spend in school or at homework, and every time we coerce or coax them into yet another adult-directed extracurricular activity, we deprive them further of opportunities to play, explore, reflect, and experience the joys and frustrations of self-direction. With each new restriction we drive a wedge further into the school system, pushing away more and more young people who cannot or will not accept such

restrictions. Boys in particular are increasingly unwilling to accept the confinements of schooling, and boys are increasingly, in various ways, dropping out.

I have been teaching for a long time at a selective university. Students come to my classes with *A* averages in high school. But they don't come knowing very much about the subjects they studied. They achieved high grades because they are bright and are motivated to get ahead through the standard procedures. They figured out what they needed to do to get high grades and then they did it. They figured how to do well on tests without learning much about the subject. They learned how to hold information, in the form that the teacher wanted, just long enough for the test.

I have no objection to students' entering my classes not knowing much. Information is easy to find and easy to supply. If students discover that they need to know something as background to what I am saying or what they are reading, they can ask or look it up. I'm only sorry that they wasted so much time in school, when they would have been better off playing and following through on their own interests. If they had done that, then those who decided to go to college and to take my course would have good reasons for doing so; and others would have good reasons for choosing other routes. Students who have explored and are pursuing their own interests in their college studies are rare and delightful; they don't treat their first year there as 13th grade.

I also know teenagers who are presently in high school. Some are "good students" and some are not. What I have observed is that both groups are equally cynical about school. The "good students" may not quite recognize their cynicism or identify it as such, but it is clearly there. It manifests itself with every shortcut they take to a good grade. It manifests itself when, in asking for help, they say, "But I don't really need to understand it; all I need is the right answer."

We could make life better for children and improve learning, at much less expense than our current schools cost, if we developed environments in which children can play safely, interact freely with a wide range of others, and pursue their own interests. I know that, because I have seen it; and I will tell you about some of those observations in future installments.

I have begun this new blog, *Freedom to Learn*, because I am seriously concerned about the state of education and the declining opportunities of children to play and explore. I am a professor of evolutionary and developmental psychology. My special interest is children's and adults' natural ways of learning. In this first installment I have set out an opinion. In future installments I intend to support that opinion with essays dealing with questions such as the following:

• Why are human beings the most playful of all animals?

• What does it mean to say that the playful mind is a mind poised for learning?

• Is play the opposite of work? (In what sense is it, and in what sense isn't it?)

• What is the evolutionary purpose of curiosity?

• What happens to curiosity as children grow older?

• What do children and adolescents mean when they say, "I'm bored"?

• What is the value of free age mixing in children's learning?

• Do children “need structure”? (Of course they do, but what kind of structure?)

• In what conditions will young people naturally educate themselves, without coercion or coaxing?

• What should it mean to say that someone is “well educated”?

• What is the proper role of adults in the education of children?

• What are the risks inherent in trying to protect children from risks?

• Why do we feel so much need to control children’s learning?

• Why do schools operate the way they do? (The answer lies in history.)

• Why do liberalizing reforms in education usually fail?

• What kind of discipline is needed for work and careers, and how is such discipline acquired?

• What is the meaning of freedom, and why do we seek it?

Keep tuned, and join the discussion. I’ll post a new installment every Wednesday, and I’ll take your questions, comments, and arguments into account. I hope to convince you that what I’m talking about is not pie-in-the-sky idealism. We’ll talk about real people, real schools, and findings from systematic empirical research.

Children Educate Themselves I: Outline of Some of the Evidence

Children are designed by nature to educate themselves.

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As adults we do have certain responsibilities toward our children and the world's children. It is our responsibility to create safe, health-promoting, respectful environments in which children can develop. It is our responsibility to be sure that children have proper foods, fresh air, non-toxic places to play, and lots of opportunities to interact freely with other people across the whole spectrum of ages. It is our responsibility to be models of human decency. But one thing we do *not* have to worry about is how to educate children.

We do not have to worry about curricula, lesson plans, motivating children to learn, testing them, and all the rest that comes under the rubric of pedagogy. Let's turn that energy, instead, toward creating decent environments in which children can play. Children's education is children's responsibility, not ours. Only they can do it. They are built to do it. Our task regarding education is just to stand back and let it happen. The more we try to control it, the more we interfere.

When I say that education is children's responsibility and that they are by nature designed to assume that responsibility, I do not expect you to take that assertion on faith. We live in a world in which that assertion is not the self-evident truth that it once was. We live in a world in which almost all children and adolescents are sent to school, beginning at ever-younger ages and ending at ever-older ages, and in which "school" has a certain standard meaning. We measure education in terms of scores on tests and success in advancing through the school system from one level to the next. Naturally, then, we come almost automatically to think of education as something that is done at schools by specialists trained in the art and science of pedagogy, who know how to put children through the paces that will turn their raw potential into an educated product.

So, I take it as my task to present evidence to support my claim. The most direct lines of evidence come from settings where we can see children educating themselves without anything like what we think of as schooling. Here are three such settings, which I will elaborate on in the next three installments of this weekly blog.

1. A huge amount of children's education occurs before they start school. The most obvious evidence of children's capacity for self-education, available to any of us who opens our eyes, comes from watching kids in their first four or five years of life, before anyone tries in any systematic way to teach them anything. Think of all they learn in that period. They learn to walk, run, jump, climb. They learn about the physical properties of, and how to manipulate, all of the objects that are within their reach. They learn their native language, which is surely one of the most cognitively complex tasks that any human being ever masters. They learn the basic psychology of other people--how to please others, how to annoy them, how to get what they need or want from them. They learn all this not through lessons

provided by anyone, but through their own free play, their insatiable curiosity, and their natural attentiveness to the behavior of other people. We can't stop them from learning all this and more unless we lock them up alone in closets.

2. Children in hunter-gatherer cultures become successful adults without anything like schooling. During most of human existence we lived in relatively small nomadic, foraging bands. Our basic human nature--including our playfulness, curiosity, and all of our other biological adaptations for learning--evolved in the context of that way of life. Some groups of hunter-gatherers managed to survive, with their cultures intact, into recent times. Anthropologist who have studied such groups--in Africa, Asia, New Zealand, South America, and elsewhere--have found a remarkable consistency across them in their attitudes toward children. In all of these cultures children and adolescents are permitted to play and follow their own interests, without adult interference, essentially from dawn to dusk every day. The belief of these people, borne out by millennia of experience, is that young people teach themselves through play and exploration and then, when ready to do so, begin naturally to put what they have learned to purposes that benefit the group as a whole. Through their own efforts hunter-gatherer children acquire the enormous sets of skills and knowledge they need to be successful adults in their culture.

3. Children at certain "non-school schools" in our culture become successful adults without anything like conventional schooling. I have for many years been an observer of children and adolescents at the Sudbury Valley School, in Framingham, Massachusetts. The school was founded forty years ago by people whose beliefs about education are remarkably similar to those of hunter-gatherers. The school is for young people aged four on through high school age, and it is nothing at all like a typical school. It is a democratic setting in which children truly have equal power to the adults and in which students learn entirely through their own self-directed activities. It is, essentially, a safe environment in which young people can play, explore, assume responsibility, and interact freely with others across the whole range of ages. There are no tests, no gold stars or other such rewards, no passing or failing, no required courses or coursework, no coercion or coaxing of children to learn, no expectations that the staff are responsible for children's learning. By now, many hundreds of young people have educated themselves in this environment. And, no, they don't become hunters and gatherers. They become artisans, artists, chefs, doctors, engineers, entrepreneurs, lawyers, musicians, scientists, social workers, and software designers. They can be found in the whole range of careers that we value in our culture.

In my next three weekly installments I will elaborate, one by one, on these three sources of evidence about young people's capacities for self-education.

Children Educate Themselves II: We All Know That's True for Little Kids

Watching young children learn can revolutionize our views on education.

Published on July 23, 2008 by Peter Gray in Freedom to Learn

Have you ever stopped to think about how much children learn in their first few years of life, before they start school, before anyone tries in any systematic way to teach them anything? Their learning comes naturally; it results from their instincts to play, explore, and observe others around them. But to say that it comes naturally is not to say that it comes effortlessly. Infants and young children put enormous energy into their learning. Their capacities for sustained attention, for physical and mental effort, and for overcoming frustrations and barriers are extraordinary.

Next time you are in viewing range of a child under the age of about five years old, sit back and watch for awhile. Try to imagine what is going on in the child's mind each moment in his or her interactions with the world. If you allow yourself that luxury, you are in for a treat. The experience might lead you to think about education in a whole new light--a light that shines from within the child rather than on the child.

Here I will sketch out a tiny bit of what developmental psychologists have learned about young children's learning. To help relate this knowledge to thoughts about education, I'll organize the sketch into categories of physical, linguistic, scientific, and social-moral education.

Physical Education

Lets begin with learning to walk. Walking on two legs is a species-typical trait of human beings. In some sense we are born for it. But even so it doesn't come easily. Every human being who comes into the world puts enormous effort into learning to walk.

I remember one spring day long ago when my son, somewhere near his first birthday, was at the stage where he could walk by holding onto something but could not take steps alone. We happened to be traveling that day on a large tourist boat, and my son insisted on spending the entire ride walking up and down the deck while holding my hand. We spent many hours walking the length of the boat, with me uncomfortably stooped over so my hand could reach his. The motivation, of course, was entirely his. I was just a convenient tool, a human walking stick. I kept trying to convince him to take a rest because I needed one; but he was a master at manipulating me back into walking whenever we did stop for a moment.

Researchers have found that toddlers at the peak of learning to walk spend, on average, 6 hours per day walking, during which time they take an average of 9,000 steps and travel the length of 29 football fields (Adolph et al., 2003, *Child Development*, *74*, 475-497). They aren't trying to get anywhere in particular; they are just walking for the sake of walking. They become especially interested in walking when they are exposed to a new kind of surface. I suspect that

my son on our boat ride was stimulated to walk partly because the boat's motion made walking difficult and added a new and exciting challenge.

Early in the stage of walking alone, children often fall and sometimes hurt themselves; but then they pull themselves right back up and try again--and again, and again, and again. After walking comes running, jumping, climbing, swinging, and all sorts of new ways of moving. We don't have to teach children any of this, and we certainly don't have to motivate them. All we have to do is provide appropriate safe places for them to practice.

Language Education

If you have ever tried to learn a new language as an adult, you know how difficult it is. There are thousands of words to learn and countless grammatical rules. Yet children more or less master their native language by the age of four. By that age, in conversations, they exhibit a sophisticated knowledge of word meanings and grammatical rules. In fact, children growing up in bilingual homes acquire two languages by the age of four and somehow manage to keep them distinct.

Four-year-olds can't describe the grammatical rules of their language (nor can most adults), but their implicit knowledge of the rules is clear in their speech and understanding. They add *s* to brand new nouns to make them plural, add *ed* to brand new verbs to put them into the past tense, and manifest an understanding of grammatical categories--nouns, verbs, adjectives, adverbs, and so on--in their construction of novel sentences. Infants may come into the world with some innate understanding of language, as Noam Chomsky long ago suggested, but the specific words and rules of every language are different and clearly have to be learned.

Infants and young children continuously educate themselves about language. Early in infancy they begin babbling language-like sounds, practicing the motor acts of articulation. With time they restrict their babbling more and more to the sounds of the specific language that they hear around them. By a few months of age they can be observed to pay close attention to the speech of others and to engage in activities that seem to be designed to help them figure out what others are saying. For example, they regularly follow the eyes of older children or adults, to see what the others are looking at, which helps them guess what they are talking about. With this strategy, a toddler in the garden who hears someone say, "What a pretty chrysanthemum," has a good chance of identifying what object is being referred to. Between the ages of two and 17, young people learn an average of about 60,000 words (Bloom, 2001, *Behavior & Brain Sciences, 24*, 1095-1103); that works out to nearly one new word for every hour that they are awake.

Language learning, like learning to walk, is play. It is absorbing, intense, done for its own sake. Young children go around naming things just for the fun of naming them, not for any other reward. And as children grow older their word play becomes ever more sophisticated, taking such forms as riddles, puns, and rhymes. We can't teach children language; all we can do is provide a normal human environment within which they can learn it and practice it, that is, an environment in which they can engage themselves with people who speak.

Science Education

Young children are enormously curious about all aspects of the world around them. Even within their first few days of life, infants spend more time looking at new objects than at those they have seen before. By the age at which they have enough eye-hand coordination to reach out and manipulate objects, they do just that--constantly. Six-month-olds examine every new object they can reach, in ways that are well designed to learn about it's physical properties. They squeeze it, pass it from hand to hand, look at it from all sides, shake it, drop it, watch to see what happens; and whenever something interesting happens they try to repeat it, as if to prove that it wasn't a fluke. Watch a six-month-old in action and see a scientist.

The primary goal of young people's exploration is to learn how to control their environment. Many experiments have shown that infants and young children are far more interested in objects whose actions they can control than in those they cannot control. For instance, an audio player that they can turn on and off through some effort of their own is far more fascinating to them than one that comes on and off by itself or is controlled by an adult. They are especially drawn to such objects during the period when they are learning how to control them. Once they have learned how to control an object and have exhausted all the possibilities for action on it, they tend to lose interest in it. That's why the cardboard carton that a fancy but uncontrollable toy comes in may sustain a child's interest for a longer time than does the toy.

The drive to figure out how objects work and how to control them does not end with early childhood; it continues on as long as children and adults are free to follow their own paths. This drive is the foundation of science. Nothing destroys it more quickly than an environment in which everyone is told what they must do with new objects and how to do it. The fun of science lies in the discovery, not in the knowledge that results. That is true for all of us, whether we are 6-month-olds exploring a mobile, two-year-olds exploring a cardboard box, or adult scientists exploring the properties of a physical particle or an enzyme. Nobody goes into science because they like to be told the answers to someone else's questions; they go into science because they like to discover the answers to their own questions. That's why our standard method of training people in science never turns them into scientists. Those who become scientists do so despite such training.

Social and Moral Education

Even more fascinating to young children than the physical environment is the social environment. Children are naturally drawn to others, especially to those others who are a little older than themselves and a little more competent. They want to do what those others do. They also want to play with others. Social play is the primary natural means of every child's social and moral education.

It is through play that children learn to get along with others. In play they must take into account the other children's needs, learn to see from others' points of view, learn to compromise, learn to negotiate differences, learn to control their own impulses, learn to please others so as to keep them as playmates. These are all hard lessons, and they are among the most important lessons that all of us must learn if we are to live happy lives. We can't possibly teach these lessons to children; all we can do is let them play with others and let them experience themselves the consequences of

their social failures and successes. The strong innate drive to play with others is what motivates every normal child to work hard at getting along with others in play. Failure to get along ends the game, and that natural consequence is a powerful learning experience. No lectures or words of advice that we can provide can substitute for such experience. I'll not elaborate further on this now; it will be the topic of future installments.

What Happens to Motivation at Age Five or Six?

Once, when my son was about seven years old and in public school, I mentioned to his teacher that he seemed to have been far more interested in learning before he started school than he was now. Her response was something like this: "Well, I'm sure you know, as a psychologist, that this is a natural developmental change. Children by nature are spontaneous learners when they are little, but then they become more task oriented."

I can understand where she got that idea. I've seen developmental psychology textbooks that divide the units according to age and refer to the preschool years as "the play years." All the discussion of play occurs in those first chapters. It is as if play stops at age five or six. The remaining chapters largely have to do with studies of how children perform on tasks that adults give them to perform. I imagine that the teacher had read such a book when she was taking education courses. But such books present a distorted view of what is natural. In the next two installments I will present evidence that when young people beyond the age of five or six are permitted the freedom and opportunities to follow their own interests, their drives to play and explore continue to motivate them, as strongly as ever, toward ever more sophisticated forms of learning.

Children Educate Themselves III: The Wisdom of Hunter-Gatherers

How hunter-gatherer children learn without schools.

Published on August 2, 2008 by Peter Gray in Freedom to Learn

For hundreds of thousands of years, up until the time when agriculture was invented (a mere 10,000 years ago), we were all hunter-gatherers. Our human instincts, including all of the instinctive means by which we learn, came about in the context of that way of life. And so it is natural that in this series on children's instinctive ways of educating themselves I should ask: *How do hunter-gatherer children learn what they need to know to become effective adults within their culture?*

In the last half of the 20th century, anthropologists located and observed many groups of people--in remote parts Africa, Asia, Australia, New Guinea, South America, and elsewhere--who had maintained a hunting-and-gathering life, almost unaffected by modern ways. Although each group studied had its own language and other cultural traditions, the various groups were found to be similar in many basic ways, which allows us to speak of "the hunter-gatherer way of life" in the singular. Wherever they were found, hunter-gatherers lived in small nomadic bands (of about 25 to 50 people per band), made decisions democratically, had ethical systems that centered on egalitarian values and sharing, and had rich cultural traditions that included music, art, games, dances, and time-honored stories.

To supplement what we could find in the anthropological literature, several years ago Jonathan Ogas (then a graduate student) and I contacted a number of anthropologists who had lived among hunter-gatherers and asked them to respond to a written questionnaire about their observations of children's lives. Nine such scholars kindly responded to our questionnaire. Among them, they had studied six different hunter-gatherer cultures--three in Africa, one in Malaysia, one in the Philippines, and one in New Guinea.

What I learned from my reading and our questionnaire was startling for its consistency from culture. Here I will summarize four conclusions, which I think are most relevant to the issue of self-education. Because I would like you to picture these practices as occurring now, I will use the present tense in describing them, even though the practices and the cultures themselves have been largely destroyed in recent years by intrusions from the more "developed" world around them.

1. Hunter-gatherer children must learn an enormous amount to become successful adults.

It would be a mistake to think that education is not a big issue for hunter-gatherers because they don't have to learn much. In fact, they have to learn an enormous amount.

To become effective hunters, boys must learn the habits of the two or three hundred different species of mammals and birds that the band hunts; must know how to track such game using the slightest clues; must be able to craft perfectly the tools of hunting, such as bows and arrows, blowguns and darts, snares or nets; and must be extraordinarily skilled at using those tools.

To become effective gatherers, girls must learn which of the countless varieties of roots, tubers, nuts, seeds, fruits, and greens in their area are edible and nutritious, when and where to find them, how to dig them (in the case of roots and tubers), how to extract the edible portions efficiently (in the case of grains, nuts, and certain plant fibers), and in some cases how to process them to make them edible or increase their nutritional value. These abilities include physical skills, honed by years of practice, as well as the capacity to remember, use, add to, and modify an enormous store of culturally shared verbal knowledge about the food materials.

In addition, hunter-gatherer children must learn how to navigate their huge foraging territory, build huts, make fires, cook, fend off predators, predict weather changes, treat wounds and diseases, assist births, care for infants, maintain harmony within their group, negotiate with neighboring groups, tell stories, make music, and engage in various dances and rituals of their culture. Since there is little specialization beyond that of men as hunters and women as gatherers, each person must acquire a large fraction of the total knowledge and skills of the culture.

2. The children learn all this without being taught.

Although hunter-gatherer children must learn an enormous amount, hunter-gatherers have nothing like school. Adults do not establish a curriculum, or attempt to motivate children to learn, or give lessons, or monitor children's progress. When asked how children learn what they need to know, hunter-gatherer adults invariably answer with words that mean essentially: "They teach themselves through their observations, play, and exploration." Occasionally an adult might offer a word of advice or demonstrate how to do something better, such as how to shape an arrowhead, but such help is given only when the child clearly desires it. Adults to not initiate, direct, or interfere with children's activities. Adults do not show any evidence of worry about their children's education; millennia of experience have proven to them that children are experts at educating themselves.[1]

3. The children are afforded enormous amounts of time to play and explore.

In response to our question about how much time children had for play, the anthropologists we surveyed were unanimous in indicating that the hunter-gatherer children they observed were free to play most if not all of the day, every day. Typical responses are the following:

• "[Batek] children were free to play nearly all the time; no one expected children to do serious work until they were in their late teens." (Karen Endicott.)

• "Both girls and boys [among the Nharo] had almost all day every day free to play." (Alan Barnard.)

• "[Efé] boys were free to play nearly all the time until age 15-17; for girls most of the day, in between a few errands and some babysitting, was spent in play." (Robert Bailey.)

• "[!Kung] children played from dawn to dusk. " (Nancy Howell.)

The freedom that hunter-gatherer children enjoy to pursue their own interests comes partly from the adults' understanding that such pursuits are the surest path to education. It also comes from the general spirit of

egalitarianism and personal autonomy that pervades hunter-gatherer cultures and applies as much to children as to adults [2]. Hunter-gatherer adults view children as complete individuals, with rights comparable to those of adults. Their assumption is that children will, of their own accord, begin contributing to the economy of the band when they are developmentally ready to do so. There is no need to make children or anyone else do what they don't want to do. It is remarkable to think that our instincts to learn and to contribute to the community evolved in a world in which our instincts were trusted!

4. Children observe adults' activities and incorporate those activities into their play.

Hunter-gatherer children are never isolated from adult activities. They observe directly all that occurs in camp--the preparations to move, the building of huts, the making and mending of tools and other artifacts, the food preparation and cooking, the nursing and care of infants, the precautions taken against predators and diseases, the gossip and discussions, the arguments and politics, the dances and festivities. They sometimes accompany adults on food gathering trips, and by age 10 or so boys sometimes accompany men on hunting trips.

The children not only observe all of these activities, but they also incorporate them into their play, and through that play they become skilled at the activities. As they grow older, their play turns gradually into the real thing. There is no sharp division between playful participation and real participation in the valued activities of the group.

For example boys who one day are playfully hunting butterflies with their little bows and arrows are, on a later day, playfully hunting small mammals and bringing some of them home to eat, and on yet a later day are joining men on real hunting trips, still in the spirit of play. As another example, both boys and girls commonly build play huts, modeled after the real huts that their parents build. In her response to our questionnaire, Nancy Howell pointed out that !Kung children commonly build a whole village of play huts a few hundred yards from the real village. The play village then becomes a playground where they act out many of the kinds of scenes that they observe among adults.

The respondents to our survey referred also to many other examples of valued adult activities that were emulated regularly by children in play. Digging up roots, fishing, smoking porcupines out of holes, cooking, caring for infants, climbing trees, building vine ladders, using knives and other tools, making tools, carrying heavy loads, building rafts, making fires, defending against attacks from predators, imitating animals (a means of identifying animals and learning their habits), making music, dancing, story telling, and arguing were all mentioned by one or more respondents. Because all this play occurs in an age-mixed environment, the smaller children are constantly learning from the older ones.

Nobody has to tell or encourage the children to do all this. They do it naturally because, like children everywhere, there is nothing that they desire more than to grow up and to be like the successful adults that they see around them. The desire to grow up is a powerful motive that blends with the drives to play and explore and ensures that children, if given a chance, will practice endlessly the skills that they need to develop to become effective adults.

What relevance might these observations have for education in our culture?

Our culture, of course, is very different from hunter-gatherer cultures. You might well doubt that the lessons about education that we learn from hunter-gatherers can be applied effectively in our culture today. For starters, hunter-gatherers do not have reading, writing, or arithmetic; maybe the natural, self-motivated means of learning don't work for learning the three R's. In our culture, unlike in hunter-gatherer cultures, there are countless different ways of making a living, countless different sets of skills and knowledge that children might acquire, and it is impossible for children in their daily lives to observe all those adult skills directly. In our culture, unlike in hunter-gatherer cultures, children are largely segregated from the adult work world, which reduces their opportunities to see what adults do and incorporate those activities into their play.

Yet, in the next installment, I am going to argue that the same natural means of learning that work so well for hunter-gatherers indeed do work equally well for our children, when we provide an educational setting that allows those means to work.

Children Educate Themselves IV: Lessons from Sudbury Valley

For forty years children have educated themselves at this school.

Published on August 13, 2008 by Peter Gray in Freedom to Learn

The Sudbury Valley School has, for the past forty years, been the best-kept secret in American education. Most students of education have never heard of it. Professors of education ignore it, not out of malice but because they cannot absorb it into their framework of educational thought. The Sudbury Valley model of education is not a variation of standard education. It is not a progressive version of traditional schooling. It is not a Montessori school or a Dewey school or a Piagetian constructivist school. It is something entirely different. To understand the school one has to begin with a completely different mindset from that which dominates current educational thinking. One has to begin with the thought: *Adults do not control children's education; children educate themselves.*

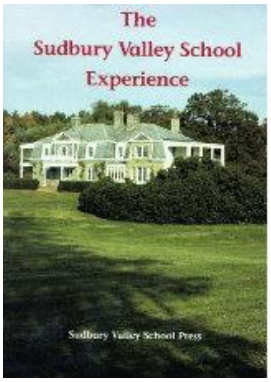
But the secret is getting out, spread largely by students and others who have experienced the Sudbury Valley School directly. Today at least two dozen schools throughout the world are modeled after Sudbury Valley. I predict that fifty years from now, if not sooner, the Sudbury Valley model will be featured in every standard textbook of education and will be adopted by many public school systems. In fifty years, I predict, today's approach to education will be seen by many if not most educators as a barbaric remnant of the past. People will wonder why the world took so long to come to grips with such a simple and self-evident idea as that upon which the Sudbury Valley School is founded: *Children educate themselves; we don't have to do it for them.*

In the last posting I summarized evidence that hunter-gatherer children learn the extraordinary amount that they must to become effective adults through their own self-directed play and exploration. In the posting before that, I pointed out that children in our culture learn many of the most difficult lessons they will ever learn before they start school, entirely on their own initiatives, without adult direction or prodding. And now, based on the experiences of the Sudbury Valley School, I contend that self-education works just as well for school-aged children and adolescents in our culture as it does for preschoolers and for hunter-gatherers.

For many years I have had the opportunity to observe the Sudbury Valley School, both as the father of a student who went there and as an academician using the school as a resource to study play and self-directed learning. Here I'll tell you a little about the school.

First, a few mundane facts. The school was founded 40 years ago and has been in continuous operation since then. It is a private day school, in Framingham, Massachusetts, open to students age four on through high-school age. The school is not in any sense elitist. It admits students without regard to any measures of academic performance, and it operates at a per pupil cost that is about half that of the surrounding public schools. The school currently has about 200 students and ten adult staff members. It is housed in a Victorian mansion and a remodeled barn, which sit on ten acres of land in a part of town that was largely rural when the school began operating. Now, the more remarkable facts concerning the school's mode of operation:

The school operates as a participatory democracy



The Sudbury Valley School is first and foremost a community in which children and adolescents experience directly the privileges and responsibilities of democratic government. The primary administrative body is the School Meeting, which consists of all students and staff members. In one-person-one-vote fashion, the School Meeting, which meets once a week, creates all of the school's rules, makes decisions about school purchases, establishes committees to oversee the school's day-to-day operation, and *hires and fires staff members*. Four-year-olds at the school have the same vote as do older students and adult staff members in all of this.

No staff members at the school have tenure. All are on one-year contracts, which must be renewed each year through a secret-ballot election. As the student voters outnumber the staff by a factor of 20 to 1, the staff who survive this process and are re-elected year after year are those who are admired by the students. They are people who are kind, ethical, and competent, and who contribute significantly and positively to the school's environment. They are adults that the students may wish in some ways to emulate.

The school's rules are enforced by the Judicial Committee, which changes regularly in membership but always includes a staff member and students representing the full range of ages at the school. When a student or staff member is charged by another school member with violating a rule, the accuser and the accused must appear before the Judicial Committee, which determines innocence or guilt and, in the latter case, decides on an appropriate sentence. In all of this, staff members are treated in the same way as students. Nobody is above the law.

The school does not interfere with students' activities

Students are free, all day, every day, to do what they wish at the school, as long as they don't violate any of the school's rules. The rules, all made by the School Meeting, have to do with protecting the school and protecting students' opportunities to pursue their own interests unhindered by others. School members must not make noise in designated "quiet rooms," misuse equipment or fail to put it away when finished, deface school property, use illegal drugs on campus, or behave in any way toward another person that makes that person feel harassed. Behaviors of those sorts are the fodder of Judicial Committee complaints.

None of the school's rules have to do with learning. The school gives no tests. It does not evaluate or grade students' progress.[1] There is no curriculum and no attempt to motivate students to learn. Courses occur only when students take the initiative to organize them, and they last only as long as the students want them. Many students at the school never join a course, and the school sees no problem with that. The staff members at the school do not consider themselves to be teachers. They are, instead, adult members of the community who provide a wide variety of services, including some teaching. Most of their "teaching" is of the same variety as can be found in any human setting; it involves answering sincere questions and presenting ideas in the context of real conversations.

The school is a rich environment for play and exploration, and therefore for learning

Learning at Sudbury Valley is largely incidental. It occurs as a side effect of students' self-directed play and exploration. The school is a wonderful place to play and explore. It provides space and time for such activities. It also provides equipment--including computers, a fully equipped kitchen, a woodworking shop, an art room, playground equipment, toys and games of various sorts, and many books. Students also have access to a pond, a field, and a nearby forest for outdoor play and exploration. Those who develop a special interest, which needs some new piece of equipment, might convince the School Meeting to buy it, or they might raise the money and buy it themselves by some means such as selling cookies in the school.

The most important resource at the school, for most students, is other students, who among them manifest an enormous range of interests and abilities. Because of the free age mixing at the school, students are exposed regularly to the activities and ideas of others who are older and younger than themselves. Age-mixed play offers younger children continuous opportunities to learn from older ones. For example, many students at the school have learned to read as a side effect of playing games that involve written words (including computer games) with students who already know how to read. They learn to read without even being aware that they are doing so.

Much of the students' exploration at the school, especially that of the adolescents, takes place through conversations. Students talk about everything imaginable, with each other and with staff members, and through such talk they are exposed to a huge range of ideas and arguments. Because nobody is an official authority, everything that is said and heard in conversation is understood as something to think about, not as dogma to memorize or feed back on a test. Conversation, unlike memorizing material for a test, stimulates the intellect. The great Russian psychologist Lev Vygotsky argued, long ago, that conversation is the foundation for higher thought; and my observations of students at Sudbury Valley convince me that he was right. Thought is internalized conversation; external conversation, with other people, gets it started.

Hundreds of graduates attest to the school's educational effectiveness

My own first study of the Sudbury Valley School, many years ago, was a follow-up study of the graduates. Since that time, the school itself has conducted several studies of graduates, which have been published as books.[2] All of these studies have shown that the school works well as an educational institution.

Graduates of Sudbury Valley can be found today in the whole range of careers that are valued by our society. They are skilled craftsmen, entrepreneurs, artists, musicians, scientists, social workers, nurses, doctors, and so on. Those who chose to pursue higher education had no particular difficulties getting into colleges and universities, including highly selective ones, or performing well there once admitted. Many others have become successful in careers without going to college. More important, former students report that they are happy with their lives. They are almost unanimous in reporting that they are glad that they attended Sudbury Valley and in believing that the school prepared them better than a traditional school would have for the realities of adult existence. To a considerable degree they maintain, in adulthood, the playful (and that means focused and intense as well as joyful) attitude to careers and life that they developed and refined while at the school.

If you are interested in learning more about the Sudbury Valley School, a good place to start is with the school's website. The leading philosopher of the school, and also one of the school's founders, is Daniel Greenberg. His books, and other books about the school, can be found at the school's website. Greenberg's most recent book, which I recommend, is "Turning Learning Right Side Up," co-authored with the noted business professor and innovator Russell Ackoff.

My own interest in this and future postings is not to promote Sudbury Valley as an institution, but to help create a dialogue about play, curiosity, human nature, and education that is informed, in part, by the experiences of the school.

Notes

1. There is one exception to the statement that the school does not evaluate students. Students who wish to graduate with a high school diploma must prepare a written thesis defending the statement that they have prepared themselves for responsible adult life. That thesis is defended orally and evaluated by a panel of adults who are staff members at other Sudbury-model schools.

2. My study of the graduates, co-authored with David Chanoff, was published in the American Journal of Education, Volume 94, pp 182-213. The school's more recent studies of the graduates have been published by the Sudbury Valley School Press and can be found at the school's website.

A Brief History of Education

To understand schools we must view them in historical perspective.

Published on August 20, 2008 by Peter Gray in Freedom to Learn

When we see that children everywhere are required by law to go to school, that almost all schools are structured in the same way, and that our society goes to a great deal of trouble and expense to provide such schools, we tend naturally to assume that there must be some good, logical reason for all this. Perhaps if we didn't force children to go to school, or if schools operated much differently, children would not grow up to be competent adults. Perhaps some really smart people have figured all this out and have proven it in some way, or perhaps alternative ways of thinking about child development and education have been tested and have failed.

In previous postings I have presented evidence to the contrary. In particular, in my August 13 posting, I described the Sudbury Valley School, where for 40 years children have been educating themselves in a setting that operates on assumptions that are opposite to those of traditional schooling. Studies of the school and its graduates show that normal, average children become educated through their own play and exploration, without adult direction or prodding, and go on to be fulfilled, effective adults in the larger culture. Instead of providing direction and prodding, the school provides a rich setting within which to play, explore, and experience democracy first hand; and it does that at lower expense and with less trouble for all involved than is required to operate standard schools. So why aren't most schools like that?

If we want to understand why standard schools are what they are, we have to abandon the idea that they are products of logical necessity or scientific insight. They are, instead, products of history. Schooling, as it exists today, only makes sense if we view it from a historical perspective. And so, as a first step toward explaining why schools are what they are, I present here, in a nutshell, an outline of the history of education, from the beginning of humankind until now. Most scholars of educational history would use different terms than I use here, but I doubt that they would deny the overall accuracy of the sketch. In fact, I have used the writings of such scholars to help me develop the sketch.

In the beginning, for hundreds of thousands of years, children educated themselves through self-directed play and exploration.

In relation to the biological history of our species, schools are very recent institutions. For hundreds of thousands of years, before the advent of agriculture, we lived as hunter-gatherers. In my August 2 posting, I summarized the evidence from anthropology that children in hunter-gatherer cultures learned what they needed to know to become effective adults through their own play and exploration. The strong drives in children to play and explore presumably came about, during our evolution as hunter-gatherers, to serve the needs of education. Adults in hunter-gatherer cultures allowed children almost unlimited freedom to play and explore on their own because they recognized that those activities are children's natural ways of learning.

With the rise of agriculture, and later of industry, children became forced laborers. Play and exploration were suppressed. Willfulness, which had been a virtue, became a vice that had to be beaten out of children.

The invention of agriculture, beginning 10,000 years ago in some parts of the world and later in other parts, set in motion a whirlwind of change in people's ways of living. The hunter-gatherer way of life had been skill-intensive and knowledge-intensive, but not labor-intensive. To be effective hunters and gatherers, people had to acquire a vast knowledge of the plants and animals on which they depended and of the landscapes within which they foraged. They also had to develop great skill in crafting and using the tools of hunting and gathering. They had to be able to take initiative and be creative in finding foods and tracking game. However, they did not have to work long hours; and the work they did was exciting, not dreary. Anthropologists have reported that the hunter-gatherer groups they studied did not distinguish between work and play--essentially all of life was understood as play.

Agriculture gradually changed all that. With agriculture, people could produce more food, which allowed them to have more children. Agriculture also allowed people (or forced people) to live in permanent dwellings, where their crops were planted, rather than live a nomadic life, and this in turn allowed people to accumulate property. But these changes occurred at a great cost in labor. While hunter-gatherers skillfully harvested what nature had grown, farmers had to plow, plant, cultivate, tend their flocks, and so on. Successful farming required long hours of relatively unskilled, repetitive labor, much of which could be done by children. With larger families, children had to work in the fields to help feed their younger siblings, or they had to work at home to help care for those siblings. Children's lives changed gradually from the free pursuit of their own interests to increasingly more time spent at work that was required to serve the rest of the family.

Agriculture and the associated ownership of land and accumulation of property also created, for the first time in history, clear status differences. People who did not own land became dependent on those who did. Also, landowners discovered that they could increase their own wealth by getting other people to work for them. Systems of slavery and other forms of servitude developed. Those with wealth could become even wealthier with the help of others who depended on them for survival. All this culminated with feudalism in the Middle Ages, when society became steeply hierarchical, with a few kings and lords at the top and masses of slaves and serfs at the bottom. Now the lot of most people, children included, was servitude. The principal lessons that children had to learn were obedience, suppression of their own will, and the show of reverence toward lords and masters. A rebellious spirit could well result in death.

In the Middle Ages, lords and masters had no qualms about physically beating children into submission. For example, in one document from the late 14th or early 15th century, a French count advised that nobles' huntsmen should "choose a boy servant as young as seven or eight" and that "...this boy should be beaten until he has a proper dread of failing to carry out his masters orders."[1] The document went on to list a prodigious number of chores that the boy would perform daily and noted that he would sleep in a loft above the hounds at night in order to attend to the dogs' needs.

With the rise of industry and of a new bourgeoisie class, feudalism gradually subsided, but this did not immediately improve the lives of most children. Business owners, like landowners, needed laborers and could profit by extracting as much work from them as possible with as little compensation as possible. Everyone knows of the exploitation that

followed and still exists in many parts of the world. People, including young children, worked most of their waking hours, seven days a week, in beastly conditions, just to survive. The labor of children was moved from fields, where there had at least been sunshine, fresh air, and some opportunities to play, into dark, crowded, dirty factories. In England, overseers of the poor commonly farmed out paupers' children to factories, where they were treated as slaves. Many thousands of them died each year of diseases, starvation, and exhaustion. Not until the 19th century did England pass laws limiting child labor. In 1883, for example, new legislation forbade textile manufacturers from employing children under the age of 9 and limited the maximum weekly work hours to 48 for 10- to 12-year-olds and to 69 for 13- to 17-year-olds [2].

In sum, for several thousand years after the advent of agriculture, the education of children was, to a considerable degree, a matter squashing their willfulness in order to make them good laborers. A good child was an obedient child, who suppressed his or her urge to play and explore and dutifully carried out the orders of adult masters. Such education, fortunately, was never fully successful. The human instincts to play and explore are so powerful that they can never be fully beaten out of a child. But certainly the philosophy of education throughout that period, to the degree that it could be articulated, was the opposite of the philosophy that hunter-gatherers had held for hundreds of thousands of years earlier.

For various reasons, some religious and some secular, the idea of universal, compulsory education arose and gradually spread. Education was understood as inculcation.

As industry progressed and became somewhat more automated, the need for child labor declined in some parts of the world. The idea began to spread that childhood should be a time for learning, and schools for children were developed as places of learning. The idea and practice of universal, compulsory public education developed gradually in Europe, from the early 16th century on into the 19th. It was an idea that had many supporters, who all had their own agendas concerning the lessons that children should learn.

Much of the impetus for universal education came from the emerging Protestant religions. Martin Luther declared that salvation depends on each person's own reading of the Scriptures. A corollary, not lost on Luther, was that each person must learn to read and must also learn that the Scriptures represent absolute truths and that salvation depends on understanding those truths. Luther and other leaders of the Reformation promoted public education as Christian duty, to save souls from eternal damnation. By the end of the 17th century, Germany, which was the leader in the development of schooling, had laws in most of its states requiring that children attend school; but the Lutheran church, not the state, ran the schools [3].

In America, in the mid 17th century, Massachusetts became the first colony to mandate schooling, the clearly stated purpose of which was to turn children into good Puritans. Beginning in 1690, children in Massachusetts and adjacent colonies learned to read from the New England Primer, known colloquially as "The Little Bible of New England" [4]. It included a set of short rhymes to help children learn the alphabet, beginning with, "In **A**dam's Fall, We sinned all," and ending with, "**Z**accheus he, Did climb the tree, His Lord to see." The Primer also included the Lord's Prayer, the Creed,

the Ten Commandments, and various lessons designed to instill in children a fear of God and a sense of duty to their elders.

Employers in industry saw schooling as a way to create better workers. To them, the most crucial lessons were punctuality, following directions, tolerance for long hours of tedious work, and a minimal ability to read and write. From their point of view (though they may not have put it this way), the duller the subjects taught in schools the better.

As nations gelled and became more centralized, national leaders saw schooling as means of creating good patriots and future soldiers. To them, the crucial lessons were about the glories of the fatherland, the wondrous achievements and moral virtues of the nation's founders and leaders, and the necessity to defend the nation from evil forces elsewhere.

Into this mix we must add reformers who truly cared about children, whose messages may ring sympathetically in our ears today. These are people who saw schools as places for protecting children from the damaging forces of the outside world and for providing children with the moral and intellectual grounding needed to develop into upstanding, competent adults. But they too had their agenda for what children should learn. Children should learn moral lessons and disciplines, such as Latin and mathematics, that would exercise their minds and turn them into scholars.

So, everyone involved in the founding and support of schools had a clear view about what lessons children should learn in school. Quite correctly, nobody believed that children left to their own devices, even in a rich setting for learning, would all learn just exactly the lessons that they (the adults) deemed to be so important. All of them saw schooling as inculcation, the implanting of certain truths and ways of thinking into children's minds. The only known method of inculcation, then as well as now, is forced repetition and testing for memory of what was repeated.

With the rise of schooling, people began to think of learning as children's work. The same power-assertive methods that had been used to make children work in fields and factories were quite naturally transferred to the classroom.

Repetition and memorization of lessons is tedious work for children, whose instincts urge them constantly to play freely and explore the world on their own. Just as children did not adapt readily to laboring in fields and factories, they did not adapt readily to schooling. This was no surprise to the adults involved. By this point in history, the idea that children's own willfulness had any value was pretty well forgotten. Everyone assumed that to make children learn in school the children's willfulness would have to be beaten out of them. Punishments of all sorts were understood as intrinsic to the educational process. In some schools children were permitted certain periods of play (recess), to allow them to let off steam; but play was not considered to be a vehicle of learning. In the classroom, play was the enemy of learning.

A prominent attitude of eighteenth century school authorities toward play is reflected in John Wesley's rules for Wesleyan schools, which included the statement: "As we have no play days, so neither do we allow any time for play on any day; for he that plays as a child will play as a man."[5]

The brute force methods long used to keep children on task on the farm or in the factory were transported into schools to make children learn. Some of the underpaid, ill-prepared schoolmasters were clearly sadistic. One master in Germany kept records of the punishments he meted out in 51 years of teaching, a partial list of which included:

"911,527 blows with a rod, 124,010 blows with a cane, 20,989 taps with a ruler, 136,715 blows with the hand, 10,235 blows to the mouth, 7,905 boxes on the ear, and 1,118,800 blows on the head"[6]. Clearly, that master was proud of all the educating he had done.

In his autobiography, John Bernard, a prominent eighteenth-century Massachusetts minister, described approvingly how he himself, as a child, was beaten regularly by his schoolmaster [7]. He was beaten because of his irresistible drive to play; he was beaten when he failed to learn; he was even beaten when his classmates failed to learn. Because he was a bright boy, he was put in charge of helping the others learn, and when they failed to recite a lesson properly he was beaten for that. His only complaint was that one classmate deliberately flubbed his lessons in order to see him beaten. He solved that problem, finally, by giving the classmate "a good drubbing" when the school day was over and threatening more drubbings in the future. Those were the good old days.

In recent times, the methods of schooling have become less harsh, but basic assumptions have not changed. Learning continues to be defined as children's work, and power assertive means are used to make children do that work.

In the 19th and 20th centuries, public schooling gradually evolved toward what we all recognize today as conventional schooling. The methods of discipline became more humane, or at least less corporal; the lessons became more secular; the curriculum expanded, as knowledge expanded, to include an ever-growing list of subjects; and the number of hours, days, and years of compulsory schooling increased continuously. School gradually replaced fieldwork, factory work, and domestic chores as the child's primary job. Just as adults put in their 8-hour day at their place of employment, children today put in their 6-hour day at school, plus another hour or more of homework, and often more hours of lessons outside of school. Over time, children's lives have become increasingly defined and structured by the school curriculum. Children now are almost universally identified by their grade in school, much as adults are identified by their job or career.

Schools today are much less harsh than they were, but certain premises about the nature of learning remain unchanged: Learning is hard work; it is something that children must be forced to do, not something that will happen naturally through children's self-chosen activities. The specific lessons that children must learn are determined by professional educators, not by children, so education today is still, as much as ever, a matter of inculcation (though educators tend to avoid that term and use, falsely, terms like "discovery").

Clever educators today might use "play" as a tool to get children to enjoy some of their lessons, and children might be allowed some free playtime at recess (though even this is decreasing in very recent times), but children's own play is certainly understood as inadequate as a foundation for education. Children whose drive to play is so strong that they can't sit still for lessons are no longer beaten; instead, they are medicated.

School today is the place where all children learn the distinction that hunter-gatherers never knew--the distinction between work and play. The teacher says, "you must do your work and then you can play." Clearly, according to this message, work, which encompasses all of school learning, is something that one does not want to do but must; and play, which is everything that one wants to do, has relatively little value. That, perhaps, is the leading lesson of our

method of schooling. If children learn nothing else in school, they learn the difference between work and play and that learning is work, not play.

In this posting I have tried to explain how the history of humanity has led to the development of schools as we know them today. In my next posting I will discuss some reasons why modern attempts to reform schools in basic ways have been so ineffective.

Notes

1. Quoted by Orme, N. (2001), Medieval children, p 315.
2. Mulhern, J. (1959), A history of education: A social interpretation, 2nd edition.
3. Again, Mulhern (1959).
4. Gutek, G. L. (1991), An historical introduction to American education, 2nd edition.
5. Quoted by Mullhern (1959, p 383).
6. Again, in Mullhern (1959, p 383).
7. From “Autobiography of the Rev. John Bernard,” Collections of the Massachusetts Historical Society, 3rd Ser., 5 [1836]: 178-182. Extracted in J. Martin (Ed.) (2007), Children in Colonial America.

Why Schools Are What They Are II: Forces Against Fundamental Change

Why educational reform must occur outside the school system.

Published on August 27, 2008 by Peter Gray in Freedom to Learn

In previous postings I have presented evidence supporting the following claims: (1) Children's instincts to play and explore on their own provided the foundation for education during our long history as hunter-gatherers (August 2 posting). (2) Children today can and do educate themselves very well, without coercion or adult prodding or direction, if they are provided with an environment that supports their instincts to play and explore (August 13 posting). (3) Conventional schools are what they are today because of historical circumstances that led people to devalue play, believe that children's willfulness must be broken, and believe that everything useful, including learning, requires toil (August 20 posting).

Today, many people understand the educative value of free play and exploration, regret that children are provided relatively little opportunity for such activities, and believe that children's willfulness is a positive force for their development, education, and enjoyment of life. Yet schools continue on, as before. In fact, conventional schooling and other adult-led activities modeled after such schooling occupy an ever-growing percentage of our children's time. Why is it so difficult to reverse this trend? Why is it so difficult to institute fundamental changes within the school system? I don't pretend to know the full answer to this question, but here is an outline of my thoughts concerning the forces that make the educational system so difficult to change in a fundamental manner.

The Normality of Conventional Schooling

As social psychologists frequently point out, people will go to amazing lengths to appear normal. If we behave differently from the norm, others may reject us, and nothing is worse for us as social beings than rejection. If everyone in a culture binds girls' feet, essentially crippling them, then even parents who don't believe in that practice do it, so their daughters won't look weird. If all of the children in the neighborhood go to a conventional school, then the child who does something quite different from that may be seen as weird, and the parents may be seen as not only weird but negligent.

As one piece of evidence concerning the degree to which we today identify children with their conventional schooling, listen to almost any conversation (or attempt at conversation) between an adult and a child that the adult has just met: "What grade are you in school?" "What is your favorite subject?" "Do you like your teacher?" "Are you eager for school to start?" We have to find whole new ways of talking with children who don't attend such a school.

New schools that are founded on principles very different from those of conventional schools attract relatively few students, even from among those who believe in the principles, because of the fear of doing something that looks abnormal. Children who do make a decision to attend such a school need lots of social support to counteract that fear, and their parents need even more.

The Self-Fulfilling Prophecies of Conventional Schooling

Conventional schooling has promoted ways of thinking and acting that turn its own premises into self-fulfilling prophecies. The premises appear to be true because we evaluate them within the context of conventional schooling and by criteria established by such schooling.

Here's an example of such a premise: *Schools need to motivate children to learn*. I have, countless times, encountered parents who believe that unconventional schools such as Sudbury Valley are fine for "self-motivated kids" but not for their kids, because their kids are "not self-motivated." And the kids themselves also often believe that. They say things like, "I need teachers who'll kick my butt, or I'll do nothing all day." Why do people in our culture have this perception that school-aged children will not learn much if left to their own devices? Almost nobody has that perception of kids younger than school age (July 23 posting), and hunter-gatherers don't have that perception of kids of any age (August 2 posting).

One reason for the perception that school-aged kids are not motivated to learn on their own comes from our culture's general acceptance of the school system's definition of learning. If learning is defined as doing school assignments or work that looks a lot like school assignments, then it is certainly true that kids who are "unschooled" or who attend Sudbury schools spend little time "learning." Instead, they spend their time playing and exploring, in unpredictable ways, and they pick up the culture's knowledge and skills as a side effect.

Another reason for the perception is that kids who spend their day at a conventional school taking tests and doing work that they don't want to do may, at the end of the day, spend their free time relaxing, kicking back, or letting off steam, much as their parents do after a stressful day at work. This interferes with the opportunity to become fully engaged in the sort of play, exploration, and conversation that we most easily identify as educational.

Another example of a self-fulfilling school prophecy is this: *Good performance in school predicts subsequent success*. We have made this prophecy come true by setting up a world for children in which we essentially define "success" as good performance in school. The job of children is to get good grades in school, and there are many rewards for doing so. Good grades are the criteria for advancement to the next level in the graded school system, for placement on the "honor roll," for eligibility to play sports, for getting into college, for nominations to sought-after societies, for praise from many adults, and so on. So, of course, by all these measures of success, good performance in school (as measured by grades) predicts subsequent success.

We are also constantly bombarded with statistics showing correlations between years of schooling and career success as measured by income. But there are lots of reasons for those correlations that have nothing to do with learning. Here are three such reasons:

(1) We have set up a world in which certain high-paying jobs, such as law, medicine, and business administration, commonly require a certain number of years of higher education. In such a world, years of schooling inevitably correlate with income.

(2) We have set up a world in which "success" is more or less defined as good grades during youth and as high income later on. In such a world, those people who are highly achievement motivated, by conventional standards, will work

hard for high grades in school and for money in adulthood; and, *voila*, we have the correlation. We have also set up a world in which very few people do not attend conventional schools, so parents and children have few models that they can look to of success through any other route.

(3) Children from wealthy homes can afford more schooling than can those from poorer homes, so they obtain more schooling. Children from wealthy homes also have more opportunities for high paying jobs, because of family connections and lots of other advantages, than do those from poorer homes. This too helps create the correlation between years of schooling and subsequent income.

For these and other reasons an overall correlation between schooling and "success" is inevitable in the world we have built. There is no statistical way to know if any of that correlation has anything at all to do with what is actually learned in school.

The Entrenchment of the Education Business

Another reason for the inertia that operates against real change in our educational system has to do with the massive, entrenched nature of the educational establishment. In the United States, 6.8 million people currently make their living as teachers (U.S. Census Bureau). Contrary to popular belief, teaching pays better than does the average white-collar or professional job (Greene & Winters, 2007) and offers many other benefits, including, usually, job security, excellent pension plans, and lots of vacation time. Schools of education, which prepare teachers for conventional schools, comprise a huge portion of the higher educational establishment. The textbook industry is also massive and lucrative. A radical change in our system of education would upset all of this. Such a change would abolish our need for teachers, as presently defined. It would also abolish our need for schools of education and most if not all of our need for textbook

Many people in our culture have an economic interest in not just retaining but expanding conventional education. The more hours and years we require young people to go to school, the more teachers, school administrators, education professors, and textbook authors and publishers we can employ. The education business is just like every business; it is constantly trying to expand for the benefit of those who profit from it.

The education industry thrives on small changes and fads. New ideas about how to motivate children, new courses, and new ways of teaching old courses (such as the "new new new math") all provide jobs for education professors and textbook publishers. But fundamental change of the type I have been talking about in previous postings of this blog would upset everything.

Gradual Change Doesn't Work

Another barrier to the kind of change in schooling that I have been talking about is that it cannot be done gradually within a school or school system. The change requires a paradigm shift, from one in which teachers are in charge of the educational process to one in which each student is truly in charge of his or her own education. You can't do that a little at a time. As long as teachers set a curriculum, no matter how many choices they offer within that curriculum, students will see it as teachers' jobs, not theirs, to decide what to learn. As long as teachers evaluate students' progress, no

matter how they do so, students will see that their job is to meet teachers' expectations, not to establish and meet their own expectations.

In fact, the addition of choices and of less clearly defined means of evaluation within the conventional schooling system can make students' lives even more stressful than before. After such "liberal" changes, it becomes each student's job to guess what it is that the teachers want them to do and to guess at the real, unspoken criteria for evaluation. School becomes an exercise in mind reading. My own belief is that within the conventional school system the most benign way to teach is to be as clear as possible about the requirements and criteria, so students can meet those requirements and criteria with minimal fear that they may be studying the wrong things.

You also can't, within the conventional school system, expect to eliminate evaluation gradually, one course at a time. Suppose you introduce into the curriculum one course in which students will not be graded. What you will find is that most students won't do anything in that course, even if they want to. In a system where other courses are graded, the ungraded course is understood as irrelevant. How can a good student justify devoting time to a course that is not graded if other courses are graded? In order to change that mindset, the whole system has to change.

How Change is Occurring

Fundamental change in education is, nevertheless, occurring outside of the traditional school system. It is occurring among groups of families who decide to "unschool" their children (that is, to home school them in a free way, where there is no curriculum or evaluation) and among people who start non-school schools, such as those modeled after the Sudbury Valley School. People in these movements establish among themselves new sets of social norms, which allow them to overcome the barriers to behaving in ways that seem abnormal to others. Their observations of children who are educating themselves lead them to perceive education in a new light, as something to admire and enjoy in children but not to control. They begin to see many examples of people who have educated themselves freely and happily, outside of the conventional school system, and have gone on to successful lives by every meaningful definition of success, and so the self-fulfilling prophesies of conventional schooling are understood for what they are.

We have no reason to be discouraged about the future of education. We just must realize that real reform is not going to occur within the established school system. It will continue to occur outside of that system. The gradual change that will occur is that more and more people will opt out of conventional schooling. To permit that to happen, we need to be sure that people have the legal right to opt out. On a political level, that should be the highest priority for those of us who look for a world in which children can develop freely and happily, with the full experience of democracy and the rights and responsibilities that democracy entails.

The Natural Environment for Children's Self-Education: How The Sudbury Valley School is Like a Hunter-Gatherer Band

What do children need in order to educate themselves?

Published on September 3, 2008 by Peter Gray in Freedom to Learn

A major theme of this blog is that we come into the world with instincts that are well designed to promote our education. We have instincts to observe, explore, play, and converse with others in ways that endow us with the skills, knowledge, and values needed to live and thrive in the physical and social world into which we are born. We do this with great intensity and joy. These educational instincts were shaped by natural selection during the hundreds of thousands of years in which our ancestors survived as hunter-gatherers (see August 2 posting). We might expect, therefore, that these instincts would operate best in the social environment of a hunter-gatherer band, or in a modern environment that replicates certain aspects of a hunter-gatherer band.

For the past forty years, the Sudbury Valley School has been proving that the human instincts for self-education can provide the foundation for education in our modern society. At this school, children and adolescents explore, play, and converse as they please--without adult direction or prodding--and then graduate and go out into the world as successful adults (see August 13 posting). I have spent a good deal of time observing Sudbury Valley to understand how students learn there, and I have also surveyed the anthropological literature to understand how hunter-gatherer children and adolescents learn. This research has convinced me that Sudbury Valley works so beautifully as an educational institution because it replicates those elements of a hunter-gatherer band that are most essential to self-education.

Here I offer a list of what seem to me to be the most crucial ingredients of the natural environment for self-directed learning. Anthropologists report that these ingredients exist in the hunter-gather bands they have studied [1], and I have seen that all of these ingredients exist at the Sudbury Valley School.

Time and space for play and exploration

Self-education through play and exploration requires enormous amounts of unscheduled time--time to do whatever one wants to do, without pressure, judgment, or intrusion from authority figures. That time is needed to make friends, play with ideas and materials, sort things out, experience and overcome boredom, and develop passions. In hunter-gatherer bands adults place few demands on children and adolescents, because they recognize that young people need to explore and play on their own to become competent adults. The same is true at Sudbury Valley.

Self-education also requires space--space to roam, to get away, to explore. That space should, ideally, encompass the full range of terrains relevant to the culture in which one is developing. Hunter-gatherer adults trust their children to use good judgment in deciding how far they should venture away from others into possibly dangerous areas. At

Sudbury Valley, children are likewise trusted, within the limits set by prudence in our modern, litigious society. They can explore the surrounding woods, fields, and nearby stream, and by signing out to let others know where they are going, they can venture as far off campus as they choose.

Free age mixing

An enormous amount of learning occurs in interactions with others. When we segregate children by age, in schools, we deprive them of the opportunity to interact with those others from whom they have the most to learn. In hunter-gatherer tribes, and at Sudbury Valley, children and adolescents regularly, on their own initiative, play and explore in widely age-mixed groups.

In age-mixed groups, younger children acquire skills, information, ideas, and inspiration from older ones. In such groups, younger children can do things that would be too dangerous, or too complicated, for them to do alone or just with others their own age. Older children also benefit from age-mixed interactions. They learn how to be leaders and nurturers. They develop a sense of responsibility for others. They also consolidate and extend their own knowledge through explaining things to younger children. Free age mixing is so crucial to self-directed learning that I plan to devote two or three future postings specifically to that topic.

Access to knowledgeable and caring adults

In hunter-gatherer bands, the adult world is not segregated from the children's world. Children see what adults do and incorporate that into their play. They also hear the adults' stories, discussions, and debates, and they learn from what they hear. When they need adult help, or have questions that cannot be answered by other children, they can go to any of the adults in the band. All of the adults care for them. Most of the adults, in fact, are their aunts and uncles.

At Sudbury Valley, too, adults and children mingle freely (there are 10 full-time staff members and roughly 200 students, between the ages of 4 and 19). There is no place in the school where staff members can go but students cannot. Students can listen into any adult discussions and observe whatever the adults are doing, and they can join in if they wish. Students who need help of any kind can go to any of the staff members. A child who needs a lap to sit on, or a shoulder to cry on, or personal advice, or the answer to some technical question that he hasn't been able to find on his own, knows just which adult will best satisfy his need. The adults are not literally aunts and uncles, but they are much like aunts and uncles. They know all of the students over the entire span of time that they are students at the school (unlike teachers in a conventional school who know each set of kids for just one year) and take pride in watching them develop. Since the staff members must be re-elected each year by vote of all of the students in the school, they are necessarily people who like kids and are liked by kids.

Access to equipment

To learn to use the tools of a culture, people need access to those tools. Hunter-gatherer children play with knives, digging sticks, bows and arrows, snares, musical instruments, dugout canoes, and all of the other items of equipment that are crucial to their culture. At Sudbury Valley, children have access to a wide range of the equipment that is of most general use to people in our culture, including computers, woodworking equipment, cooking equipment, art materials, sporting equipment of various types, and many walls filled with books.

Free exchange of ideas

Intellectual development occurs best in a setting where people can share ideas freely, without censorship or fear of being ostracized. According to anthropologists' reports, hunter-gatherers are non-dogmatic in their beliefs, even in their religious beliefs. People can say what they please, without fear, and ideas that have any consequence to the group are debated endlessly. The same is true at Sudbury Valley. The school has deliberately refrained from becoming aligned with any particular religious or political ideology. All ideas are on the table. In this kind of environment an idea is something to think about and debate, not something to memorize and feed back on a test. Daniel Greenberg, the school's leading philosopher, has described the school as "a free marketplace of ideas." Children who may not hear much discussion of politics or religion at home hear it at school, and they hear every side of every issue.

Freedom from bullying

To feel free to explore and play a person must feel safe, free from harassment and bullying. Such freedom occurs to a remarkable extent both in hunter-gatherer bands and at Sudbury Valley. According to anthropologists, the close-knit personal relationships, the age mixing, and the non-competitive, egalitarian ethos of hunter-gatherer cultures work effectively to prevent serious bullying. If an older or bigger child appears to be picking on a younger or smaller one, others will step in and quickly stop it. The same occurs at Sudbury Valley. Moreover, at Sudbury Valley the school's democratically created rules and judicial system, in which children of all ages are involved, prevent serious bullying. Students who feel harassed or bullied can "bring up" the offender, to appear before the Judicial Committee, comprised of school members of all ages. This contrasts sharply with the case in many conventional schools, where bullying is a way of life. Students there who report bullying are snitches or tattle-tales, and teachers can get away with bullying because they make the rules and are not subject to them.

Immersion in democratic processes

Hunter-gatherer bands and the Sudbury Valley School are, in quite different ways, democracies. Hunter-gatherer bands do not have chiefs or "big men" who make decisions for the group. Instead, all group decisions are made through long discussions, until a clear majority of those who care have come to agreement. Anybody, including children, can take part in these discussions. Sudbury Valley is administered through a formal democratic process, involving discussions and votes of the School Meeting, where each student and staff member who chooses to attend has an equal vote.

Immersion in the democratic process endows each person with a sense of responsibility that helps to motivate education. If my voice counts, if I have a real say in what the group does and how it operates, then I'd better think things through carefully and speak wisely. I'm responsible not just for myself, but also for my community, so that is a good reason for me to educate myself in the things that matter to my community.

In sum, my contention is that the natural environment for learning--which existed during our long history as hunter-gatherers and is replicated at the Sudbury Valley School--is one in which people (a) have much free time and space in which to play and explore; (b) can mix freely with others of all ages; (c) have access to culturally relevant tools and equipment and are free to play and explore with those items; (d) are free to express and debate any ideas that they wish to express and debate; (e) are free from bullying (which includes freedom from being ordered around arbitrarily by adults); and (f) have a voice that is heard in the group's decision-making process.

How different this is from the environment of conventional schools. How ironic: In conventional schools we deprive children of all of the elements of their natural environment for learning, and then we try to teach them something!

Note

A good source for anthropologists' reports about hunter-gatherer childhoods is Barry S. Hewlett & Michael Lamb (Eds.), Hunter-gatherer childhoods: Evolutionary, developmental, and cultural perspectives. Transaction Publishers, 2005.

Why We Should Stop Segregating Children by Age: Part I--The Value of Play in the Zone of Proximal Development

Age segregation interferes with children's natural means of learning.

Published on September 9, 2008 by Peter Gray in Freedom to Learn

One of the oddest, and in my view most harmful, aspects our treatment of children today is our penchant for segregating them into separate groups by age. We do that not only in schools, but increasingly in out-of-school settings as well. In doing so, we deprive children of a valuable component of their natural means of self-education.

The age-segregated mode of schooling became dominant at about the same time in history when the assembly-line approach to manufacturing became dominant. The implicit analogy is pretty obvious. The graded school system treats children as if they are items on an assembly line, moving from stop to stop (grade to grade) along a conveyor belt, all at the same speed. At each stop a factory worker (teacher) adds some new component (unit of knowledge) to the product. At the end of the line, the factory spits out complete, new, adult human beings, all built to the specifications of the manufacturers (the professional educators).

Of course everyone who has ever had or known a child, including everyone who works in our age-graded schools, knows that this assembly-line view of child development is completely false. Children are not passive products, to which we can add components. Children are not incomplete adults that need to be built bit by bit in some ordered sequence. Children are complete human beings in their own right, who constantly demand to control their own lives and who, despite what we put them through, insist on learning what they want to learn and practicing the skills they want to practice. We can't stop them. We would all be much better off if we went with them on this rather than fought them.

In previous postings I have described settings where children educate themselves, without adult direction or prodding. In particular, I have discussed self-education as it once occurred in hunter-gatherer bands (August 2, 2008, posting) and as it occurs today in schools designed for self-education, particularly the Sudbury Valley School (August 13, 2008, and September 3, 2008, postings). A prominent feature of such settings is that children regularly interact with others across the whole spectrum of ages. Anthropologists have claimed that free age mixing is the key to the self-education of hunter-gatherer children; and Daniel Greenberg has long claimed that free age mixing is the key to self-education at the Sudbury Valley School, which he helped to found [1].

Several years ago, Jay Feldman (who then was a graduate student working with me) and I conducted some studies of age-mixed interactions at the Sudbury Valley School, aimed at (a) determining how much age mixing occurred at the school, (b) identifying the contexts in which age-mixing occurred, and (c) identifying ways by which age mixing seemed to contribute to students' self-education.

When given a choice, children spend considerable time interacting with others who are older or younger than themselves.

Sudbury Valley has, at any given time, approximately 170 to 200 students, who range in age from 4 to 18 years old and sometimes older. Students can move freely at all times throughout the school buildings and campus, and they can interact with whomever they please. The school is large enough that students could, if they chose, interact just with others who are within a year or two of themselves in age. But they don't do that. In our quantitative study we found that more than 50% of students' social interactions at the school were with other students who were more than two years older or younger than themselves, and 25% of their interactions were with other students who were more than 4 years older or younger than themselves [2]. Age mixing was especially frequent during play. Active play of all sorts was more likely to be age mixed than was conversation that did not involve play.

Over the next several installments of this blog, I will discuss various advantages of an age-mixed environment for self-education, using examples from our observations at Sudbury Valley [3]. One clear advantage, and the topic of this rest of today's installment, is this:

Age mixing allows younger children to engage in, and learn from, activities that they could not do alone or only with age-mates.

In the 1930's, the Russian developmental psychologist Lev Vygotsky developed a concept that he called the **zone of proximal development**, defined as *the realm of activities that a child can accomplish in collaboration with more skilled others but cannot accomplish alone or with others who are at his or her same level* [4]. Vygotsky claimed that children learn best when they are engaged with more skilled others within their zones of proximal development. Since Vygotsky's time, education professors have often used Vygotsky's concept to describe interactions between adult teachers and young learners, but the concept applies far better, I think, to naturally occurring age-mixed interactions among children.

As an illustration (which I have used elsewhere), imagine two 4-year-olds trying to play a simple game of catch [5]. They can't do it. Neither child can throw the ball straight enough for the other to catch it, so the game is no fun and quickly dissolves. Now imagine a 4-year-old playing catch with a skilled 8-year-old. The older child, by diving and leaping, can catch the wild throws of the younger one and can have fun doing it; and the older child can lob the ball directly into the outstretched hands of the younger one, so the latter can experience the joy catching. Thus, catch is a game within the 4-year-old's zone of proximal development. In an age-segregated environment consisting of only 4-year-olds, there would be no catch; but in an age-mixed environment that includes some 8-year-olds as well as 4-year-olds, catch is within everyone's realm of possibility.

At any given time of day at Sudbury Valley you can find young children playing games, with older children, that they would not be able to play just with age-mates. These include intellectual games as well as athletic ones. They play together not because anyone requires them to, but because they want to. Younger children are attracted to the activities and personalities of older ones; and older children enjoy opportunities to interact with younger ones.

Here's an example of intellectual play in the zone of proximal development. In several instances we observed 7- or 8-year-olds playing complicated card games in groups with older children and teenagers. By themselves, 7- and 8-year-olds would not be able to play such games. They would not be able to keep their attention focused long enough, or keep track of the rules, or even hold their cards straight enough to keep others from seeing them. They could play the games with older children because the older ones kept them on track, reminded them when necessary of what they had to do, and sometimes gave them strategy hints: "Pay attention." "Try to remember which cards were played." "Think before you lay down a card, so you don't put down something another player can take." Attention, memory, and forethought are the elements of what we commonly call intelligence. In the process of playing cards, which they were only doing to have fun, the older children were incidentally helping the younger ones to develop their intelligence.

Vygotsky's concept also helps us understand how young children learn to read at Sudbury Valley. Children who can't read, or can't read well, can regularly be found playing games (especially computer games) that involve the written word with children who can read well. The readers read aloud what the others cannot, and in the process the non-readers gradually become readers themselves.

Age mixing also allows young children to engage in playful adventures that would be too dangerous for them to do alone or just with age mates. Children who would, quite appropriately, be too frightened to venture off into the woods by themselves feel safe doing so with older children, who know the woods. Similarly, little kids new to tree climbing feel safe venturing up onto some of the lower branches if big kids are under them, advising them how to do it, ready to catch them if they fall.

When you are little and just with kids your own age, the range of possible activities is restricted by the knowledge and abilities of those in your age group; but in collaboration with older kids there is almost no limit to what you might do!

In the next several installments I will describe more advantages of an age-mixed educational environment, including advantages for the older children as well as the younger ones.

References

1. Greenberg, D. (1992). Sudbury Valley's secret weapon: Allowing people of different ages to mix freely at school. In D. Greenberg (Ed.), The Sudbury Valley School experience, 3rd ed. Framingham, MA: Sudbury Valley School Press.

2. Gray, P. and Feldman, J. (1997). Patterns of age mixing and gender mixing among children and adolescents at an ungraded democratic school. Merrill-Palmer Quarterly, 43, 67-86.

3. Gray, P. and Feldman, J. (2004). Playing in the Zone of Proximal Development: Qualities of Self-Directed Age Mixing Between Adolescents and Young Children at a Democratic School. American Journal of Education, 110, 108-145.

4. Vygotsky, L. (1978). Interaction between learning and development. In M. Cole, V. John-Steiner, S. Scribner, and E. Souberman (Eds), Mind and society: the development of higher psychological processes. Cambridge, MA: Harvard University Press.

5. Gray, P. The value of age-mixed play. Education Week, April 16, 2008.

Why We Should Stop Segregating Children by Age: Part II--The Unique Educative Qualities of Age-Mixed Play

Age-mixed play is more playful than same-age play.

Published on September 17, 2008 by Peter Gray in Freedom to Learn

During the long course of human history, play almost always occurred in age-mixed settings. The biological foundations for play evolved to serve educative purposes in settings where children were almost never segregated by age. Anthropologists who have studied play in hunter-gatherer groups report that a typical playgroup might range in age from age 4 through 12, or 8 through 17. When we observe play in age-segregated settings (such as school playgrounds)--where 6-year-olds can play only with other 6-year-olds and 12-year-olds only with other 12-year-olds--we are observing an artifact of modern times. Studying children's play in age-segregated settings is like studying monkeys in cages; we are observing behavior under unnaturally confined conditions. Monkeys in cages show a lot more aggression and dominance behavior than do monkeys in the wild, and the same is true of children in age-segregated settings compared to those in age-mixed settings.

In my last posting, I described how age-mixed play allows younger children to participate in, and learn from, activities that would be too difficult for them to do alone or just with age-mates. In this posting I will comment on some qualitative differences between age-mixed play and age-segregated play. My main point is this:

Age-mixed play is less competitive, more creative, and more conducive to practicing new skills than is same-age play

Age-mixed play is, in short, more *playful* than is same-age play. When children who are all nearly the same age play a game, competitiveness can interfere with playfulness. This is especially true in our current culture, which puts so much emphasis on winning and on all sorts of comparisons aimed at determining who is better, an emphasis fostered by our competitive, graded school system. In contrast, when children who differ widely in age play a game together, the focus shifts from that of beating the other to that of having fun. There is no pride to be gained by the older, larger, more skilled child in beating the much younger one, and the younger one has no expectation of beating the older one. So, they play the game more joyfully, in a more relaxed manner, modifying the rules in ways to make it both fun and challenging for all involved. A playful mood facilitates creativity, experimentation, and the learning of new skills, while a serious mood tends to inhibit these and leads a person to fall back on skills that have already been well learned (a point to be expanded upon in a future posting).

My own systematic studies of age-mixed play have taken place primarily at the Sudbury Valley School, where, as I have pointed out in previous posting, students age 4 through 18 are free to interact with one another, as they please, at any time of day. In an essay that he wrote several years after graduating from Sudbury Valley, Michael Greenberg described age-mixed soccer games at the school. I offer the following rather extensive quotation from that essay, because it illustrates so beautifully some of the values of age-mixed play.

"One person says, "lets play soccer" to some other people. Whoever feels like playing at the moment comes to the field. There are 6-year-olds, 10-year-olds, 18-year-olds, maybe a staff member or a parent who feels like joining in. There are boys and girls. Teams are chosen with a conscious effort at creating evenly matched sides. ... this often consists of one team having an extra "big kid' who can play well and the other team getting a small army of 6-year- olds to get in his way. People want even teams because they are playing for fun. It's no fun to play a game with lopsided teams. ... The game is played by whoever wants to play, for as long as they feel like playing. There will always be certain people who value winning, but there is little peer performance pressure. Most people don't really care who wins.

"Now, you might get the impression that people are not trying very hard to be good at the game, but that's not true. The process of play is only fun if you exert effort and challenge yourself. That is why people developed the idea of games like soccer in the first place. Running around for no reason gets boring, but running around trying to kick a ball between two posts that are guarded by people who are trying to stop you--that's exciting.

"The people who play sports as we do at [Sudbury Valley School] learn far more profound lessons about life than those that can be taught by regimented, performance-oriented sports. They learn teamwork--not the 'we against them' type of teamwork, but the teamwork of a diverse group of people of diverse talents organizing themselves to pursue a common activity--the teamwork of life. They learn excellence, not the 'I'm the star' type of excellence, but the type of excellence that comes from setting a standard for yourself to live up to and then trying your best to live up to it.

"I'm 23 years old and I've played a lot of soccer. It would be pretty silly for me to try to be better than the three 8-year-olds who crowd around my feet every time I try to kick the ball. I think that the 8-year-olds are too busy running after kids who are three feet taller than they are to worry about being the best 8-year-old. In this game, as in real life, the only standard that matters is one you set for yourself. One of the profound truths you learn is that we are all so different from each other that peer pressure and comparisons of worth are meaningless. If you're 11 years old and you are only allowed to play with other 11-year-olds, it's very hard to glimpse this profound truth, which unlocks the meaning of excellence.

"[You also] learn responsibility and restraint. In all the years of playing very physical games like football, soccer, and basketball, there has never been an injury beyond a minor cut or bruise. People play all these sports in their regular clothes without any of the standard protective equipment that is normally required. How can this be explained when people wearing protective pads injure each other with alarming frequency? Because in a regimented, performance-oriented way of looking at sports (or life), making sure you don't hurt someone becomes less important than winning. So it doesn't matter how much you talk about "sportsmanship" or how many safety pads you wear, people are going to get hurt. When you approach sports (or life) as a fun, exciting process, as something that is done for the sheer joy and beauty of doing it, then not hurting someone, not impairing their ability to enjoy the same process, becomes a top priority. ...

"To participate in an activity where the clash of unequal bodies is transformed through teamwork, pursuit of personal excellence, responsibility, and restraint into a common union of equal souls in pursuit of meaningful experience has been one of the most profound experiences of my life. I am sure it has had a similar effect on others." [1]

In our systematic observations at Sudbury Valley (noted in the previous posting), Jay Feldman and I recorded many occurrences of age-mixed play that fit well with Michael Greenberg's description. In one instance, for example, Feldman watched a tall 15-year-old boy playing basketball with a group of much shorter 8- to 10-year-olds. The older boy rarely shot, but spent much time joyfully dribbling while the gang of small boys who made up the opposing team tried to steal the ball from him. Then he would pass to his single teammate (age 8) and encourage him to shoot. By dribbling and passing rather than shooting, the older boy made the game fun and challenging not just for the younger children but also for himself. Shooting baskets is too easy to be fun when nobody is tall enough to block your shots, but dribbling through a gang of short people who are trying to steal the ball is a great, fun way to improve your dribbling. Here's another example, quoted from one of our articles, which illustrates the creative, light-hearted nature of age-mixed athletic play:

"In an age-mixed game of capture the flag, one team, the Big People, consisted of three adolescents and one 11-year-old, and the other team, the Hordes, consisted of ten 4- to 8-year-olds and one 12-year-old. Larry (age 4) would often run across the line and get captured by Sam (age 17) in an act that included lots of tickling and carrying of Larry in mock combat. After Larry was set down, he would prance merrily back to his side, without going to jail. Often one or more of the Big People would cross into the Hordes' territory not to go after the flag but simply to run around with a gang of small children chasing them. Nobody seemed to be much focused on winning, but when the Hordes did finally capture the flag, they cheered loudly."[2]

Board games and card games, likewise, are played in more playful, creative, non-competitive ways when the players vary widely in age than when they are age-mates. Feldman observed many games of chess, which happened to be a fad at the time of his research. Games between equally matched players tended to be quite serious; the players appeared intent on winning. Games between unmatched players, who usually differed widely in age, were more creative and light-hearted. To make the game interesting, the older players would typically self-handicap in some way, for example by deliberately getting into difficult positions, and would frequently point out better moves to the younger players. The older players seemed to be using such games to experiment with new styles of play, which they were not yet ready to try out in serious games.

Some of the most creative and joyful samples of play I have witnessed involved teenagers and younger children engaged together in shared fantasy play. Here is another quotation, describing one such scene that I observed not long ago:

"I was sitting in the playroom at the Sudbury Valley School, ... pretending to read a book but surreptitiously observing a remarkable scene. A 13-year-old boy and two 7-year-old boys were creating, purely for their own amusement, a fantastic story involving heroic characters, monsters, and battles. The 7-year-olds gleefully shouted out ideas about what would happen next, while the 13-year-old, an excellent artist, translated the ideas into a coherent story and sketched the scenes on the blackboard almost as fast as the younger children could describe them. The game continued for at least half an hour, which was the length of time I permitted myself to watch before moving on. I felt privileged to enjoy an artistic creation that, I know, could not have been produced by 7-year-olds alone and almost certainly would not have been produced by 13-year-olds alone. The unbounded enthusiasm and creative imagery of the 7-year-olds I

watched, combined with the advanced narrative and artistic abilities of the 13-year-old they played with, provided just the right chemical mix for this creative explosion to occur."[3]

Age mixing is sometimes a means of matching abilities.

My main concern in this essay has been with the value of play among people with unequal abilities. Before closing, though, I should add that freely chosen play among people with relatively equal abilities is also valuable. In general, children who are similar in age are more similar in abilities than are those who are different in age, but that is not always the case. In an age-mixed environment, a person who is ahead of or behind his or her age-mates in some realm of activity can find equal partners among older or younger children. The child who is awkward at climbing can play at scrambling up rocks and trees with younger children without feeling constantly left behind, and in that way can improve her climbing ability. The talented 11-year-old guitar player, whose musical ability is beyond that of his age-mates, can jam with teenagers who are at his level.

Feldman observed a number of examples of students at Sudbury Valley who were advanced for their age in certain abilities and frequently played with older children. One example was that of 12-year-old Randy, an excellent chess player, who went to tournaments and had an official ranking. His only chess peers at the school were Jack (age 17), Elana (age 17), and Ken (age 18). All of his serious games, with which he measured his own progress, were with these older students. He might practice new moves in games with his age-mates and younger children, but he tested himself in games with students who were five or six years older than himself.

References

1. Greenberg, M. (1992). On the nature of sports at S.V.S. and the limitations of language in describing S.V.S. to the world. In D. Greenberg (Ed.), The Sudbury Valley School experience, 3rd ed. Framingham, MA: Sudbury Valley School Press.

2. Gray, P. & Feldman, J. (2004). Playing in the Zone of Proximal Development: Qualities of Self-Directed Age Mixing Between Adolescents and Young Children at a Democratic School. American Journal of Education, 110, 108-145.

3. Gray, P. The value of age-mixed play. Education Week, April 16, 2008.

Why We Should Stop Segregating Children by Age: Part III—Older Children Are Excellent Models, Helpers, and Teachers

Why age-mixing is crucial to children's self-education.

Published on September 24, 2008 by Peter Gray in Freedom to Learn

We adults flatter ourselves when we think that we are the best models, guides, and teachers for children. Children are much more interested in other children than in us. Children are especially interested in, and ready to learn from, those others who are a little older than themselves, a little farther along in their development, but not too far along. Children are drawn to older children, and older children are drawn to adolescents. Adulthood is too far off to be of much concern. That is why age-mixing is crucial to children's self-education.

In my two just-previous posts I focused on the value of age-mixed play. I described how younger children are lifted up in such play to do things that they couldn't do just with age-mates; and I described how age-mixed play is often more creative, less competitive, and more conducive to experimentation than is same-age play. Now I complete this series on age mixing by describing some ways, beyond play, by which the presence of older and younger children promotes self-education. As before, my examples come mostly from observations at the Sudbury Valley School, where the students, who range in age from 4 through high-school age, mingle freely all day long.

Younger children want to do what older children do.

One sunny morning as I sat near the school's playground I watched two 10-year-old girls easily and nonchalantly perform the trick of walking upright down the slide. A 6-year-old girl nearby watched them more intently than I, and then she climbed the ladder and started gingerly walking down the slide herself. This was clearly a challenge for the little girl. She walked with knees bent and hands down, ready to grab the rails if she lost balance. I also noticed that the two older girls remained next to the slide and looked on with a degree of apprehension, ready to catch her, but not too obviously so, if she should fall. One said, "You don't have to do it, you can just slide," but the little girl continued, slowly, and beamed with pride when she made it to the bottom. Shortly after that, the two older girls began climbing a nearby tree, and the younger girl followed them in that activity too. The little girl was clearly motivated to do, with effort, what the older girls could do with ease.

This is just one of many, many observations of young children modeling their behavior after that of older children. Children on the verge of being able to play strategy games, or read, or perform new operations on the computer, or engage in more advanced athletic activities, become motivated to do so by observing those activities in older children and adolescents. In our study of how and why children learn to read at the school, some told us that they wanted to read because they were envious of the older kids who were reading and talking about what they had read. As one student put it, "I wanted the same magic they had; I wanted to join that club."

Younger children don't just blindly mimic older ones. Rather, they watch, think about what they see, and incorporate what they learn into their own behavior in ways that make sense to them. Because of this, even the mistakes and unhealthy behaviors of older children can provide positive lessons for younger ones. Young children talk endlessly about what they like and don't like about the activities of the older ones around them. Negative models can be as helpful as positive ones. "I'm not going to do what X does, because I can see all the trouble it brings him."

Children also learn an enormous amount just by listening to or overhearing older ones, even when they aren't interacting with them. Through hearing the language and thoughts of older children--which are more sophisticated than their own, but not so much more so as to be out of reach--they expand their own vocabularies and range of thought.

Older children are also inspired by younger ones.

It is not just the younger children whose horizons are expanded by the age-mixed environment. At Sudbury Valley, older children and teenagers are inspired by the playthings and actions of younger ones to continue to engage in activities that they probably would have dropped by middle childhood in an age-segregated environment. They continue, for example, to play with blocks, clay, crayons, and paint. As a result, many of them become extraordinarily good at those activities. The school has produced a remarkable number of successful creative artists, and I suspect that the age-mixed environment has much to do with that.

Older children are excellent helpers and advisors of younger children, partly because they do not help or advise too much.

Children often prefer to ask an older child rather than an adult for help or advice, even when an adult is available whom they could easily ask. I suspect there are many reasons for this, but one of the main reasons, I think, has to do with control.

Children seeking help or advice do not want to give up their own control of the situation. They don't want any more help than what they ask for, and they want to decide themselves whether or not to accept what is offered. Because adults are more likely to be seen as authority figures than are older children, it is harder to reject an adult's help or walk away when advice goes beyond what the child wants. Moreover, in my observations, older children are much less likely than are adults to extend help or advice beyond what the young child wants. Older children are not worried about the long-term development of the child who has asked them for help, or about whether or not they are coming across as wonderful teachers and guides, so they just give the help that is asked for, which is all that the younger child wants.

In one of Jay Feldman's observations, for example, 5-year-old Sue asked 8-year-old Anne to thread the needle on a beading loom for her, which she needed to do to complete a bracelet she was making.[1] After Anne threaded the needle, Sue continued her work on her own, without further help, and Anne offered none, even though Sue continued to have difficulties with the loom and made many mistakes. If Sue had asked an adult to thread the needle, rather than an older child, the adult might have hovered around and helped Sue with other parts of her project, which would have

taken away Sue's pride in doing the work herself. Sue clearly didn't want such further help, even though the project was difficult for her, so it was safer to ask an 8-year-old. [Note: Students' names in this and other examples are pseudonyms.]

So, here is a valuable lesson that we adults can learn from children about helping and advising children: *Don't give more help, or more advice, than is asked for!* Come to think of it, the same lesson applies to helping and advising adults. I know that when I ask for help I am not asking for supervision. I just want the help I asked for. I want to do the rest myself, even if I'll make more mistakes that way. A too-helpful helper takes away my sense of freedom, self-control, and play.

Older children are excellent teachers of younger ones, partly because they are not too far ahead of the younger ones.

Daniel Greenberg made this point in one of his books about Sudbury Valley, where he wrote: "Kids love to learn from other kids. First of all, it's often easier. The child teacher is closer than an adult to the student's difficulties, having gone through them somewhat more recently. The explanations are usually simpler, better. There's less pressure, less judgment." [2]

Not only are the explanations simpler, but, because they come from someone closer in age, they are easier to challenge. They are more likely to be viewed as ideas to think about, rather than as Truth, and understanding comes from thought, not from blind acceptance. Here is an example from one of Jay Feldman's observations:

Eight-year-old Ed was complaining to 14-year-old Arthur about how two other boys had been teasing him by calling him names he didn't like. Arthur told Ed that he should bring a complaint to the school's Judicial Committee. Ed then said, "They have freedom of speech." Arthur, after a little thought, replied that freedom of speech meant that they had the right to say those things, but Ed also had the right not to hear them. Ed, after a little thought, said, "Okay." [3]

Notice that in this example Ed felt equal enough to Arthur to challenge his suggestion, and the challenge led to a new idea. Notice also the elegant language of the exchange. Big ideas were expressed in few and simple words.

Older children expand their own understanding through explanations to younger children.

Everyone who has ever been a teacher knows that we learn more when we teach than when we are taught. The requirement to put ideas into words that others can understand, and the need to think through objections that others might make, leads us to think deeply about what we thought we knew. Often this leads us to a better understanding than we had before. In an age-mixed environment, children, not just adults, can learn through teaching.

In the above example, 14-year-old Arthur, the "teacher," probably learned at least as much as 8-year-old Ed, the protégé, in their conversation. Ed's challenge to Arthur's suggestion led Arthur to think further and expand on his explanation in a way that he may not have thought about before. Both parties probably left the conversation with a deeper understanding of democracy at the school than they had before.

As another example, consider the case of an older child playing chess or some other strategy game with a younger one and teaching strategy as they play. When the older child says to the younger one that move A would be better than move B, the younger one says, "Why?" To answer this, the experienced player cannot just rely on gut instinct developed from long experience with chess, but must articulate a reason. She must turn her implicit chess knowledge into conscious, explicit knowledge, and in doing so she becomes a better chess player. Similar examples occur in every realm of exchange of knowledge and ideas among people who feel free to ask questions.

Older children develop compassion and nurturing skills through helping younger ones.

Even more valuable than the cognitive gains derived from interacting with younger children are the moral gains. To develop effectively as responsible, ethical beings, children need to have the experience of caring for others, not just the experience of being cared for by others. Observations in many cultures have shown that both boys and girls behave in more caring ways toward children who are several years younger than themselves than toward children near their own age. Little children seem to draw out the nurturing instincts that lie latent in all of us. One study, in Kenya, revealed that boys who cared for younger siblings at home behaved less aggressively, more kindly, toward same-age peers than did boys who lacked that opportunity.[4] Apparently, the nurturing instinct is strengthened through interactions with younger children, and, once strengthened, it generalizes to age-mates.

In observations at Sudbury Valley, many examples of children nurturing younger ones can be seen every day. These include scenes of older children reading to younger ones, who sit on their laps; older children helping younger ones find lost objects or fixing things they have broken; and older children giving needed boosts to younger ones as they go about their daily activities. Some of the most interesting scenes are those in which an older child criticizes a younger one for his or her poor treatment of a still younger child. In one case, for example, we observed a 10-year-old girl explain to three 6-to-8-year-old girls why they should let a certain 4-year-old join them in their game. "How would you feel if you weren't included," she said. In another case we observed a 17-year-old boy reprimand a 13-year-old for his unfriendly way of rejecting an 8-year-old boy who asked to play a game with him. The reprimands we heard in these examples were much more effective coming from an older child than they would have been if they had come from an adult.

Taking this essay along with the previous two, I conclude with the following summary.

An age-mixed environment

(1) allows younger children to engage collaboratively in activities that they could not do just with age-mates;

(2) promotes non-competitive, creative forms of play that are ideal for acquiring new skills;

(3) allows those who are ahead of or behind their age-mates in certain realms to find others who are at their level;

(4) permits younger children to be inspired by the activities of older ones, and vice versa;

(5) allows younger children to receive help and advice without giving up their own autonomy;

(6) allows older children to learn through teaching; and

(7) allows older children to practice caring for younger ones and to develop a sense of responsibility and maturity.

When we segregate children by age, in schools and in other settings, we deprive them of all of this. We rob them of the opportunity to use fully their natural and joyful ways of learning from one another.

References

[1] Feldman, J. (1997). The educational opportunities that lie in self-directed age mixing among children and adolescents. Ph.D. dissertation, Department of Psychology, Boston College, 1997.

[2] Greenberg, D. (1987). Free at last: the Sudbury Valley School. Framingham, MA: SudburyValley School Press.

[3] Gray. P. & Feldman, J. (2004). Playing in the zone of proximal development: Qualities of self-directed age mixing between adolescents and young children at a democratic school. American Journal of Education, 110, 108-145.

[4] Ember, C. R. (1973).Feminine task assignment and the social behavior of boys. Ethos, 1, 424-439.

The Varieties of Play Match the Requirements of Human Existence

Children play at the skills they need most for survival.

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From an evolutionary perspective, the main purpose of play is education. Play is nature's way of ensuring that young mammals will practice the skills they need for survival. You can predict what a young mammal will play at by knowing what it must learn. Young carnivores, such as lions and tigers, play at stalking, chasing, and pouncing. Young zebras and other animals that are preyed on by lions and such play at running, dodging, and escaping. Young monkeys play endlessly at chasing one another and swinging from trees. Young humans--who have far more to learn than do the young of any other species--play in far more ways than do the young of any other species.

This is the first of a series of essays on the educational value of human play. My point in this installment is that the universal forms of human play--the forms that can be seen in any human culture--match well with the varieties of skills that human beings everywhere must develop to survive and thrive. From an evolutionary perspective, that is no accident.

As a caveat, I should note at the outset that the varieties of play that I list and describe below are not mutually exclusive categories. Any given instance of play that you observe is likely to combine more than one of these varieties. But I think you will recognize, in the list, the range of types of play that we take more or less for granted in children, because we see them everywhere. I ask, as you read this essay, to not take play for granted; think about its extraordinary value to the developing child.

Locomotor play

All, or at least nearly all, young mammals engage in *locomotor play*, such as playful running and leaping, and young humans are no exception. People everywhere must learn to control their own bodies, to move quickly and effectively through space, to avoid falls, and to recover from falls that inevitably occur. As I noted in a previous essay in this blog, toddlers spend an average of six hours a day at playful walking--walking for no other purpose than the fun of it. In the process they become experts at the universal human skill of two-legged walking. After walking comes running, jumping, climbing, swinging, and--depending on the environment and culture--swimming, bicycling, roller blading, ice skating, cartwheeling, and all sorts of other ways of experiencing the thrill of movement. Children, and adults too, do all this for no other reason than fun, but in the process they acquire skills that may save their lives many times in the future.

Rough and tumble play

Overlapping with locomotor play is *rough-and-tumble play*, playful chasing and fighting, which we also share with other mammals. Like all mammals, we are physical beings that need fit bodies for life's work and emergencies. Rough-and-

tumble play builds strength, coordination, and endurance. Children on their own initiative don't lift weights or run laps to keep in shape. Nothing would be more dull and wearisome than that. Instead, they chase one another around, and maybe wrestle or play at sword fighting, to happy exhaustion, many times per day if they have the opportunity. Nothing is more fun that that!

In most cultures boys and girls engage about equally at playful chasing, but boys everywhere engage in more playful fighting than do girls. Play fighting is sometimes confused with real fighting by adults who don't look closely at it, but for anyone who looks closely the distinction is clear. In fact, it is not unreasonable to say that play fighting is the opposite of serious fighting. In a real fight the purpose is to hurt the other person and/or make that person run away. In a play fight the purpose, quite deliberately, is to go through fighting motions without hurting the other person or making that person want to leave. Some researchers have argued that a major function of play fighting, beyond pure physical exercise, is to help children learn restraint and especially to help boys learn how to be in close and peaceful proximity with other boys. Play fighting is one of the ways by which boys bond. We might think of it as boys' means of hugging. But I'll save that story for a future essay.

Language play

We are the linguistic animal, and so we have *language play* that teaches us to talk. Nobody has to teach language to young children. They learn it on their own, through play. The earliest stages of language play involve the production of language-like sounds. At about 2 months of age, infants begin to make repeated, drawn-out vowel-like cooing sounds--*ooh-ooh-ooh, eeh-ahhh-eeh-ahhh*. At about 4 or 5 months of age, the cooing gradually changes to babbling, as the baby begins to put consonant and vowel sounds together--*ba-ba-boo-ba-ga-da-da-da-badada*. Such cooing and babbling is clearly play. It only occurs when the baby is happy; it has structure; it is self-motivated; it is not done to get something--it is done purely for its own sake. All that makes it play. With time, the babbled sounds come increasingly to resemble the sounds of the child's native language, and by about one year of age the child's first words appear and may be repeated over and over in a playful manner.

As children grow older they begin to play with simple grammatical constructions. Many years ago, as research for her doctoral dissertation, Ruth Hirsch Weir recorded and analyzed the "crib speech" of her son Anthony, when he was 28 to 30 months of age. Because this speech occurred when Anthony was alone in his crib, it clearly did not involve an attempt to communicate; it was pure play. Some of Anthony's crib speech is reminiscent of the repetitive phrases, with systematic variation, that you might hear in recordings made for self-instruction in a foreign language. Here's an example [From Weir's book, "Language in the Crib."]:

"What color? What color blanket? What color mop? What color glass? ... Not the yellow blanket, the white. It's not black, it's yellow. Not yellow, red."

In the first part of this sequence Anthony is playing with his new ability to ask about the colors of things and is consolidating his understanding of color words. In the second part he continues playing with color words, but now the focus is on negating and correcting.

Playful language practice doesn't occur just when children are alone; it also occurs in pseudo-communicative exchanges with others. The famous developmental psychologist Jean Piaget gave, as an example, the following exchange between his 3-year-old daughter and himself [in his book, "Play, Dreams, and Imitation in Childhood"]:

What's that? (she asked, looking at a picture) -- It's a cowshed. -- *Why?*-- It's a house for cows. -- *Why?* -- Because there are cows in it, do you see? -- *Why are they cows?* -- Don't you see? They've got horns. -- *Why have they horns?* ... and so on, and so on.

The daughter here was almost certainly not asking questions to get information; rather, she was playfully exercising her newfound capacity to ask questions and elicit responses from her father. All of us who have spent time with young children have experienced similar exchanges. They can be frustrating or fun, depending on whether we take them as serious questions or recognize them as linguistic play.

With still further development, children's language play can involve puns, rhymes, alliterations, and deliberate distortions of grammar, all of which help the child consolidate his or her growing understanding of linguistic sounds, words, grammar, and meanings. Listen closely to the playful language of any young child, alone or in pseudo-dialogues, and you will find many instances of practice at constructions that represent a joyful challenge to the child.

Exploratory play

We are *Homo sapiens*, the wise animal, who makes sense of the world, and so we have *exploratory play*, which combines playfulness with curiosity to help us understand our surroundings. Newborn babies, even on their first day out of the womb, look at patterns that are brand new to them in preference to patterns that they have already seen earlier in the day. Within a few weeks, babies start putting things within their reach into their mouths. Like puppies, they examine things orally, by mouthing them. By about 5 or 6 months of age, they transition to the uniquely human way of examining objects, with hands and eyes together. Put a novel object in reach of a 6-month-old and she will pick it up, hold it before her eyes, look at it, squeeze it, rub it, turn it over, pass it from hand to hand, shake it, pound with it, and act on it in various other ways that seem well designed to learn about its properties.

We come into the world as little scientists, pre-programmed to try to understand everything around us. Nobody has to tell us to explore and learn about our environment; we do it naturally, all our lives, in increasingly sophisticated ways, unless someone turns it into work by trying to make us do it.

Constructive play

We are the animal that survives by building things--including shelters, tools, devices to help us communicate, and devices to help us move from place to place--and so we have *constructive play*, which teaches us to build. In constructive play a child strives to produce some object that he or she has in mind. A child making a sandcastle, or creating a spaceship from blocks, or drawing a giraffe, is engaged in constructive play.

In many cases the objects built in constructive play are miniature or pretend versions of "real" objects that adults in the culture build and use. Hunter-gatherer children make small versions of huts, bows and arrows, blowguns, nets, knives, slingshots, musical instruments, digging sticks, rafts, rope ladders, mortars and pestles, and baskets in their play. Through such play they become good at building, and by the time they are adults they are making well-crafted, useful versions of the real things.

Constructive play can be with words and sounds as well as substances, and people everywhere, adults and children alike, produce stories, poems and melodies in their play. Among the countless kinds of constructions playfully made by children in our culture today are computer programs, written stories, and secret codes with invented symbol systems. Constructive play can be intellectual as well as manual.

Pretend and sociodramatic play

We are the imaginative animal, able to think of things that are not immediately present, and so we have *fantasy play*, or *pretend play*, which builds our capacity for imagination. In this type of play children establish certain propositions about the nature of their pretend world and then play out those propositions logically. In doing so they are exercising the same capacities that allow us, as adults, to think about things that are not immediately present, which is what we all do when we plan for the future and what scientists do when they develop theories to explain or predict events in the real world.

We are an intensely social species, requiring cooperation with others in order to survive, and so we have many forms of *social play*, which teach us to cooperate and to restrain our impulses in ways that make us socially acceptable. The social form of pretend play--in which children engage in elaborate joint pretend ventures and enact roles and scenes that they make up together--is called *sociodramatic play*. In such play, children are doing much more than just exercising their imagination. As they enact roles, they are exercising their ability to behave in accordance with shared conceptions of what is or is not appropriate. If you are the mommy, or the daddy, or the pet dog in a game of house, then you must behave in accordance with the players' shared understanding of how mommies, or daddies, or pet dogs behave. You cannot behave impulsively; you must think about what you are doing to be sure it will be acceptable. I will have more to say in a later essay about play as exercise in self-control. The learning of self-control is perhaps the most important general function of all sorts of human play.

Children in sociodramatic play are also practicing the art of negotiation. As they decide who will play what roles, who will get to use which props, and just what scenes they will enact and how, the players must all come to agreement. Indeed, a basic rule of all social play is that everyone must agree. Anyone left unhappy by a decision will quit, and if everyone quits there will be no game. Since the motive to play is strong, the motive to keep the other players happy is strong. That is true of all social play, but it is especially apparent in the negotiations that are observed in sociodramatic play. Keeping our companions happy, so they stay with us and continue to support us through life, is surely one of the most valuable of human survival skills, and children continuously practice that skill in social play.

Games with explicit rules

We are the rule-abiding animal, able to keep contracts and follow explicit, socially agreed-upon rules, and so we play *formal games*, which teach us to follow explicit rules.

All play to some degree involves rules. Rules in the minds of the players give structure to any form of play. In play fighting, for example, a basic rule is that you don't really hurt the other person--you don't kick, bite, or scratch, and if you are the larger and stronger of the two you don't use your full force. In constructive play a basic rule is that you must attempt to depict some object that you have visualized in your mind; you don't just scribble or pile blocks randomly. In sociodramatic play a general rule is that you must act in accordance with shared understanding of how the person or animal you are pretending to be would act. The rules in all of these forms of play are mostly *implicit*; they are understood but unstated. In formal games the rules are *explicit*, meaning that they are clearly stated, in categorical terms, in a way that makes it possible for observers to agree on whether or not the rules have been followed. All competitive games have such rules, as they are necessary to make the competition fair, but many non-competitive games do too. Dances and cooperative games like jump rope (of the variety where the goal is to keep the rope spinning and the jumper jumping as long as possible) are examples of cooperative games with formal rules.

Human beings everywhere must follow explicit as well as implicit rules to function socially. For example, a cooperative hunt may involve explicit rules concerning what each member of the hunting party must do and when. People also need to abide by rules or laws designed to keep peace within the community, and they need to follow through on social agreements (oral or written contracts) made between themselves and others. These crucial social skills are exercised in formal games.

When children are free to play, have sufficient time to play, and have playmates of a range of ages with whom to play, they play in all of these ways. In doing so, they learn all of the basic skills that are required of human beings everywhere--physical skills, linguistic skills, intellectual skills, social skills, self-control, and law-abiding skills. We cannot teach any of these skills to children. All we can do is provide the conditions in which they can teach themselves, using the joyful, playful means designed by evolution. Our job is to make sure that children have lots of time and and opportunity to play. They'll take care of the rest.

“No Child Left Inside”: An Example of The Wrong Way to Solve a National Problem

This legislation would exacerbate the problem it aims to fix.

Published on October 8, 2008 by Peter Gray in Freedom to Learn

On Sept. 18, the US House of Representatives passed, by a landslide vote of 293 to 109, its version of the "No Child Left Inside" act. The Senate version has yet to been voted on. This legislation has been pushed by a coalition of environmentalists, educators, public health specialists, and business groups called the No Child Left Inside Coalition.

I share all of the concerns of the Coalition, at least as they are expressed on the Coalition's website. I am an ardent environmentalist, much concerned about the rape of our planet and its potential future inhabitability. I am concerned about the great ignorance on the part of so many of our citizens about the outdoors. I am concerned that we see very few children playing outdoors today. I am concerned that what passes for outdoor "play," all too often today, is highly structured, adult-supervised sports, which have little or nothing to do with discoveries about the outdoors. I am concerned about the epidemic rates, today, of childhood obesity and depression, and I agree with the Coalition that these rates are at least partly the results of the absence of outdoor adventure in children's lives.

Since I agree with the Coalition on all of this, you might think that I would support the No Child Left Inside legislation, which the Coalition has been working so hard to pass. But I do not.

Schools suck the fun out of everything they teach. Do we want schools now to suck the fun out of outdoor adventure?

This legislation, in my mind, is a perfect example of the kind of thinking that has caused many of the problems that the Coalition is concerned about, not the kind of thinking that can solve them. Every time we see a national problem, and especially if that problem has anything to do with children, a hue and cry goes out to solve that problem through the school system. The attitude seems to be that every problem can be solved by piliing yet another set of required courses and examinations onto the backs of schoolchildren. Don't you see, you members of the Coalition, that the school system and our reliance on it to babysit our children and to force onto them an ever growing list of "educational" demands *is* the problem? And don't you see that the more we attempt to regulate school activities through government mandates, the more restrictive and antithetical to the spirit of discovery school becomes?

If this new act becomes law, then each state will be asked to submit, to the US Department of Education, a plan for "environmental literacy." Here is what the House act says about that plan (quoted from the Coalition's website):

"*State plans must include: relevant content standards, content areas, and courses or subjects where instruction will take place; a description of the relationship of the plan to state graduation requirements; a description of programs for professional development of teachers to improve their environmental content knowledge, skill in teaching about environmental issues, and field-based pedagogical skills; a description of how the state educational agency will measure the environmental literacy of students; and a description of how the state educational agency will implement the plan, including securing funding and other necessary support.*"

Passage of this legislation would, no doubt, be a coup for the educational industry (see my August 27 post). It would result in a new set of courses, tests, textbooks, educational specialists, program administrators, grant writers, and so on and so on. What would it do for children? It would give them yet another set of school requirements, yet another set of tests to pass. Is this the way to get children to love and explore the outdoors? Has the school system been so successful in getting children to love all the other things it teaches--like math, history, and physics--that we now want to entrust it with teaching our kids to love the outdoors?

Take a look, for example, at what our school system already does in the realm of "physical education." Because people think that the body as well as the mind needs training, most schools require students to take a physical education class each year. What this class does is to take something that should be joyful play and turn it into something that, for many if not most kids, is tedious, sometimes odious, and often embarrassing. By forcing everyone to do the same activities, at the same time, in accordance with the school's schedule, and by testing and grading kids on everything and publicly comparing their performances, the school system effectively turns everything that should be play into work.

If you care about children's love for the outdoors, write to your US senators and ask them to vote against "No Child Left Inside."

How Can We Increase Children's Outdoor Play and Adventure?

To solve a problem, it is often valuable to start by thinking about what caused the problem in the first place. When I was a child (longer ago than I'll say), most kids spent enormous amounts of time outdoors. We went everywhere on our own, by foot and on bikes. We played games in vacant lots, and in rural areas outside of town, as well as in parks. We discovered things like butterflies, frogs, and snakes. We went fishing and swimming on our own. We took ice skating adventures across frozen lakes and hiking adventures in the woods, on our own, with no adults. What has happened to change all that?

One thing that has happened is that school and adults outside of school have taken over children's lives. When I was a child, school performance was much less emphasized than it is today. There was very little if any homework. On school days we had all day after 3:00 to play, plus an hour at lunchtime (during which we were not confined to school). The school year was shorter then than now, and we had three months of summer to play. Most communities did not have adult-organized sports leagues, and if they did have them we were never made to feel that we must participate for the sake of our résumés. Our parents did not feel that it was their responsibility to drive us places, or to watch us do everything we did so they could cheer us on or protect us from dangers. They trusted us. They trusted that, given freedom, we would enjoy ourselves and would for the most part do things that were good for us.

Many parents will argue that it is not their kids that they distrust, but the neighborhood. I'm to a considerable degree sympathetic with that fear. Partly because fewer kids are outdoors playing, many neighborhoods may in fact be less safe now than then. It used to be that if anyone harassed someone outdoors, there would be many kids around, of all ages, as witnesses and deterrents. It is also the case that today, with both parents in most families away at work, there are fewer adults at home in any given neighborhood, fewer adults who could spot potential problems. People (adults as well as children) are also less likely to know their neighbors today than in the past, and that too makes neighborhoods less safe. And, of course, there are more cars on the streets than there used to be, and communities no longer feel that it is their duty to construct and maintain sidewalks, parks, and playgrounds.

So, if these are the causes of the decline in outdoor play and adventure, then these are the issues we should work on. Let's stop trying to solve problems through increased schooling, which only makes the problems worse, and start trying to solve them through steps that will give our children more real freedom, including freedom to play outdoors. Here are some things you might do:

Speak out against increased school hours, homework, and testing. Let your school board, your school superintendent, and others in your community know that you, as a parent, resent the amount of busywork that is being forced on your children and resent the ever-increasing intrusion of school into your child's time and your family's time. Initiate local legislation to decrease the school day and school year. Fight against state-mandated testing.

Work outside of the school system to develop safe places for children to play. Let the legislators in your community know that they should start spending less money on schools and more money on sidewalks, parks, and police protection in areas where children can play. Urge your community to develop and maintain parks that are safe yet provide opportunities for adventure--parks that have woods to explore, trees to climb, ponds and streams to fish in. Develop and support programs that allow children to engage with the outdoors in their own playful ways, on their own time, with others of their own choosing, without adult supervision and certainly without testing.

Meet with other parents in your neighborhood to talk about the problem of providing safe places and opportunities to play. Maybe you can set up a neighborhood watch, which will help assure people that the neighborhood is safe for children's play. Maybe you can find ways to take weekend trips with other families, to campgrounds or other places where the kids can play safely, with one another in new and exciting settings, while the adults ignore them and socialize among themselves in their own chosen ways.

I know that these steps may not be easy. They require initiative. They run counter to the spoken agenda in most communities, which is always for *more* school and *more* direct adult supervision of children. Yet, if you scratch the surface of thinking of the adults in your community, you will find that many of them, in their hearts, recognize that children are more constrained, more imprisoned, today than they themselves were when they were children. If you ask them to say why, they are likely to come up, on their own, with lists not unlike what I have suggested here. What we need to do now is to transfer that heartfelt understanding into the head, to organize our efforts, and to take rational action to give our children real freedom to play outdoors.

Reasons to Consider a Less Selective, Less Expensive College: Saving Money is Just One of them

Why Fitchburg State may be better than Harvard.

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Families who, for years, have been dutifully squirreling money into college tuition funds have discovered, over the last few weeks, that a skunk has gotten into their stash. The stock-based college funds have plummeted, as have the parents' retirement funds and the value of their home. This situation is leading many high-school seniors and juniors to expand their thinking about what colleges to apply to, and it will lead them also to think carefully about which offer to accept, when those admissions offers begin to arrive in the mail. The local state university, or one of the state colleges, which costs a fraction of what an elite private school costs, is beginning to look a lot more attractive than it did before.

When my wife was finishing high school, some years ago, she had an academic record that could have gotten her into most highly selective colleges. She chose, instead, Fitchburg State, a school you will never see in Newsweek's rankings of top colleges or in anybody's guide to the most selective schools in America. She looked carefully, and she concluded that, for what she wanted to study, Fitchburg's program was as good as any; and she especially liked the fact that neither she nor her parents would have to go into debt for her to go there. She was also pleased that her fellow students would come from a diverse set of backgrounds. She--who is now a highly respected physician, at the top of her field--has never regretted that decision. There is no indication that her Fitchburg diploma, which she proudly displays, has served her any less well than a diploma from Harvard would have. I personally envy the reverse snobbery that she is able (subtly) to display among her colleagues who have degrees from fancy schools.

For decades, our nation's educational establishment has been promoting a simplistic, wrong-headed view about college selection. That view is: Apply to the most selective schools that you have a chance of getting into, and then go to the most selective school that accepts you. The notion out there is that you are "selling yourself short," "not being all you can be," if you don't go to the most selective and expensive college that is willing to take you. Because that notion has gotten so firmly into people's heads, private colleges have for many years been able to get away with increases in tuitions and other fees that have vastly outstripped inflation and are nothing short of outrageous. Here I will present a case for thinking carefully and not falling into the trap that has captured so many.

For equally able students, education at a highly selective college does not lead to a better job or higher income than does education at a less selective college.

Some people are fooled by a misleading statistic. Yes, it is true that graduates from Harvard (and its ilk) do, on average, make more money than graduates from Fitchburg State (and its ilk). But, remember, those who go to Harvard are, on

average, quite different to begin with from those who go to Fitchburg. Because most people have the mindset that they should attend the most selective school they can get into, Harvard and others like it are able to select the cream of the crop (by the usual definition of cream). These are people who are destined to do well, career wise, no matter where they go to school. Most of them are extraordinarily bright and motivated (and the rest have very rich or famous parents).

The fact that the average graduate of an elite college makes more money in adult life than does the average graduate of a less elite college has no bearing at all on the question of whether or not *you* (or your son or daughter) will make more money by going to an elite college. The only kind of research study that would help at all to answer that question is one that compares students who had equal initial academic ability and income-earning potential but chose to go to colleges differing in prestige level. Fortunately, such a study has been done; but not many people know about it.

In 2002, Stacy Berg Dale and Alan Krueger published the results of an extensive study of the relationship between college attended and subsequent income for students who, on other measures, had comparable potential.[1] They used data from the National Longitudinal Survey of the High School Class of 1972. As one part of their study, they focused exclusively on those students who had applied to and been accepted by at least one highly elite college and at least one less elite college. Then, from this pool, they compared the adult incomes of those who had chosen the elite school to the adult incomes for those who had chosen the less elite school, and they found no significant difference. In another part of the study, they used statistical means to equate students for income potential, based on information about them when they were in high school (such as their SAT scores), and, again, found that students with equal initial potential did essentially equally well, income wise, regardless of the prestige level of the college they attended.

There was, I should note, one interesting exception to the general conclusion that prestige of college attended did not affect adult income. That exception was for students coming from very low-income families. For that group, and only that group, attending an elite college did significantly boost average income. Perhaps, for that group, attending an elite school helped in various ways to elevate them into a higher social class, which helped them get better jobs and make more money as adults than they would have otherwise. For the typical middle-class college student, however, there was no such effect. So, if you happen to come from a low-income family and have great high-school grades and SAT scores, then, depending on a lot of other conditions, you might want to listen to the standard advice and go to the most prestigious school you can get into. It is also the case that the most prestigious colleges have the best financial aid packages for those who come from low-income families. If you can get into Harvard and your family has no money to pay for it, Harvard will pay all of your expenses. For you, Harvard might not only provide a bigger boost up than Fitchburg State, but it might be cheaper as well.

There is no evidence that the quality of a college education correlates with its cost.

Quality of college education is very difficult if not impossible to assess in any general way. What works great for one person may be terrible for another. Moreover, consistent with the theme of most of these blog posts, the education that you get in college, regardless of what college you attend, will depend on what you put into it. Real education is not done *to* you; it is done *by* you. Therefore, it is important for you to assess schools based on what you can do there.

It is also the case that, at many elite schools, the most famous professors (the ones drawing the highest salaries) will generally be least available to you as an undergraduate student. They will be busy with their research and graduate students. It is standard practice now that professors who get big research grants use part of that money to "buy out" some or all of their courses. The result is that the university hires, for paltry amounts, graduate students and outside part-timers to teach those courses.

If you go to a less elite college, especially if it one without a graduate program, the professors may not be famous, but they may well be better scholars than the graduate students and part-timers who are teaching the famous professors' courses elsewhere. They are also likely to be more dedicated to teaching and to have more time and motivation to get to know you as a person. They may welcome you to participate in their research or other scholarly or community work, as a junior colleague, which could give you invaluable experience not available in the classroom.

I myself went to an Ivy League college, many years ago, partly because of the fame of the members of its physics department. I was, at the time, planning to major in physics. I took my first physics course from the most famous of all of those professors, and it was the worst course I ever took in my life. He often appeared late for lectures, and when he did appear he would talk incoherently; he seemed to be making his lecture up on the spot, while his mind was somewhere else. None of us could understand him, and most of us just stopped attending class. That experience led me to change my focus of study to biology and psychology--which may or may not have been a good thing.

Of course, there are many wonderful professors in prestigious schools who do take their teaching seriously. I know personally quite a few of them. I'm just saying that you can't assume that the famous professors at any given prestigious school are good teachers, or are teaching at all. Wherever you apply, you should find out who actually teaches the courses you are likely to take, and you should find out what you can about students' evaluations of those teachers. If possible, visit their classes.

It is often better to be a "big fish in a little pond" than the reverse.

A well-documented psychological phenomenon, relevant to your college choice, is what social psychologists call the "big-fish-little-pond effect."[2] The phenomenon has to do with self-esteem. Many research studies have shown that, given equal academic abilities, students in a non-selective academic setting feel better about their academic abilities than do students in a highly selective setting. Stated differently, a student of moderate ability might feel incompetent, even depressed, in an environment of super achievers. Conversely, that same student might feel like a super achiever himself or herself--and might even start performing like one--in an environment in which his or her performance stands out as one of the best. Unfortunately, our educational world is constructed so as to promote a competitive attitude, so such comparisons and their effects on self-esteem are inevitable. Getting accepted at that Ivy League college might give you an immediate burst of high self-esteem, as your classmates look at you with envy and your grandparents gloat; but actually going to that college could lead to a very long bout of depression, if it turns out to be more than you bargained for.

Separate from self-esteem, there is another advantage of being a big fish in a little pond. A good student at a less prestigious school generally has a much better chance of being noticed by the professors and, therefore, of receiving

extra educational opportunities and wonderful recommendations for future careers or studies, than does a student of equal ability at a highly prestigious school. Those extra opportunities and glowing letters may, in many cases, more than compensate for any loss in prestige value that comes from not having gone to Harvard. Moreover, if the classes are easier at the less-prestigious school, that could be a good thing, not just for your self-esteem but also for your education. It would leave you more time to go beyond the assigned coursework, to take charge of your own education, in ways that in the long run will lead to more real learning than the assignments and tests given in class.

I'm not saying it is always a mistake to go to the most prestigious college you can get into. I'm just saying that there are many good reasons to consider seriously the alternative. Another thing to consider is this: For you, given what you really want to do in life, is a four-year college advantageous at all? Many young people today--including many who could easily get into the most prestigious colleges in the country--are carving out great lives for themselves, happy at their work, making good livings, without going to college at all. "A mind is a terrible thing to waste, at college, if you've got better things to do." But that's another essay.

References

1. S. B. Dale & A. B. Krueger, "Estimating the payoff of attending a more selective college," Quarterly Journal of Economics, 117 (2002), 1491-1527.

2. H. W. Marsh & K-T. Hau, "The big-fish-little-pond effect on academic self-concept," American Psychologist, 58 (2003), 364-376.

Chasing Games and Sports: Why Do We Like to Be Chased?

Evolutionary theory explains why we like playing quarterback.

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The three-year-old squeals with almost unbearable joy as she flees from the terrible monster, in the form of her father or big brother, who threatens to catch her and eat her for breakfast. The 22-year-old quarterback experiences a similar thrill as he twists, turns, and dashes around one monstrous defender after another on his way to the goal line; and fans in the stands share vicariously his joy, as they imagine themselves in similar flight. In nightmares and in real life, nothing is more terrifying than being chased by a predator or monster. But in play, nothing is more delightful.

Have you ever noticed that in all chase games the preferred position is that of being chased? The most universal and basic of all such games is tag. Children everywhere play it, and the goal, always, is to spend as much time being chased, and as little time chasing, as possible. The punishment for being caught is that you become "it," and then you must serve time as chaser until you catch someone and can once again enjoy the thrill of being chased.

In every chasing game that I know of, the main object and joy is to run successfully through or around those who are chasing you, while doing whatever else it is that the game demands. A typical example is "fox and geese," which my friends and I played endlessly, on ice skates, in paths carved through the snow on frozen ponds in Northern Minnesota. The preferred position always was to be one of the geese, not the fox. If you were caught, then you had to be the fox until you caught someone and could again be a goose. In real life, people would far rather be predator than prey; but in play, everyone prefers to be prey. Hide-and-seek and dodge ball are not exactly chase games, but they too follow the rule: The preferred position is to be pursued, which in hide-and-seek is the one who hides and in dodge ball is the one whom people are trying to hit with a ball. Punishment for being found or hit is that you have to be a pursuer until you find or hit someone, and then you can once again enjoy hiding or dodging.

All formal team sports follow the same rule; they are all variations of tag. In American football and in soccer, the primary goal and joy lies in running across a field carrying or kicking a ball while a horde of "enemies" chase after you, to tackle you or get the ball from you. Likewise for basketball and hockey. In baseball, the preferred positions are batter and base runner. The batter, after hitting the ball, tries to run around a specified loop, from one safe point to another and ultimately to "home," while a gang of enemies tries to capture him. In all such games the teams alternate between "offense" and "defense," and the preferred position is always offense. That is the position where you are chased.

From the biological perspective I am taking here, the terms "offense" and "defense" in team sports are misleading. Those terms come from the metaphor of war: The offensive players invade the defenders' territory and then scramble to avoid being caught by the defenders. But, if my analysis is correct, at the biological level the thrill from the games comes not from the simulation of war but from the simulation of predator-prey or monster-victim relations. In this

light, the so-called "offensive" players, such as the quarterback scrambling in football, are really the defenders. They are, in play, trying to defend their own lives as they are pursued by pretend predators, monsters, or enemies.

And now, back to the original question. In chase games, why do we like to be the chased more than to chase? The answer can be inferred from observations of similar behaviors in other animals. Young mammals of most species play chase games very much like our tag; and the apparently preferred position for most species is that of being chased. A typical game--for a pair of young monkeys, lambs, or squirrels, for example--starts with one youngster playfully attacking the other and then running off, looking back to be sure that the provoked playmate is pursuing. When the pursuing animal catches the pursued and gives it a little play bite, the tables turn and the former pursuer flees gleefully with the other in pursuit. It is exactly like children playing tag. By all of the ways that animals show pleasure, the animal being chased shows the greatest pleasure in the game, just as is the case for humans.

More than a century ago, the philosopher and naturalist Karl Groos (in *The Play of Animals*, 1898) pointed out that natural selection shaped young mammals to find joy in fleeing from one another in play, so they would engage in such play repeatedly and develop skills that would help them in real life to flee from predators and same-species enemies. In most species of mammals, predation is the leading cause of death, especially while young, and in some species aggressive attacks from others of one's own kind are also a relatively common cause of death. For most mammals the ability to flee effectively from predators or enemies is a clear requirement for survival, and the same was true for our species during most of our evolutionary history. When an animal is running from a real predator, the motivating force is fear. When an animal is practicing, in play, how to get away from a play predator, the motivating force is joy. It is no coincidence, then, that our greatest real fear becomes, in play, our greatest joy.

As you might predict, the rule that being chased in play is more fun than chasing does not hold for large predatory animals. Young wolves, lions, and tigers play chase games, but their behavior strongly suggests that they prefer the position of chaser. Such animals are rarely preyed upon, and for them the games serve more as practice at predation than at fleeing. That is why your dog likes to play at chasing cars (big prey), balls (small prey), and all sorts of other moving objects. Your dog, unlike you, gets more of a thrill from play at chasing than from play at being chased, because, in its ancestry, skill at running down game was more crucial to survival than was skill at fleeing, dodging, and hiding.

Next time you watch your favorite quarterback dodging and darting downfield, think of those after him as play versions of lions, tigers, and trolls. You will enjoy the game all the more if you do. If I were to name a football team, I would call it something like the "Fleeing Fawns,"not "Lions," "Bears," or "Eagles." It is the prey, not the predator, who is the game's hero. I'd probably have a hard time selling that to the 22-year-old quarterback, however. Maybe that's why we evolutionary psychologists aren't often asked to name sports teams. Oh well, in my heart I'm cheering for the Fleeing Fawns; and so is everyone else, even if they don't know it.

The Value of Play I: The Definition of Play Provides Clues to Its Purposes

Freedom to quit is an essential aspect of play's definition.

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Play in our species serves many valuable purposes. It is a means by which children develop their physical, intellectual, emotional, social, and moral capacities. It is a means of creating and preserving friendships. It also provides a state of mind that, in adults as well as children, is uniquely suited for high-level reasoning, insightful problem solving, and all sorts of creative endeavors. This essay is the first in a series I plan to post on *The Value of Play*. The subject of this first installment is the definition of play. Clues to play's value lie in the definition.

Most of this essay is about the defining characteristics of play, but before listing them there are three general points that I think are worth keeping in mind. The first point is that the characteristics of play all have to do with motivation and mental attitude, not with the overt form of the behavior. Two people might be throwing a ball, or pounding nails, or typing words on a computer, and one might be playing while the other is not. To tell which one is playing and which one is not, you have to infer from their expressions and the details of their actions something about why they are doing what they are doing and their attitude toward it.

The second point, toward definition, is that play is not necessarily all-or-none. Play can blend with other motives and attitudes, in proportions ranging anywhere from 0% up to 100% percent play. Pure play occurs more often in children than in adults. In adults, play is commonly blended with other motives, having to do with adult responsibilities. That is why, in everyday conversation, we tend to talk about children "playing" and about adults bringing a "playful attitude" or "playful spirit" to their activities. We intuitively think of playfulness as a matter of degree. Of course we don't have meters for measuring these things, but I would estimate that my behavior in writing this blog is about 80% play.

The third point is that play is not neatly defined in terms of some single identifying characteristic. Rather, it is defined in terms of a confluence of several characteristics. People before me who have studied and written about play have, among them, described quite a few such characteristics; but they can all be boiled down, I think, to the following five: (1) Play is self-chosen and self-directed; (2) Play is activity in which means are more valued than ends; (3) Play has structure, or rules, which are not dictated by physical necessity but emanate from the minds of the players; (4) Play is imaginative, non-literal, mentally removed in some way from "real" or "serious" life; and (5) Play involves an active, alert, but non-stressed frame of mind.

The more fully an activity entails all of these characteristics, the more inclined most people are to refer to that activity as play. By "most people" I don't just mean most scholars who study play. Even young children are most likely to use the word play for activities that most fully contain these five characteristics. These characteristics seem to capture our intuitive sense of what play is. Notice that all of the characteristics have to do with the motivation or attitude that the person brings to the activity. Let me elaborate on these characteristics, one by one, and expand a bit on each by pointing out some of its implications for thinking about the purposes of play.

1. Play is self-chosen and self-directed; players are always free to quit.

Play is, first and foremost, an expression of freedom. It is what one *wants* to do as opposed to what one is *obliged* to do. The joy of play is the ecstatic feeling of liberty. Play is not always accompanied by smiles and laughter, nor are smiles and laughter always signs of play; but play is always accompanied by a feeling of "Yes, this is what I want to do right now." Players are free agents, not pawns in someone else's game.

Players not only choose to play or not play, but they also direct their own actions during play. As I will argue below, play always involves rules of some sort, but all players must freely accept the rules, and if rules are changed then all players must agree to the changes. That is why play is the most democratic of all activities. In social play (play involving more than one player), one player may emerge for a period as the leader, but only at the will of all the others. Every rule a leader proposes must be approved, at least tacitly, by all of the other players.

The ultimate freedom in play is the freedom to quit. A person who feels coerced or pressured to engage in an activity, and unable to quit, is not a player but a victim. The freedom to quit provides the foundation for all of the democratic processes that occur in social play. If one player attempts to bully or dominate the others, the others will quit and the game will be over; so players who want to continue playing must learn not to bully or dominate. People who don't agree to a proposed change in rules may likewise quit, and that is why leaders in play must gain the consent of the other players in order to change a rule. People who begin to feel that their needs or desires are not being met in play will quit, and that is why children learn, in play, to be sensitive to others' needs and to strive to meet those needs. It is through social play that children learn, on their own, with no lectures, how to meet their own needs while, at the same time, satisfying the needs of others. This is perhaps the most important lesson that people in any society can learn.

This point about play being self-chosen and self-directed is ignored by, or perhaps unknown to, many adults who try to take control of children's play. Adults can play with children, and in some cases can even be leaders in children's play, but to do so requires at least the same sensitivity that children themselves show to the needs and wishes of all the players. Because adults are commonly viewed as authority figures, children often feel less able to quit, or to disagree with the proposed rules, when an adult is leading than when a child is leading. And so, when adults try to lead children's play the result often is something that, for many of the children, is not play at all. When a child feels coerced, the play spirit vanishes and all of the advantages of that spirit go with it. Math games in school and adult-led sports are not play for those who feel that they have to participate and are not ready to accept, as their own, the rules that the adults have established. Adult-led games can be great for kids who freely choose them, but can seem like punishment to kids who haven't made that choice.

What is true for children's play is also true for adults' sense of play. Research studies have shown that adults who have a great deal of freedom as to how and when to do their work often experience that work as play, even (in fact, especially) when the work is difficult. In contrast, people who must do just what others tell them to do at work rarely experience their work as play.

2. Play is activity in which means are more valued than ends.

Many of our actions are “free” in the sense that we don’t feel that other people are making us do them, but are not free, or at least are not experienced as free, in another sense. These are actions that we feel we must do in order to achieve some necessary or much-desired goal, or end. We scratch an itch to get rid of the itch, flee from a tiger to avoid getting eaten, study an uninteresting book to get a good grade on a test, work at a boring job to get money. If there were no itch, tiger, test, or need for money, we would not scratch, flee, study, or do the boring work. In those cases we are not playing.

To the degree that we engage in an activity purely to achieve some end, or goal, which is separate from the activity itself, that activity is not play. What we value most, when we are not playing, are the results of our actions. The actions are merely means to the ends. When we are not playing, we typically opt for the shortest, least effortful means of achieving our goal. The non-playful, goal-oriented college student, for example, does the least studying in each course that she can in order to get the “A” that she desires, and her studying is focused directly on the goal of doing well on the tests. Any learning not related to that goal is, for her, wasted effort.

In play, however, all this is reversed. Play is activity conducted primarily for its own sake. The playful student enjoys studying the subject and cares less about the test. In play, attention is focused on the means, not the ends, and players do not necessarily look for the easiest routes to achieving the ends. Think of a cat *preying* on a mouse versus a cat that is *playing* at preying on a mouse. The former takes the quickest route for killing the mouse. The latter tries various ways of catching the mouse, not all very efficient, and lets the mouse go each time so it can try again. The preying cat enjoys the end; the playing cat enjoys the means. (The mouse, of course, enjoys none of this.)

Play often has goals, but the goals are experienced as an intrinsic part of the game, not as the sole reason for engaging in the game’s actions. Goals in play are subordinate to the means for achieving them. For example, constructive play (the playful building of something) is always directed toward the goal of creating the object that the player has in mind. But notice that the primary objective in such play is the *creation* of the object, not the *having* of the object. Children making a sandcastle would not be happy if an adult came along and said, "You can stop all your effort now. I'll make the castle for you." That would spoil their fun. The process, not the product, motivates them. Similarly, children or adults playing a competitive game have the goal of scoring points and winning, but, if they are truly playing, it is the process of scoring and trying to win that motivates them, not the points themselves or the status of having won. If someone would just as soon win by cheating as by following the rules, or get the trophy and praise through some shortcut that bypasses the game process, then that person is not playing.

Adults can test the degree to which their work is play by asking themselves this: “If I could receive the same pay, the same prospects for future pay, the same amount of approval from other people, and the same sense of doing good for the world for *not* doing this job as I am receiving for doing it, would I quit?” If the person would eagerly quit, the job is not play. To the degree that the person would quit reluctantly, or not quit, the job is play. It is something that the person enjoys independently of the extrinsic rewards received for doing it.

One reason why play is such an ideal state of mind for creativity and learning is because the mind is focused on means. Since the ends are understood as secondary, fear of failure is absent and players feel free to incorporate new sources of information and to experiment with new ways of doing things.

3. Play is guided by mental rules.

Play is freely chosen activity, but it is not freeform activity. Play always has structure, and that structure derives from rules in the player's mind. This point is really an extension of the point just made about the importance of means in play. The rules of play are the means. To play is to behave in accordance with self-chosen rules. The rules are not like rules of physics, nor like biological instincts, which are automatically followed. Rather, they are mental concepts that often require conscious effort to keep in mind and follow.

A basic rule of constructive play, for example, is that you must work with the chosen medium in a manner aimed at producing or depicting some specific object or design. You don't just pile up blocks randomly; you arrange them deliberately in accordance with your mental image of what you are trying to make. Even rough and tumble play (playful fighting and chasing), which may look wild from the outside, is constrained by rules. An always-present rule in play fighting, for example, is that you mimic some of the actions of real fighting, but you don't really hurt the other person. You don't hit with all your force (at least not if you are the stronger of the two); you don't kick, bite, or scratch. Play fighting is much more controlled than real fighting; it is always an exercise in restraint.

Among the most complex forms of play, in terms of rules, is what play researchers call sociodramatic play—the playful acting out of roles or scenes, as when children are playing "house," or acting out a marriage, or pretending to be superheroes. The fundamental rule here is that you must abide by your and the other players' shared understanding of the role that you are playing. If you are the pet dog in a game of "house," you must walk around on all fours and bark rather than talk. If you are Wonder Woman, and you and your playmates believe that Wonder Woman never cries, then you refrain from crying, even when you fall down and hurt yourself.

To illustrate the rule-based nature of sociodramatic play, the Russian psychologist Lev Vygotsky wrote about two actual sisters—ages seven and five—who sometimes *played* that they were sisters.[1] As actual sisters, they rarely thought about their sisterhood and had no consistent way of behaving toward one another. Sometimes they enjoyed one another, sometimes they argued, and sometimes they ignored one another. But, when they were playing sisters, they always behaved according to their shared stereotype of how sisters should behave. They dressed alike, talked alike, always loved one another, talked about the differences between themselves and everyone else, and so on. Much more self-control, mental effort, and rule following was involved in playing sisters than in being sisters.

The category of play with the most explicit rules is that called formal games. These are games, like checkers and baseball, with rules that are specified, verbally, in ways designed to minimize ambiguity in interpretation. The rules of these games are commonly passed along from one generation of players to the next. Many formal games in our society are competitive, and one purpose of the formal rules is to make sure that the same restrictions apply equally to all competitors. Players of formal games, if they are true players, must adopt these rules as their own for the period of the

game and be willing to stick to them. Of course, except in "official" versions of such games, players commonly modify the rules to fit their own needs, but each modification must be agreed upon by all the players.

The main point I want to make here is that every form of play involves a good deal of self-control. When not playing, children (and adults too) may act according to their immediate biological needs, emotions, and whims; but in play they must act in ways that they and their playmates deem appropriate to the game. Play draws and fascinates the player precisely because it is structured by rules that the player herself or himself has invented or accepted.

The student of play who most strongly emphasized play's rule-based nature was Lev Vygotsky, whose example of sisters playing sisters I just mentioned. In an essay on the role of play in development, originally published in 1933, Vygotsky commented, as follows, on the apparent paradox between the idea that play is spontaneous and free and the idea that players must follow rules:

"The … paradox is that in play [the child] adopts the line of least resistance—she does what she most feels like doing because play is connected with pleasure—and at the same time she learns to follow the line of greatest resistance by subordinating herself to rules and thereby renouncing what she wants, since subjection to rules and renunciation of impulsive action constitute the path to maximum pleasure in play. Play continually creates demands on the child to act against immediate impulse. At every step the child is faced with a conflict between the rules of the game and what she would do if she could suddenly act spontaneously. … Thus, the essential attribute of play is a rule that has become a desire. …. The rule wins because it is the strongest impulse. Such a rule is an internal rule, a rule of self-restraint and self-determination …. In this way a child's greatest achievements are possible in play, achievements that tomorrow will become her basic level of real action and morality."[1]

Vygotsky's point, of course, is that the child's desire to play is so strong that it becomes a motivating force for learning self-control. The child resists impulses and temptations that would run counter to the rules because the child seeks the larger pleasure of remaining in the game. To Vygotsky's analysis, I would add that the child accepts and desires the rules of play only because he or she is always free to quit if the rules become too burdensome. With that in mind, the paradox can be seen to be superficial. The child's real-life freedom is not restricted by the rules of the game, because the child can at any moment choose to leave the game. That is another reason why the freedom to quit is such a crucial aspect of the definition of play. Without that freedom, rules of play would be intolerable. To be required to act like Wonder Woman in real life would be terrifying, but to act like that in play—a realm you are always free to leave—is great fun.

Along with Vygotsky, I would contend that the greatest of play's many values for our species lies in the learning of self-control. Self-control is the essence of being human. We commonly say that people behave like "animals," rather than like humans, when they fail to abide by socially agreed-upon rules and, instead, impulsively follow their immediate drives and whims. Everywhere, to live in human society, people must behave in accordance with conscious, shared mental conceptions of what is appropriate; and that is what children practice constantly in their play. In play, from their own desires, children practice the art of being human.

4. Play is non-literal, imaginative, marked off in some way from reality.

Another apparent paradox of play, also pointed out by Vygotsky, is that play is serious yet not serious, real yet not real. In play one enters a realm that is physically located in the real world, makes use of props in the real world, is often about the real world, is said by the players to be real, and yet in some way is mentally removed from the real world.

Imagination, or fantasy, is most obvious in sociodramatic play, where the players create the characters and plot, but it is also present to some degree in all other forms of human play. In rough and tumble play, the fight is a pretend one, not a real one. In constructive play, the players say that they are building a castle, but they know it is a pretend castle, not a real one. In formal games with explicit rules, the players must accept an already established fictional situation that provides the foundation for the rules. For example, in the real world bishops can move in any direction they choose, but in the fantasy world of chess they can move only on the diagonals.

The fantasy aspect of play is intimately connected to play's rule-based nature. Because play takes place in a fantasy world, it must be governed by rules that are in the minds of the players rather than by laws of nature. In reality, one cannot ride a horse unless a real horse is physically present; but in play one can ride a horse whenever the game's rules permit or prescribe it. In reality, a broom is just a broom, but in play it can be a horse. In reality, a chess piece is just a carved bit of wood, but in chess it is a bishop or a knight that has well-defined capacities and limitations for movement that are not even hinted at in the carved wood itself. The fictional situation dictates the rules of the game; the actual physical world within which the game is played is secondary. Through play the child learns to take charge of the world and not simply respond passively to it. In play the child's mental concept dominates, and the child molds available elements of the physical world to meet that concept.

Play of all sorts has "time in" and "time out," though that is more obvious for some forms of play than others. Time in is the period of fiction. Time out is the temporary return to reality—perhaps to tie one's shoes, or go to the bathroom, or correct a playmate who hasn't been following the rules. During time in one does not say, "I am just playing," any more than does Shakespeare's Hamlet announce from the stage that he is merely pretending to murder his stepfather.

Adults sometimes become confused by the seriousness of children's play and by children's refusal, while playing, to say that they are playing. They worry needlessly that children don't distinguish fantasy from reality. When my son was four years old he was Superman for periods that sometimes lasted more than a day. During those periods he would deny vigorously that he was only pretending to be Superman, and this worried his nursery school teacher. She was only partly mollified when I pointed out that he never attempted to leap off of actual tall buildings or stop real railroad trains and that he would acknowledge that he had been playing when he finally did declare time out by removing his cape. To acknowledge that play is play is to remove the magic spell; it automatically turns time in into time out.

An amazing fact of human nature is that even 2-year-olds know the difference between real and pretend. A 2-year-old who turns a cup filled with imaginary water over a doll and says, "Oh oh, dolly all wet," knows that the doll isn't really wet. It would be impossible to teach such young children such a subtle concept as pretense, yet they understand it.

Apparently, the fictional mode of thinking, and the ability to keep that mode distinct from the literal mode, are innate to the human mind. That innate capacity is part of the inborn capacity for play.

The fantasy element of play is often not as obvious, or as full-blown, in adults' play as in children's play. That is one reason why adults' play is typically not of the 100% variety. Yet, I would argue, fantasy occupies a big role in much if not most of what adults do and is a major element in our intuitive sense of the degree to which adult activities are play. An architect designing a house is designing a real house. Yet, the architect brings a good deal of imagination to bear in visualizing the house, imagining how people might use it, and matching it with some aesthetic concepts that she has in mind. It is reasonable to say that the architect builds a pretend house, in her mind and on paper, before it becomes a real one.

When I say that my writing this blog is about 80% play, I am taking into account not only my sense of freedom about doing it, my enjoyment of the process, and the fact that I'm following rules (about writing) that I accept as my own, but also the fact that a considerable degree of imagination is involved. I'm not making up the facts, but I am making up the way of stringing them together, and I am imagining how you might respond to what I am writing. Sometimes my fantasy goes even further, and I imagine that the ideas I'm presenting will have certain positive effects on society. So, fantasy is moving me along in this, much as it moves a child along in building a sandcastle or pretending to be Superman. The fact that parts of my fantasy could possibly turn into reality does not negate its status as fantasy.

5. Play involves an active, alert, but non-stressed frame of mind.

This final characteristic of play follows naturally from the other four. Because play involves conscious control of one's own behavior, with attention to process and rules, it requires an active, alert mind. Players do not just passively absorb information from the environment, or reflexively respond to stimuli, or behave automatically in accordance with habit. Moreover, because play is not a response to external demands or immediate strong biological needs, the person at play is relatively free from the strong drives and emotions that are experienced as pressure or stress. And because the player's attention is focused on process more than outcome, the player's mind is not distracted by fear of failure. So, the mind at play is active and alert, but not stressed. The mental state of play is what some researchers call "flow." Attention is attuned to the activity itself, and there is reduced consciousness of self and time. The mind is wrapped up in the ideas, rules, and actions of the game.

This point about the mental state of play is very important for understanding play's value as a mode of learning and creative production. The alert but unstressed condition of the playful mind is precisely the condition that has been shown repeatedly, in many psychological experiments, to be ideal for creativity and the learning of new skills. Such experiments are normally not described as experiments on play, but it is no stretch to interpret them as that. What the experiments show is that strong pressure to perform well (which induces a non-playful state) *improves* performance on tasks that are mentally easy or habitual for the person, but *worsens* performance on tasks that require creativity, or conscious decision making, or the learning of new skills. In contrast, anything that is done to reduce the person's

concern with outcome and to increase the person's enjoyment of the task for its own sake—that is, anything that increases playfulness—has the opposite effect.

Strong pressure to perform well inhibits creativity and learning by focusing attention strongly and narrowly on the goal, thereby reducing the ability to focus on means. In the pressured state, one tends to fall back on instinctive or well-learned ways of doing things. That way of responding to pressure is adaptive in many emergency situations. When a tiger is chasing you, you use whatever means you have already learned for getting away or hiding; that is not a good time to experiment with new ways. Experts in any realm can usually perform well in the pressured state because they can call on their well-learned, habitual modes of responding and don't need to learn anything new or act creatively. Their attention can focus on producing the best possible outcome using the repertoire of actions that are already second nature to them.

When we pressure students to do well on their schoolwork by constantly evaluating their work, we put them into a non-playful, goal-directed state that may motivate those who already know how to do it to perform well, but inhibits experimentation and learning in those who don't already know how. Pressure widens the performance gap between experts and novices. Even experts, though, must play at their activity of expertise if they are going to rise to still higher levels of expertise. And, in some realms, such as art and essay writing, creativity is required no matter how much experience a person has had, and a playful mind always performs best in those realms.

When an activity becomes so easy, so habitual, that it no longer requires conscious mental effort, it may lose its status as play. That is why players keep making the game harder, or different, or keep raising the criteria for success. A game is a game only if an active, alert mind is required to do it well.

Does this extended definition of play make sense to you? Does it fit with the way that you think of play in everyday life? I ask this question genuinely. I want, for my own work, to be sure that I am using a concept of play that fits with the concept of play that people find useful in everyday discourse. I would very much appreciate your comments on this.

As I said, over the next few weeks I will be elaborating on the various functions of play, both for children and for adults, and I will refer from time to time to the definition of play that I have provided in this post. Keep tuned.

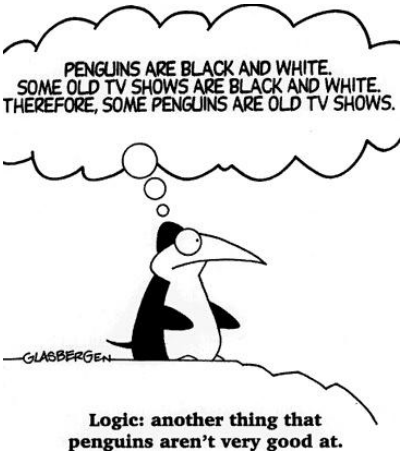
Reference

Lev S. Vygotsky, "The Role of Play in Development," in M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.). *Mind in Society: The Development of Higher Psychological Processes*, 92-104. (1978, original essay published in 1933).

The Value of Play II: How Play Promotes Reasoning in Children and Adults

Play improves problem solving by heightening our imagination.

Published on December 4, 2008 by Peter Gray in Freedom to Learn



Logic: another thing that penguins aren't very good at.

Twenty years ago, a pair of researchers in England reported on a series of experiments in which they showed that very young children could, in the context of play, solve logic problems that they seemed unable to solve in a serious context.

The problems they used were syllogisms, the classic type of logic problem described originally by Aristotle. A syllogism requires a person to combine the information in two premises to decide if a particular conclusion is true, false, or indeterminate (cannot be determined from the premises). Syllogisms are generally easy when the premises coincide with concrete reality, but are more difficult when the premises are counterfactual (contradictions to reality). The prevailing belief at the time that the British researchers conducted these experiments was that the ability to solve counterfactual syllogisms depends on a type of reasoning that is completely lacking in young children.

Here is an example of the kind of counterfactual syllogism that the researchers used:

All cats bark (major premise).

Muffins is a cat (minor premise).

Does muffins bark?

Previous research--including research by the famous Swiss developmental psychologist Jean Piaget--had shown that children under about 10 or 11 years old regularly fail to solve such syllogisms correctly (that is, they fail to give answers that logicians take as the correct answers). When the British researchers put syllogisms like this to young children in a serious tone of voice, the children answered as Piaget and others would expect. They said things like, "No, cats go *meow*, they don't bark." They acted as if they were unable to think about a premise that did not fit with their real-world experiences. But, when the researchers presented the same problems in a playful tone of voice, using words that made it clear that they were talking about a *pretend* world, children as young as 4 years old solved the problems easily, and even many 2-year-olds solved them![1] They said, "Yes, Muffins barks."

Think of it: Four-year-olds in play easily solved logic problems that they were not supposed to be able to solve until they were about 10 or 11 years old!

How the playful state led young children to the "correct" answers to syllogisms

Piaget and other philosophers and psychologists of his time generally drew a sharp distinction between two kinds of reasoning----*concrete* reasoning and *abstract* reasoning (which Piaget called *hypothetico-deductive* reasoning). They argued that the first kind of reasoning depends on direct, concrete, previous experience with the conditions that are being thought about and the second kind depends on formal logic that has a mathematical foundation and can be applied to problems regardless of the person's experience, or lack of experience, with the concrete substance of the problems. Some philosophers and psychologists argued, further, that concrete reasoning develops naturally in nearly all people while abstract reasoning requires special training of the type found in Western schools. Others, including Piaget, contended that abstract reasoning does develop naturally, but typically does not emerge in children until they are about 11 years old. According to Piaget, young children could not solve counterfactual syllogisms, because they lacked the capacity for abstract reasoning. But Piaget was wrong.

Today, many if not most developmental and cognitive psychologists, myself included, reject the distinction between concrete and abstract reasoning. We argue that so-called abstract reasoning occurs through mental transformations that turn what at first appears to be an abstract problem into a concrete problem--that is, into a problem that is very similar to a problem that the person has previously encountered and solved in the real world. Those mental transformations involve imagination, and even young children are capable of them. From this point of view, all human reasoning is concrete; it is just that some problems involve a greater use of imagination than do others in order to put them into concrete form.[2]

Human play, by definition, involves imagination (see my Nov. 19, 2008, posting). Play naturally leads us to think of things as they *might be* rather than just as they currently *are*. In the playful state of mind it is easy for anyone to imagine and think about a world in which people can fly, in which time machines can transport us to the past, or in which all cats bark. Young children are masters of play, so it is no surprise that they can solve counterfactual syllogisms in the context of play.

Why can 11-year-olds solve counterfactual syllogisms in a serious context while 4-year-olds require a playful context? I think the answer has little to do with age differences in reasoning ability and much to do with differences in understanding of the researchers' purpose in asking the questions. Four-year-olds misinterpret the researchers' purpose. They believe that when adults ask them questions in a serious tone of voice, they want serious answers, answers that have to do with truth about the real world. So, they respond accordingly--"Cats don't bark." On the other hand, 11-year-olds, especially 11-year-olds who have been to school, recognize that the question is not about reality but is a test of logic, so they accept the counterfactual premise and give the answer that the researcher wants. They realize that this is a game that the researcher is playing, which has to do with a pretend world and not with the real world. Four-year-olds recognize the game-like quality only when the researcher makes it clear, through tone of voice and wording, that it is a game.

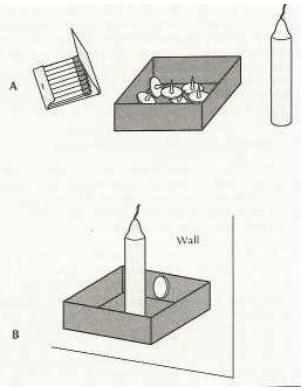
Researchers have found that unschooled adults in other cultures "fail" counterfactual syllogisms, just as young children in our culture do. In the past, this has been interpreted as evidence that schooling is necessary for the development of abstract thinking. But my guess is that those adults "fail" on such problems for the same reason that young children in

our culture do; they misinterpret the intent of the questions. I bet if researchers put the same problems to unschooled adults in a playful mode, they too would easily solve them.

My overriding point here is that play automatically induces hypothetical reasoning. It leads us to think about pretend worlds, where anything is possible, and to reason about those possibilities, rather than to limit our thoughts just to things that are true in the immediate here and now. In this way play promotes the kind of thought that is crucial not just to all of theoretical science but to all planning about the future, in which we must imagine possible events and think about how we might deal with those events.

Please do not draw the wrong conclusion from this little discussion. I am not arguing that it is a good idea, educationally, to induce playful states deliberately in children in order to improve their reasoning, as the researchers did in their experiment. Children play naturally, and it is through natural play that children practice reasoning. Children who are manipulated into play by teachers who think that this will improve their reasoning will soon learn to resist the manipulations. Play, in the long run, is only play if it is self-chosen and self-directed. Children practice reasoning in their own ways, through their own self-chosen play; we can't do it for them and shouldn't try. All we need to do, as I have argued in previous installments (e.g. Sept. 30, 2008, posting), is to provide places where children can play and explore safely and naturally, with others in age-mixed groups. They will take care of the rest.

How playfulness allowed college students to solve a classic insight problem



Here is another example of an experiment showing the power of a playful mood to improve problem solving. In this case the subjects were college students and the problem was a classic insight problem, called *candle problem*. In this task, subjects are given a small candle, a book of matches, and a box of tacks and are asked to attach the candle to a bulletin board in such a way that the candle can be lit and will burn properly. They are allowed to use no objects other than those they were given. The trick to solving the problem is to realize that the tacks can be dumped out of the box that holds them and the box can then be tacked to the bulletin board and used as a shelf on which to mount the candle. In the typical test situation, very few people solve this problem. They fail to see that the tack box can be used for something other than a container for tacks.

In the experiment, some subjects were exposed to a slapstick comedy film for a short period just before being presented with the candle problem, while others saw a serious film and still others saw no film. The result was that watching a slapstick film greatly increased the percentage of subjects who solved the problem.[3] The researchers' interpretation was that a happy mood broadens thought and leads to insight. My own interpretation is similar but emphasizes the role of play. I think the slapstick comedy put the subjects in a playful state of mind and that playfulness, not just happiness itself, led to the broadened way of thinking. In play, we regularly view objects and information in new ways. In a serious state of mind, whether we are happy or not, we fail to imagine that a tack box might be a shelf; but in a playful state such imagination comes easily. In play we regularly imagine objects to be other than what they

were originally designed for. In play a broom can be a horse, a thimble can be a bishop, and a tack box can easily be a shelf.

One of the main purposes of play in our species, I think, is to promote our use of imagination to solve problems. We appear to be the only animal that thinks in imaginative ways. Imagination provides the foundation for our inventiveness, our creativity, and our ability to plan for the future. I believe that our huge capacity and desire for play came about, in evolution, partly to promote our capacities to invent, create, and plan. When we allow children ample opportunities for real play, we are providing them with opportunities to exercise and develop those capacities. When we allow ourselves to take a playful attitude in our work and domestic life, we are providing ourselves with a context for solving problems that might otherwise be intractable.

References

1. Dias, M. G., & Harris, P. L. (1988). The effect of make-believe play on deductive reasoning. *British Journal of Developmental Psychology, 6*, 207-221.

2. I elaborate on the idea that "abstract" thought is really just concrete thought coupled with imagination in my textbook, *Psychology*, 5th edition (2007), pp 348-351.

3. Isen, A. M., Daubman, K. A., & Nosicki, G. P. (1987). Positive affect facilitates creative problem solving. *Journal of Personality and Social Psychology, 52*, 1122-1131.

The Value of Play III: Children Use Play to Confront, not Avoid, Life's Challenges and Even Life's Horrors

In that worst environment, the Nazi death camp, children played.

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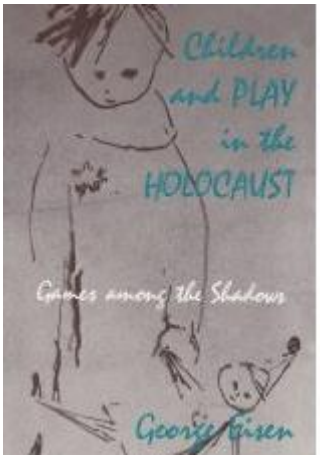

Children's extraordinarily powerful drive to play did not come about to provide them with "recess" or "recreation." It came about for a far more serious purpose than that. It came about to help them survive. Throughout human history and pre-history, play has been children's primary means of acquiring the skills, values, and knowledge they need to survive within their culture. Children do not play to avoid the realities of life; they play at the realities of life. In doing so they come to grips with those realities--physically, intellectually, and emotionally.

In previous essays in this blog, I have described how play exercises and builds children's capacities for language, reasoning, locomotion, building things, and getting along with others (see especially the October 1, 2008, posting). I have there described play in ways that do not contradict the happy images we have of children playing at cherished activities in healthy environments. But play is not just adaptive in healthy environments. Play also helps children to confront and deal with the horrors of their world and ours, wherever those horrors exist.

We would like to think of children as fully sweet and innocent. In an ideal world, where the adults are fully sweet and innocent, children might be too. But the world is not ideal, and children growing up protected from the realities of the environment in which they must eventually make their way would be poorly equipped for that environment. It is no wonder that children resist the protective embraces of well-meaning adults, fight the restraints meant to keep them in idyllic playgrounds, and venture out, however and whenever they can, to experience the real world around them and incorporate it into their play. They, not we, know what's best for them.

The most dramatic evidence I know of concerning children's drive to embrace even the worst horrors of their environment through play is found in a remarkable book by George Eisen, published twenty years ago, entitled *Children and Play in the Holocaust*. Here are two concepts that lie at opposite ends of anyone's emotional spectrum: *Nazi Holocaust* and *children playing*. It is shocking to see the two next to one another in Eisen's title. And yet, as Eisen explains to us throughout the book, children interred in Nazi ghettos and concentration camps played--however briefly, until they were murdered. They played not because they were oblivious to the horrors around them. Nor did they play as a means to deny those horrors or divert their attention from them. Rather, they played in ways that helped them to understand, confront, and, to the degree possible, deal effectively with those horrors. Eisen's evidence comes from diaries and from interviews with survivors.

In the ghettos, the first stage in concentration before being sent off to labor and extermination camps, adults attempted to preserve for their children some semblance of the innocent play they had known before; but the children

themselves, on their own, played games that fit their surroundings. They played games of war, of "blowing up bunkers," of "slaughtering," of "seizing the clothes of the dead," and games of resistance. At Vilna, Jewish children played "Jews and Gestapomen," in which the Jews would overpower their tormenters and beat them with their own rifles (sticks).

Even in the extermination camps, the children who were still healthy enough to move around played. In one camp they played a game called "tickling the corpse." At Auschwitz-Birkenau they dared one another to touch the electric fence. They played "gas chamber," a game in which they threw rocks into a pit and screamed the sounds of people dying. They made up a game called klepsi-klepsi--a common term for stealing--that was modeled on the camp's daily roll call. One playmate was blindfolded; then one of the others would step forward and hit him hard on the face; and then, with blindfold removed, the one who had been hit had to guess, from facial expressions or other evidence, who had hit him. To survive at Auschwitz, one had to be an expert at lying--for example, about stealing bread or about knowing of someone's escape or resistance plans--without giving oneself away. Klepsi-klepsi seemed to be practice for that skill.

In play, whether it is the sweet play we like to envision or the play described by Eisen, children bring the realities of their world into a fictional context, where it is safe to look those realities in the eye, to confront them, to experience them, and to practice ways of dealing with them. Some people think that violent play creates violent adults; but in reality the opposite is true. Violence in the adult world leads children, quite properly, to play at violence. How else can they prepare themselves emotionally, intellectually, and physically, for reality? It is wrong to think that somehow we can reform the world, for the future, by controlling children's play and controlling what they learn. If we want to reform the world, we have to reform the world; and children will follow suit. The children must, and will, prepare themselves for the the real world in which they must strive to survive. Let's try to make that word, in reality, not in pretense, as happy a one as we can.

The Value of Play IV: Play is Nature's Way of Teaching Us New Skills

The educative power of play lies in its apparent triviality.

Published on January 1, 2009 by Peter Gray in Freedom to Learn

From a biological, evolutionary perspective, the primary purpose of play is to promote skill learning. Play is nature's way of assuring that young mammals, including young humans, will practice and become good at the skills they need to develop in order to survive and thrive in their environments. The German philosopher and naturalist Karl Groos developed this idea more than 100 years ago and expanded on it in two books--*The Play of Animals* (1898) and *The Play of Man* (1901).

Young animals practice survival skills through play.

Groos was ahead of his time, both in his thinking about evolution and in his thinking about play. He understood well the writings of Charles Darwin, and he had a sophisticated, modern understanding of instincts. He recognized that animals, especially mammals, must to varying degrees *learn* to use their instincts. Young mammals come into the world with biological drives and tendencies (instincts) to behave in certain ways, but to be effective such behaviors must be practiced and refined. Play, according to Groos, is essentially an instinct to practice other instincts. In *The Play of Animals* (p 75), Groos wrote: "Animals can not be said to play because they are young and frolicsome, but rather they have a period of youth in order to play; for only by doing so can they supplement the insufficient hereditary endowment with individual experience, in view of the coming tasks of life." Consistent with his theory, Groos divided animal play into categories related to the types of skills the play promotes, including movement play (running, leaping, climbing, swinging in trees, and so on), hunting play, fighting play, and nursing play (playful care of infants).

Groos's answer to the question about the biological purpose of play allows us to make sense of the patterns of play that we see throughout the animal world. For starters, it explains why young animals play more than do older ones of the same species; they play more because they have more to learn. It also explains why mammals play more than do other classes of animals. Insects, reptiles, amphibians and fishes come into the world with rather fixed instincts; they don't need to learn much in order to survive, given their ways of life, and there is little evidence in them of play. Mammals, on the other hand, have more flexible instincts, which must be supplemented and shaped through learning and practice provided by play.

Groos's theory also explains the differences in playfulness found among different orders and species of animals. Among mammals, primates (monkeys and apes) are the most flexible and adaptable order, with the most to learn, and they are the most playful of all animal orders. Among primates, human beings, chimpanzees, and bonobos (a species of ape closely related to chimpanzees and to humans) have the most to learn, and they are the most playful species. Also among mammals, carnivores (including the dog-like and cat-like species) are generally more playful than herbivores, probably because success in hunting requires more learning than does success in grazing. Aside from mammals, the

only other animal class in which play has been regularly observed is that of birds. The most playful birds are the corvids (crows, magpies, and ravens), raptors (hawks and their relatives), and parrots. These are all long-lived birds, with larger brain to body weight ratios than other birds, which exhibit much flexibility and cleverness in their social lives and ways of obtaining food.

The idea that play's purpose is to promote skill learning helps us to understand species differences in types of play as well as in amounts of play. To a considerable degree, you can predict what an animal will play at by knowing what skills it must develop in order to survive and reproduce. Lion cubs and the young of other predators play at stalking and chasing; zebra colts, young gazelles, and other animals that are preyed upon by lions and such, play at fleeing and dodging (see post on chasing games and sports); young monkeys play at swinging from branch to branch in trees. Among species in which males fight one another for access to females, young males engage in more play fighting than do young females. And, at least among some species of primates, young females, but not young males, engage in much playful care of infants.

Human children practice all sorts of skills through play, including skills specific to their culture.

In *The Play of Man*, Groos extended his insights about animal play to humans. He pointed out that human beings, much more so than any other species, must learn different skills depending on the society in which they develop. Therefore, he argued, natural selection led to a strong drive, in human children, to observe the activities of their elders and incorporate those activities into their play. Children in every culture play at the general categories of activities that are essential to people everywhere, but their specific forms of play, within each category, are shaped by the kinds of activities they see around them. When children are free, they play far more, and in a far greater variety of ways, than do the young of any other species because they have far more to learn.

Consistent with Groos's theory, children play in ways that promote the full range of skills that human beings everywhere must develop:

• We, like all mammals, are physical beings who must develop strong bodies and learn to move in coordinated ways, and so we have *physical play*, which includes chasing and rough-and-tumble games that are quite similar to the ways that other mammals play. In many other respects, however, we are unique, and our play reflects that uniqueness.

• We are the linguistic animal, and so we have *language play*, which teaches us to talk.

• We are Homo sapiens, the wise animal, and so we have *exploratory play*, which combines curiosity with playfulness to teach us about the world around us.

• We are the animal that survives by building things--including shelters, tools, devices to help us communicate, and devices to help us move from place to place--and so we have *constructive play*, which teaches us to build.

• We are an intensely social species, requiring cooperation with others in order to survive, and so we have many forms of *social play*, which teach us to cooperate and to restrain our impulses in ways that make us socially acceptable.

• We are the imaginative animal, able to think about things that are not immediately present, and so we have *fantasy play*, which builds and exercises our capacity for imagination and provides a foundation for what we call intelligence.

These terms, which I have put in italics, do not refer to mutually exclusive categories of play, but rather to various functions that play can serve. Any given instance of play may serve more than one of these functions. A lively outdoor group game may be physical play, language play, exploratory play, constructive play, social play, and fantasy play all at once. Play, in all its forms combined, works to build us into fully functioning, effective human beings. (For an expansion of these ideas, see post on how the varieties of play match the requirements of human existence.)

Also consistent with Groos's theory, cross-cultural studies of play have shown that children play especially at the kinds of activities that are most valued by their culture. Children in hunting and gathering cultures play at hunting and gathering, using the kinds of tools that adults in those cultures use. Children in farming communities play at animal tending and plant cultivation. Children in modern western cultures play at games that involve reading and numbers, if they grow up in settings where these are valued, and they play with computers and other modern forms of technology, the tools of today.

Going beyond Groos, I would add that children are drawn to play not just at the skills that are most prominent and valued among adults around them, but also, even more intensely, at skills that are new and expanding. Because of this, children typically learn to use new technology faster than do their parents. From an evolutionary perspective, that is no accident. At a deep genetic level, children recognize that the most crucial skills for them to learn are those that will be of increasing importance in the future--the skills of their own generation, which may be different from the skills of their parents' generation. The value of this attraction to the new is especially apparent in modern times, in which technology and the skills required to master it change so rapidly.

Play's nature suits it well to its skill-building purpose.

Play, by definition, is activity that is psychologically removed from the real world. It is activity for its own sake, not activity aimed at some serious goal outside of the play itself such as food, money, gold stars, praise, or an addition to one's résumé (see posting on the definition of play). When we offer such rewards to children who are playing, we turn their play into something that is no longer play. Because play is activity done for its own sake rather than for some conscious end outside of itself, people often see play as frivolous, or trivial. But here is the deliciously paradoxical point: *Play's educational power lies in its triviality.*

Play serves the serious purpose of education, but the player is not deliberately educating himself or herself. The player is playing just for the fun of playing, not for anything else; education is a byproduct. If the player were playing for a serious purpose, much of play's educative power would be lost.

Because the child at play is not worrying about his or her future, and because the child at play suffers no real-world consequence for failing--that is, because of play's triviality--the child at play does not fear failing. Because the child at play is not seeking approval or praise or gold stars or anything else from adult judges, the child at play is unhampered by evaluation concerns. Fear and concerns about evaluation tend to freeze the mind and body into rigid frames, frames

that are suited for carrying out well-learned habitual activities but not for learning new actions or thinking about new ideas. In the absence of concern about failure and others' judgments, children at play can devote all their attention to the skills at which they are playing. They strive to perform well, because performing well is an intrinsic goal of play, but they know that if they fail there will be no serious, real-world consequences, so they feel free to experiment, to take risks in ways that are crucial to learning. They do not have to devote part of their mental resources to the task of trying to figure out what some external judge is looking for. They can direct their activities in ways that they are ready for, rather than in ways that some judge has chosen for them.

Another aspect of play, besides its triviality, which suits play so well for its purpose of skill building is its repetitiveness. Have you ever noticed that most forms of play involve lots of repetition? A cat playfully stalking a mouse keeps releasing the mouse in order to stalk it again. A baby playfully babbling keeps repeating the same syllables or the same sets of syllables, sometimes altering the sequence slightly, as if deliberately practicing their pronunciation. A toddler playing at walking may keep walking back and forth, over the same route. A young child playfully reading may read the same (memorized) little book, over and over again. All sorts of structured games, such as tag or baseball or twenty questions, involve repetition of the same actions or processes over and over. But the repetition is never rote.

Because the repetitive action derives from the player's own will, each repetitive act is a creative act. If the act is exactly the same as the previous act, that is because the player wished to make it the same and was striving to make it the same. Often, though, each "repeated" act is different in some systematic way from the previous one; the player is deliberately varying the act in some way to fit the game or to experiment with new ways of doing the same thing. A side effect of such repetition is the perfection and consolidation of the newly developing skill.

The same skills that children learn so naturally in play become difficult in the typical school environment. Reading is an excellent example. Many years ago I watched my youngest brother learn to read, through his own play, before he started school, and later I watched my son do the same thing. At the Sudbury Valley School, the democratic non-school school that I have described in a previous essay, countless children have learned to read through play, at a wide range of ages, sometimes completely unaware of their learning. In this age-mixed community, where there are no formal reading lessons, children learn to read because reading is a valued part of their social environment. They see other children reading and hear them talking about what they have read, so they want to read. They play games that involve the written word. They are read to by adults and teenagers, who enjoy reading to them. They want to hear the same books over and over again until they have memorized them, and then they playfully "read" the books they have memorized until their pretend reading turns into real reading.

Contrast this to learning to read in standard schools, which for many children is painful and scars them for life about reading. Imagine what it is like for the child who, for whatever reason, is a little slower at learning to read than others in the class. Reading becomes a measure of self-worth and a source of anxiety and shame, and those emotions make learning to read not only painful but hard. When children are allowed to learn to read on their own, at their own pace, through their self-directed play, reading becomes and remains one of life's great pleasures. The same is true of other skills as well. Even throwing a ball can be difficult and shame-inducing when it is taught in school rather than learned in play.

Play is nature's way of teaching us the skills we need for life. But our educational system has stupidly turned play into something called "recess," truly trivializing it and marginalizing it, and has turned learning into something called "work," making it, by definition, something that children don't want to do.

How to Ruin Children's Play: Supervise, Praise, Intervene

How to enjoy, not destroy, children's play.

Published on January 14, 2009 by Peter Gray in Freedom to Learn

My soul has been stirred by many of nature's wonders--by orange and yellow leaves sparkling in the autumn sun, by mallards landing softly on still waters at dusk, by clouds drifting by as I lay on my back gazing upward. But, of all of nature's scenes that I have enjoyed and pondered, none have enthralled me more than those of children playing--playing on their own, without adults guiding or interrupting them. Intervening in children's play seems to me to be like shooting those mallards that are landing on the water.

My words are poor substitutes for the actual scenes, but let me try to convey two examples that have moved me more than any poetry. There is nothing special about these examples; they are like play everywhere. What made them special to me is that I took the time just to watch and enjoy them, to look at them as some people listen to concerts or admire great paintings. I report on them here partly in an attempt to convey their beauty, but also to point out how adults might well have ruined them by supervising, praising, or in other ways intervening, as happens all too often today.

Both of these examples happen to have occurred at the church to which I belong. I present them in the present tense in the attempt to paint a verbal portrait.

Example 1: A game of keep-away

The Sunday service has ended. Bored by the adults' coffee hour, I go upstairs to the large open room where children sometimes play while they wait for their parents to finish socializing. Fourteen children--of both sexes and ranging from 3 to about 12 years old--are playing keep-away with an inflated ball, about twice the diameter of a basketball. Fourteen human bodies of greatly different sizes are moving rapidly about, each following a rather random path, at its own pace, with its own flair. Yet, somehow, all fourteen blend together, accented by the bright green ball, into a single fluid organism.

I feel that I am watching a beautifully choreographed dance, but there is no choreographer. Nobody dominates; nobody is left out; nobody bumps into anybody else; nobody complains; all of the shrieks are of joy. Every child who wants the ball receives it for a fair period of time. The older players dribble the ball as they run with it, daring the others to steal it; the younger ones just run with it until they pass it toward the outstretched arms of an eager teammate.

The 3-year-old runs joyfully in circles, his arms sometimes flailing above his head, showing no interest in the ball at all, just delighted to be out there running with these amazing older kids. Despite the differences in age, size, and ball-playing ability, all of the players are treated as equal--as equally worthy, equally deserving of having their needs met. The game goes on like this for the entire twenty minutes that I can stay and watch. As I watch I learn lessons of

movement, rhythm, coordination, and unselfish self-expression, in which joy comes from anticipating and fulfilling the needs and desires of the others. I see democracy, in its most ideal form, in action.

The kids and I are lucky that no other adults are paying attention and that my attention is inconspicuous. I've often seen such games ruined by well-meaning adults who intervened--for the sake of safety, or because they believed that someone was being treated unfairly, or because they believed that they knew better than the children how to make the game fun for children. Attentive adults can ruin games even if they don't intend to intervene. Children perceive them as potential enforcers of safety, solvers of conflicts, and audiences for whining; and this perception invites the children to act unsafely, to squabble, and to whine. Play requires self-control, and the too-obvious presence of adults can lead children to relinquish their self-control.

Example 2: Making a Christmas Ornament

I am helping to manage the church's annual "Green Christmas" celebration, at which church members of all ages create earth-friendly decorations, wrapping papers, and gifts. I'm in charge of the natural ornaments table, which contains such materials as pinecones, milkweed pods, and seeds and shells of various colors and shapes. The table also contains hot glue guns, which people can use to fasten the natural materials together to form ornaments for their Christmas trees or statues for their tables. Most people are doing this rather quickly, eager to get something made and to move on to another table so they can complete the rounds. They make big, flashy ornaments, using many materials, but they put relatively little care into making them. As they work, they laugh and joke with others around them. Those people are not, in my view, playing; or, if they are playing, their play lies in their socializing, not in ornament making. They are making ornaments just because that is what they are supposed to do at this table. But one little boy, who appears to be about 4 or 5 years old, takes an entirely different approach.

He ignores the hustle and bustle around him and allows himself to become completely absorbed by his project. On his own, he decides to glue small, round white beans onto a large pinecone in such a way that each of the roughly 60 lobes of the pinecone will have exactly one bean precisely in its center. He doesn't announce this to anyone; he just starts doing it. His expression is one of intense concentration. Using the glue gun, very carefully with his little hands, he squeezes a single tiny drop of hot glue squarely onto the center of one of the pinecone lobes and then, before the glue hardens, places a bean ever so gently on the drop of glue. It takes him about half an hour to finish his task of gluing a bean onto every lobe. During this entire time he does not move from his work place. He does not say a word, and nobody--I am pleased to observe--says a word to him.

As I watch, a woman asks me if I think it is safe for such a little child to use a hot glue gun. I tell her that I have been watching him and he is being more careful than anyone else at the table. There is no need to caution him or to do the gluing for him. The former would interrupt his concentration and the latter would spoil his play completely. I am grateful that the boy's parents and all others who see him are wise enough to leave him alone at this activity. Imagine all the ways that an over-involved adult could ruin his play. The adult could deprive him of the challenge by kindly doing all the difficult or "dangerous" parts for him, distract his concentration with unsolicited advice or cheerful chatter, hurry him along so he could get to other projects but have inadequate time for this one, or praise his work in ways that would

shift his attention away from the process (which is most important to him) and toward the product (which is less important). Because nobody disturbs him, this boy experiences sublime solo immersion in artistic creation, and I experience the joy of watching him and learning from him. I learn lessons of self-determination, concentration, persistence, and painstaking craftsmanship.

Many years ago Lev Vygotsky, a Russian psychologist and a great observer of children's play, wrote that at play a child "behaves above his daily behavior, ... as though he were a head taller than himself." I would add that the same is true for adults. We are all at our best when we are playing. That is a theme of many of the essays that I have already presented in this blog, and it is a theme about which there is still much more to say. Let us learn to cherish play, in others as well as ourselves.

Minimally Invasive Education: Lessons from India

How thousands of impoverished children in India became computer literate.

Published on January 28, 2009 by Peter Gray in Freedom to Learn

Ten years ago, on January 29, 1999, Sugata Mitra--who then was science director of NIIT, an information technology firm with headquarters in New Delhi--initiated a fascinating set of studies of children's self-directed learning.

On that day, Mitra turned on a computer that he had installed in an outside wall of the NIIT building, a wall that faced one of the poorest slums in New Delhi, a community where most children do not go to school, are illiterate, and had never previously seen a computer. He simply turned the computer on, left it there, told the crowd of children that they could play with it, and used a video camera to monitor activity around it.

Children--mostly in the age range of 6 to 13--immediately approached and began to explore this odd installment, which looked to them like some kind of television set. They touched some of the parts and, apparently by accident, discovered that they could move a pointer on the screen by moving their finger across the touch pad. This led to a series of further exciting discoveries. The pointer turned to a hand when it was moved to certain parts of the screen. By pushing (clicking) on the touch pad when the pointer was a hand, they could get the screen to change. They eagerly sought out their friends to tell them about this fascinating machine. Each new discovery, made by one child or a group, was shared with others. Within days, dozens of children were surfing the Web, downloading music and games, painting with Microsoft Paint, and doing many of the other things that children everywhere do with computers when they have access to them.

Subsequently, Mitra and his colleagues repeated the experiment in 26 other places in India, rural as well as urban, always with the same general results. Similar findings occurred in other nations where outdoor computers were set up--in Cambodia, Egypt, and South Africa. Even now, as I write, new outdoor computers are being installed in various impoverished parts of the world.

Wherever a computer kiosk was set up, children quickly gathered, explored the apparatus, and, with no help except that which they provided to each other, discovered exciting ways to use it. The children made up names to refer to the computer, its parts, the various icons that appeared on the screen, and the activities they could perform with the computer. For example, one group referred (in their native Hindi language) to the pointer as a "needle" and to folders as "cupboards." Those who did not know English learned many English words through their interactions with the computer and their talk with others about it. Children who could read sometimes found and downloaded articles that interested them, in the language in which they were literate (typically Hindi or Marathi).

Mitra and his colleagues describe the kind of education they were experimenting with as *minimally invasive education*, a descriptor borrowed from the medical world of surgery. It is education with the minimal amount of intrusion into

children's lives. The experiments demonstrated that children learned at an amazingly rapid rate with no adult teachers. All that the educators had to do was to provide the tool, the computer. The children's natural curiosity, playfulness, and sociability took over from there.

Mitra and his colleagues estimate that for each outdoor computer they set up, an average of 300 children became computer literate within three months of the computer's becoming available. That's 30,000 computer-literate children for 100 computers, within a three-month period. By computer literate, Mitra means that they can "do most or all of the following tasks:"

- Use all Windows operational functions, such as click, drag, open, close, resize, minimize, menus, navigation, etc.
- Draw and paint with the computer.
- Load and save files.
- Play games.
- Run educational and other programs.
- Browse and surf the Internet, if a connection is available.
- Set up email accounts.
- Send and receive email.
- Chat on the Internet.
- Do simple troubleshooting, for example, if the speakers are not working.
- Download and play streaming media.
- Download games.

On the basis of various tests given to randomly chosen children who used the outdoor computers, Mitra concluded that the children's abilities to learn in this setting "seem to be independent of their educational background, literacy levels in English or any other language, social or economic level, ethnicity and place of origin (city, town, or village), gender, genetic background, geographic location, and intelligence."

Mitra's observations illustrate beautifully many of the ideas that I have been discussing in this blog. My major theme is that children educate themselves. Mitra observed that children taught themselves to use the computer, and then used the computer to teach themselves much more. They did so because they have, within them, a set of powerful instincts for self-education--the instincts of *curiosity*, *playfulness*, and *sociability*.

Curiosity: All mammals are curious, but we humans are the most curious, especially in childhood. Because we are tool-using animals, our curiosity leads us not just to explore new objects with our senses, but also to explore them with our muscles. When we see something new, we want to know what we can do with it. Children, from infancy on, explore new objects by manipulating them--pushing them, shaking them, squeezing them, dropping them, throwing them, bouncing them--to see what interesting effects might be produced. In Mitra's experiments, curiosity drew children to the outdoor computer and motivated them to manipulate it in various ways to learn about its properties. The manipulations led to exciting discoveries, each of which led to new questions and new discoveries. For example, the

discovery that clicking on one icon caused the screen to change led children to click on all of the other available icons, just to see what would happen.

Playfulness: The young of all mammals are playful, but human children are the most playful of all. The primary evolutionary function of playfulness, in children as in the young of other mammals, is skill development (see Jan. 1, 2009, posting). Play involves repetitive but varied actions aimed at producing effects that the player has in mind. The actions--both physical and mental--are performed for the pure pleasure of doing them, but the consequence is skill at those actions. In Mitra's experiments, playfulness led children to become highly skilled at using the computer's functions. For example, children who had already explored the Paint program and knew how to use it were motivated to play with that program, that is, to use it to paint many pictures. Through such play those children became skilled at computer painting. Through play the children consolidated knowledge already acquired and developed skill in using that knowledge. Often play led inadvertently to new discoveries, which renewed curiosity and led to new bouts of exploration. Play and exploration are inseparably mixed.

Sociability: We are not only the supremely curious and playful animal, but also the supremely social animal. Our sociability is such that we want to know what other people know, and we want to share our stories and knowledge with others. This, perhaps more than anything else, is what distinguishes us from the other mammals. Through language and our desire to communicate with and understand others, our minds are linked in a vast network with the minds of other people. No other animal has such a capacity and drive for communication, and that is why no other animal has developed culture as we have. In Mitra's experiments, sociability motivated children to play together, to want to know and do what the others knew and did, and to share their own knowledge with others. When one child made a new discovery about something that could be done with the computer, that discovery spread like a brush fire through the whole group of children nearby; and then some child in that group, who had a friend in another group, would carry the spark of new knowledge to that other group, where a new brush fire was ignited, and so on, and so on, through the roughly 300 children who at varying times were using the computer. Each discovery by one child became the discovery of all the children in the network.

Why don't school lessons spread in the same wildfire way that Mitra observed in his experiments on minimally invasive education? It is not hard to think of many answers to this question. Here are a few that pop to mind:

• Children in school are not free to pursue their own, self-chosen interests, and this mutes their enthusiasm.

• Children in school are constantly evaluated. The concern for evaluation and pleasing the teacher--or, for some children, a rebellious reaction against such evaluation--overrides and subverts the possibility of developing genuine interest in the assigned tasks.

• Children in school are often shown one and only one way to solve a problem and are told that other ways are incorrect, so the excitement of discovering new ways is prevented.

• Segregation of children by age in schools prevents the age mixing and diversity that seem to be key to children's natural ways of learning. Mitra observed that the mix of abilities and interests in the age-mixed groups that gathered around the outdoor computers ensured that different functions of the computer were tried out and played with by different children and that a wide variety of discoveries were made, which could then spread from child to child.

Learning is so easy, and such fun, when it occurs naturally. We make learning hard and dreary in our classrooms by depriving children of the opportunity to use their natural ways of learning and by replacing them with coercion. If we would concentrate on providing children with environments and tools that optimize their abilities to teach themselves, in age-mixed groups, and if we would stop trying to control children's learning, life would be more fun for all of us and the culture would flourish even more than it does now.

Some references describing Mitra's work:

For a video of Mitra talking about his research into minimally invasive education, click here.

To read about the most recent developments in Mitra's program of minimally invasive education, click here.

Published articles by Mitra and his colleagues:

Dangwal, R., Jha, S., & Kapur, P. (2006). Impact of minimally invasive education on children: An Indian perspective. British Journal of Educational Technology, 37, 295-298.

Inamdar, P. (2004). Computer skills development by children using 'hole in the wall' facilities in rural India. Australasian Journal of Educational Technology, 20, 337-350.

Mitra, S. (2003). Minimally invasive education: A progress report on the "hole-in-the-wall" experiments. British Journal of Educational Technology, 34, 267-371.

Mitra, S. (2004). Hole in the Wall. Dataquest (India), Sept. 23 issue. URL http://dqindia.ciol.commakesections.asp/04092301.asp.

Mitra, S. (2005). Self organizing systems for mass computer literacy: Findings from the 'hole in the wall' experiments. International Journal of Development Issues, 4, 71-81.

Mitra, S., & Rana, V. (2001). Children and the internet: Experiments with minimally invasive education in India. British Journal of Educational Technology, 32, 221-232.

Rousseau’s Errors: They Persist Today in Educational Theory

Pity poor Émile!

Published on February 12, 2009 by Peter Gray in Freedom to Learn

Jean-Jacques Rousseau is known as the "back-to-nature" theorist in education. He is referred to frequently in education texts as the originator of child-centered, natural means of education. Those of you who have been regular readers of my blog know that I have been writing about children's natural means of education; so you might assume that I would be inspired by Rousseau. Well, I am inspired--inspired to point out how very wrong he was.

Rousseau's sole work on educational theory is his book *Émile*, first published in 1760, which describes the education of a fictitious boy, whose name is the title of the book. The book is partly a novel and partly a philosophical treatise on the natural goodness of human beings and how to preserve that goodness through an education that does not corrupt.

Pity poor Émile! He is subjected in Rousseau's work to the most extreme form imaginable of what today would be called child-centered or progressive education. Émile spends the first 25 years of his life in the company of his tutor, referred to as the *master*, who is presented by Rousseau in the first person. The master is an extraordinarily intelligent, accomplished, devoted man who continuously studies Émile, gets to know his every motive and whim, and uses that knowledge to provide the boy with just those experiences that best impart the exact lessons that the master deems appropriate. The student-teacher ratio is one to one.

The master controls the boy constantly, not through orders but through what two centuries later Skinnerian psychologists would refer to as "behavioral engineering." He manipulates Émile's environment in such a way that the boy always chooses to do exactly what the master believes is good for him. In order for this to happen, Émile must, for his first 15 years, be isolated from other social forces, including other children. The master is his sole companion. The boy also has to be isolated from all literature except that made available by the master. Indeed, Rousseau prescribes that Émile should read just one book in his first 15 years, *Robinson Crusoe*. According to Rousseau, that book alone provides just the right story to motivate the boy's thoughts, fantasies, and play in a healthy direction.

Émile plays and explores (all by himself, apparently), and he believes that he is acting freely, but in fact he plays and explores with just those materials, and in just those ways, and thereby learns just those lessons, that the master has chosen for him. Far from trusting the natural inclinations of the child, Rousseau's vision is one in which every decision of the child, and every lesson learned, is cleverly controlled by the brilliant master, who gladly devotes his brilliance, full time, for most of his adult life, to the education of just one boy!

It is tempting to think that Rousseau wrote this book as a farce. I would love to believe that witty Rousseau was pulling the legs of other educational theorists by deliberately exaggerating and ridiculing their ideas. But apparently he was

not. He referred to *Émile* as his most important and serious philosophical work. He recognized, of course, the impracticality of the educational plan he was proposing, but he thought that if such a plan could be followed it would be the ideal. Nor have the thousands of modern education professors who have referred to the book described it as a joke. Whether they have agreed with it or not, they have treated it seriously as the foundation of modern progressive and child-centered theories in education.

Regular readers of this blog know that my own view of education has been shaped partly by my observations of the Sudbury Valley School and partly by my studies of how children in hunter-gatherer bands become educated. You can find my posts on these topics in the list to the right of this column. Although I agree with Rousseau that children's play and exploration are keys to their learning, I disagree with him on almost everything else.

Let me list here what I see to be the primary fallacies of Rousseau's educational theory. The fallacies are important as a critique not just of Rousseau but of a whole line of educational theories following him that are very much alive today.

1. The vulnerable-child fallacy: The idea that children must be protected from learning the wrong things.

Throughout the book, Rousseau is even more concerned with protecting Émile from learning the wrong lessons than he is with teaching Émile the right lessons. This concern follows from the very first line in the book: "God makes all things good; man meddles with them and they become evil." To Rousseau, nature is good and society is evil; so if Émile is to develop into a good person he must be exposed to nature and isolated from society, at least until he is an adult and has acquired the strength of character to resist society's evils.

Today we hear this same idea expressed, in more particular ways, by those who wish to control what television shows children watch, what games they play, what ideas they hear, and whom they associate with. This vulnerable-child idea is even part of the reason for the age segregation that we have imposed on children. We protect children from interacting with others who might, we think, be corrupting influences.

My view--consistent with the philosophy and practices of the Sudbury Valley School--is that human beings are neither fundamentally good nor bad, nor are young children necessarily more innocent and pure than are older children and adults. We are all fundamentally social beings, and to deprive children of the full range of social interactions is to deprive them of that which is essential to normal human development. Children don't just blindly mimic what they see in others. They think about what they see. They pay attention not just to others' actions, but also to the consequences of those actions. The more children can explore the realities of the world the more skilled they become at coping with those realities. In order to decide what works and what doesn't, they must see a range of models, who behave differently from one another. In order to form useful opinions, they must hear all sides and decide for themselves where the contradictions lie. To prepare for the real world, children need to grow up in that world, experiencing its warts as well as its roses.

Where society is corrupt, the best we adults can do for our children's long-term wellbeing is to attack the corruption directly, not try to hide it from them. In a democracy, we continually strive to improve society through means in which each person has an equal vote. Through those means we strive to create rules and procedures that are designed to

reduce the conflicts between each person's self-interests and the interests of the group as a whole, and thereby we strive to reduce evil. Sudbury Valley is fundamentally a democratic community, in which children, from four years old on through the teenage years, experience firsthand the rights and responsibilities accorded by democracy.

2. The stage-of-development fallacy: The idea that children can learn only certain kinds of things at certain ages.

Rousseau divides his treatise into several "books" (units), which correspond with what he sees to be separate stages of development. Each stage represents a metamorphosis from one way of being to another. Of most significance, Rousseau expresses with certainty the view that children are unable to reason logically until the age of 12 years old, a view remarkably like that expressed nearly two centuries years later by the famous developmental psychologist Jean Piaget. According to Rousseau, there is no sense in trying to reason with a young child, because the child has no capacity to reason. The young child can learn physical skills and can learn through experiencing the direct consequences of his actions, but cannot learn anything useful through the symbolic means of language. This premise--which is contradicted by the experience of every child and every person who ever was a child--provides a rationale for failing to listen seriously to what children have to say. It does so even today, and even by people who know, from recalling their own childhood thoughts and reasons, that the premise is false. Of course, the democratic procedures that the Sudbury Valley School has been using successfully for over 40 years are founded on the assumption that children can reason.

3. The lone-child-in-nature fallacy: The idea that children learn mostly or entirely from acting on natural objects in their environment.

A corollary of the idea that children under 12 can't reason is that they can learn little if anything of importance through verbal means. They learn, instead, from their direct sensory experiences and their manipulation of objects in the physical world. Rousseau claimed to believe that, and so did Piaget. But everyday experience clearly proves this view to be wrong. When children want to know something, their most frequent route to finding the answer is to ask someone who might know. Their reactions show that very often they understand what they hear. They ask appropriate follow-up questions, make reasonable (sometimes infuriatingly reasonable) objections to what they hear, and subsequently behave in ways that show that they understand. Children do also learn through non-social means, through direct experiences with physical objects in their environment, and that is important; but they learn even more through language. Indeed, for human beings, other people who can speak and understand have always been an essential ingredient of the natural environment. To think that young children cannot learn from the social part of their natural environment is absurd.

4. The controllability fallacy: The idea that it is possible to know a child so well as to be able to control, through subtle means, what the child learns.

The most serious of Rousseau's errors is the idea that human behavior is sufficiently predictable and controllable that a teacher can ever guide a student in anything like the manner that the master guided Émile. At least Rousseau was

willing to admit that such a teacher would have to be a sort of superhero--a person with extraordinary powers of observation and reason, who would dedicate essentially his whole life to the education of a single child. Some more recent philosophies of education seem to expect this from real teachers, who have real lives, and who have more than one child to deal with.

The usual debate between traditionalists and progressivists in education has to do with means of control. Both sides agree that the educator's job is to ensure that children learn a certain curriculum, but they differ on the means of achieving that goal. Traditionalists believe in the direct approach: You tell students what they need to learn; you use direct and open power-assertive means, with lots of drill, to try to make them learn it; you test them on it; and then you go through the whole process again if they didn't learn it the first time. Progressivists believe in the indirect approach: You know what it is that the children should learn and you feel it is your responsibility to get them to learn it, but, to the degree possible, you try to do it through means that do not involve any obvious power assertion. You try to do it by calling forth children's natural learning activities, including play and exploration, and by subtly guiding those activities so that the children will "discover," on their own, the right answers and not the wrong ones. That, of course, is the method of Rousseau. In this debate I find it hard to prefer one view over the other; I agree with neither.

Rousseau's fundamental error, and that of essentially all modern educators, is the belief that the secret to education lies in the capacities of the teacher. It does not; it lies in the capacities of the children. Children educate themselves.

The great insight of the founders of Sudbury Valley School--an insight understood for millennia earlier by hunter-gatherers--is that you don't need a curriculum. You don't need to take responsibility for children's learning. You don't need to use either power assertion or cleverness to get children to learn. All you need to do is to provide an environment in which children (a) can explore, play, and socialize to their hearts' content; (b) are free of bullying and other forms of intimidation; (c) can interact freely with others of all ages; (d) have access to the culturally valued tools for learning; and (e) can experience directly enough of the culture in which they are growing up that they can figure out what it is that they need to know to do well in that culture.

Unlike Rousseau's fantasy, Sudbury Valley is not a pipe dream. It has been operating successfully for over 40 years, at a cost per student far less than that of the local public schools and at far less trouble, and more joy, for all involved. It has hundreds of graduates, succeeding in all walks of life. It's high time that the education professors of the world took a serious look at it.

Social Play and the Genesis of Democracy

In play children learn that they are the adults.

Published on March 4, 2009 by Peter Gray in Freedom to Learn

We value democracy. As citizens, we want our children to grow up holding and abiding by democratic values. We know that democracy is not easy. Democracy implies freedom, but it also implies responsibility. The balance between the two is delicate and takes wisdom that can only be gained through practice. People in a democracy are free, yet they must follow rules, cooperate with others, respect differences among individuals, and recognize that their own needs and rights are no more valuable than are those of every other person. How do children acquire such values and learn to live by them?

One thing we can be certain of is that children do not acquire such values in schools, at least not in the schools that most people know. People acquire values by actually experiencing those values, in real life settings, and seeing that they work. In schools children experience dictatorship, not democracy. Children are required by law to be in school, and while there they must follow rules that they have no voice in creating. They may be required to memorize something about democratic values as part of a civics lesson, but they do not experience those values, so the lesson may seem cynical. They may, if they are lucky, experience compassion from kind teachers, but that is benevolent dictatorship, not democracy.

Children cannot acquire democratic values through activities run autocratically by adults. They can and do, however, experience and acquire such values in free play with other children. That is a setting where they are treated as equals, where they must have a say in what goes on, and where they must respect the rights of others if they wish to be included. In previous essays I have argued that play is nature's way of promoting children's reasoning (12/04/08) and physical skills (01/01/09). Now I argue that play is also nature's way of teaching children how to get along with one another democratically.

As I pointed out in my essay on the definition of play (11/19/08), play is not random activity. It always has structure, and that structure can be specified in terms of rules. Even the most informal kinds of play are structured by rules. For example, children in rough-and-tumble playfighting abide by rules about what kinds of blows are permissible. An overriding rule of such play is that you don't really hurt the other person. Little children playing make-believe establish elaborate sets of rules specifying what roles each person plays, how they play them, and what props each may or may not use. Researchers who study such play have noted that more time goes into articulating and negotiating the rules than into actually playing. Formal games, like baseball, have official rules, but in pickup games the players always modify the rules to fit their unique needs and desires—"Any ball hit into the mean neighbor's yard is an automatic out." All such rules, which specify how play is to proceed, might be referred to as **game rules**.

But above the game rules lies a higher set of rules, which apply to all social play. These are the rules that make social play possible. These are rules about how to play with other people. To distinguish them from the game rules, I'll call them the **meta-rules** of social play. These rules are also, in essence, the principles of democracy. In brief, here they are, stated as well as I can at this moment:

1. All players must have a voice in choosing, making, or changing the game rules.

2. To the degree possible, without violating the game rules or infringing on other people's rights, everyone in the game must be allowed to play in their own way, to express their own individuality.

3. All players must be treated respectfully, as equal to everyone else.

In social play these rules hold sway not because anyone preaches them as moral principles, but because the pragmatics of play require them. If people violate such rules—or violate them too egregiously—the game falls apart. Let me explain.

Play, by definition, is optional. It is something people choose to do, not something they have to do. The most fundamental freedom in any form of play is the freedom to quit. Everyone implicitly recognizes that. If someone is forced to stay in a game, then that person is not a player but a victim. This freedom to quit is the driving force that makes social play necessarily democratic.

In play, as in the rest of life, there are always some people who would like to dictate the rules. Suppose bossy Betsy, in a game of "house," tells Jill and Jamie just what roles they must play, what props they must use, and how they must act in their make-believe game. Jill and Jamie, even if they are smaller than Betsy, may have other ideas of how they want to play. If Betsy sticks to her guns and insists on having it all her way, Jill and Jamie will quit. They'll go and do something else. Betsy, left alone, has learned a valuable lesson. Next time she won't be quite so bossy. She'll make suggestions, but be willing to compromise.

Similarly, bully Benjamin, in the baseball game, may insist on doing all the pitching for his team, arguing (correctly, let us assume) that he is the best pitcher. But three other players on his team also want to pitch. They want to so badly that they may quit if not allowed a chance. If Benjamin doesn't agree he may lose half his team and the game will be over. Even moderately sophisticated players understand all this implicitly. Nobody has to actually threaten to quit; everyone knows that to keep a game going you must keep others happy. That is why everyone has to have a say in the rules and all other decisions. That is also why everyone must be treated respectfully and equally. The equality of play—like the equality of all democracy—is not the equality of sameness. It is, rather, the equality that comes from respecting equally the differing needs and desires of diverse people.

Notice that in the pickup game of baseball the goals of keeping the game going and keeping people on both teams happy trump the goal of winning. The players may say that their goal is to win, and indeed the players may cheer every

time their team gets a hit or scores a run, but if you look closely you will see that the real goal is not winning. The real goals are to play well, to have fun, and to keep the game going by keeping everyone happy. You don't always use your best pitcher if others want to pitch. You pitch softly to little Nicky, who is a novice, because you know he would have no chance and no fun if you pitched hard. You pitch hard to big experienced Henry, partly because you want to get him out, but also because you know that a soft pitch would insult him. In real play, unlike in Little League Baseball or other adult-directed activities, each player must attend to the psychology of all of the players and play in ways that please them. That is the route to keeping the game going and to having fun.

I don't want to over-idealize children. Not all children easily learn the lessons of democracy through play. Not all play is completely democratic. Bullies persist, and so do patsies. But social play, more than any other force we know of, helps people overcome their bullying and helps the patsies become more assertive.

How sad it is that children today have less opportunity for true social play, unsupervised by adults, than we did when we were children. Not only does this loss contribute to the epidemics of childhood obesity and depression, but it also, I fear, is making it harder for children to grow up with a full appreciation of democratic values. In play we learn how to negotiate our needs, as equals, and to treat others as equals. In play, no matter what our age, we learn that we *are* the adults; there is no higher authority to turn to who will solve our problems. And that, really, is the hard lesson of democracy.

The Headman Was a Woman: Introduction to a Series on Play as a Foundation for Freedom and Equality

What is the Batek's secret ingredient for peace and cooperation?

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Tanyogn was the kind of person who would be an asset to any community. She was highly intelligent, able to see through specious arguments, able to judge when the traders from outside might be trying to pull a fast one. She was knowledgeable about midwifery, herbal medicines, religious practices, and many other matters crucial to her culture. She had a powerful personality and capacity to persuade. She participated vigorously in the community's discussions, with a voice of reason that people could not ignore. She had enormous energy and capacity for hard work. When a job needed to be done she was the first to dig in, and she encouraged others, by her example, to join her.

Perhaps most valuable of all was Tanyogn's extraordinary sense of responsibility and care for others—not just for relatives, but for all members of the community and even for outsiders who came to visit. She attended to the sick and comforted crying children, no matter whose children they were. She and her husband took care of two orphaned boys. When the two young anthropologists—Kirk and Karen Endicott—came to study her community, she took them under her wing and helped to protect them from their own clumsiness. For example, when she saw them slip on a muddy sloping path near their camp, she shoveled steps into the path—steps that no native would need but were helpful to Kirk and Karen.

The Batek of Peninsular Malaysia, like many other hunting and gathering groups throughout the world, are an egalitarian people. They value personal freedom and are repelled by the idea that any person should have authority to control the activities of another. They make all group decisions by consensus, sometimes after days or weeks of discussion and debate. They have no official leaders, but they do have natural leaders—people who, by dint of their personalities, knowledge, and abilities are sought for advice and are listened to more closely than others. For the Batek inhabiting the upper Lebir River valley, Tanyogn was such a leader. In fact, she was such a powerful natural leader that the Batek, and even many of the neighboring Malay (the predominant farming people of Malaysia), referred to her as *Penghulu*, which is the Malay term for *Headman*, or *Chief*.

The story of Tanyogn and the Batek is told beautifully in a recent book by Kirk and Karen Endicott entitled *The Headman Was a Woman: The Gender Egalitarian Batek of Malaysia* (Waveland Press, 2008). The book is more than a documentation of gender equality in a long-standing human society. As you read it you discover that the remarkable fact to be explained is not that the headman was a woman but that the headman was a person, regardless of gender, with Tanyogn's qualities. In what kind of society can a person who is not competitive, not interested in status, not the

slightest bit threatening, but simply helpful, become the most widely recognized leader? The book is about the social conditions that can give rise to such a leader.

The Batek are a people who resist all attempts, by anyone, male or female, to act in a domineering manner. Their highest values include individual autonomy, social equality, cooperation, and the sharing of all material wealth. They love to play, but they never play competitively, because the idea of beating another person is repugnant to them. They raise their children to be both self-directed and respectful of others by trusting them to make their own choices and by treating them respectfully from birth on. In many ways the Batek violate the stereotypes about human nature that evolutionary psychologists often promulgate.

And yet, for people who read the anthropological literature, the story of the Batek is not unique. It is in many ways similar to stories that other anthropologists have told about other hunting and gathering people. The Endicotts' book has many of the same themes and messages that are found, for example, in Elizabeth Marshall Thomas's *The Old Way* (2006) about the Ju/'hoansi hunter-gatherers of the Kalahari Desert, and in Colin Turnbull's classic *The Forest People* (1968) about the Mbutu hunter-gatherers of the Congo's Ituri Forest.

What is it about these and other hunting and gathering societies that allowed them, perhaps for hundreds of thousands of years, to resist the temptations of status, dominance, and violence that have dictated the course of history for the rest of us over the last ten thousand years? What secret did they have about how to live peacefully and cooperatively? What can we learn from them that might help save us from our own worst instincts?

I have spent a considerable amount of time studying the hunter-gatherer literature-–not just the popular books about them, but also the articles in academic journals. My study has led me to conclude that a common denominator of all of these societies is a high degree of playfulness. All such societies, as far as I can tell, optimize the human capacity for play and humor in ways that seem deliberately designed to combat the tendency to dominate.

As many of you know, I took some time off from blogging. I was buried in another project that had immediate and unavoidable deadlines. But now I am nearly done with that, and breathing again, and ready to resume the pleasure of weekly posting.

My next six posts will constitute a series entitled "Play Makes Us Human." The posts will deal with such topics as *playful government, playful religion, playful work, playful parenting,* and *playful education*. With each topic I'll explain what I learned from research on hunter-gatherers and how I think those ideas are relevant to our society today. An overarching idea I will present is this: A major evolutionary function of play is to combat dominance and promote cooperation. For hundreds of thousands of years, hunting and gathering people maximized their playfulness in ways that enabled the high degree of cooperation that was essential to their survival.

Play Makes Us Human I: Outline of a Ludic Theory of Human Nature

Play is the germ that grew to make us human.

Published on June 4, 2009 by Peter Gray in Freedom to Learn

I've been working lately on a *ludic theory of human nature*. In case you haven't studied Latin in a while (perhaps not since several lifetimes ago), I hereby inform you that *ludic* means *playful*. I'm calling my theory a ludic theory because if I called it a playful theory you wouldn't take it seriously. (I'm trying hard to ignore the fact that the only common English derivative of ludic is ludicrous.)

Heaven take pity on those few of us who try to take play seriously. It's hard to do. Play, by definition, is something that is not serious. I'm sure that's part of the reason why most serious scholars stay far away from the topic.

The great classic scholarly book on human play is entitled *Homo Ludens*, which means literally *Man the Player*. It was written by Johan Huizinga, a Dutch historian, in 1938. It's a wonderful book and has inspired me greatly. But my own theory is quite different from Huizinga's.

Huizinga stated clearly that his is a cultural theory of play, not a biological theory. My theory, in contrast, is fundamentally biological, though it is also cultural, because, in matters of human behavior, biology and culture are inextricably entwined. Another big difference is that Huizinga tended to equate play with contest and to focus on agonistic, or competitive aspects of play, while I hold that play is fundamentally noncompetitive. I can understand how someone such as Huizinga, steeped in Western cultural history, might view play primarily as contest. In my theory, contest is a morphing of play with something that is close to the opposite of play--a drive to beat and dominate others. When we combine these two opposites, play becomes more serious (and thereby more acceptable to contemporary adults) and domination becomes more playful--not entirely a bad thing, but not the same as pure play.

In the remaining paragraphs here, I present a sketch of the ludic theory. In subsequent weekly posts I shall elaborate on specific aspects of the theory, presenting evidence along the way. [Some of what I shall present overlaps with ideas I published in a recent article-- *Play as a Foundation for Hunter-Gatherer Social Existence*, in T*he American Journal of Play, 1* (#4), 2009, pp 476-522.]

The Limited Role of Play in Non-Human Mammals

In most non-human mammals, play occurs almost entirely among the young of the species and seems clearly to serve the function of skill learning and practice. As I have noted in previous posts, young mammals, in play, practice the very skills that they must develop in order to make it into adulthood and to thrive and reproduce. Predators practice predation, as when tiger clubs stalk and pounce on bugs, wind-

blown leaves, and each other. Prey animals practice getting away from predators, as when zebra colts dodge and dart in their playful frolicking and endless games of tag. Young males of many species practice fighting, taking turns pinning one another in their species-specific ways and getting out of pinned positions. Young females of at least some species practice nurturance, in playful care of young.

Expansion of Play's Roles in Humans

We humans have inherited the basic youthful play characteristics of our animal ancestors, but in the course of our biological and cultural evolution we have elaborated upon them and created new functions. Playfulness in humans does not end when adulthood begins and it serves many functions beyond the learning of species-specific skills.

• *Play as a means of suppressing aggression and promoting cooperation.*

Social play in all animals requires that all tendencies toward aggression and dominance be suppressed. This is especially true in playful fighting, which is one of the most common forms of animal play. The fundamental difference between a play fight and a real fight is that the former involves no intention to hurt, drive away, or dominate the other animal. A play fight between two young animals can only occur if both are willing partners. Anything that smacks of true aggression or tendency to dominate would cause the threatened animal to run away, and the play, with all its fun and opportunity for learning, would end. And so, in the course of natural selection, animals developed signals to let each other know that their playful attacks are not real attacks, and they developed, for purposes of play, self-restraints and means of self-handicapping to operate against any tendencies to dominate or hurt one another in play.

We inherited these play-enabling signals and restraints from our primate ancestors, and then--through both culture and biological evolution--we built upon them. We brought playfulness and signals associated with it (such as laughter) into adulthood, and we used them to promote ways of cooperating and sharing with one another that surpass those of other mammals.

I am going to argue, in my next post, that when we bring playfulness to bear in our social interactions we create a spirit of equality and personal freedom that allows us to overcome our equally human drive to dominate one another. Hunter-gatherer societies were especially successful in cultivating playfulness as a means of defeating aggression and dominance. Their way of life required close cooperation and sharing, of the sort that could easily be defeated by aggression and dominance. Their playful approach to social life apparently enabled them to survive, relatively peacefully, for hundreds of thousands of years prior to the invention of agriculture. In our culture today, play and humor are still forces for defeating aggression, dominance, and hierarchy, though we don't use them as effectively as hunter-gatherers did.

• *Play as a basis for art, music, literature, theoretical science, religion, and all that we call "higher culture."*

Play, in any species, is done primarily for the *fun* of it, not to fill some felt survival need. A young animal or child playing may be learning, but it is not consciously learning; it is just having fun. I don't know if other animals have a perceptual

sense of beauty, but it is easy to imagine how doing something just for the fun of it could, in humans, become doing something just for the *beauty* of it.

Play is also, by definition, *creative*. It is not an automatic response to demands from outside, but is creative behavior deriving from within. Moreover, play is *representative*. A play fight is not a fight, but it represents a fight. Playful predation is not a hunt, but it represents a hunt. In humans, the representative power of play grew immensely. Human children--and adults, too--can represent not just fights and hunts, but truly anything in play. Play thereby provides a foundation for all of *imagination*.

Fun, beauty, creativity, representation, imagination--these are the essences of art, music, literature, theoretical science, and (I will argue two weeks from now) religion. These activities, which characterize our species everywhere, make us human. They all originated biologically in play. Play is the biological germ, which we inherited from our animal ancestors, which grew in us to make us human.

• *Play as a basis for productive work.*

In animals, play is quite separate from productive behaviors. Playful predation and real predation are two different things. But in humans playfulness can blend with productivity. When productive work is suffused with the qualities of play--that is, with freedom, creativity, and imagination--we experience that work as play. Hunter-gatherers had a genius for keeping their productive work within the realm of play. In our culture today, those people who have the most freedom of choice and opportunity for creativity within their work are most likely to say they enjoy their work and regard it as play.

• *Play as a basis for education.*

This final point, drawn out, provides the most direct and clear functional line between animal and human play. But education in humans is far more than learning in other species. We are the cultural being, and education is the passing of culture from generation to generation. In previous posts I have already written about play as a vehicle for children's education, but I will have more to say in a future post about the ways by which animal play was modified, in humans, to become such a powerful force for education.

Play Makes Us Human II: Defeating Dominance and Achieving Equality

Hunter-gatherers used play and humor to promote equality and cooperation.

Published on June 11, 2009 by Peter Gray in Freedom to Learn

We humans have two fundamentally different ways of governing ourselves in social groups. One is the method of hierarchy, or dominance, or force. I need not describe this method in detail; we are all too familiar with it. This is the method of governance in which those in power keep order by telling the others what they must do and not do. This is the method that predominates in conventional schools, where teachers tell students what to do; in conventional businesses, where bosses tell employees what to do; and in civic, state, and national governments, where those in power--whether that power is founded in heredity, military coup, appointment, or election--decide upon and enforce the rules that people must live by. We share this method of governance with our animal relatives. Mammals that live in social groups, especially primates, develop dominance hierarchies in which those higher up control at least some of the activities of those below. The ultimate source of control in any dominance system lies in the ability of dominant individuals to hurt subordinates who disobey--by giving bad grades to students, or firing employees, or putting offenders in jail, or simply by beating up those who behave in an insubordinate manner.

The other method is so little known and little discussed that it does not have a commonly accepted name. Sometimes the term *anarchy* is used to refer to it, but that term carries a pejorative burden because it is so often used to imply social chaos. I am talking not about chaos, but about situations in which people abide by rules willingly and freely, not because of threats imposed by more powerful others. I refer to this method of governance as the method of *play*, because play is where we see it most clearly and, I think, play is always its ultimate source.

Social Play Demands that Dominance Be Set Aside

Social play is the enemy of hierarchy and dominance; it demands equality. This is as true in animal play as it is in human play. In their serious daily lives, young monkeys--especially young male monkeys--are concerned with status. They spar and fight to establishing their positions in the hierarchy of power. Physical strength, cleverness, ability to form coalitions with others--these all contribute to the capacity to achieve high status. The one social activity for which young monkeys must, and do, set their concern for status aside is play.

Play, by definition, cannot be coerced. If two monkeys are playing together they must both feel free, not threatened or dominated by the other. Young monkeys love to play at chasing one another and wrestling, and such play is crucial to their healthy development. But to engage in such play they must set status aside, otherwise any monkey who is subordinate will run away or freeze and the game will end. In order to play with subordinate monkeys, dominant monkeys must suppress all signs of dominance. If they are stronger, they must self-handicap, so as not to overwhelm a weaker playmate. If they are cleverer, they must use that cleverness to help, not hinder, the less clever playmate.

All mammals have signals to mark their play. In wolves and dogs that signal is the play bow (the animal lowers its front end while facing the playmate). In monkeys and apes the play signal is the relaxed open-mouth display, or play face, characterized by a widely open mouth with lower jaw dropped and lack of tension in the facial muscles. In chimpanzees, our closest animal relative, the play face is often accompanied by a vocalized *ahh ahh ahh*, which sounds like a throaty human laugh. If such signals were translated into English they might be rendered: "We are just playing; nobody is going to hurt anyone; we have put aside our aggressiveness and defensiveness; we are cooperating in this activity for our mutual enjoyment."

As I explained in an earlier post, on the definition of play, all play--even the rough and tumble play of monkeys and children--has rules. The rules specify the actions that are permissible and not permissible; they serve to keep the play organized and fun for all and to prevent any one player from hurting another. Players follow the rules because the game is fun and the players know intuitively that the fun will end if rules are violated. If one monkey fails to take its proper turn in chasing another, or if one play-nips the other a bit too hard, the other will quit and the game will be over. The participants are motivated not only to follow the rules, but also to go beyond the rules to meet the needs and desires of the others. In my observations of age-mixed play in children and adolescents I have witnessed time and again the ways by which the stronger and more capable players modify their actions so as to refrain from dominating and to keep the game fun for all (see, for example, my discussion of an age-mixed pickup baseball game).

Now, here is the point that I am building to. In human beings, the spirit of play can suffuse all sorts of activities, including productive work, and when this happens the playful mode of governance can trump and defeat the hierarchical mode. Hunter-gatherer peoples throughout the world seemed to have understood this, and they used this knowledge, more or less deliberately, to arrange their entire social existence in a manner that permitted them to avoid hierarchy, dominance, and coercion.

The Egalitarian Nature of Hunter-Gatherer Societies

The kinds of hunter-gatherer societies that I am referring to here are those that are sometimes called *band societies* or *immediate-return societies*. These are societies in which people live in small, independent bands, of roughly 20 to 50 individuals per band, who move regularly from place to place within a large but circumscribed area to follow the available game and edible plant life. Today such societies are all but destroyed by encroachments from the outside world, but as recently as the last half of the twentieth century anthropologists were able to find and study such societies, in various remote parts of the world, that had been almost unaffected by modern ways. Examples include the Ju/'hoansi, the Hazda, the Mbuti, the Aka, and the Efé in Africa; the Batek in Peninsular Malaysia; the Agta in the Philippines; the Nayaka in India; the Aché in Paraguay; the Parakana in Brazil; and the Yiwara in Australia.

These societies are of special significance to those of us who are interested in human nature, because they are believed to represent the predominant manner by which human beings lived for hundreds of thousands of years before the advent of agriculture (which occurred a mere 10,000 years ago). Although such societies are not carbon copies of one another, they are remarkably similar to one another in certain basic ways. Of most significance to this essay, they are all marked by extraordinary egalitarianism and total commitment to cooperation and sharing. The people within a band

cooperate fully with one another, regardless of degree of genetic relationship, in hunting, gathering, childcare, defense against predators, and everything else that is necessary for survival. They share all food and material wealth equally within the band, and they also often share with neighboring bands that are in need. Such intense cooperation and sharing appear to be essential to the hunting-and-gathering mode of existence; without it, our species would probably not have survived all those millennia prior to agriculture.

My analysis of the anthropological literature concerning such societies has led me to conclude that they managed to live in this highly cooperative, egalitarian manner by deliberately accentuating their playfulness as a way of suppressing the drives for dominance that we humans inherited from our primate ancestors.[1] Essentially all aspects of hunter-gatherer social life seem to be bathed in the spirit of play. Their religions are playful--not grim and threatening like the hierarchical religions that originated with agriculture and came to fruition in medieval times. Their work, including both hunting and gathering, is playful. Their approach to childcare is playful. The playful nature of hunter-gatherer religion, work, and childcare are topics of my next several posts. Right now I want to focus on hunter-gatherers' ways of making group decisions and maintaining order within the band.

In the words of anthropologist Richard Lee, hunter-gatherers are "fiercely egalitarian." Part and parcel of this egalitarianism is their staunch sense of individual autonomy. They do not believe that anyone has the right to tell another person what to do. Hunter-gatherers do not have big men, or chiefs, or bosses, who give orders. Historically, those sorts of leaders came later, with the rise of tribal societies and agriculture. Hunter-gatherers' stricture against controlling others through force applies even to parent-child relationships. Parents might try to coax their children to behave in certain ways, but they do not believe they have the right to give orders backed up by power. By refraining from giving orders, by refraining from trying to boss one another around, hunter-gatherers keep all of social life potentially within the realm of play. The band makes all group decisions through extensive discussion and debate until a consensus is achieved. People may voice their opinions vigorously, but they do not use coercive means to enforce their opinions.

How Hunter-Gatherer Bands Are Like Play Groups

This non-coercive approach to governance works for hunter-gatherers because the band itself is similar in many ways to a social play group. Hunter-gatherers are highly mobile people. They own no more property than what they can easily carry on foot, and they all have friends and relatives in other bands, so they can move at a moment's notice from one band to another. Just as people playing a social game are free to leave the game if they are not pleased, hunter-gatherers are free to leave the band, and join another if they are not pleased. But, at the same time, people are motivated to keep the band together. A stable band is more effective in meeting people's survival needs than is a band whose membership constantly changes. Moreover, people within a band become close friends and want to stick together because they like one another. Therefore, to keep the band together, people behave in ways that are designed to please the others and keep them from leaving.

Just as any attempt to coerce another in a social game may cause that other to leave the game, any attempt to coerce another within a hunter-gatherer band may cause that person to leave the band. Even children may leave a band, to

live with relatives in another band, if they feel they are being mistreated. Freedom to quit is the ultimate source of all freedom and equality within any social game, and it is also the ultimate source of freedom and equality within a hunter-gatherer band. People within the band are motivated to hunt, gather, and participate in other band activities because such activities, when not coerced, are fun, please others, and keep the group together.

Humor as a Device to Keep Order and Prevent Dominance

Many anthropologists who have lived among hunting and gathering people have commented on their good humor--their joking, teasing, and easy laughter. Humor of this sort is common in all social play and it adds to the playful quality of all social interactions. Laughing together helps to maintain a sense of closeness, friendship, and equality, and it does so by evoking the sense of play. Good-natured teasing is a way of acknowledging yet accepting one another's flaws. So, humor itself brings the spirit of play to people's social activities and thereby motivates people to abide by the rules and cooperate willingly.

A number of anthropologists have commented on another use of humor among hunter-gatherers--that of correcting the behavior of those who are in some way disturbing the peace or violating a social rule. For example, Colin Turnbull wrote: "[The Mbuti] are good-natured people with an irresistible sense of humor; they are always making jokes about one another, even about themselves, but their humor can be turned into an instrument of punishment when they choose."[2] Similarly, Elizabeth Marshall Thomas noted that the Ju/'hoansi that she had lived among would not criticize people directly, but would do so through humor. She wrote: "The criticized person was not supposed to take offense at the jokes and would be sure to laugh along with the others. On the very rare occasions when self-control broke down, such as happened when two women could not stop quarreling, other people made a song about them and sang it when the arguments started. Hearing the song, the two women felt shamed and fell silent. Thus the community prevailed without mentioning the problem directly."[3]

Richard Lee has commented most directly on hunter-gatherers' use of humor as a tool to quell budding expressions of individual superiority and to maintain the sense of equality. Concerning hunter-gatherers in general, he wrote: "There is a kind of rough good humor, putdowns, teasing, and sexual joking that one encounters throughout the foraging world. ... People in these societies are fiercely egalitarian. They get outraged if somebody tries to put on the dog or to put on airs; they have evolved--independently, it would seem--very effective means for putting a stop to it. These means anthropologists have called ‘humility-enforcing' or ‘leveling' devices: thus the use of a very rough joking to bring people into line . . . ."[4]

In his book about the Ju/'hoansi, Lee tells a wonderful story of how the people he was studying turned their leveling humor on him.[5] At one point early in his fieldwork, Lee decided to reward the people he was studying with a feast, for which he purchased the fattest ox that he could find in the nearby farming community, "1200 lbs on the hoof." He was excited about announcing this gift and expected that the Ju/'hoansi would be grateful. When he announced the gift, however, he was surprised and hurt to find that the people responded not with the words of gratitude that he had expected, but with insults. For example, Bena, a 60-year-old grandmother, referred to the ox as "a bag of bones" and asked, to everyone's amusement except Lee's, "What do you expect us to eat off it, the horns?" A man who had been

one of Lee's closest confidants among the Ju/'hoansi said, in mock earnestness: "You have always been square with us. What has happened to change your heart? Or are you too blind to tell the difference between a proper cow and an old wreck?" Such humor, at Lee's expense, continued for days preceding the feast.

Lee was already aware of the Ju/'hoan practice of "insulting the meat" that hunters brought to the band, and at some point he began to suspect that this practice was now being used on him. Nevertheless, his pride in providing such a wonderful gift was taken away; his masculine ego was hurt. And that was precisely the purpose of the insults. The Ju/'hoansi were treating him in just the same way that they treated any of their own hunters who brought home a big kill and failed to show proper modesty about it. As Tomazho, a wise Ju/'hoan healer, subsequently explained to Lee: "When a young man kills much meat, he comes to think of himself as a big man, and he thinks of the rest of us as his inferiors. We can't accept this. We refuse one who boasts, for someday his pride will make him kill somebody. So we always speak of his meat as worthless. In this way we cool his heart and make him gentle."

The effectiveness of humor--in reducing aggression and promoting humility--comes, I think, from its direct relationship to play. To make fun of a dispute or a boast to say, "This disagreement that has you so angry, or this thing that you are so proud of, is not as important as you think it is. This is play, and the important thing in play is to be a good sport." When hunter-gatherers use humor to resolve even the most serious social problems that they face, they bring all of social life into the domain of play.

The relationship between laughter and play lies deep in our biological makeup. Our laughter has its evolutionary roots in the primate play face--the signal that all primates use to suppress dominance and enable play. Play fighting and chasing, with its accompanying laughter, is the original form of humor. When we humans, of any age and in any culture, use humor to quell a real fight or deflate a puffed-up ego, we are calling on a very primitive biological mechanism. We are saying, in effect, "This is play; and in play we don't really hurt anyone and we don't act in a domineering manner." We are saying it in a way that works because it strikes at the gut level of instinct, which we have no means to refute, rather than at the intellectual level of verbal argument, which we are all so good at refuting or ignoring.

And so, by using humor to promote humility and peace, hunter-gatherers capitalize on the human instinct to relate humor to play. Those who are criticized through humor have three choices: They can join the laughter, thereby acknowledging implicitly the foolishness of what they have done, which puts them immediately back into the social game. They can feel and express shame for acting in a way that led to the ridicule, which brings them back into the good graces of the others and allows them more gradually to re-enter the game. Or, they can stew in resentment until they either leave the band or decide to change their ways. A great advantage of humor as a means to induce behavioral reform is that it leaves the punished persons free to make their own choices and does not automatically end their senses of autonomy and play, as would happen if the punishment involved incarceration, physical violence, or forced banishment.

I hold no illusions that we, today, can do away with hierarchical government. Our social world is much too large and complex to govern entirely through the method of play. At the civic, state, national, and world level we need rule of law

and some forms of power--preferably formulated through democratic means--to back it up. But at the more local level--for example in our schools and businesses--I think we have a lot to learn from hunter-gatherers. By following the hunter-gatherer model we can, I believe, remove coercion and institute a spirit of play in almost all of the day-to-day local aspects of our social lives, including our education and our productive work. I'll say much more about this over the next several installments.

As a final note I ask you to imagine how today's world might be different if those "titans" of industry and finance--who believed they were above the rest of us and deserved outrageous salaries and bonuses, and who were so lacking in concern for others--had been subjected early in their careers to the hunter-gatherer mode of leveling. What a different world we would have. Today those people are quite appropriately the butts of humor everywhere, though it is too late for that to rectify the damage they caused. But if we keep up such humor, and begin to apply it at the earliest signs of arrogance, we may see some improvement in the business world of the future.

References

[1] Peter Gray. Play as the foundation for hunter-gatherer social existence. American Journal of Play, 1, 476-522, 2009. All of the ideas presented in this essay are elaborated upon in this academic article. Also, some of the specific wording in the final section of this essay is taken from the article.

[2] Colin Turnbull, The Forest People (1968), p 114.

[3] Elizabeth Marshall Thomas, The Old Way (2006), p 218.

[4] Richard B. Lee, "Reflections on Primitive Communism," in T. Ingold, D. Riches & J. Woodburn (Eds.), Hunters and Gatherers I (1988).

[5] Richard B. Lee, The Dobe Ju/'hoansi, 3rd Edition (2003).

Play Makes Us Human III: Play Is the Foundation for Religion

To have faith is to make believe.

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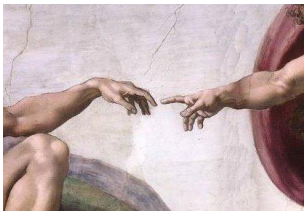

Some people would take offense at the idea that religion is play. Religion, they would say, is sacred, and play is trivial. How can the one be lumped with the other? But regular readers of this blog know that I regard play as the highest form of human activity, so I am not demeaning religion when I describe it as play.

I have two main points to make in this essay. The first is that all of religion has its roots in play. The cognitive skills that make religion possible are the skills of play, the most central of which is make-believe. The second point is that religion functions best when it does not stray too far from its playful origins. Religion that has lost its playfulness can be dangerous. Here I outline some of the logic and evidence that leads me to these conclusions.

To Have Faith Is to Make Believe

The essence of all religion is faith. To have faith is to believe without evidence. To believe without evidence is to make believe. To make believe is to play.

All human play involves an element of make-believe (see essay on the *definition of play*). Each player accepts, for the duration of the game, a certain imaginary world. In chess, for example, the imaginary world is one in which miniature horse-shaped figures are knights, and knights can only move in L-shaped hops. The purest form of make-believe is found in the pretend play of young children, who regularly enter imaginary worlds in which they may be witches, or trolls, or space travelers, or mommies and daddies, and where the living room couch may be a haunted house, or a magic bridge, or another planet, or the office where the mommy works. To enter into a game players don't ask for evidence that such and such is true, they simply *decide* or *agree* that it is true. Suzie is a witch and Jimmy is a troll, because all of the players have agreed to that. The truths of make-believe are truths by choice, not discovery, and so are the truths of religion. To accept a religion is to choose to believe in the religion's truths; and in that sense, at least, all religion is play.

The truths of play are true as long and only as long as the play continues. When play is over, or during time out, Suzie and Jimmy may say that they were only pretending to be a witch and a troll; but they would never say that during play. In fact, it would be impossible for them to say that during play, because the very act of saying it automatically stops the play and creates a time out. Religion, for the devout, has no recognized time out; so the devotees may have no opportunity to say that their religious beliefs are make-believe, even if at some level of consciousness they know that that this is so.

(I ask the devout reader here, please, to take a brief time out, just to consider my thesis. You will not lose your religion by doing so. Your religious devotion may even profit from the exercise. Children improve their play, and become even

more devoted to it, by taking time outs to think about and possibly reformulate the truths; and the same can happen for adults with religion.)

My thoughts about the playfulness of religion originated when I was about 11 years old, an age when many people begin to puzzle seriously about the world around them. I was a regular church and Sunday school attendee, and like some of my childhood colleagues I had difficulty understanding how people could believe the stories. It was clear to me that belief or lack of belief had nothing to do with rational intelligence. Some people far more intelligent and rational than I, and some less so, were devout believers. I remember thinking then that religion might be a kind of game--a life-long game that people knew was a game but would not say was one. It was like belief in Santa Claus, but more valued. It was belief that people held onto throughout life rather than just in early childhood.[1]

These childhood thoughts about religion lay relatively dormant in my mind until quite recently, when they were stirred up by my reading about hunter-gatherer religions. As I noted in the *introductory essay*, this whole series on "Play Makes Us Human" was inspired by my recent immersion in the anthropological literature on hunter-gatherers.

Hunter-Gatherer Religions Are Overtly Playful

I discovered, in my immersion, that hunter-gatherer band societies (as distinct from more complex tribal societies) have certain basic characteristics in common, wherever they are found. Among these characteristics is a high degree of playfulness, which runs through all aspects of their social lives, including their religions.[2] The overtly playful nature of hunter-gatherer religious beliefs and activities renewed my thinking about the the idea that religion everywhere has its origins in the human capacity for play.

Hunter-Gatherer Religious Stories Are Playful and Often Funny

All hunter-gatherer religions are polytheistic; there are multiple deities, and the deities themselves are playful. They are not arranged in a hierarchy of power, taking or giving orders, but are equal players in an ongoing drama that takes place in a spirit world that parallels the physical world in which hunter-gatherers live. The deities themselves are neither all good nor all bad, but are a mixture of the two, much like real people. They are often whimsical and unpredictable. They are not necessarily concerned with human morality. They may help or hurt a person just because they feel like doing so, not because the person deserves it.

A common character in hunter-gatherer religions is what mythologists call the "trickster," a partly clever, partly bumbling, morally ambivalent being who manages to interfere with the best-laid plans of the other deities and humans. The trickster character is not necessarily represented in just one deity; it may be an aspect of personality that runs through most or all of them. The characteristics and actions of many of the deities are comical. Consistent with their egalitarian ethos and non-hierarchical means of governing themselves, hunter-gatherers do not worship their deities. They have no kings on earth, so they have no kings in heaven either. In fact, just as they use humor to level any members of their own band who show signs of arrogance (see *last-week's post*), they also use humor to level any deities who might otherwise think too highly of themselves.

Here is an example, taken from Elizabeth Marshall Thomas's book, *The Old Way*, about the Ju/'hoansi of Africa's Kalahari Desert:

One of the most prominent Ju/'hoan deities, Gao Na, has characteristics that might, at first, lead us to view him as equivalent to the single god of modern monotheistic religions. Gao Na is the creator of the universe. He created first himself, then the other deities, and then the earth, water, sky, sun, moon, stars, rain, wind, lightning, plants, animals, and human beings. Yet, despite such creative power, Gao Na is not particularly powerful in other respects, and he is certainly not especially wise. In fact, the Ju/'hoansi delight in portraying Gao Na as a fool.

In Ju/'hoan religious stories, Gao Na, the creator of everything, is unable to control the beings he created and is continuously being outwitted by them. For example, his wives trick him, again and again, into jumping into a pit full of feces. They tell him that there is a fat eland under a pile of branches, and he leaps happily into the pile to get it, only to fall into the pit. Later, after he has cleaned himself up, they tell him another story, about some other prize under the branches, and he jumps in again.

Whenever I think of this story I am reminded of the classic comic-strip character Charlie Brown, who repeatedly believes that this time Lucy will not pull the football away when he tries to kick it. Like Charlie Brown, Gao Na never learns. We know, each time that Lucy sets him up, that Charlie Brown will fall for it. We feel sorry for him, and yet we laugh. That is the plight of us humans, and it is portrayed in Ju/'hoan religious stories as it was by Schultz on the comics page.

Hunter-Gatherer Religious Rituals Are Indistinguishable from Play

The religious practices of most hunter-gatherers include music, dances, sometimes costumes, and lots of overt play. The most serious religious ceremonies, for most hunter-gatherer groups, are those that involve shamanic exercises. The primary serious purpose of such ceremonies is healing, but the ceremonies also provide an opportunity for band members to interact personally, in all sorts of ways, with members of the spirit world. Individuals who have the power to do so (the shamans) enter into trance states in which they take on the properties of, and/or communicate with, specific deities.

One researcher, Mathias Guenther, notes that this altered state is generally reached "without hallucinogenic substances, but through a combination of drumming, singing, and dancing, coupled with physical exhaustion." He writes further: "Often the shaman is a showman who employs rich poetic imagery and histrionics. He may sing and dance, trembling and shrieking, and speak in strange languages. He may also employ prestidigitation and ventriloquism. . . . Shamanic séances are very much performance events, not infrequently with audience feedback. They involve the shaman in role playing, engaging in dialogue with various spirits, each of whose counter-roles he plays himself."[3]

Among some hunter-gatherer groups the whole band is involved in the dancing, singing, and drumming; all of them, effectively, are shamans or at least contributors to the shamanic experience. Among the Ju/'hoansi, roughly half of the men and a third of the women are able to enter into shamanic trances. When spirits are called forth in such exercises, in apparently any hunter-gatherer group, they are not treated reverently; they are treated much as the people treat

each other. The communication may involve mutual joking, teasing, laughing, singing, and dancing, as well as requests for healing.

Anthropologists refer to the shamanic and other religious ceremonies as "rituals," probably because that term has come to be used for any religious ceremony that has some sort of regular structure to it. But the ceremonies are clearly not rituals in the sense of strict, uncreative adherence to a prescribed form. In fact, some hunter-gatherer researchers have claimed that the religious "rituals" that they observed in the groups they studied were indistinguishable from play.[4] The ceremonies typically involve a great deal of the kind of self-determined, creative, imaginative, yet rule-guided action that fits the *definition of play*.

Hunter-Gatherers Do Not Confuse Religious Beliefs With Empirical Observations, and They Have No Concept of Heresy

Anthropologists have often described hunter-gatherers as practical people, not much given to magic or superstition. Shamanic healing seems to be an exception, but such healing may actually work to the degree that diseases have psychological components.

In general, hunter-gatherer religious ceremonies have more to do with embracing reality than with attempting to alter it. For example, in her book *The Harmless People*, Thomas describes how the /Gwi people (hunting and gathering neighbors to the Ju/'hoansi) use their sacred rain dance not to bring on rain but to welcome it and partake in its power when they see it coming. Living in the desert, where water is a limiting factor for all life, they might well dance to bring on rain if they thought it would work, but they do not believe they have such power. They can, however, rejoice in the rain and use its coming to raise their own spirits and prepare themselves for the bounty to follow. Another researcher, Richard Gould, in his book *Yiwara*, about a hunter-gatherer culture in Australia, makes the same point in stating that these people ". . . do not seek to control the environment in either their daily or their sacred lives. Rituals of the sacred life may be seen as the efforts of man to combine with his environment, to become ‘at one' with it."

From my perspective, such ceremonies are a form of play in which aspects of the natural world, personified in the deities, become playmates.

On the dimensions that distinguish religious liberals from religious fundamentalists in our culture, hunter-gatherers appear everywhere to be at the liberal end. Although hunter-gatherers find meaning in their stories about the spirit world, they do not treat the stories as dogma. Neighboring bands may tell similar stories in different ways, or may tell different stories, which contradict one another, but nobody takes offense. The sacred ceremonies of one band may be different from those of another, or may vary considerably over time. Hunter-gatherer parents do not become upset when their children marry into another group and adopt religious beliefs and practices that differ from those they grew up with. To leave one band and join another, with different religious practices, is in this sense like leaving a group who are playing one game and joining another who are playing a different game. There seems to be an implicit acknowledgment, among these people, that religious stories, while in some ways special and even sacred, are in the end just stories.

Hunter-gatherers value their beliefs about the spirit world, but they apparently don't let those beliefs interfere with their empirical understanding of the physical world in which they live. Here is an example of that, again provided by Elizabeth Marshall Thomas. When Toma, a wise Ju/'hoansi, was asked, matter-of-factly, what happens to stars during the daytime, he responded, matter-of-factly: "They stay where they are. We just can't see them because the sun is too bright." But another time, in a religious frame, Toma answered the same question with a Ju/'hoan legend, in which the stars are antlions that crawl up into the sky at night and return to their sandy pits at dawn. He was apparently not the least bit upset by the contradiction between these two explanations. I wish that all religious people had Toma's wisdom when it comes to such foolish controversies as that of evolution versus creationism!

Religion Is Sacred Play, Which Gives Meaning to Everyday Life

A general function of all play is to give meaning to people's lives and to help them cope with the real world. As I described in an *earlier post*, play helps children come to grips with reality. Playing at being witches and trolls, for example, helps young children think about and understand aspects of their real world that would be hard to understand otherwise. This is true even though the children clearly recognize that the play world is imaginary, not real. In fact, play would not serve its purpose if children did not recognize that distinction.

Religion, properly conceived, is a grand and potentially life-long game in which people use the basic structures of the game--the story outlines, beliefs, and rituals--along with their own creative additions and modifications, to make sense of their real world and real lives. The stories and beliefs may be understood as fictions, but they are sacred fictions because they represent ideas and principles that are crucial to living in the real world and they may be held through all of life.

It is not surprising, from this view, that religious stories and beliefs everywhere reflect and elaborate on ideas and themes that are crucial to the society in which the devotees live their real lives. Hunter-gatherers depend on principles of equality and sharing, and so it is natural that their deities are not rulers but equals, who contribute and sometimes fail to contribute, as they will. Hunter-gatherers also depend, every day, on the whims of nature, which they cannot control, so it is not surprising that their deities are whimsical. The best way to deal with unpredictability is through humility and humor, and their religions foster those traits. Their task is to embrace nature, not to control it, and their religious play with the spirits of the natural world help them to do that.

With agriculture, religion changed. Agriculturalists attempt to control nature, and so the gods of agriculture are controlling gods. With agriculture, and with the land ownership and accumulation of wealth that accompanies it, egalitarianism lost its sway and concepts of lords and masters, and of servants and slaves, emerged. It is not surprising, then, that hierarchical concepts of the spirit world emerged in post-agricultural religions--peaking in the Middle Ages, in the dominant monotheistic religions, Islam and Christianity. At a time when most people were servants, it was only natural that religious stories and beliefs would focus on the value of servitude and duty to lord and master, and that God would be understood as the supreme master, the king of kings, lord of lords. Such beliefs gave meaning to a life of servitude and helped the rulers to justify their power.

Religion Turns Bad When the Element of Play is Lost

As religion evolved (or should I say devolved) from the hunter-gatherers' comic pantheons to the medieval monotheisms it became less playful and more dangerous. As nature became an enemy rather than a friend, and as the spirit world became hierarchical, the element of fear began to overwhelm the element of play. God became not a playmate, but the supreme source of punishment and reward, to be worshipped, served, and feared. As religion became serious, people began to confound the imaginary religious world with the real world.

If children playing that they are witches and trolls did not know that they were just pretending, we would worry. We know, for children, that failure to distinguish imagination from reality can be dangerous. We should know that this is even truer in the case of adults and religion.

The religions that emerged with agriculture and feudalism have promoted horrors that would be unimaginable to hunter-gatherers. The Aztecs sacrificed human beings to their angry gods. Christians tortured people they called witches and murdered heathens mercilessly. Today among some groups of Islamists we find promoters of suicide bombings, who put religious beliefs above their concerns for people. If service to God is the highest value, and if God is fearsome and egotistical and punishing, and if religion is confounded with reality, then all these horrors in the name of religion become possible. Religion of that type does not "make us human," in the sense by which I mean that statement in the title to this series.

The remarkable thing, today, is that as our societies continue to evolve so do our religions. As we have left medievalism and entered an era of growing democracy, many people have taken the monotheisms of their ancestors and made them more playful. God becomes once again a friend rather than a power to be feared. People stop arguing about which religion is right. They begin again to acknowledge that such arguments make no more sense than do arguments about whether chess or checkers is the one true game. If this hopeful trend continues, we may complete the circle and once again enjoy playful religion as hunter-gatherers did.

To keep religion on the side of humanity instead of against it, we need continuously to refresh its playfulness. Sacred play promotes the best of our human nature, improves our wellbeing, and is fun. Religion lacking play is suicidal.

Notes

[1] I have since learned, of course, that my early thoughts about religion as a game were not original. A number of highly respected theologians and theological scholars have put these same ideas into writing. One such book, for example, is David L. Miller's (1970) *Gods and Games: Toward a Theology of Play*. An interesting and relatively recent article on the topic is "Play and Religion: Indication of an Interconnection," in the Journal of the Asian Research Center for Religion and Social Communication, 2 (#1), 2004. There, K. P. Aleaz, an Indian scholar, makes a special case for the playfulness of Hindu religions, which, more than most other modern religions, have retained their historic folk-religion roots.

[2] An account of my conclusions from this immersion into the hunter-gather literature can be found in my article, *Play as the foundation for hunter-gatherer social existence. American Journal of Play, 1, 476-522, 2009.* Most of the ideas

in the present series of essays, on "Play Makes Us Human," are presented there with documentation. In this essay I have repeated, in parts of several paragraphs, some of the same language I used in that larger article.

[3] Mathias Guenther, "From Totemism to Shamanism: Hunter-Gatherer Contributions to World Mythology and Spirituality," in R. B. Lee & R. Daly (Eds.), The Cambridge Encyclopedia of Hunters and Gathers (1999), 426-433.

[4] See, for example, Daisaku Tsuru, "Diversity of Ritual Spirit Performances among the Baka Pygmies in Southeastern Camaroon," African Study Monographs, Suppl. 25 (1998), 47-83.

Play Makes Us Human IV: When Work Is Play

Is your work play? It can be.

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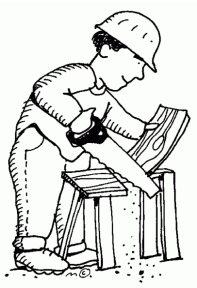

One of the first and most often reinforced lessons that children learn in school is that work and play are opposites. Work is what one has to do; play is what one wants to do. Work is burdensome; play is fun. Work is essential; play is trivial. But when we leave school and go on to the "real world," at least some of us, the lucky ones, discover that work is not the opposite of play. In fact, work can be play, or at least it can be imbued with a high degree of playfulness.

When work is play, it is humanizing. It brings out our best qualities and makes us feel good. When work is toil--the opposite of play--it can be dehumanizing. We become beasts of burden, whether the burdens are borne mostly by our muscles or our minds. What are the qualities that can make our work play rather than toil?

In this series on "Play Makes Us Human," I was originally going to devote just one essay to the topic of work. But now I realize that one essay would be inadequate, so I've decided to devote two essays to the topic, which will be just a little less inadequate. Here, in the present essay, my focus is on the definition of play and how gainful employment can fall within that definition. Next week I'll describe how hunter-gatherers minimized the work-play distinction and suggest some ways by which we might emulate them in this regard.

Definition of Play

In an earlier essay, on the *definition of play*, I elaborated on the idea that play is structured activity that is (a) self-chosen, (b) self-directed; (c) imaginitive, or creative; (d) intrinsically motivated; and (e) produced in an active, alert, but not distressed frame of mind. To the degree that any activity has these characteristics, we experience it as play. Work, at its best, can have all of these characteristics to a high degree. Let me explain.

(a) Work Can Be Self-Chosen.

Play is what we choose to do, not what we have to do, so the more we experience a sense of choice about our employment the more we experience it as play. If you feel that necessity requires you to work at such-and-such a job, then it will be hard for you to maintain a playful attitude about that job. The more you feel free to leave a job, the easier it is to experience the job as play. Play, by definition, is something that you are always free to quit. If you can't quit, you have no sense of choice, and the activity is not play.

Some years ago, Reed Larson and his colleagues conducted a research study in which married men and women, who all had out-of-home jobs, wore beepers throughout their day and wrote down information about their activities and moods whenever their beeper sounded. A major finding was that women were happier than men when they were at

their out-of-home job, and men were happier than women when they were doing chores around the house, such as cooking or cleaning.[1]

The researchers interpreted this finding as a reflection of the element of choice. At least at the time that the study was done, out-of-home work was regarded as more of a necessity for men than for women. Men often felt burdened by such work, because they felt they had no choice about it. It was their duty to participate in the "rat race" to support their families. Women, in contrast, were relatively more likely to feel that out-of-home employment was a liberating choice, not a duty, and this feeling helped to endow their work with a quality of play. For housework the opposite was true. Women felt little choice about cleaning, cooking and the like, so they often reported themselves as angry or bored while engaged in those tasks. Men, in contrast, were more likely to feel that their domestic work was optional. They were gallantly helping out at home, doing something that was not their ultimate responsibility.

As Larson and his colleagues noted, the findings fit with a certain gender stereotype, which may still hold at least a grain of truth in our culture. Men "slave" at work and come home to enjoy themselves. Women "slave" at home and go out to enjoy themselves.

The broader point here is that, regardless of the kind of work we do, the more we can adopt the attitude that we don't really have to do this work, the more we can experience the work as play. Slavery is outlawed now, so at least in theory all of us should have the opportunity to choose the work by which we earn our income, though I recognize that economic conditions can sometimes make this difficult.

Schoolchildren, of course, experience no freedom about being in school or not. They are required by law to be there. That is one reason why schoolchildren rarely experience their schoolwork as play. We do not, in our society, provide the same basic freedoms for children that we do for adults.

(b & c) Work Can Be Self-Directed and Creative.

Players are free agents. They not only choose freely to play the game or not, but they also choose how to play it. They must follow the rules, but within the guidelines of the rules each move must be their own. Players are not cogs in a machine that is controlled by someone else. It is not surprising, therefore, that workers who are free to make their own on-the-job decisions are much more likely to experience their work as play than are those who do not have such freedom. Nothing sucks the play out of work more than does a micromanaging boss.

One reason why children experience their schoolwork as the opposite of play derives from the close supervision of that work. Schoolchildren, more than almost any employed workers I know of, are under the constant thumb of their bosses (teachers, in this case). They are told just what to do, just how to do it, and just when to do it; and every detail of what they do is judged and evaluated by criteria that are not their own. Work of this sort truly is the opposite of play. But in the real world outside of school, in places where slavery is forbidden, people are never so tightly controlled.

In a classic study of work satisfaction, sociologist Melvin Kohn and his colleagues identified a highly desired constellation of job characteristics that they referred to as *occupational self-direction*. Jobs high in this quality are those that are (a) complex rather than simple, (b) varied rather than routine, and (c) not closely supervised by others.[2]

These, of course, are precisely the characteristics that call for a high degree of on-the-job decision-making and creativity. Kohn and his colleagues found that self-direction was desired and enjoyed as much in blue-collar employment as in white-collar employment. Although the researchers did not describe their findings in terms of play, from my perspective occupational self-direction is crucial to the playfulness of work. Whether you are a plumber or a lawyer, you will experience your job as play to the degree that it entails lots of occupational self-direction.

Kohn and his colleagues discovered that workers who went from a job low in occupational self-direction to one high in that quality not only experienced more pleasure at work but also changed psychologically over time. They became more flexible, less rigid, in their home life and hobbies as well as in their work life. Their parenting styles became more democratic, less autocratic. They began to value creativity and autonomy in their children above blind obedience. In other words (my words, not Kohn's), their whole outlook toward life became more playful than it was before.

(d) Work Can Be Intrinsically Motivated.

Play is intrinsically motivated; that is, it is activity that is done for fun rather than for some end that it produces. Play may have ends, but it is the process of achieving the ends, not the ends themselves, that is most valued. It is the creation of the sandcastle, not the sandcastle once created, that players on the beach enjoy. It is the process of scoring points or trying to score them, not the points once scored, that pleases tennis players, if they are truly playing. In other words, in play the activities themselves are the source of pleasure; any product that may emerge is a side effect.

Work can never be completely intrinsically motivated. By definition, the purpose of work is to produce some valued end--such as repairing the plumbing or creating a successful trial defense for a client, and /or producing a paycheck to bring home to support yourself and family. But extrinsic motivation and intrinsic motivation are not mutually exclusive. You can work for a valued end while still focusing on and enjoying the process. To the degree that you focus on the process, your work is play.

In my employment as an author, writing is a burden if I concentrate just on the end--the published piece or the royalties I might earn. When I take that attitude, the writing itself is just a necessary means to an end. In that case I find it hard to start, and once I do start the writing drags along. Writing then is toil, not play. To make writing play, I must remove my focus from the end. I don't totally forget the end, of course, but I put it on a shelf in the back of my mind, so I can focus my attention on the process--the process of generating ideas and crafting phrases with which to express them. I can even convince myself that the end doesn't matter; writing is such fun that it is worth doing even if the piece is never published, never has any effect on the world, and never earns a cent. Ironically, when I succeed in taking this playful attitude, the end result is far better than when I don't. And the same is true for other tasks I do, including laundry, cooking, and lawn maintenance.

When we are exclusively goal oriented, we view the activity required to achieve the goal as a necessary evil, so we perform it in the most minimal way that we think will be acceptable. We do just enough to earn the paycheck, or to satisfy the boss, or to produce a meal that our family won't reject. In school we do just enough to get an "A" or whatever grade we have chosen as our goal. In contrast, when we allow ourselves to become absorbed in the process as play we sometimes achieve far more. For shear fun we may do much more than is needed to produce the originally

envisioned product; and the product, as a result, may be far better. It may even become an artistic creation. That can be true whether the product is repaired plumbing, a mowed lawn, a meal, a legal brief, or an essay.

(e) Work Can Entail an Alert, Focused, but Non-Distressed Mental State.

This final characteristic follows naturally from the others. The decision-making, creativity, and focus on process that characterize play require and produce mental alertness. The reduced focus on ends and on others' evaluations reduces or eliminates our fear of failure. For most of us, our work does not have life-or-death consequences, so fears we have about failure are likely to be exaggerations. However, even for people such as surgeons, or fire fighters, or police officers, whose work can have life-or-death consequences, a focus on process reduces the sense of distress and increases the chance of a successful outcome.

What might we do as a society to increase the playfulness and reduced the burden of work? Here is where I think we have lots to learn from hunter-gatherer societies. Tune in next week.

Notes & References

*Some of the hyperlinks in these postings are automatically generated and may or may not connect you to sites that are relevant. To distinguish the links that I have generated from the automatic ones, I have marked mine with asterisks.

[1] Larson, R. J., Richards, M. H., & Perry-Jenkins, M. (1994). Divergent worlds: The daily and emotional experience of mothers and fathers in the domestic and public spheres. *Journal of Personality and Social Psychology, 67*, 1034-1046.

[2] Kohn, M. L. (1980). Job complexity and adult personality. In N. J. Smelser & E. H. Erikson (Eds.), *Theories of work and love in adulthood*. Cambridge, MA: Harvard University Press. Also, Kohn, M. L., & Slomczynski, K. M. (1990). *Social structure and self-direction: A comparative analysis of the United States and Poland*. Cambridge, MA: Basil Blackwell.

Play Makes Us Human V: Why Hunter-Gatherers' Work is Play

Hunter-gatherers made work play by making it optional.

Published on July 2, 2009 by Peter Gray in Freedom to Learn

Our word *work* has two meanings. It can mean any unpleasant activity; or it can mean any productive or useful activity, regardless of its pleasantness or unpleasantness. The first of these meanings is the opposite of play; the second is not. We use the same word for the two meanings, I suppose, because in our culture's history the two meanings have so often overlapped. Productive activity conducted by slaves, servants, and hired hands with no sense of choice about what they are doing indeed is work in both senses of the term.

To keep the two concepts distinct, so we can think about them separately, let's use the term *toil* for the first meaning (unpleasant activity) and *work* for the second. With this terminology, toil is the opposite of play, but work is not. Work can be toil, or it can be play, or it can lie anywhere on a continuum between the two.

In *last week's essay* I described the characteristics of work, and the attitudes toward it, that allow many people in today's society to experience their work as play. Now I want to expand on those ideas by describing hunter-gatherers' toil-less manner of sustaining themselves.

As I noted in the *introductory essay*, this whole series on "Play Makes Us Human" was inspired by my immersion in the research literature on hunter-gatherer band societies. Wherever they have been studied--in isolated parts of Africa, Asia, South America, Australia, and elsewhere--such societies have been found to be extraordinarily playful. Today, such societies are mostly destroyed, or in transition to something quite different, but I use the present tense (sometimes called the "anthropological present") to describe them, as remnants of them do still exist. In past essays I have shown *(a)* how hunter-gatherer children educate themselves through play; *(b)* how hunter-gatherers use play and humor to maintain a social and economic system founded on principles of sharing, cooperation, individual autonomy, and equality; and *(c)* how playfulness runs through hunter-gatherers' religious beliefs and practices in ways support their egalitarian approach to life.

In general, hunter-gatherers do not have a concept of toil. When they do have that concept, it derives apparently from their contact with outsiders. They may learn a word for toil to refer to the work of their neighboring farmers, miners, or road construction workers, but they do not apply it to their own work. Their own work is simply an extension of children's play. Children play at hunting, gathering, hut construction, tool making, meal preparations, defense against predators, birthing, infant care, healing, negotiation, and so on and so on; and gradually, as their play become increasingly skilled, the activities become productive. The play becomes work, but it does not cease being play. It may even become more fun than before, because the productive quality helps the whole band and is valued by all.

My reading about life in many different hunter-gatherer cultures has led me to conclude that their work is play for four main reasons: (1) It is varied and requires much skill and intelligence. (2) There is not too much of it. (3) It is done in a

social context, with friends. And (4) (most significantly) it is, for any given person at any given time, optional. Let me expand on these, point by point.[1]

Hunter-Gatherer s' Work is Playful Because It is Varied and Requires Much Skill, Knowledge, and Intelligence.

Except for the general distinction between men as hunters and women as the primary gatherers (a distinction that holds for most but not all hunter-gatherer societies), hunter-gatherers do not specialize. Everyone is involved in most of the society's economic activities. Moreover, most of these activities require great skill, knowledge, and decision-making ability.

Anthropologists have marveled at the enormous skill and intelligence shown by hunter-gatherers in their hunting. The tools of hunting--such as bows and arrows, blowguns and darts, spears, or nets--must be crafted to perfection; and skill in using those tools effectively must be developed through years of play with them. Hunters must also learn the habits of the perhaps two to three hundred different species of mammals and birds that they hunt, which the children do in part through games of imitating the animals around them. They learn to identify each animal by its sounds and tracks as well as by its sight.

A book has been written on the thesis that the tracking of game by hunters marked the origin of what we today call science.[2] Hunters use the marks they see in the sand, mud, or foliage as clues, combined with their accumulated knowledge from past experience, to develop and test hypotheses about such matters as the size, sex, physical condition, speed of movement, and time of passage of the animal they are tracking. In describing the tracking abilities of the Ju/'hoansi hunter-gatherers of Africa's Kalahari Desert, Alf Wannenburgh wrote: "Everything is noticed, considered, and discussed. The kink in a trodden grass blade, the direction of the pull that broke a twig from a bush, the depth, size, shape, and disposition of the tracks themselves, all reveal information about the condition of the animal, the direction it is moving in, the rate of travel, and what its future movements are likely to be."[3]

The gathering of vegetable foodstuffs likewise requires great knowledge and skill. Hunter-gatherers must know which of the countless varieties of roots, tubers, nuts, seeds, fruits, and greens in their area are edible and nutritious, when and where to find them, how to dig them (in the case of roots and tubers), how to extract the edible portions efficiently (in the case of grains, nuts, and certain plant fibers), and in some cases how to process them to make them edible or more nutritious than they otherwise would be. These abilities include physical skills, honed by years of practice, as well as the capacity to remember, use, add to, and modify an enormous store of culturally shared verbal knowledge.

In our society, too, work that is varied, that requires much skill and knowledge, and that involves much decision-making is enjoyed far more and considered more play-like than work that is simply routine. The assembly line is the enemy of playful work. Fortunately, with robots to do assembly work, the least playful sorts of jobs are largely behind us and we are moving toward a world in which most work, once again, has the potential to be play.

Hunter-Gatherers' Work is Playful Because There Isn't too Much of It.

Anthropologists have often pointed out that hunter-gatherers' work is skill-intensive but not labor-intensive. Research studies suggest that hunter-gatherers' work somewhere between 20 and 40 hours a week, on average, depending on just what you count as work. Moreover, they do not work according to the clock; they work when the time is ripe for the work to be done and when they feel like it. There is ample time in hunter-gatherers' lives for leisure activities, including games of many sorts, playful religious ceremonies, making and playing musical instruments, singing, dancing, traveling to other bands to visit friends and relatives, gossiping, and just lying around and relaxing. The life of the typical hunter-gatherer looks a lot like your life and mine when we are on vacation at a camp with friends.

It's amazing when you think about it. During the 10,000 years since the onset of agriculture and then industry, we have developed countless laborsaving devices, but we haven't reduced our labor. Today, most people spend more time working than did hunter-gatherers, and our work, on average, is less playful.

Hunter-Gatherers' Work is Playful Because It Is Done in a Social Context, with Friends.

We are a highly social species. We like to be with other people, especially with those we know well; and we like to do what our friends do. Hunter-gatherers live very social lives. Nearly all of their activity is public. Most of their work is done cooperatively, and even that which is done individually is done in social settings, with others around. And--because hunter-gatherers are highly mobile people, who move to another band if they don't like the people they are currently living with--their bands are truly friendship groups. In general, anything that we humans do with friends has more of a spirit of play than things we do alone or with collaborators who aren't really friends.

Men usually hunt in ways that involve teamwork; and women usually forage in groups. Concerning the latter, Wannenburgh wrote, of the Ju/'hoansi bands he studied, "In our experience all of the gathering expeditions were jolly events. With the [Ju/'hoansi's] gift of converting chores into social occasions, they often had something of the atmosphere of a picnic outing with children."[4] In a description of the means by which Batek people choose tasks and form work groups each day, Kirk Endicott wrote: "They may be entirely different groups from those of the previous day, for the Batek like variety both in their work and their companions."[5]

Hunter-Gatherers' Work is Playful Because Each Person Can Choose When, How, and Whether to Do It.

And now I reach the most crucial ingredient of play--the sense of choice. Play, by definition is optional; it is something that we choose to do, not something that we have to do. How do hunter-gatherers maintain the sense of choice about the work they do?

Clearly, in an ultimate sense, hunter-gatherers' work is not optional. As a band, they must hunt, gather, make tools, build huts, and so on if they are going to survive. However, for any given person, on any given day, these for the most part are optional. As I noted in an earlier essay, hunter-gatherers everywhere maintain an extraordinary ethic of personal autonomy, to a degree that may seem radically extreme by our standards. They deliberately avoid telling each other how to behave, in work as in any other context. Each person is his or her own boss.

On any given day at a hunter-gatherer camp, a hunting or gathering party may form. The party is made up only of those who want to hunt or gather that day. That group decides collectively where they will go and how they will approach their task. Anyone made unhappy by the decision is free to form another party, or to hunt or gather alone, or to stay at camp all day, or to do anything at all that is not disruptive to others. There is no retribution for backing out. A person who doesn't hunt or gather will still receive his or her share of whatever food is brought back. By adopting this strategy, hunter-gatherers avoid being held back, in their foraging, by someone who is there only begrudgingly and has a bad attitude about it. And because they adopt this strategy, all members of the band can experience their hunting and gathering as play.

On any given day, a band member may join a foraging group, or visit friends in another camp, or just stay in camp and relax, depending on what he or she feels like doing. Such freedom does open up the possibility of free-riding by individuals who choose not to hunt or gather over an extended period of time, but such long-term shirking apparently happens rarely if at all. It is exciting to go out hunting or gathering with the others, and it would be boring to stay in camp day after day. The fact that on any given day the work is optional and self-directed keeps it in the realm of play. I'm sure that the perceived necessity to obtain food and accomplish other essential tasks influences people's decisions about what to do, but the sense of necessity does not dominate, on a day-to-day basis, and therefore does not destroy the sense of play.

The genius of hunter-gatherer societies, from my perspective, lies in their abilities to accomplish the tasks that must be accomplished while maximizing each person's experience of free choice, which is essential to the spirit of play. They manage to accomplish that through their extraordinary willingness to share everything, which removes any immediate link between work and the receipt of life's necessities. Even the most industrious and successful hunters and gatherers receive no more of the food brought back to camp on a given day than does anyone else in the band.

What a different attitude they have than we! To us it seems almost sinful that someone who does less work than others should receive as much of the bounties as anyone else. But that is *because* we think of work as toil. If produce requires toil, then those who toil the most should get the most. If someone is lazy and doesn't toil, they should not get the rewards. That's our concept of justice, and it's a reasonable one. But now, what if we thought of work as play, something that we want to do just because it's fun. With that attitude, why should those who get the most intrinsic rewards from play--because they enjoy it so much, and are so skilled at it, and therefore participate in it the most--also reap the most extrinsic rewards from it?

Economists and behavioral psychologists alike tend to think of life as a matter of give-and-take, cost-and-benefit, effort-and-reward. From this view, work is what you do for a benefit. If someone gets the benefit without having done the work, something is wrong. Economists and behavioral psychologists often talk of this as if it is essential human nature. But they are wrong. As far as we can tell, hunter-gatherers were living as they do now--without a concept of reward for work done--for hundreds of thousands of years before the advent of agriculture. They did not conceive of life in terms of cost and benefit. They saw it, instead, as a playful adventure. You do things because they are fun, and you share the bounty with everyone you know, regardless of what those people have been doing. Precisely because of that attitude, people willingly and joyfully did the work that needed to be done, all as part of play.

One way of thinking about all this involves the concept of trust. Hunter-gatherers simply trust that, as long as work is play and as long as people are treated well and are truly free to make their own decisions, the great majority of people will quite gladly contribute to the band in the ways they can.

I'm not suggesting that we can import the hunter-gather approach whole cloth into our current culture. I'm sure that can't be done. But there are areas where this way of thinking would make life more fun for all of us. Think about it. When I approach my work with others as play I don't mind doing more than the others, for no more extrinsic rewards than they get. The rewards of play lie in the doing, not in the end.

Notes & References

*Some hyperlinks in these postings are automatically generated and may or may not link you to sites that are relevant. To distinguish the links that I have generated from the automatic ones, I have marked mine with asterisks.

[1] Documentation for the points made in the following paragraphs can be found in my article, *"Play as the foundation for hunter-gatherer social existence," American Journal of Play, 1, 476-522, 2009.* In these paragraphs I have used some of the same wording that I used in that article.

[2] Louis Liebenberg, *The Art of Tracking: The Origin of Science* (1990).

[3] Alf Wannenburgh, *The Bushmen* (1979), p 41.

[4] Wannenburgh, *Bushmen*, p 30.Hu

[5] Kirk Endicott, *Batek Negrito Religion* (1979), p 16.

Play Makes Us Human VI: Hunter-Gatherers' Playful Parenting

Playful parenting is founded on trust.

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Have you ever noticed how we, as a society, use agricultural metaphors to talk about parenting and education? We speak of *raising* children, just as we speak of raising tomatoes or chickens. We speak of *training* children, just as we speak of training horses. Our manner of talking and thinking about parenting suggests that we own our children, much as we might own domesticated plants and livestock, and that we control how they grow and behave. We train horses to do the tasks that we want them to do, and we train---or try to train---children to do the tasks that we think will be necessary for their future success. We do that whether or not the horse or child wants such training. Training requires suppression of the trainee's will, and hence of play. The agricultural approach to parenting is, therefore, not a playful one.

Our society's concepts of raising and training children assume a dominant-subordinate relationship between parent and child. The parent---or teacher or other parent substitute---is in charge and is responsible for the child's actions. The child's primary duty, at least in theory, is to obey. This aproach to parenting seems so natural to us that it may be hard to imagine an alternative. Yet, in the context of our long history as a species, it is new. It came with agriculture, which first appeared about 10,000 years ago. Before that, we were all hunter-gatherers and we had no agricultural metaphors to guide our parenting practices.

In this series of essays, on "Play Makes Us Human," I have been describing the social values and practices of band hunter-gatherer societies. My thesis has been that an expansion of the primate play drive in our species enabled our ancestors to adopt a far more social and cooperative style of life than that manifested by other primates (see June 4, 2009, post). Hunter-gatherers seemed to use play and humor more or less deliberately to suppress tendencies toward dominance and to foster the sense of personal freedom and equality that was essential to their livelihood. In past essays I have talked about hunter-gatherers' playful approaches to (a) government, (b) religion, and (c) productive work. Now, in this essay, I describe their playful approach to parenting.[1]

First, to give you a sense of hunter-gatherers' parenting philosophy, here is a sample of quotations from anthropologists and others who have lived in various hunter-gatherer societies and observed them closely:

• "Hunter-gatherers do not give orders to their children; for example, no adult announces bedtime. At night, children remain around adults until they feel tired and fall asleep. ... Parakana adults do not interfere with their children's lives. They never beat, scold, or behave aggressively with them, physically or verbally, nor do they offer praise or keep track of their development." (Yumi Gosso et al., "Play in Hunter-Gatherer Societies," in A. D. Pellegrini & P. K. Smith (Eds.), *The Nature of Play: Great Apes and Humans*, 2005, p 218.)

• "The idea that this is ‘my child' or ‘your child' does not exist [among the Yequana, of South America]. Deciding what another person should do, no matter what his age, is outside the Yequana vocabulary of behaviors. There is great interest in what everyone does, but no impulse to influence--let alone coerce--anyone. The child's will is his motive force." (Jean Liedloff, *The Continuum Concept, Revised Edition*, 1977, p 90.)

• "Aborigine children are indulged to an extreme degree, and sometimes continue to suckle until they are four or five years old. Physical punishment for a child is almost unheard of." (Richard A. Gould, *Yiwara: Foragers of the Australian Desert*, 1969, p 90.)

• "Infants and young children [among Inuit hunter-gatherers of the Hudson Bay area] are allowed to explore their environments to the limits of their physical capabilities and with minimal interference from adults. Thus if a child picks up a hazardous object, parents generally leave it to explore the dangers on its own. The child is presumed to know what it is doing." (Lee Guemple, "Teaching Social Relations to Inuit Children," in T. Ingold, D. Riches, & J. Woodburn (Eds.), *Hunters and Gatherers 2*, 1988, p 137.)

• "Ju/'hoansi children [of Africa] very rarely cried, probably because they had little to cry about. No child was ever yelled at or slapped or physically punished, and few were even scolded. Most never heard a discouraging word until they were approaching adolescence, and even then the reprimand, if it really was a reprimand, was delivered in a soft voice." (Elizabeth Marshall Thomas, *The Old Way*, 2006, p 198.)

You might think that such indulgence would lead to spoiled, demanding children, who would grow up to be spoiled, demanding adults. But according to the anthropologists who lived among them, nothing could be further from the truth. Here is what Thomas (*Old Way*, p 198-199) has to say about that: "We are sometimes told that children who are treated so kindly become spoiled, but this is because those who hold that opinion have no idea how successful such measures can be. Free from frustration or anxiety, sunny and cooperative, the children were every parent's dream. No culture can ever have raised better, more intelligent, more likable, more confident children."

Based on my reading of anthropologists' writings about many hunter-gatherer cultures, I would characterized hunter-gatherer parenting in the following way:

1. *Hunter-gatherers love their children as much as we love ours*. They rejoice at births, grieve at children's deaths, and enjoy their children as do we.

2. *Hunter-gatherers protect young children from serious dangers, but are not overprotective*. Hunter-gatherers recognize that they must arrange their environment in certain ways to protect infants and very young children. For example, those who hunt with poisoned arrows store the arrows high up, out of young children's reach. Concerning less serious dangers, however, hunter-gatherers believe it is best to let young children explore as they wish rather than restrict their exploration. For example, it is not uncommon to see toddlers poking sticks into the campfire or playing with sharp knives. Hunter-gatherers' experience is that toddlers rarely hurt themselves in these activities and that such risk is outweighed by the advantage of learning, early on, how to handle such objects. The adults believe, further, that by the time children begin to prefer the company of other children to that of adults (at about four years old), they have enough common sense to make their own decisions about what is safe or unsafe. Children of that age and older play in age-mixed groups, often some distance from adults.

3. *Hunter-gatherers trust their children*. Anthropologists commonly use the term *indulgence* to characterize the hunter-gatherer style of parenting, but I think the more fundamental concept here is *trust*. Parents indulge children's desires because they trust children's instincts and judgments. They believe that children know best what they need and when they need it, so there are no or few battles of will between adults and children. If an infant cries or shows even a lesser sign of distress, any adult or older child nearby responds immediately to see what is the matter and to help solve the problem. The assumption is that the infant would not communicate a need for help unless it needed help.

Hunter-gatherers believe that the instinctive drives of children to explore are balanced by instinctive fears and by knowledge of their own abilities and limitations, which lead them to temper their explorations with appropriate caution. Four-year-olds will not, on their own, wander into unfamiliar territory without the company of an older child or an adult. Children of any age will not try to leap chasms that they are physically unable to leap. Children are constantly taking risks to expand the limits of what they can do, but the risks are small. Children are designed by nature (today we would say by natural selection) to do all this, so they will learn how to cope with serious dangers when they occur.

Concerning education, hunter-gatherers trust that children and adolescents will figure out what they need to learn and will learn it through their own drives to observe, explore, and play with all relevant aspects of their environment (see my Aug. 2, 2008, post). They trust, further, that when young people are ready to start contributing in meaningful ways to the band's economy, they will do so gladly, without any need for coercion or coaxing.

Such trust, I think, becomes a self-fulfilling prophecy. People who are trusted from the very beginning usually become trustworthy. People treated in this way do not grow up to see life as a matter of trying to overpower, outsmart, or in other ways manipulate others. Rather, they grow up viewing life in terms of friendships, that is, in terms of people willingly and joyfully helping each other to satisfy their needs and desires. That is the attitude that I have been describing throughout this series as the playful approach to life--the approach that brings out the best aspects of our humanity.

Play, as I have said repeatedly in this series, requires individual freedom. Play is no longer play when one person attempts to dominate another and dictate what they do. If life is a grand game, then each player must be free to make his or her own moves, while still abiding by the general rules of the game--in this case by the larger rules of society, which apply to everyone. To interfere with the players' abilities to make choices is to destroy the game for them. Social interaction, learning, productive work, and religious practices become burdensome toil rather than joyful play when they are enforced and controlled by others. By refraining from using their greater physical strength or mental prowess to control children's (or anyone else's) behavior, hunter-gatherer adults refrain from destroying the sense of play in their children and in themselves.

Play requires a sense of equality, and hunter-gatherers are remarkably able to retain that sense even in their interactions with young children. Young children are clearly not as strong, skilled, or knowledgeable about the world as are older children or adults; but their needs and desires are equally legitimate, and nobody knows what a child needs or desires better than the child himself or herself. Hunter-gatherers seem to understand these truths better than do most people in our society today.

Why did the approach to parenting change with the advent of agriculture? It wasn't just that new metaphors became available. Rather, the goal of parenting changed--from that of fostering the child's will to that of suppressing the child's will--because the perceived needs of society changed. In next week's essay I'll say more about that, and why it happened, and then talk about ways by which we, in our culture today, might adopt a more playful style of parenting.

Notes

*Some of the hyperlinks in these postings are automatically generated and may or may not link you to sites that are relevant. Author-generated links are underlined to distinguish them from the automatic ones.

[1] The theme of this essay, and some of the wording, is taken from my recently published article, "Play as the foundation for hunter-gatherer social existence," American Journal of Play, 1, 476-522, 2009.

Trustful Parenting: Its Downfall and Potential Renaissance

Can we complete a historical circle by reviving trustful parenting?

Published on July 16, 2009 by Peter Gray in Freedom to Learn

Parenting, like essentially all human behaviors, must be understood in the context of the culture in which it is embedded. Parenting styles derive from broader cultural values, and they help to perpetuate those values.

In my last post, I talked about hunter-gatherers' *playful* style of parenting. That essay was part of a series on hunter-gatherers' playful approach to all of social life. I used the term *playful* there to refer to an attitude of treating others as equals rather than as superiors or subordinates. In the series I contrasted hunter-gatherers' playful approaches to government, religion, productive work, and parenting to the more dominance-based approaches that have held sway in all subsequent cultures.

In play, nobody may dominate the behavior of another person; each player must be allowed to make his or her own decisions, within the boundaries set by the rules of the game, and all must have a say in establishing the rules. A playful style of parenting, then, is one in which parents do not attempt to dominate children's behavior, but rather allow children maximal freedom to make their own moment-to-moment and day-to-day decisions. Playful parents allow their children to make their own decisions because they *trust* their children's instincts and judgments.

In this essay I use the term *trustful parenting*, rather than playful parenting, to describe the hunter-gatherers' parenting style, because its meaning is more obvious. Trustful parents do not measure or try to guide children's development, because they trust children to guide their own development. They support, rather than guide development, by helping children achieve their own goals when such help is requested and needed. My aims in this essay are to explain why trustful parenting worked so well for hunter-gatherers, why it was replaced by directive parenting in agricultural and industrial societies, and why conditions may now be ripe for a rebirth of trustful parenting.

Trustful parenting was well suited to the hunting and gathering way of life.

As I pointed out in previous posts, hunter-gatherers held strongly to the values of individual freedom and equality, which fostered the cooperation, sharing, individual initiative, and creativity required to sustain life in a world where there was no accumulation of property or long-term storage of food. Hunting and gathering themselves require much creativity and decision-making; they are not done well by people who feel compelled by others to do them. The hunting and gathering way of life also requires self-assertion. In a society where group decisions are made through long discussions leading to consensus, in which everyone has a say, it is essential that everyone feel free to assert their ideas and wishes and be competent in doing so. Trustful parenting was the ideal means to create the ideal hunter-gatherer.

Trustful parenting sends messages to children that are consistent with the needs of hunter-gatherer bands: *You are competent. You have eyes and a brain and can figure things out. You know your own abilities and limitations. Through your self-directed play and exploration you will learn what you need to know. Your needs are valued. Your opinions count. You are responsible for your own mistakes and can be trusted to learn from them. Social life is not the pitting of will against will, but the helping of one another so that all can have what they need and most desire. We are with you, not against you.*

The experience of hunter-gatherers was that people who grew up in this way usually became highly competent, cooperative, non-domineering, cheerful, valued members of their society. They contributed to their bands not because they felt forced to, but because they wanted to, and they did so with a playful spirit. One group of anthropologists, writing many years ago, summed all this up as follows: "The successful forager . . . should be assertive and independent and is so trained as a child."[1]

With the rise of agriculture, parental styles shifted from trusting to directive and domineering.

Agriculture, invented a mere 10,000 years ago, dramatically changed the conditions of human life. The value of agriculture, of course, was that it could produce more food and sustain more people in less space than could hunting and gathering. The costs, however, were severe constraints on human freedom.

With agriculture came land ownership and accumulation of property, and with that came the need to remain with one's property and to protect it, sometimes by violent means. Also, and even more significantly, agriculture produced labor. While hunting and gathering required personal initiative, skill, intelligence, creativity, and a playful spirit, much of the work of agriculture was routine and could be done by unskilled laborers. Agriculture also resulted in larger families; with more mouths to feed, children had to work--in the fields and at childcare--to help support themselves and their siblings. With all this came the breakdown of the hunter-gatherer ideals of equality and freedom.

Agriculture set the conditions for dominance relationships and inequality. People who did not own land--including children and nearly all women--became dependent on people who did own land. Landowners became lords and masters, and those without land became servants and slaves. Ultimately, throughout much of the world, this led to feudal societies in which few were lords and masters and the great majority were servants and slaves. Not surprisingly, such changes dramatically altered social values. Religions, for example, changed from being playful and egalitarian to being deadly serious and hierarchical, with messages of obedience rather than freedom (see June 18, 2009 post). Clearly, in the context of all of this, the approach to parenting also had to change.

While hunter-gatherers needed to be independent and assertive in order to survive, most post-hunter-gatherers needed to be obedient in order to survive. And so, the goal of parenting for most people became that of producing obedient and subservient children. While hunter-gatherers parented in ways designed to enhance independence and willfulness, early agriculturalists and people in feudal times parented in ways designed to suppress these qualities. Physical beating of children was a regular and widely approved of means of doing this. Children who did not work as much as they were told to work were beaten. Children who acted uppity toward their fathers or other masters were beaten. Adult women and servants were also commonly treated in this way.

Many research studies have demonstrated this relationship between economic livelihood and style of parenting. For example, one large-scale statistical study published 50 years ago revealed a strong correlation between the degree to which a culture's subsistence depended on agriculture, rather than hunting and gathering, and the degree to which its parenting practices were directed toward obedience rather than self-assertion.[2]

The rise of industry led, if anything, to even more suppression of children's willfulness and independence. Early industry, even more so than agriculture, was labor intensive, and children provided a good share of the labor. Children as well as adults toiled long hours, under dismal conditions, and children were often beaten to keep them on task. Most people continued to depend on masters, but now the masters were lords of the factories rather than lords of the land.

It is reasonable to suppose that parents in early agricultural and industrial societies who attempted to beat their children into submission were acting for their children's own good. To survive in conditions where survival requires obedience, you really do need to suppress your own will and learn to do, unquestioningly, what you are told. But such parenting was never fully successful. By nature, all people are willful, creative, and playful. The hunter-gatherer way is the natural human way. It is impossible to beat that completely out of anyone. That is why there were always rebellions and uprisings, even at the risk of death. People cannot be trained to be ants.

Modern conditions have fostered a directive-protective style of parenting.

Today many if not most people are repelled by the idea of beating children into submission. Today initiative, creativity, and self-assertion are generally valued in children. In today's world, we see that obedience is not enough. Non-skilled labor has declined, replaced by machines, and people must be creative and self-directed to figure out ways to support themselves. Many of the values espoused by hunter-gatherers are espoused regularly by people today.

But we have not as a culture revived the hunter-gatherers' trustful style of parenting. Instead, we have replaced the directive-domineering parenting of feudal and early industrial forebears with a new kind of directive style, a *directive-protective* style. For a variety of reasons we have come to see childhood as a highly fragile period of development. Experts are constantly telling us of the things we must protect our children from. We have come to believe that children lack the competence to make their own decisions; they must be nurtured carefully and brought along gradually to a stage at which, some day, they will have that competence.

We are told that we must protect children from all sorts of accidents, which means serious restrictions on their forms of play and exploration. We must protect them from diseases, which can be contracted from almost anything they do. We must protect them from predatory adults presumed to be lurking in every neighborhood, and from the harmful influences of peers and of older children or adolescents. We must protect them from their own foolishness; we read regularly of new data purported to prove that children and especially adolescents are, for biological reasons, knuckleheads. We must protect children's fragile self-esteems through constant, increasingly meaningless praise, by attending their games (which we arrange for them) and cheering for them, and by trying to arrange their lives so they never fail. And we must protect their futures, as we are told we can, by forcing them through more and more years and daily hours of an educational system that they do not embrace and does not speak to their real needs and concerns.

With all this, and with all good intentions, we deprive children today of freedom at least as much as did parents in feudal and early industrial societies. We don't beat children, but we use all the other powers that we have as their providers to control their lives.

What would it take to revive the trustful parenting style?

Many parents would like to adopt a more trustful style, but find it hard to do so. The voices of fear are loud and incessant, and the fears are never completely unfounded. They can't be completely dismissed. Terrible accidents do happen; adult predators do exist; delinquent peers can have harmful influences; children and adolescents (like people of all ages) do make mistakes; and failure can hurt. We are also, by nature, conformists. It is hard to swim against the current and risk the negative judgments of our parenting peers. Yet, some do swim against the current, and the number swimming that way may change the river's direction.

Over the course of the next two or three posts I'll address directly the question posed in boldface above. I'll talk about the trustful parenting that I experienced as a child and about the challenges of trustful parenting today and ways of meeting those challenges.

Notes

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[1] Devore, Murdock & Whiting (1968). In Richard B. Lee & Irven DeVore, *Man the Hunter*, p 337.

[2] Barry, Child, & Baron (1959), "Relation of Child Training to Subsistence Economy," *American Anthropologist, 61*, 51-63.]

Hillary Clinton's and My Wonderful Childhoods: Trustful Parenting Continued

Because our parents trusted us, Hillary and I learned responsibility.

Published on July 22, 2009 by Peter Gray in Freedom to Learn

In my last post I talked about an historical change in parenting over the long sweep of human history. I described the *trustful* parenting of hunter-gathers, the *directive-domineering* parenting of medieval and early industrial times, and the *directive-protective* parenting that predominates in our culture today. What I neglected to say there is that the directive-protective parenting style is largely a very recent development. Now, in this post and the next, I describe an historical change in parenting that has occurred within the past few decades.

The first sixty years or so of the twentieth century was a period of expansion of children's freedom, at least in North America and Western Europe. Both adults and children gained more free time, as labor unions helped workers achieve shorter workweeks and child labor declined; and parenting styles became more liberal and liberating, less aimed at obedience training, than they had been before. The 1950s and early 1960s were, in some ways, a golden era for children. People around my age, myself included, often, and for good reasons, wax nostalgic about the freedom we enjoyed as children, in contrast with the highly controlled lives of children today.

Hillary Rodham Clinton's Childhood

One such person is Hillary Rodham Clinton. Here, in her own words, is a description of her childhood and her regret about the lives of children today: [1]

"I was born in Chicago, but when I was about four, I moved to where I grew up, which was Park Ridge, Illinois. It was your typical 1950s suburb. Big elm trees lined the streets, meeting across the top like a cathedral. Doors were left open, with kids running in and out of every house in the neighborhood.

"We had a well-organized kids' society and we had all kinds of games, playing hard every day after school, every weekend, and from dawn until our parents made us come in at dark in the summertime. One game was called chase and run, which was a kind of complex team-based hide-and-seek and tag combination. We would make up teams and disperse throughout the entire neighborhood for maybe a two- or three-block area, designating safe places that you could get to if somebody was chasing you. There were also ways of breaking the hold of a tag so that you could get back in the game. As with all of our games, the rules were elaborate and they were hammered out in long consultations on street corners. It was how we spent countless hours. …

"We had so much imaginative game-playing time—just unstructured fun time. I had the best, most wonderful childhood: being outside, playing with my friends, being on my own, just loving life. When I was a kid in grade school, it was great. We were so independent, we were given so much freedom. But now it's impossible to imagine giving that to a child today. It's one of the great losses as a society. But I'm hopeful that we can regain the joy and experience of free play and neighborhood games that were taken for granted growing up in my generation. That would be one of the best gifts we could give our children."

Snippets from My Own Childhood

I, too, have wonderful memories of childhood freedom. Here are just a few examples.

I grew up mostly in small towns in Minnesota and Wisconsin. My mother was an adventurous person, always seeking new jobs and new challenges, and that is why we moved frequently when I was a child. Every town we moved to had its own kids' culture, and the great challenge to me, each time we moved, was to learn to do well the things that kids in that town did, so I could fit into the social group. Here are just a few of my memories, from three different towns:

Monterey, Minnesota: bicycle freedom at age 5

At about the time I turned five, my family moved to a little town called Monterey, on the southern border of Minnesota. Monterey no longer exists; it merged in 1959 with the neighboring town of Triumph to form a new town, Trimont. My most prominent memories from Monterey involve bicycling. My best friend there was Ruby Lou, a girl one year older than I who lived across the street. When I was five and she was six, she taught me how to ride her bicycle. It was a two-wheeler, with no training wheels. The street that separated our houses was on a small hill, and she showed me how riding downhill is the best way to learn. I could straddle the bike, give myself a push-off with my foot, and coast down the hill with enough speed to keep the bike stable, and then I could pedal at the bottom to keep it going. I skinned my knee several times in the process, and Ruby Lou's bike got some dings, but within a couple of days I could ride, and when my parents saw that, they bought me a used bike of my own.

The bike—coupled with my parents' trust and Ruby Lou's friendship—gave me freedom. I could, at age five, ride anywhere in town or in the nearby countryside on that bike. My parents set just one rule about it: I had to go with Ruby Lou. She (at age six) was older and wiser than I and knew her way around. I didn't argue about the rule. I probably would have been too frightened to go far without Ruby Lou anyway. What adventures we had, Ruby Lou and I, discovering and exploring new places in and around Monterey, on our bikes.

Sun Prairie, Wisconsin: managing my little league team at age 9

Between the ages of 7 and 10 I lived in Sun Prairie, Wisconsin. I'm told that Sun Prairie is now a rapidly growing suburb of Madison, but when I lived there, in the 1950s, it was a small city with lots of cornfields between it and Madison. The kids in Sun Prairie were involved in many activities that were new to me. For example, I learned from my new friends

how to build my own kite and fly it. We used to organize kite-flying contests, with the one rule that the kite had to be built from scratch, not from a kit. Today you'd assume that parents would be involved in helping kids build the kites, but that was not at all true then. We younger kids learned from our slightly older, more experienced friends how to do it, and then we went on to produce our own innovations. We used to get shafts of wood, free, from the local lumberyard to make the frames (sometimes we asked for them, sometimes we didn't). Some kids built truly remarkable kites, unlike any kites I have seen since.

But even more than kite flying, Sun Prairie was, for boys, a baseball town. Every neighborhood had a vacant lot, and in every vacant lot you would find kids playing baseball—all summer long and on weekends and after school in the fall and spring. Baseball quickly became my passion. Like most of my friends, I was sure I would grow up to become a professional baseball player. We all listened on the radio to the Milwaukee Braves games, and we all collected and traded baseball cards. Kids who couldn't do long division in school had no trouble calculating batting averages, in those days before calculators.

Most of our baseball was completely informal, in vacant lots with anyone who showed up. But Sun Prairie also had a little league program. I use small letters here for "little league," because I don't know if it had any affiliation at all with official Little League, but we called it that. Our little league had nothing like the adult involvement that you see in Little League today. A playground supervisor would get it started each year in the spring, but beyond that it was entirely kid run. Here's how it worked:

On a certain day in the spring, kids in the proper age range who wanted to be in the league would show up at the main city park. Generally we showed up in groups—groups of friends who were already playing in vacant lots together. Groups would declare themselves to be teams, and individuals who weren't part of a group would be added onto the teams by the playground supervisor. Each team elected a team captain, who would be the contact person to the supervisor and who would be official manager of the team. Then the playground supervisor worked out a schedule of games, so each team played each other team a certain number of times over the course of the summer. At each game a high-school kid served as umpire. That was it. Generally, no adults even attended the games. If there was an audience at all, it was mostly little kids who hoped to get into the game, as replacements, if one of us got hurt or for some other reason had to leave early. A similar league was also organized for girls' softball.

These league games were very exciting to us, because they were a step beyond, in formality, the pickup games that we played most of the time. We played on a field that looked like a real baseball diamond, with a backstop and real bases. There was an umpire who called balls and strikes and kept an official score. But the games were also exciting because they were still really ours. No adult was telling us what to do; we had to make our own decisions.

When I was near the end of third grade, and had recently turned 9, I was elected captain of my little league team. That meant I was responsible to be sure that my teammates knew about each game and that they showed up. (We all traveled by bicycle. The idea that parents should drive kids places had not yet been invented. Parents didn't even know when the games were scheduled.) I also had to determine the lineup for each game. The biggest trick was determining who would pitch. We had one good pitcher and several others who thought they were good pitchers. I had to compromise between letting our good pitcher pitch and letting others pitch to some extent. I was manager, but I had

very little real power because players would quit if they weren't happy, and we needed a certain number of players to keep the team going. So lots of discussion and compromise went into that lineup every game.

Can you imagine, today, putting a 9-year-old in charge of a little league baseball team? The fact that you can't imagine it is a measure of the degree to which we, as a culture, have lost respect for the abilities of children. It wasn't just me; every team in that league was led by a kid. The whole league was founded on the premise that kids wanted to play organized baseball so much that they would take responsibility to make it happen. And it worked! If it hadn't worked, that would have just meant that we kids had lost interest in baseball; and that would be OK too.

Hill City, Minnesota: fishing, skating, and running the printing press at ages 10 and 11

When I was 10 we moved to Hill City, a little town on a big lake in northern Minnesota, where I lived my most glorious two years of childhood. We were quite poor when we lived in Hill City, because my parents had spent all of the little money they had purchasing the local print shop and newspaper. My mother had always wanted to run a newspaper and this was her chance. This was at a time when small town newspapers everywhere were going out of business, and the Hill City News was clearly in its death throws; but my mother hoped she could revive it. We lived in a house that my parents bought for $2000; it was big enough for the seven of us, but it had no indoor bathroom. Can you imagine an outhouse in northern Minnesota? Sometimes, if one of my brothers had missed while doing #1 and I had to do #2, I would freeze to the seat. We took baths every Saturday night in a tin tub in the middle of the kitchen floor. This was not uncommon for Hill City in the 1950s. Some of my friends also lived in houses without an indoor bathroom.

Kids' life in Hill City centered on the lake. Fishing quickly replaced baseball as my passion. On a typical summer day my friends and I would take our bikes, loaded with our fishing gear, down to the lake or to the river that fed into it, catch frogs or seine minnows for bait, and then spend the whole day fishing. Sometimes we'd fish from a dock or from shore, and other times we'd take out the old wooden rowboat that seemed to be communal property for kids in that town. We were all good swimmers, so none of our parents were worried that we would drown. We would row miles to check out various spots for fishing. I became a good fisherman, catching mostly crappies, northern pike, and bass; and, because we were poor, my family really appreciated the fish I brought home. A rule in our house, though, was that whoever caught the fish also had to clean them.

In winter we skated on the lake. If the snow was deep, we shoveled off our own skating rink. We used to skate in the evening, and we'd make a fire on the lake for light and to keep warm. In the second winter that we lived there the snow was light enough and the wind strong enough that the whole frozen lake stayed clear of snow for several weeks early in the winter. We took advantage of that to take skating trips the whole length of the lake (about 5 miles long). We'd take our lunch with us, and matches to make a fire to warm us when we rested and ate. Sometimes we'd also collect ground pine, from islands on the lake, to bring home to the mother of one of my friends to make Christmas wreaths.

One final memory from Hill City that I want to convey involved my running the printing press. The Hill City News was a weekly paper, and it was printed every Thursday. My parents would often stay up all Wednesday night to meet their

own deadline and then, on Thursday morning, they would get me out of bed and ask me to run the press while they took a morning nap. I was proud, at age 10 and 11, to be trusted to run that huge and seemingly dangerous press, all alone in the print shop, where I had to feed the papers in by hand, one at a time, keeping up with the operating speed of the press. I felt important; the whole town awaited the News, which I was printing. It didn't matter that I regularly missed school on Thursday mornings while I ran the press. It didn't matter to my parents, or my teacher, or the school principal. Everyone knew that I was learning more running that press than I would have learned during those hours in school.

I have recounted these memories as stories about myself and my friends, but the real stars were our parents and the other adults of the community, who were wise enough to trust us and to stay in the backgrounds of our lives rather than the foregrounds. Because of such trust we lived adventurous childhoods, and from every adventure we learned. The most important lesson we learned, which is also the most important lesson anyone ever learns, was how to take responsibility for ourselves. That is a lesson that cannot be taught. It must be learned anew by each person, and the learning requires freedom, including freedom to make mistakes, to fail, and sometimes to get hurt.

What about your childhood? What memories do you have of adventures that would be forbidden by most parents today? And, what ideas do you have for reviving childhood freedom? I would appreciate your thoughts and stories, in the comments section below. In next week's post I will continue the topic of trustful parenting by outlining some of the forces that have caused its recent decline and by suggesting possible routes to its revival.

Notes

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[1] The quotation is from Hillary Rodham Clinton's "An Idyllic Childhood," in S. A. Cohen (Ed.), *The Games We Played: A Celebration of Childhood and Imagination*. Simon & Schuster, 2001.

Why Have Trustful Parenting and Children's Freedom Declined in Recent Decades?

A pedagogical model of child development interferes with parental trust.

Published on July 29, 2009 by Peter Gray in Freedom to Learn

In recent posts I have been discussing the decline of trustful parenting and the rise of directive-protective parenting. *Trustful parents* are those who trust their children to play and explore on their own, to make their own decisions, and to make and learn from their own mistakes. Trustful parenting predominated through the long stretch of human history when we were all hunter-gatherers, and it served well the hunter-gatherers' needs for people who were independent, responsible, and assertive, and who maintained an ethos of equality and personal freedom. With agriculture and land ownership, and subsequently with industry, social systems based on equality and freedom succumbed to those based on hierarchical power structures and servitude. The predominant parenting style shifted from trustful to directive-domineering, aimed at forcing children to labor in fields or factories and training them to be obedient to lords and masters. (See July 16, 2009, post for a summary of this history).

In relatively recent times, with the decline in need for child labor and the renaissance of democratic values, the directive-domineering style of parenting, with its regular beating of children to drive the willfulness out of them, has declined. For a while—-peaking around the 1950s and '60s—-trustful parenting seemed to experience a rebirth, but the decades since then have seen trustful parenting swamped out by a new kind of directive parenting, which I have been calling *directive-protective parenting*. Directive-protective parents direct their children's activities and limit their freedom not to force them to labor in fields or factories, or to make them servile, as directive-domineering parents did. Rather, they do so because they fear for their children's safety and for their futures, and they believe they can make better decisions for their children than their children can themselves. While trustful parents view children as resilient and competent, directive-protective parents view children as fragile and incompetent. While trustful parents believe that children develop best when allowed to play and explore on their own, directive-protective parents believe that children develop best when they follow a path that has been carefully laid out for them by adults.

In last week's post I quoted Hillary Clinton on the freedom that she experienced as a child in the 1950s, and I described the freedom and trust that my friends and I enjoyed during that same period in our grade-school years. Clinton and I are not the only adults today who regret the decline in children's freedom over the past few decades—-a decline that has been accompanied by a sharp rise in childhood obesity, depression, and suicides. Several surveys conducted in the UK and the United States in recent times reveal that many adults today express sadness that their own children are growing up with less freedom than they themselves enjoyed when they were growing up.[1] Yet, most feel that they cannot allow their children such freedom. They feel that the world has changed and that children today need more protection and adult direction than they needed when they were children.

What societal changes have occurred over the past several decades to create the perception that children today need more adult-direction and protection than they did in the past? I'm sure that a full answer to this question would describe a large number of interconnected changes in the social world. Here are a few of them that seem to me most relevant:

• The decline of neighborhoods and loss of children's outdoor play groups

In the 1950s, when I was a child, most people—-adults as well as children—-knew their neighbors. This was partly because many women were home during the day and formed friendship networks with others, but men too tended to be home more then than now. Workdays were not as long, on average, and people were home on weekends. Nowadays out-of-home work has come to dominate adult life for both men and women, and most adult friendships are formed at work rather than in the neighborhood. Since children are not part of that work world, they are not part of the same friendship networks as their parents. The result of all this is that parents are uncertain about the character of other people in the neighborhood, and other people in the neighborhood, even when they are home, typically don't know or keep an eye out for children that are not their own. The neighborhood therefore seems less safe, and maybe really is less safe, than it was in times past.

When some parents stop allowing their children to play freely in the neighborhood, the neighborhood becomes less inviting for those children who are still allowed to play outdoors. Few children want to play alone. The biggest attraction of children to the outdoors, or to any place, always, is other children. The neighborhood also becomes less safe when fewer children are outdoors. There is always safety in numbers. It's a vicious cycle: Fewer children outdoors playing means that the outdoors is less inviting and less safe than before, which means that there will be still fewer children outdoors playing. To make neighborhoods once again inviting and safe for children's outdoor free play, something has to be done to break that cycle.

• The decline of local common sense about parenting and the rise of a worldwide network of fear

In times past most adults had more familiarity with and understanding of children than they do today. Families tended to be larger than today, and extended families tended to live in the same town and share time together. By the time adults had their own children, they already had lots of experience with children. They knew, firsthand, something about child development. They knew something about children's competencies and the value of play and adventure to children, and so they tended to be trustful of their own children when they had them. They also were often parenting in the context of a network of other parents, who were their friends and who shared stories about their children. They could see that the children of neighbors, who were allowed to play freely, were growing up well and doing just fine. Neighborhoods and extended families were places of shared common sense about children and parenting

With the decline in family size and in closeness of extended families, and with the decline of neighborhoods, adults today often start their families with little firsthand or even secondhand experience with real children. The ideas and information that they have about children, often, come from what they read or hear from experts and the media, and

that is biased information. Experts commonly write to warn people of dangers, danger is their field of expertise; and the news every day reports on some terrible thing that has happened to some child somewhere. The fact that millions of children went outdoors today and played without adult supervision and came home healthier, wiser, and more responsible as a result is not news, but the fact that one child somewhere was abducted today, or drowned, or was run over by an automobile is spread quickly by the media throughout the state, or even throughout the nation or world depending on how lurid the story. The information that parents get does not reflect statistical reality and it feeds into every parent's worst nightmares.

• The increased uncertainty about the future

The world seems less stable now than it did a few decades ago. Many of the old ways of making a living have disappeared. It is impossible to predict what jobs will be available in the future or what job skills will be required. A result of this is that parents worry about their children's futures far more than they did in times past. Many parents today see childhood as a time of résumé building. Children can't just go out and play and explore on their own, because that doesn't count on a résumé. Somehow, parents believe, if they can get their children to develop impressive résumés, get them to score high on various tests, and get them into the most prestigious schools, they can protect their children's futures. They are wrong, of course; but the perception persists.

The reality is that the best protections against unemployment in uncertain times are precisely those qualities that people develop through their own self-directed experiences, not through the prodding of parents or teachers. Uncertain times require personal responsibility, independence of thought, self-initiative, self-assertion, flexibility, creativity, and imagination. These are the characteristics that are fostered by a trusting style of parenting and are inhibited by the directive-protective style.

• The continuous rise in the power of school systems, and the need to conform to schools' ever-more restrictive requirements

Perhaps the most significant of all of the contributors to the rise of directive-protective parenting and the decline in children's freedom has been the continuous rise in the power of schools to interfere with the lives of children and families.

Schools are places where children are confined, against their wills, and are required to perform tasks that often seem meaningless to them and often really are meaningless. Schools are and always have been places where children are, for a good share of the day, not allowed to explore or play. How ironic: Exploration and play, which came about in our biological evolution for the purpose of education, are outlawed at school, which is supposed to be the place for education.

School was an inhibitor of freedom in the 1950s, but not so much as it is today. Our school day started at 9:00 and ended at 2:30 or 3:00 in the afternoon, and we were free after that. We did not have homework, at least not when we were in grade school. Even during the school day we were freer than grade-school children are today. We had a full

hour at lunch, during which some of us walked or bicycled home and others of us played freely, without supervision, in the schoolyard or nearby neighborhoods. We also had morning recess; and some teachers gave us extra recess time in the classroom, when they could see that we were restless, during which we could play whatever games we wished as long as we weren't too rough or noisy. Teachers were not judged by their students' scores on standardized tests, so they were relatively free to modify what happened in the classroom to suit what they perceived to be our needs and wishes; but, of course, some teachers were not as wise or kind as others, and there was little we could do about that.

Today the school year is longer, the sanctions for missing days of school are greater, and the activities conducted within school are more rigidly controlled than in times past. Children are constantly tested and whole families get into trouble if the children don't perform up to par.

The school system today is not just confined to the school buildings and the hours spent in classrooms; it reaches into people's homes to control life there as well. There are summer reading lists, for example, and parents are supposed to make sure that their children get those books and read them. Homework is given, and parents are often required to sign homework sheets so that teachers can see that the parents are involved as enforcers. Parents are regularly called in for conferences when their children misbehave in school or don't do well on tests. Parents are expected to play the role at home that teachers play at school, pushing and directing their children to do the things that the school system has decided they should do. Family trips and other adventures that would be fun and educational for all are often curtailed because the child has too much homework or must participate in one or another formal activity at school, conducted outside of regular school hours. It is hard to be a trustful parent in these conditions; you have to fight the school system to do so.

• The rise of a pedagogical model of child development and parenting

As schooling increasingly dominates the lives of children and families, it increasingly dominates people's mental conceptions of child development and parenting. In schools learning is adult-directed, not child directed. In schools learning is considered to be sequential, along established pathways; you have to learn A before you learn B. In schools children's companions are all the same age; there is no learning of skills through play with older kids, no learning to be responsible through play with younger kids. In schools self-initiated play and exploration are disruptions and need to be controlled. Most psychological research on children is conducted in schools and centers on school-related problems. That is one reason why there is very little psychological study of children's play or self-directed learning and almost no study of children's age-mixed interactions. Not surprisingly, the theories and models of child development that such research generates fit well with the assumptions that underlie our formal system of schooling.

The dominance of schooling has led child psychologists and society at large, including parents, to develop and hold to models of child development that distort human nature. Throughout the whole history of humankind children have learned primarily from other children, in age-mixed play and exploration (as I have discussed in many previous posts). Throughout the whole history of humankind children have learned what they want to learn, not what is next on somebody's list of what they should learn. But now we have this conception that learning is sequential and adult-directed; that the proper companions for children are other children who are all of the same age (and from whom they

have the least to learn); and that self-directed play and exploration are largely wastes of time, especially for children who have reached school age. Some developmental psychology textbooks refer to the unit on preschool kids as "The Play Years;" the implicit assumption being that play stops at age 5.

The pedagogical model of childhood has taken hold in many out-of-school settings and in many homes. Playgrounds are no longer places where children go and play freely with one another, but are places of coaching and teaching, led by adults; and children are sorted there into age-segregated groups, just as they are in school. In the home many parents today, in implicit acceptance of the pedagogical model, define themselves as teachers of their children. They look for "teaching moments," buy educational toys, and "play" and talk with their children in ways designed to impart specific lessons. No wonder parent-child interactions these days are often accompanied by lots of eyeball rolling and "whatevers" on the parts of the children!

As the school system becomes ever-more entrenched and powerful, people's implicit conceptions of child development grow ever-more to fit the schooling model; and children, out of school as well as in school, become ever-less free, ever-more controlled, and ever-more deprived of self-initiated adventures. Children who refuse to be molded in ways that fit the model are given a diagnosis, such as ADHD, and are drugged into compliance.

How can enlightened parents—-who believe in the values of freedom, exploration, and play, and who would like to raise their children in a trusting way—-buck this trend that has become a torrent? Given all of the forces working against the trust of children, how can anyone today raise children in a trusting way? If you have been bucking this trend, please clue us in, in the comments section below. Next week I'll offer some of my own thoughts about routes to trustful parenting in our time.

Note

*Some hyperlinks in these postings are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines

[1] For examples of such surveys, see: Clements, R. (2004), "An investigation of the status of outdoor play," in *Contemporary Issues in Early Childhood, 5*, 68-80; and see O'Brien, J., & Smith, J. (2002), "Childhood transformed? Risk perceptions and the decline of free play," in *British Journal of Occupational Therapy, 65* (3), 123-128.

Routes Toward Trustful Parenting and Children's Freedom in Our Time

Your child navigates, but you provide the pond.

Published on August 5, 2009 by Peter Gray in Freedom to Learn

In last week's post I described some of the social trends that have conspired to reduce trustful parenting, promote directive-protective parenting, and reduce children's freedom over the past several decades. I talked about (a) the decline of neighborhoods and loss of children's outdoor play groups; (b) the reduced experience that most people have with children before becoming parents; (c) the exaggerated perceptions of dangers that originate thorugh the media; (d) the increased uncertainty about the future, and parents' mistaken beliefs that they can protect their children's futures through tightened controls; (e) the continuous rise in the power of schools to interfere with children's and family's lives, even when school is not in session; and (f) the rise of a pedagogical model of parenting, in which parenting is construed as teaching, or as enforcing school-like learning, and family life becomes lessons rather than life. Readers mentioned other contributing trends as well, including the decline in family size, which allows parents to devote too much attention to each child, and the use of television as a babysitter, which keeps children indoors.

The decline in children's freedom is a serious social issue. It is responsible, I think, for the dramatic increases in childhood depression and suicide. People of all ages crave freedom, and they suffer when their freedom is taken away. As a society we have come to understand this principal as applied to adults, but we put our heads in the sand rather than face the evidence that children too crave freedom and need it in order to feel happy and to grow in healthy ways. If children had power, they would rise in protest to force the issue--as African Americans, women, and homosexuals have in our recent past and our present. But they don't have power.

Suppose you are a parent who accepts the idea that children need freedom in order to be happy and to grow in healthy ways. How can you, despite all of the social forces working against you, become a more trusting parent and allow your children more freedom? Here are six suggestions. The first three have to do with restructuring your own thoughts and habits, and the rest have to do with providing a healthy environment for your children.

Begin by examining your own values: What is a good life?

The first step toward trustful parenting is to examine your own values and think about how they might apply to your children and to your relationships with your children. Do you value freedom, personal responsibility, self-initiative, assertiveness, honesty, integrity, and concern for the welfare of other people? If these rank high in your system of values, and if they represent characteristics you would like to see in your children, then you will want to be a trustful

parent. None of these values can be taught as school lessons. They are acquired or lost through daily life experiences that reinforce or suppress them.

You can help your children build these values by living them yourself and applying them in your relationship with your children. Trust promotes trustworthiness. Monitoring, prying, and lecturing promote deceit. Continuous direction from others prevents children from experiencing freedom and acquiring the traits of personal responsibility and self-initiative. The continuous tests and the competitions that children are forced into at school and in other adult-directed settings promote a defensive approach to life and reduce the opportunities to practice honesty, assertiveness, and true concern for others.

Let go of the idea that you can determine your child's future or are responsible for it.

If you value freedom and personal responsibility, then you must respect your children's rights to chart their own courses in life. Your ambitions cannot be their ambitions, and vice versa. The self-charting of life begins in infancy, not at age 18, 21, or 35. To learn responsibility children must learn how to make their own decisions in the course of each day, week, and year; and they can learn that only by practicing it.

All loving, caring parents are concerned about their children's futures, so it can be hard not to try to control those futures. But the attempt at control is self-defeating. When we try to determine our children's destinies, we deprive them of the opportunities to take ownership of those destinies. When we try to pilot them through the daily and weekly mazes of life, we deprive them of the opportunities to practice their own piloting. When we offer lots of unsolicited advice, we reduce the chance that they will ask for our advice when they truly want and need it.

To learn to be a trustful parent you may have to remind yourself regularly that you are not your child and your child is not you. You are simply part of the environmental substrate that your child is using to create himself or herself. Your child's destiny is to move beyond your world, into a world that you may not understand. You cannot control that movement, and you do your child a disservice if you prevent it. Whether your child succeeds or fails is up to your child, not you; and the measure of success or failure is your child's, not yours. The world is full of unhappy lawyers, doctors, and business executives; and many clerks and janitors are happy, fulfilled, and decent. Career success is not life success. You can be happy or unhappy in any profession; one factor that matters is the degree to which you believe your life is your own. These are truisms. They may even sound trite. But too many people forget them when it comes to their child-care practices.

Resist urges to be in continuous contact with your child, to monitor your child's activities and learning, or to inquire about the details of his or her day.

In this day of modern technology, it is easy and tempting to track your child's every move. You can observe through hidden cameras; you can track the web pages that your child visits; you can insist on regular cell-phone reports of current whereabouts and activities; you can even install a global positioning device that allows you to know for certain where your child is at every moment, as is done with prisoners. You may even justify such monitoring by convincing

yourself that it demonstrates to your child that you care. But how would you like to be constantly monitored? How would you like it if someone--maybe your loving husband or wife--was watching, recording, and evaluating all of your private activities? The message truly sent by such monitoring is, always, "I don't trust you."

But modern technology is not required to demonstrate such lack of trust. The old-fashioned method of constant, detailed inquiry does the trick as well. A trustful parent does not ask for detailed reports--from the child or anyone else--about those hours that the child spends away from the parent's direct gaze. Everyone has a right to privacy, to secrets, to opportunities to experiment without being judged. Inquiry that infringes on privacy only invites dishonesty.

Move to a neighborhood where kids of all ages play freely outdoors, and where parents as well as children get to know one another.

As a trustful parent you do have some major responsibilities concerning your children. You cannot pilot your child's ship, or even teach many piloting skills, but you can and do provide the pond where your child learns to pilot. That pond is the neighborhood where you choose to live.

Real estate brokers tell us that the leading concern of young families in finding their first home is the quality of the local public school, measured usually in terms of scores on standardized tests and percentage bound for college. But if you are a trustful parent, that will not be your main concern. You will be much more concerned with the quality of the neighborhood.

If children are to explore and play freely, they must have safe and inviting places to do so. A neighborhood of huge houses and big yards, but where there are no kids outside playing in groups, is not a good neighborhood for your child. Look for a neighborhood where kids of all ages can be found intermingling, playing, and exploring without direct adult supervision. Your child will want to join them and will learn from them. There is safety in numbers. The more kids, and the bigger the age range of kids playing together, the safer and the more inviting it is for any one child to play outdoors. Often you will find this in neighborhoods where the homes are not stately, where most people are not wealthy, where there is less emphasis on school performance, and where kids play in shared spaces rather than in their own private yards.

Look also for a neighborhood where the parents themselves spend some time outdoors and get to know other parents and other parents' children. Getting to know neighbors is the best way to assure yourself of the safety of the neighborhood and to learn about any real dangers that may exist. Parent friendship networks also provide opportunities for parents to share common sense and observations about children, become more knowledgeable about child development, and thereby learn to be more trusting of their own children. Moreover, other adults who know and are known by your children become people that your children can look to as additional models of adulthood. No matter how great you and your partner (if you have one) may be, your children need to get to know other adults as well, in real life situations, to develop their concepts of adulthood and to gain ideas about possible routes in life.

Work with other parents in your neighborhood to create safe places where children can congregate and play on their own.

It is hard these days to find neighborhoods with the qualities I've just described; and for financial or other reasons you may not be able to move to such a place, even if you could find it. So, you may need to create a neighborhood where you currently live. You might begin by taking the initiative to get to know other parents in your neighborhood and bring them together to discuss common concerns. Most parents will jump at such an opportunity, but someone needs to take the initiative. That, by itself, may promote interfamily friendships, which will spill over into children's friendships and more outdoor play.

You might also work with other parents to develop local playgrounds and provide some sort of rotating system of playground supervision, if you think that an adult presence is needed for safety. As more children come out to play, and as the range of ages of children playing together becomes greater, you may decide that an adult presence is not always necessary. You may need to move a step at a time.

Remember, as a trustful parent you are not meeting with other parents in order to create "play dates" for your children; you are meeting with them in order to create a neighborhood where children can find their own friends and play freely as they choose. You might also find yourself creating shared outings, or vacations, or camping experiences with other families, at places where your children can play with others in relative freedom from you, while you enjoy the company of other adults.

When I was a college student in New York City, I worked as a "supervisor" at a place called the Clinton Youth Center. It had been set up by the YMCA/YWCA as a free alternative for kids who couldn't afford the "real" Y. It was located in a rundown building in a neighborhood that most middle class people would call a slum, but it was a haven for the local kids of all ages. There was a gymnasium, various sorts of second-hand art equipment, and rooms where kids could just hang out. Children and teenagers also played in the street right outside the building, which was made safe by their large numbers. At any given time after school, there were usually just two adults present (the main supervisor and me, and I was just 19 when I started the job), and there might be as many as 200 kids. We were called "supervisors," but we did very little supervising. We were just there to handle emergencies and to befriend kids who wanted to talk with us. Sometimes I would take a troop of little kids to Central Park for a visit to the zoo or an opportunity to play on a grassy field rather than the street.

The kids who came to the Center--nearly all of whom were from so-called impoverished homes--were remarkably well behaved. They governed themselves and they looked after one another. The freedom and age mixing were crucial to the success of this institution. The older kids gained a sense of responsibility through their interactions with the younger ones, and the younger ones learned many skills by watching and playing with the older ones. You could even find older kids helping younger ones with homework--not because any adult set them up to be tutors, but just because they really enjoyed helping.

(I also had another job when I was in college, as a "play companion" to a small group of rich kids, all the same age, who lived on the East Side. In sharp contrast to the Clinton Youth-Center kids, those kids were brats. I quit that job after about five weeks of suffering through it. They were constantly testing me, and they won the contest. I remember

wishing that I could enroll those kids into the Clinton Youth Center, were they could learn some manners from the "disadvantaged" kids.)

We need, in all communities today, settings like the Clinton Youth Center, where kids can find one another, interact freely with one another, adapt to an ongoing kid's culture of decency, and practice responsibility. The Clinton Youth Center was not set up by philosophers of child development; it was set up by people who just had common sense about what kids want and need, and who realized that you don't need a bundle of money to provide it.

Consider alternatives to conventional schooling.

I am going to save all elaboration on this final suggestion for my next post, which will probably come two weeks from now (I'll be away vacationing for the next ten days). School, as I have described in several previous posts, increasingly infringes on children's freedom and their opportunities to learn responsibility and self-direction. School has grown into something of a cultural monster that is devouring children's and families' freedom. As a society, we increasingly turn all childhood problems over to the school system, despite the obvious evidence that it can't solve those problems. It is hard to send your children to a conventional school and still behave as a trustful parent, because the school system is perfectly designed to instill distrust. Many of the regular readers of this blog have sought and found alternatives to conventional schooling, and in my next post I will discuss some of those options.

Meanwhile, I invite you--in the comments space below--to share your own successes and failures in finding or helping to create safe and inviting places for your children to play, explore, make friends, and practice piloting their own lives. Your experiences may help to inspire many other readers. I read all comments and respond to many of them. The comments play a big role in my own thinking and subsequent essays.

Note

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Trustful Parenting May Require an Alternative to Conventional Schooling

Trustful parenting may be incompatible with conventional schooling.

Published on August 26, 2009 by Peter Gray in Freedom to Learn

My last several posts (before I went on vacation for two weeks) were about trustful parenting, the forces that work against it today, and ways of overcoming those forces. As I pointed out in the July 29 post, I think that the most powerful social force interfering with trustful parenting in our time is the school system. The power of schools over children and families has increased steadily over the decades, to the point where it is almost impossible now to be a trustful parent of a child in a typical public or private school.

As I write this essay, children and adolescents all over America are frantically completing their assigned summer reading, so they can turn in their book reports, due on the first day of class. Either that, or they are blowing off the assignments while their parents are frantically trying to get them to complete them. If your child fails to turn in those reports, the school will quite likely see that as your failing as well as your child's. You may well, at some point, be called in for a teacher's conference and reminded--as you sit, humiliated, in one of those little chairs in front of the teacher's desk--of the importance of parental enforcement of school assignments.

The school system operates on the assumption that children, including teenagers, are incompetent to make their own decisions. They are not competent to pick their own reading (even their own summer reading!); they are not competent to learn on their own initiative. The assumption is that children need constant supervision in order to learn what they need to know to become, eventually, effective adults. Children left to their own devices will just waste their time, or worse, get into serious trouble. And you, the parent, may be seen as negligent if you do trust your child.

If your child blows off a homework assignment because she sees it as a waste of time--which it usually is, and which it almost always is when done from a sense of coercion rather than choice--you may be as much to "blame" as your child. You are supposed to monitor, nudge, maybe even bribe or threaten your child--do whatever you must to get that slacker to do the assignment. Maybe you'll have to tell Mary, "No, you can't read *Breaking Dawn* (book 4 in the Twilight series), because that's not the book you need to write a report on."

Principals and teachers have figured out that the way to keep children on task, and to get those test scores up so the school and teachers will look good in their competitions with other schools and teachers, is to enlist parents to serve as homework enforcers. Parents today are routinely required to sign their children's homework assignments, sign and return regular reports sent to them about their children's successes and failures, and in other ways serve as enforcement assistants to the teachers. Email has promoted a quantum leap in the back-and-forth tattling between teachers and parents.

The home has become an extension of school, and parents have become teachers' assistants. Many parents buy into this all too readily; they, after all, are in competitions with other parents to produce kids with the best résumés. The loss, of course, lies in the children's own sense of autonomy and personal responsibility. Sadly, in many cases, the

assumption that children are incompetent becomes a self-fulfilling prophecy. The children themselves become convinced of their incompetence.

To be a trustful parent, and to raise your children with the wonderful sense that they are trusted and trustworthy, you may have to remove them from the conventional school system. Here are two alternatives to consider.

Sudbury model democratic schools

In two previous posts (August 13, 2008, and Sept 3, 2008), I have described the Sudbury Valley School, which is where I have conducted some of my own research. Today there are somewhere between two and three dozen Sudbury model schools throughout the world, and Sudbury Valley itself provides guidance for groups who want to form new schools.

For 41 years, Sudbury Valley has been proving that, when given a chance, children and adolescents behave responsibly, take charge of their own lives, and learn on their own initiative what they need to know to become highly effective adults. The graduates of the school have been followed and documented more fully than have those of any other school I know of.[1] If any school has been proven to work, in terms of producing happy, effective adult citizens, it is Sudbury Valley.

The results of this 41-year-old "experiment," now being replicated throughout the world, defy today's common beliefs about education and children. At Sudbury Valley nobody tells children what they must learn or how they must spend their time. Instead, the school provides the ideal setting for self-education. There are other kids, of the whole range of ages (from age 4 through 18 or 19), to learn from. There are adult staff members with various special skills and knowledge, who will help any child who asks. There are computers and other forms of equipment useful in today's culture. Books are everywhere. The students and staff members govern the school democratically, on a one-person-one-vote basis, which not only leads to effective governance but also generates a profound sense of communal responsibility. The democratic decision-making and judicial system, and the continuous age mixing, promote a level of nurturance, care, and safety that is exceedingly rare in other schools.

You would send your child to such a school only if you are a trustful parent. Distrustful parents can't imagine that such a school could work, even if they have read the evidence and visited the school. If you are curious to learn more about Sudbury Valley and the schools modeled after it, look back at the posts I noted above, go to the Sudbury Valley website (which includes books about the school), and look at the list of Sudbury schools there or on Wikipedia.

Homeschooling and "unschooling."

For many parents, who do not have the choice of a Sudbury school, homeschooling may be the only alternative to conventional schooling. In recent decades, as schools have become increasingly intrusive in families' lives, the number of families choosing homeschooling has risen sharply--to over a million in the United States today.

Not every parent who chooses homeschooling, however, is trustful or particularly values children's freedom. Many parents choose homeschooling primarily for religious reasons; they want to raise their children in a certain religious

tradition and protect them from other ideas and practices. Some parents choose homeschooling because they are extraordinarily *untrusting*; they want to have their children under their thumbs all the time. Some parents choose homeschooling because they believe (generally correctly) that they are more able to get their children into Harvard than is the local school system. Still others--who certainly have my sympathy--choose homeschooling primarily to protect their children from the harassment and bullying that they have experienced at the local public school.

The brand of homeschooling most compatible with trustful parenting is that often referred to by its adherents as *unschooling*--a term coined in the 1970s by John Holt, in his magazine *Growing Without Schooling*. With a little Googling, you can find a number of fascinating and helpful websites devoted to unschooling and/or to homeschooling coupled with a good deal of children's freedom. One of my favorites is the Natural Child Project, where, among other things, you can find books by Jan Hunt, including *The Natural Child* and *Unschooling*.

But here are my caveats about unschooling or any form of homeschooling, for the trustful parent:

1. *A big part of growing up is learning how to solve problems and get along independently of one's parents*. Beginning at about age four, and increasingly after that, children are drawn to other children. In hunter-gatherer and other traditional cultures, and until recently in our culture, children beyond age 4 spent many hours every day playing and exploring in age-mixed groups out of sight of adults. In play of that sort, children learn how to solve problems independently. In my view, that is the fundamental task of education, and it can only occur when children are away from parents or other adults who are paying attention.

2. *Children learn best from older and younger children*. I have discussed the value of age-mixed interactions in a previous series of posts (starting with Sept. 9, 2008) and will not repeat myself here, except to say that younger children are strongly motivated to learn the skills that they observe in older children and that older children learn compassion and nurturance through interacting with younger ones.

3. *Children need more adult models than just their parents*. Children love their parents, and they need their parents' love, but they naturally look to other adults at least as much as to their parents to learn what it is like to be an adult. By seeing what other adults do and by overhearing other adults' ideas (including ones that their own parents would consider to be blasphemous), children are exposed to a menu of behaviors and ideas from which they can pick and choose. Children do not passively mimic either other children or adults. When exposed to a sufficient range of behaviors, ideas, and attitudes, they make their own value judgments and incorporate what they observe into their own growing repertoires, in ways that make them unique, not replicas of their parents or of anyone else.

I realize that many unschoolers have figured out ways of meeting the challenges suggested by these caveats. They have found ways for their children to play and explore away from themselves, to meet and make friends with other children over a broad age range, and to become naturally exposed to a variety of adults. But this is not easy, in our society where family sizes are small and where neighborhood friendships among families are generally lacking.

If you are one of the many homeschoolers and unschoolers who have been regular readers this blog, or even if you are a new reader, I hope you will contribute your thoughts, in the comments section below. What do you see to be the

biggest challenges to your manner of helping your children educate themselves, and how do you meet those challenges? What books or websites would you recommend to others who are considering homeschooling or unschooling? What traps should be avoided?

Notes

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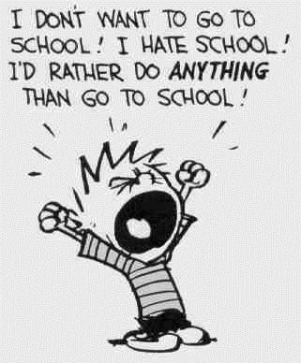
[1] For followup studies of Sudbury Valley graduates and other former students, see: Peter Gray & David Chanoff, "Democratic Schooling: What Happens to Young People Who Have Charge of their Own Education?" *American Journal of Education 94* (1986), 182-213; Daniel Greenberg & Mimsy Sadofsky, *Legacy of Trust: Life after the Sudbury Valley School Experience* (1992); Daniel Greenberg, Mimsy Sadofsky, & Jason Lempka, *The Pursuit of Happiness: The Lives of Sudbury Valley Alumni* (2005).

“Why Don’t Students Like School?” Well, Duhhhh…

Children don't like school because they love freedom.

Published on September 2, 2009 by Peter Gray in Freedom to Learn



Someone recently referred me to a book that they thought I'd like. It's a 2009 book, aimed toward teachers of grades K through 12, titled *Why Don't Students Like School?* It's by a cognitive scientist named Daniel T. Willingham, and it has received rave reviews by countless people involved in the school system. Google the title and author and you'll find pages and pages of doting reviews and nobody pointing out that the book totally and utterly fails to answer the question posed by its title.

Willingham's thesis is that students don't like school because their teachers don't have a full understanding of certain cognitive principles and therefore don't teach as well as they could. They don't present material in ways that appeal best to students' minds. Presumably, if teachers followed Willingham's advice and used the latest information cognitive science has to offer about how the mind works, students would love school.

Talk about avoiding the elephant in the room!

Ask any schoolchild why they don't like school and they'll tell you. "School is prison." They may not use those words, because they're too polite, or maybe they've already been brainwashed to believe that school is for their own good and therefore it can't be prison. But decipher their words and the translation generally is, "School is prison."

Let me say that a few more times: School is prison. School is prison. School is prison. School is prison. School is prison.

Willingham surely knows that school is prison. He can't help but know it; everyone knows it. But here he writes a whole book entitled "Why Don't Students Like School," and not once does he suggest that just possibly they don't like school because they like freedom, and in school they are not free.

I shouldn't be too harsh on Willingham. He's not the only one avoiding this particular elephant in the room. Everyone who has ever been to school knows that school is prison, but almost nobody says it. It's not polite to say it. We all tiptoe around this truth, that school is prison, because telling the truth makes us all seem so mean. How could all these nice people be sending their children to prison for a good share of the first 18 years of their lives? How could our democratic government, which is founded on principles of freedom and self-determination, make laws requiring children and adolescents to spend a good portion of their days in prison? It's unthinkable, and so we try hard to avoid thinking it. Or, if we think it, we at least don't say it. When we talk about what's wrong with schools we pretend not to see the elephant, and we talk instead about some of the dander that's gathered around the elephant's periphery.

But I think it is time that we say it out loud. School is prison.

If you think school is not prison, please explain the difference.

The only difference I can think of is that to get into prison you have to commit a crime, but they put you in school just because of your age. In other respects school and prison are the same. In both places you are stripped of your freedom and dignity. You are told exactly what you must do, and you are punished for failing to comply. Actually, in school you must spend more time doing exactly what you are told to do than is true in adult prisons, so in that sense school is worse than prison.

At some level of their consciousness, everyone who has ever been to school knows that it is prison. How could they not know? But people rationalize it by saying (not usually in these words) that children need this particular kind of prison and may even like it if the prison is run well. If children don't like school, according to this rationalization, it's not because school is prison, but is because the wardens are not kind enough, or amusing enough, or smart enough to keep the children's minds occupied appropriately.

But anyone who knows anything about children and who allows himself or herself to think honestly should be able to see through this rationalization. Children, like all human beings, crave freedom. They hate to have their freedom restricted. To a large extent they use their freedom precisely to educate themselves. They are biologically prepared to do that. That's what many of my previous posts have been about (for an overview, see my July 16, 2008, post). Children explore and play, freely, in ways designed to learn about the physical and social world in which they are developing. In school they are told they must stop following their interests and, instead, do just what the teacher is telling them they must do. That is why they don't like school.

As a society we could, perhaps, rationalize forcing children to go to school if we could prove that they need this particular kind of prison in order to gain the skills and knowledge necessary to become good citizens, to be happy in adulthood, and to get good jobs. Many people, perhaps most people, think this has been proven, because the educational establishment talks about it as if it has. But, in truth, it has not been proven at all.

In fact, for decades, families who have chosen to "unschool" their children, or to send them to the Sudbury Valley School (which is, essentially, an "unschool" school) have been proving the opposite (see, for example, my August 13, 2008, post). Children who are provided the tools for learning, including access to a wide range of other people from whom to learn, learn what they need to know--and much more--through their own self-directed play and exploration. There is no evidence at all that children who are sent to prison come out better than those who are provided the tools and allowed to use them freely. How, then, can we continue to rationalize sending children to prison?

I think the educational establishment deliberately avoids looking honestly at the experiences of unschoolers and Sudbury Valley because they are afraid of what they will find. If school as prison isn't necessary, then what becomes of this whole huge enterprise, which employs so many and is so fully embedded in the culture (see my posts on Why Schools Are What they Are)?

Willingham's book is in a long tradition of attempts to bring the "latest findings" of psychology to bear on issues of education. All of those efforts have avoided the elephant and focused instead on trying to clean up the dander. But as long as the elephant is there, the dander just keeps piling up.

In a future post I'll talk about some of the history of psychology's failed attempts to improve education. Every new generation of parents, and every new batch of fresh and eager teachers, hears or reads about some "new theory" or

"new findings" from psychology that, at long last, will make schools more fun and improve learning. But none of it has worked. And none of it will until people face the truth: Children hate school because in school they are not free. Joyful learning requires freedom.

Note

*Some hyperlinks in these postings are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines.

Seven Sins of Our System of Forced Education

Forced education interferes with children's abilities to educate themselves.

Published on September 9, 2009 by Peter Gray in Freedom to Learn

In my last post I took a step that, I must admit, made me feel uncomfortable. I said, several times: "School is prison." I felt uncomfortable saying that because school is so much a part of my life and the lives of almost everyone I know. I, like most people I know, went through the full 12 years of public schooling. My mother taught in a public school for several years. My beloved half-sister is a public schoolteacher. I have many dear friends and cousins who are public schoolteachers. How can I say that these good people--who love children and have poured themselves passionately into the task of trying to help children--are involved in a system of imprisoning children? The comments on my last post showed that my references to school as prison made some other people feel uncomfortable also.

Sometimes I find, no matter how uncomfortable it makes me and others feel, I have to speak the truth. We can use all the euphemisms we want, but the literal truth is that schools, as they generally exist in the United States and other modern countries, are prisons. Human beings within a certain age range (most commonly 6 to 16) are required by law to spend a good portion of their time there, and while there they are told what they must do, and the orders are generally enforced. They have no or very little voice in forming the rules they must follow. A prison--according to the common, general definition--is any place of involuntary confinement and restriction of liberty.

Now you might argue that schools as we know them are good, or necessary; but you can't argue that they are not prisons. To argue the latter would be to argue that we do not, in fact, have a system of compulsory education. Either that, or it would be a semantic argument in which you would claim that *prison* actually means something different from its common, general definition. I think it is important, in any serious discussion, to use words honestly.

Sometimes people use the word *prison* in a metaphorical sense to refer to any situation in which they must follow rules or do things that are unpleasant. In that spirit, some adults might refer to their workplace as a prison, or even to their marriage as a prison. But that is not a literal use of the term, because those examples involve voluntary, not involuntary restraint. It is against the law in this and other democratic countries to force someone to work at a job where the person doesn't want to work, or to marry someone that he or she doesn't want to marry. It is not against the law, however, to force a child to go to school; in fact, it is against the law to *not* force a child to go to school if you are the parent and the child doesn't want to go. (Yes, I know, some parents have the wherewithal to find alternative schooling or provide home schooling that is acceptable to both the child and the state, but that is not the norm in today's society; and the laws in many states and countries work strongly against such alternatives.) So, while jobs and marriages might in some sad cases *feel* like prisons, schools generally *are* prisons.

Now here's another term that I think deserves to be said out loud: *Forced education*. Like the term *prison*, this term sounds harsh. But, again, if we have *compulsory* education, then we have *forced* education. The term *compulsory*, if it has any meaning at all, means that the person has no choice about it.

The question worth debating is this: Is forced education--and the consequential imprisonment of children--a good thing or a bad thing? Most people seem to believe that it is, all in all, a good thing; but I think that it is, all in all, a bad thing. I outline here some of the reasons why I think this, in a list of what I refer to as "***seven sins***" of our system of forced education:

1. Denial of liberty on the basis of age.

In my system of values, and in that long endorsed by democratic thinkers, it is wrong to deny anyone liberty without just cause. To incarcerate an adult we must prove, in a court of law, that the person has committed a crime or is a serious threat to herself or others. Yet we incarcerate children and teenagers in school just because of their age. This is the most blatant of the sins of forced education.

2. Fostering of shame, on the one hand, and hubris, on the other.

It is not easy to force people to do what they do not want to do. We no longer use the cane, as schoolmasters once did, but instead rely on a system of incessant testing, grading, and ranking of children compared with their peers. We thereby tap into and distort the human emotional systems of shame and pride to motivate children to do the work. Children are made to feel ashamed if they perform worse than their peers and pride if they perform better. Shame leads some to drop out, psychologically, from the educational endeavor and to become class clowns (not too bad), or bullies (bad), or drug abusers and dealers (very bad). Those made to feel excessive pride from the shallow accomplishments that earn them A's and honors may become arrogant, disdainful of the common lot who don't do so well on tests; disdainful, therefore, of democratic values and processes (and this may be the worst effect of all).

3. Interference with the development of cooperation and nurturance.

We are an intensely social species, designed for cooperation. Children naturally want to help their friends, and even in school they find ways to do so. But our competition-based system of ranking and grading students works against the cooperative drive. Too much help given by one student to another is cheating. Helping others may even hurt the helper, by raising the grading curve and lowering the helper's position on it. Some of those students who most strongly buy into school understand this well; they become ruthless achievers. Moreover, as I have argued in previous posts (see especially Sept. 24, 2008), the forced age segregation that occurs in school itself promotes competition and bullying and inhibits the development of nurturance. Throughout human history, children and adolescents have learned to be caring and helpful through their interactions with younger children. The age-graded school system deprives them of such opportunities.

4. Interference with the development of personal responsibility and self-direction.

A theme of the entire series of essays in this blog is that children are biologically predisposed to take responsibility for their own education (for an introduction, see July 16, 2008, post). They play and explore in ways that allow them to learn about the social and physical world around them. They think about their own future and take steps to prepare themselves for it. By confining children to school and to other adult-directed settings, and by filling their time with assignments, we deprive them of the opportunities and time they need to assume such responsibility. Moreover, the implicit and sometimes explicit message of our forced schooling system is: "If you do what you are told to do in school, everything will work out well for you." Children who buy into that may stop taking responsibility for their own education. They may assume falsely that someone else has figured out what they need to know to become successful adults, so they don't have to think about it. If their life doesn't work out so well, they take the attitude of a victim: "My school (or parents or society) failed me, and that's why my life is all screwed up."

5. Linking of learning with fear, loathing, and drudgery.

For many students, school generates intense anxiety associated with learning. Students who are just learning to read and are a little slower than the rest feel anxious about reading in front of others. Tests generate anxiety in almost everyone who takes them seriously. Threats of failure and the shame associated with failure generate enormous anxiety in some. I have found in my college teaching of statistics that a high percentage of students, even at my rather elite university, suffer from math anxiety, apparently because of the humiliation they have experienced pertaining to math in school. A fundamental psychological principle is that anxiety inhibits learning. Learning occurs best in a playful state, and anxiety inhibits playfulness. The forced nature of schooling turns learning into work. Teachers even call it work: "You must do your work before you can play." So learning, which children biologically crave, becomes toil--something to be avoided whenever possible.

6. Inhibition of critical thinking.

Presumably, one of the great general goals of education is the promotion of critical thinking. But despite all the lip service that educators devote to that goal, most students--including most "honors students"--learn to avoid thinking critically about their schoolwork. They learn that their job in school is to get high marks on tests and that critical thinking only wastes time and interferes. To get a good grade, you need to figure out what the teacher wants you to say and then say it. I've heard that sentiment expressed countless times by college students as well as by high-school students, in discussions held outside the classroom. I've devoted a lot of effort toward promoting critical thinking at the college level; I've developed a system of teaching designed to promote it, written articles about it, and given many talks about it at conferences on teaching. I'll devote a future post or two in this blog to the topic. But, truth be told, the grading system, which is the chief motivator in our system of education, is a powerful force against honest debate and critical thinking in the classroom. In a system in which we teachers do the grading, few students are going to criticize or even question the ideas we offer; and if we try to induce criticism by grading for it, we generate false criticism.

7. Reduction in diversity of skills, knowledge, and ways of thinking.

By forcing all schoolchildren through the same standard curriculum, we reduce their opportunities to follow alternative pathways. The school curriculum represents a tiny subset of the skills and knowledge that are important to our society. In this day and age, nobody can learn more than a sliver of all there is to know. Why force everyone to learn the same sliver? When children are free--as I have observed at the Sudbury Valley School and others have observed with unschoolers--they take new, diverse, and unpredicted paths. They develop passionate interests, work diligently to become experts in the realms that fascinate them, and then find ways of making a living by pursuing their interests. Students forced through the standard curriculum have much less time to pursue their own interests, and many learn well the lesson that their own interests don't really count; what counts is what's measured on the schools' tests. Some get over that, but too many do not.

This list of "sins" is not novel. Many teachers I have spoken with are quite aware of all of these detrimental effects of forced education, and many work hard to try to counteract them. Some try to instill as much of a sense of freedom and play as the system permits; many do what they can to mute the shame of failure and reduce anxiety; most try to allow and promote cooperation and compassion among the students, despite the barriers against it; many do what they can to allow and promote critical thinking. But the system works against them. It may even be fair to say that teachers in our school system are no more free to teach as they wish than are students free to learn as they wish. (But teachers, unlike students, are free to quit; so they are not in prison.)

I must also add that human beings, especially young human beings, are remarkably adaptive and resourceful. Many students find ways to overcome the negative feelings that forced schooling engenders and to focus on the positive. They fight the sins. They find ways to cooperate, to play, to help one another overcome feelings of shame, to put undue pride in its place, to combat bullies, to think critically, and to spend some time on their true interests despite the forces working against them in school. But to do all this while also satisfying the demands of the forced education takes great effort, and many do not succeed. At minimum, the time students must spend on wasteful busywork and just following orders in school detracts greatly from the time they can use to educate themselves.

I have listed here "seven sins" of forced education, but I have resisted the temptation to call them *the* seven sins. There may be more than seven. I invite you to add more, in the comments section below.

Finally, I add that I do *not* believe that we should just do away with schools and replace them with nothing. Children educate themselves, but we adults have a responsibility to provide settings that allow them to do that in an optimal manner. That is the topic of my next post.

Our Social Obligation Towards Children's Education: Opportunities, Not Coercion

How we could promote universal education without coercion

Published on September 16, 2009 by Peter Gray in Freedom to Learn

Children educate themselves. Children are biologically built for self-education. Their instincts to explore; to observe; to eavesdrop on the conversations of their elders; to ask countless questions; and to play with the artifacts, ideas, and skills of the culture all serve the purpose of education. Regular readers of this blog know that this has been my main thesis, from Post #1 on through this one, Post #38.

Schools, as we generally know them, interfere with children's abilities to educate themselves. When we confine children and adolescents to schools, where they are assigned to rooms by age and can't choose their associates, where they can't pursue their own interests but instead must conform to the dictates of the teacher and the time course of the bell, we interfere with their abilities to educate themselves. Children's natural means of education require freedom. Regular readers of this blog know that this is my secondary thesis.

In my last two posts I outlined a case against compulsory (forced) schooling. Now, in this post, I will say a bit about what students *like* about school, to the degree that they like it at all, and will sketch out my thoughts about how we, as a society, could satisfy their desires and provide them the opportunities to educate themselves well without coercion. I begin, however, with a digression.

A Digression: Some Sources for Readers Who Wish to Explore Further The Ideas That Children Educate Themselves and that Our Standard Schools Interfere

Over the course of the past three or four weeks, many new readers have tuned into this blog. The comments suggest that some of the new readers have gone back to read earlier posts, to see how the arguments build, and some have not. For some readers, the ideas that children are biologically built to educate themselves and that our coercive educational practices interfere with self-education are relatively new, not something that they have thought or read much about before. For that reason, I offer this digression, suggesting some readings for those who wish to delve further into the thought and evidence behind these ideas.

The ideas that children educate themselves and that coercion interferes with self-education are by no means new. Anthropologists have found that hunter-gather adults, everywhere, understood those ideas well and therefore allowed children and adolescence unlimited free time to explore and play on their own (for documentation, see my article on play in hunter-gatherer cultures, in *The American Journal of Play*, 2009, pp 476-522). In modern times, ideas about self-

education and the harmful effects of coercion have been discussed in depth by a number of people whose profound familiarity with the standard educational system led them to become severe critics of it. Here are three whose works have been especially influential:

• **John Holt** was an elementary school teacher who, after nine or ten years of teaching, decided to make systematic observations of classrooms and children's behavior within them, in order to understand why so many fail to learn the subject matter. One of his chief conclusions was that our system of forced education and grading generates fear, and fear inhibits learning. Holt's most well known books are *How Children Fail* and *How Children Learn*. Later, Holt became a leader of the home education and unschooling movement and produced a newsletter entitled *Growing Without Schooling*. Holt died of cancer in 1985, at a time when he was still in his intellectual prime, but his work is carried on by Holt Associates Inc., led by Patrick Farenga.

• **John Gatto** taught in public schools for nearly thirty years. For three years in a row he was named New York City Teacher of the Year, and in 1991 he was named New York State Teacher of the Year. In that same year, 1991, he quit teaching and stated (in an editorial in the Wall Street Journal) that his reason was that he no longer wished to "hurt kids to make a living." Gatto's experience teaching in some of New York's "worst schools" and "best schools" convinced him that schools serve primarily to dumb kids down. Gatto concluded that children and adolescents are far smarter, and learn much more, when they are engaged with the real world and real problems, or with adventures of their own choosing, than when they are in the artificial, forced environment of school. His books include *Dumbing Us Down: The Hidden Curriculum of Compulsory Schooling*; *A Different Kind of Teacher: Solving the Crisis of American Schooling*; and *Weapons of Mass Instruction: A Schoolteacher's Journey Through the Dark World of Compulsory Schooling*.

• **Daniel A. Greenberg** began thinking seriously about the problems of education in America when he was a physics professor at Columbia University, in the early 1960s. Although he was a very popular teacher, he noticed that most students in his classes, and in other classes as well, were oriented toward getting the highest grades possible with the least effort possible, rather than toward really learning the subjects he was teaching. This led to a period of serious thought about the conditions in our schools that produce this attitude even in the brightest students. He resigned from his position at Columbia, moved to Massachusetts, and, in 1968--along with his wife Hanna and several other innovators--founded the Sudbury Valley School, a school designed for self-education. In this school, which I have described in a previous post, children and adolescents are free, all day, to associate with whom they please, to use their time as they please, and to use the school's resources as they please, as long as they don't break any of the schools rules, which students and staff create together democratically. Now, 41 years later, Sudbury Valley serves as a model for many other "Sudbury" schools throughout the world. For 41 years Greenberg has continued as a staff member at Sudbury Valley--elected each year to the staff through the one-person-one-vote procedure--and has authored many books and countless articles about the philosophy of the school and the experiences of students and former students. His books (in some cases co-authored with others) include: *The Crisis in American Education*, *A New Look at Schools*, and *Turning Learning Rightside Up* (on educational philosophy); *Kingdom of Childhood* and *The Sudbury Valley School Experience* (about life at Sudbury Valley); and *Legacy of Trust* and *The Pursuit of Happiness* (both based on systematic follow-up studies of former students of Sudbury Valley).

The perspectives and specific ideas of these three thinkers are in many ways quite different from one another, but there is a good deal of overlap. These are all people who stepped out of the box to observe schooling as it commonly exists in the United States and concluded that schools as we know them do not serve well the interests of children. Children need freedom in order to learn effectively and joyfully, and schools as we know them severely restrict freedom.

My own perspective--developed in the whole series of posts in this blog--does not match precisely that of any of the above three thinkers, but it too shares that area of overlap. I have come to my view partly from family experiences (such as watching my son and step-children grow up and observing their reactions to schooling); partly from my observations of college students in my 30 years of college teaching (which are similar to Greenberg's observations); partly from my observations of classrooms at a variety of public schools; partly from my analysis of the entire corpus of psychological literature on child development (as author of a general college textbook of psychology); partly from my formal (published) research and informal observations of learning at the Sudbury Valley School; and partly from my analysis of the anthropological literature on children's learning in other cultures, especially hunter-gatherer cultures.

If you are new to this blog and are interested in the kinds of observations and evidence that lead me to the conclusions I have been summarizing in the recent posts, I invite you to look back at the earlier posts. Especially relevant are the series entitled "Children Educate Themselves;" the series entitled "The Value of Play;" the series on the value of free age mixing; the October 1, 2008, post on the varieties of play and their relation to human educative needs; the Sept. 3, 2008, post on the natural environment for children's self-education; and the Jan. 28, 2009, post describing Mitra's research on minimally invasive education, in India. If you wish to delve further, my published research articles are readily available--including my original follow-up study (with David Chanoff) of the graduates of Sudbury Valley School (*American Journal of Education*, Vol. 94, p 182-213, 1986), my study (with Jay Feldman) of the role of free age mixing in children's and adolescents' learning (*American Journal of Education*, Vol. 110, pp. 108-145, 2004), and my previously cited review article on the roles of play in hunter-gatherer cultures.

What Students LIKE About School

The attitude of most students in our standard public and private schools toward their school is not entirely negative. I have not done a formal survey, but my informal observations suggest the following as some of the things that students often or sometimes say that they like about school:

• *Opportunity to make and meet friends*. Over the past few decades, as adults have assumed greater control over children's lives (see July 29, 2009, post), it has become increasingly difficult for children to meet other children and make friends. School is one of the few places where many children congregate, and in free time--before school, at lunch, and during recess (in those schools were recess still exists), they have the opportunity to talk and play together. The assignments of children to classes and schools by age prevent them from making friends across a broad age range, but at least they can meet and befriend other children of their same age at school.

• *Opportunity to get away from parents*. Some children--who have overbearing, or "helicopter," or (at the extreme) abusive parents--relish the opportunity to escape from their parents for the school day. Even children who have the

most wonderful parents imaginable need time away from them, in order to learn how to get along without them and to solve problems on their own. [For more on this, see Hara Marano's book, *A Nation of Wimps* (2009), or her *Psychology Today* article (2004), also by that title.] In hunter-gatherer cultures, where children are free all day to do what they want, children beyond the age of four years old spend much if not most of their time with other children, out of sight of adults. This is how they learn independence and self-governance. Children in our schools do not have that kind of independence, because they are governed by teachers, but at least they are away from their parents and are learning to cope with a different set of conditions than those that their parents would provide.

• *Opportunity to escape from poverty or from other confining conditions*. One commenter on my recent post noted, aptly, that for some children school is "an escape hatch." My local newspaper recently carried an article about a young girl in an impoverished area of Boston, whose father had abandoned her and whose mother had died of HIV, who had lost many of her young friends to murder or other causes associated with poverty, but who herself is "making it" through the school system. She is a star high school student, because of her own enormous initiative, and she is bound for college. Stories like this remind us that we need escape hatches for those born in poverty. We need escape hatches that work better than our current schools. Our schools notoriously fail to meet the needs of the majority who come from poverty. Only a few make it through the hatch; and home schooling is not an option for them.

• *Exposure to new ideas and new ways of thinking, and instruction in valued skills*. Students commonly talk about being bored in school, or anxious about tests, or angry that they have to spend so much time on meaningless homework and have little time for the rest of life. But sometimes, on the positive side, they also talk about some idea that they heard about in school, which got them excited, or about their enjoyment of some new skill they acquired in school, or about the joy of reading a book that they learned about at school. Some teachers are much better than others at breaking through the tedium and the concern for grades and finding ways to excite students, and students treasure those teachers. Unfortunately, students almost never get to choose their teachers, so the opportunity for such enrichment is a matter of luck. And even with the best teachers, only a fraction of class time is experienced by most students as intellectually exciting, partly because of the demands on all teachers to cover the standard curriculum and give the standard tests. [John Gatto was, by all accounts, the most intellectually exciting teacher in the New York City school system, but even he concluded that he was doing more harm than good in school and that his time was better spent advocating for radical reform in education.]

How We Could, If We Wished, Provide Opportunities for All Children to Educate Themselves Well, Without Coercion

It is, I think, no surprise that the things that children like best about school are among the things that they most need in order to educate themselves well. Children crave learning, but they crave it on their terms. They learn well when they are in control, and, like you and I, they often become resentful when others try to control them. But in order for children to learn, we need to provide the opportunities. We need to provide those opportunities not just to wealthy and middle class families, but also to the poor.

Briefly, what I envision, in my dream for the future, is that instead of schools as we know them today we would have a system of community centers, open to everyone, where children--and adults too, if they wish--can come to play,

explore, and learn. Where possible, there would be fields and woods where children can get away from adults and explore on their own. The tools of learning would be available, including computers. The town library would be part of each center. Local people, with various skills, would devote some time there offering classes to those who wish to take them--in music, art, athletics, math, foreign languages, cooking, business management, checkbook balancing, and anything else that people deem to be fun, interesting, or important. There would be no requirements, no grades, no ranking of people compared with other people. Local theater and music groups would put on productions at the center, and people of all ages could form new groups, of whatever sorts met their interests.

For a cost much less than that currently spent on our system of coercive education, we could develop beautiful centers, with exciting opportunities for self-education. Children would flock to such centers, because that is where their friends are and that is where there are so many exciting things to play with and explore. Within the center all that we most value in our culture would be represented, and children and adults too could sample as they please. The details of each center's construction and offerings would be determined locally and democratically, within each community. Purchases of equipment would be in response to demand, not the result of someone's *a priori* expectations. Staff would be hired for limited terms, through a democratic procedure, to assure a staff that serves the participants' needs. There would be no tenure.

With such centers, we could trust children's instincts for self-education to take control. They would learn what they need to know to do well as adults in our culture, and they would develop deep interests, which would lead to careers that would be play for them, not toil.

I have been brief here, in this final section, partly because my digression at the beginning has caused the post to grow longer than is recommended by the good people at Psychology Today. But for now, this hint may be enough. For now I'm glad just to get the idea out there, sketchy as it is, for you to play with, add to, or object to. Sometime down the road, after I've heard your thoughts and given the idea more thought myself, I'll discuss it in greater detail. I can think of many possible objections to this idea, but all of them that I can think of are problems that can be solved, not roadblocks. [Before ending, I should note that I owe this general idea primarily to my son, Scott Gray, who has given far more serious thought to it, to date, than I have. But I take responsibility for my specific interpretation of it, with which he might not agree.]

Note

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How Developmental Psychology's Marriage to the School System Distorts Our Understanding of Children

To understand children we must observe them where they're free.

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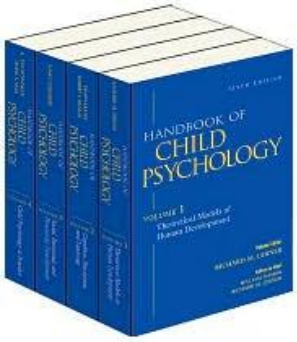

Have you ever seen the *Handbook of Child Psychology*? If not, I urge you to take a look at it the next time you have the opportunity to visit a university library. *Handbook* is a misnomer for this work; you'd need both arms to carry it all, and if you have a weak back you might want to carry it only a part at a time. The rest of its title--*of Child Psychology*--is also, in my opinion, a misnomer.

The most recent edition of this work is four volumes long, consisting of a total of nearly 5000 double-column pages. It's divided into 79 chapters, each authored by a different expert or set of experts on some aspect of child development. The list of authors could provide the foundation for a Who's Who in developmental psychology.[1] The work is intended as a full account of psychology's findings and theories about children's behavior. Graduate students in developmental psychology are often encouraged to use it as a foundation for their training. The Handbook's publisher, Wiley, describes the work as follows: "This authoritative four-volume reference spans the entire field of child development and has set the standard against which all other scholarly references are compared."

When the most recent edition came to my university's library, I eagerly hauled it down from its shelf to find out what it had to say about children's play and curiosity, the topics that interest me most. Here's what I found.

None of the 79 chapters are about *play* or even hint at play in their title. When I checked the subject indexes of each volume I found a few page references to play, but when I followed these up I discovered that, in all four volumes combined, slightly under 10 total pages are devoted to play. Ten pages out of 5,000--in other words, two-tenths of one percent of the whole--are devoted to the topic play in a work that is supposed to sum up all that we know about child psychology!

What about *curiosity* or *exploration*? Here the story is even worse. Not only is there no chapter on these topics, but curiosity doesn't appear in the index at all, and exploration appears in the index to just one volume. When I followed up that reference, I found that only 1 page was devoted to the topic of exploration. The problem is not that the index is short or incomplete; the index to each volume is huge. It is also not the case that the handbook uses some other terms for the topics of play, exploration, and curiosity. I looked exhaustively.

How can this be? How can a modern compendium of child psychology have essentially nothing to tell us about play and curiosity? If you ask a man or woman on the street to free associate to the concept *child*, the word *play* or *playful* will usually be near if not at the top of the list, and *curious* will be not far behind. To most non-academic observers, play and curiosity comprise a good part of the very essence of childhood. To borrow (and modify) a phrase once used by

William James, "only a mind polluted by too much immersion in academia" could possibly think about children for long without thinking about play and curiosity. Mark Twain has a lot more to tell us about the real psychology of children than does this supposedly comprehensive account of child psychology.

How did this sad state of affairs come about? My theory is that it came about because of the long, tight marriage of the field of developmental psychology to the school system.

Schools provide the settings, subjects, researchers, mind set, and questions for research in child development.

To conduct research on people you need to find a pool of subjects. It is difficult, time consuming, and expensive to reach out into the non-school part of the community to find people willing to be studied; it is a lot easier to study people in schools. Students provide a ready and more-or-less captive group for research. A large proportion of all of the research conducted into adult psychology is conducted with college freshmen and sophomores as subjects, who "volunteer" their time because it is part of a course requirement or because it boosts the grade they get in an introductory psychology class. Psychologists who study people younger than college age have to leave the ivory towers a little bit to find their subjects, and the most convenient places by far to find them are in schools.

Children in schools are used to being manipulated, observed, and tested. You can subject different groups of schoolchildren to different conditions, give them tests before and after the manipulation, tally the results, and, *voila*, you have, quite likely, a finding that you can publish in a scholarly journal of child development. Try that on a neighborhood playground or street corner and you may get picked up by the police. (In fact, you might get picked up just for standing around observing children in those settings, especially if you happen to be a male.)

When children are not studied within their own school building, they are most often studied in a psychology laboratory at the university. The children recruited, if they are age 5 or older, are almost invariably children who are attending conventional schools. The experimental research paradigm used in the laboratory fits well with the familiar school paradigm, so the children easily follow what they are supposed to do. The subject is the student, the researcher is the teacher, the experimental manipulation is the lesson, and the test is the test. The match fits well not just in the minds of the subjects, but also those of the researchers. My academic colleagues in psychology quite frequently, as a slip of the tongue, refer to their classroom students as "subjects," or to their laboratory subjects as "students."

Psychologists who study children generally call themselves *developmental psychologists*, because they are primarily interested in children's *development*, that is, in how children progress toward adulthood. In our culture schooling is such an ever-present force that most people, at a gut level, link child development with progression through the school system. Research psychologists are, as a rule, supreme products of the school system. We are people who survived schooling, and may have even thrived on schooling, for at least 20 years (through the Ph.D.) and are *still* in school, now as professors rather than as students. Even more than is true of most people in our culture, our gut-level understanding of human development is tied to notions of progression through the school system.

The school model of development is also convenient for psychologists who seek orderliness in their theories and abide by the dictum that only things that are measurable are worth studying. Development through schools is orderly,

uniform, and measurable; wishful thinking makes all of human development like that. Another significant source of influence on research in developmental psychology is financial. It is easier to get a government grant for such research if you link it somehow to children's education than if you don't, and education is understood implicitly by most grant reviewers as schooling.

Given all this, it is not surprising to discover that the questions that developmental psychologist attempt to answer in their research are largely school-related questions. Many of the questions are explicitly about school lessons; they have to do, for example, with ways of teaching reading or math. But even questions that are not so obviously about schooling are strongly affected by the school paradigm. They have to do with the effects, on children, of structured situations set up for them by adults, in controlled settings where the choices of what to do are severely limited. That, by itself, pretty much rules out the study of real play or curiosity.

There is nothing nefarious about any of this. These are honest researchers trying to study what they and others around them see as important. The result, though, is an extraordinarily biased and narrow view of the human nature of children.

What kind of place is school, and how does this bias our understanding of children?

If I am correct about the influence that schooling has on thought and research in developmental psychology, then an understanding of school as an environment that promotes some behaviors and prevents others can help us understand the biases that exist in developmental psychology. What kind of environment is school, and how might that affect the theories and findings of developmental psychology?

1. School is a place where children are more or less constantly directed by adults.

In school, the decisions of what to do, when to do it, and how to do it are made by the teacher or by authorities above the teacher. The student's job is to follow directions. I think this fact has an enormous influence on the ways that psychologists have thought about and studied children's behavior. There is very little research or theory on how children make choices, or take initiative, or become engaged with the world around them. There is, instead, lots of research on how children answer questions that adults ask them to answer and how they process or remember information that is given to them by adults.

2. School is a place that draws a sharp distinction between "work" and "play" and puts learning in the former category. A constant message at school is that work and play are very different things. Work (specifically, "school work") is what you have to do; work improves you; work educates you. Play is something you do at recess as a break from work, or when your work is finished. The implicit idea here is that play is trivial. I think that this helps explain why most developmental psychologists have avoided studying play, and why those few who do study it rarely get invited to contribute to summaries of the field, such as the *Handbook of Child Psychology*.

3. School is a place of frequent tests, emphasis on norms, and ranking of children along measured dimensions. The school system requires lots of testing to judge when children are ready to move on to the next lesson or grade. Psychology has obliged with an enormous amount of research on test construction and with whole theories of

development that are based on measurable achievement norms. In fact, it is fair to say that developmental psychology got its start, near the beginning of the twentieth century, when Alfred Binet was asked by the French ministry of education to develop a test whose purpose was to help the school system assign new students to grades and tracks. The result, of course, is what we know of today as the IQ test. Even today, IQ testing is among the major applied areas of developmental psychology. So, the link of developmental psychology to the school system goes back to the inception of developmental psychology. (Perhaps the metaphor of marriage in the title to this piece is misleading. You might argue that developmental psychology is the child of the school system, not the spouse, and the child has not yet ventured far from home.)

4. School is a place of strict age segregation.

In schools today, children have almost no opportunities to interact with children who are more than a few months older or younger than themselves. I think this fact helps explain why there are almost no studies in developmental psychology dealing with interactions between young children and adolescents, or between children who differ in age by more than two or three years. Yet, as I have argued in previous posts, in non-school settings age-mixed play, over a broad span of ages, appears to be the principal means by which younger children acquire new skills and knowledge and older children develop leadership and nurturing capacities (see series of three posts, beginning with Sept 9, 2008). By focusing on children in schools and employing an implicit model of schooling as the model of all of human development, developmental psychology as a field has completely ignored the developmental power of free age mixing.

5. School is a competitive place.

Schools, by design, are competitive environments. Children compete for high grades, for high placements in class rankings, and ultimately for limited places in selective colleges. The classroom "games"--such as spelling bees--are generally competitive, as are many of the extracurricular activities. Students compete to be in the school play, or on interscholastic sporting teams, or in the select chorus, or on the cheerleading squad. Moreover, age segregation itself tends to promote competition. All this leads to an atmosphere of competition that rubs off even onto the less formal activities at school. Children--and even more so adolescents--develop social hierarchies of popularity in the school context, which are often studied by developmental psychologists as if they are natural to children everywhere. Yet research in non-schooled societies and on children outside of school--conducted generally by anthropologists rather than psychologists--casts doubt on the generality of such hierarchies. Even monkeys are more hierarchical, competitive, and aggressive when they are confined, in cages, with others whom they did not choose to be with than when they are free to roam and to choose their own companions.

If we want to understand human potential, and not just how people adapt to schools and school-like environments, then we must widen our scope of research to include research on children in a wide variety of settings and research using a wide variety of methods. We will never know fully the power of children's play, curiosity, and self-direction, or the power of free age mixing, if we don't study children in contexts where these are allowed to blossom. Unfortunately,

such contexts are becoming increasingly rare in our society. Let's find them, study them, and nurture them as we do for vanishing species!

Notes

*Some hyperlinks in these posts are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines.

[1] To research psychologists the terms *child psychology* and *developmental psychology* are largely synonyms, though some developmental psychologists study adult development. I am not talking here about child psychology as clinical practice (where, in fact, considerable attention is devoted to the subject of play--especially to play as therapy), but rather about child psychology as an academic discipline aimed at learning about the psychological nature of children and the processes involved in children's development toward adulthood.

Empowering Neighborhoods and Restoring Play: A Modest Proposal

Proposal for a play/learning center run by the participants

Published on October 7, 2009 by Peter Gray in Freedom to Learn

Where have all the children gone? When I was growing up, and for some time after that, you could walk through any North American neighborhood--after school, or on weekends, or any time in the summer--and find children playing (see July 22, 2009, post). They would be playing freely, often in age-mixed groups, without adult supervision. Such play was great fun, and it served important developmental functions. It provided physical exercise; it allowed practice in a wide range of mental and physical skills; and, perhaps most important, it provided the context in which children learned how to solve problems without their parents and to get along with peers. As I have described in many previous posts (see the list), such play was the primary vehicle for children's education throughout most of human history.

Now such play is vanishing, and as it is vanishing the rates of childhood obesity, depression, and suicide are rising. It is not natural, not healthy, for children to grow up without being able to go outdoors, on their own, and play freely with other children. Adult-organized activities--such as soccer leagues, or karate lessons, or music lessons--are fun and educational for some, but they are no substitute for free play.

As regular readers of this blog know, I have been voicing such concerns for some time. But just four days ago a colleague—a prominent researcher who is also the co-director of a foundation aimed at solving social problems—presented me with a challenge. Do I want just to write about these problems, or do I want also to try to *do* something about them? He invited me to work with him to help develop, as a pilot project, a neighborhood play and learning center that could serve as a model that communities everywhere might emulate.

I have been thinking of little else since then, and so I decided to turn my thoughts into this week's post. The foundation--which I have been invited to join--could fund the project if my colleague and I can come up with a convincing proposal. And so, I am in the process of developing a proposal, and I am asking you, the readers of this blog, to help me. I don't want to name the colleague, or the foundation, or the community where we would develop the pilot project until we are a little further along. But I will outline in general terms my thoughts so far for the project. I hope that you will read this critically and make suggestions, in the comments section at the end, based on your own experiences and knowledge.

Solving the problem at the level of the neighborhood

Surveys, in North America and in the UK, show that many parents today regret the fact that their own children are less free to play on their own, away from their own homes, than they themselves were when they were growing up.[1] When asked why they don't let their children play freely in the neighborhood, most point to safety concerns. The

biggest fear seems to be of strangers--unknown people who might kill, molest, or in some other way seriously hurt their child.

This fear arises, at least in part, because people don't know their neighbors as well as they did in times past. People tend to lead private lives, largely indoors, and adults center their social lives more around their work companions than around their neighbors. Neighbors who are unknown are strangers, and strangers are perceived as potentially dangerous.

When fear leads a significant number of parents to confine their children to the indoors or to adult-directed activities, the neighborhood becomes even less inviting. Children are drawn to other children, so the fewer children there are outdoors the less incentive there is for any given child to go outdoors to play. Also, as the number of children playing outdoors decreases, the perceived danger--and possibly the real danger--of the neighborhood increases. There is safety in numbers; children who know one another protect one another and would quickly report any misbehavior or suspicious person they see. The result of all this is a vicious cycle: Perceived danger **-->** fewer children playing outdoors **-->** still greater perceived danger **-->** still fewer playing outdoors **-->** etc., until neighborhood play is lost completely.

To increase play in any given neighborhood, we must break this cycle that is driven by distrust and fear. Here is a sketch of my proposal:

Empower a neighborhood to design, create, and manage a safe haven for play and learning for people of all ages

The project would begin in a particular ethnically mixed, working class neighborhood in a particular city. A vacant lot, already existing in that neighborhood, would be donated by the city to the neighborhood as communal property for development of a play and learning center. Everyone in the neighborhood, an area consisting of several city blocks, would be invited by the researchers to an organizational meeting, at which they would hear a preliminary proposal for possible use of that vacant lot. This meeting, in itself, would be a first step through which neighbors would get to know one another.

At this and follow-up meetings, the researchers would present a proposal, which I will simply outline here as a series of principles:

1. *Start-up grant*. The city would donate the vacant lot to the neighborhood for the purpose of building a play and learning center. The donation would be reversible, however. If the area is not used in the general ways intended, over a certain period of time, it would be turned back to the city. Funding for creating the center would come from the research foundation. The center could include a building, suitable for year-around use, as well as an outdoor play area.

2. *Design to attract people of all ages*. The center must be designed in such a way as to meet needs and desires of people of all ages in the community, so adults and teenagers are attracted to it as well as younger children. For example, it might include playground equipment and toys (most attractive to young children); a small gymnasium with basketball hoops (useable by all ages); an indoor computer and video-game room (for all ages); an area where tables could be set up for cards or board games (which might be attractive to adults and whole families, in the evening); and a large-screen TV (attractive to all ages). This is just a sample list; the actual list would come from the community. One

hope is that people would come to the center even for activities that they could do at home (such as watching a sporting event on TV or playing video games), thereby turning a private activity into a social activity and, in the process, generating age-mixed play and a sense of community.

3. *Adaptability for future purposes*. The center should be designed with flexibility in mind. As interests change over time, it should be possible to modify the physical structures to meet those interests.

4. *Neighborhood control of design*. The specific design for the center--within the constraints just listed--would come from the neighborhood. Through a democratic process, the people in the neighborhood would choose a design committee, which would include children and adolescents as well as adults. That committee would develop proposals to present to the whole neighborhood. A final proposal would be approved at a meeting at which everyone in the neighborhood above (let us say) 6 years old has a vote.

5. *Neighborhood building of the center*. Once the design is set, people in the neighborhood would volunteer to help with the physical construction of the center. This would reduce initial cost, increase the sense of neighborhood ownership of the center, and cement friendships among the volunteers.

6. *Management of the center by the people who use it*. An initial rule might be that the center could be used only by people who (a) reside within the designated boundaries of the neighborhood and (b) sign a membership statement agreeing to abide by all of the rules of the center. Those who sign the membership statement would then elect a management committee, which would include children and teenagers as well as adults. That committee would develop an initial list of rules and procedures for use of the center and a system of adult, volunteer staffing if such staffing were deemed by the members to be essential for safety. Over time, the rules might change, through a process involving periodic meetings of the members.

7. *Research uses of the center*. The researchers and the foundation that arranged the initial funding would maintain a research interest, but not a management interest, in the center and its effects on the neighborhood. The initial agreement might include a statement to the effect that the researchers would be welcome to visit the center and observe at any time.

Research Questions Related to the Center

The research foundation that provides the initial funding for the center would follow up with studies aimed at understanding how the center is used and its effects on the neighborhood. The studies might include direct observations at the center and periodic surveys of people in the study neighborhood and (for comparison) in adjacent neighborhoods (which do not have such a center). The specific questions for research might include the following:

1. How fully, and for what activities, and by how many people in each age group is the center used? How does use of the center change over time? How does the community manage the center? Do they succeed in making it a safe place for people of both genders, all ages, and all ethnicities?

2. How much age mixing occurs at the center? Does this change over time?

3. What effects does the creation of the center have on people's sense of the neighborhood? More specifically, does it lead people to know more neighbors? Does it lead people to feel more trusting of their neighbors? Does it lead to an increased perception of the whole neighborhood (not just the center) as a safe place for children to play? Does it lead people to reside in that neighborhood longer than they otherwise would?

If this project is successful, the foundation would work to promote such centers nationwide. Communities throughout the United States, for relatively little cost, could develop neighborhood centers that the neighbors themselves would manage and maintain. The result could be a nationwide increase in local pride, in sense of community, and in children's opportunities to find one another and play freely and safely, across ages, in ways that promote their happiness, learning, and personal character.

What do you think?

Is this pie-in-the-sky or is it feasible? Have you had experiences with anything like it? If you have any thoughts about this at all, please share them in the comments section below. Your thoughts may well play a role in my deciding whether or not to undertake this project. If I do decide to undertake it, your thoughts may well affect the details. If this project does go forth, I will update you about it in future posts.

Notes

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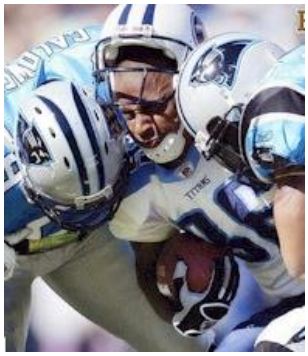
[1] For examples of such surveys, see: Clements, R. (2004), "An investigation of the status of outdoor play," in *Contemporary Issues in Early Childhood, 5*, 68-80; and see O'Brien, J., & Smith, J. (2002), "Childhood transformed? Risk perceptions and the decline of free play," in *British Journal of Occupational Therapy, 65* (3), 123-128.

Pushing Competition and Damaging Health: Making Play Offensive

Football causes brain damage, yet we continue to push it.

Published on October 27, 2009 by Peter Gray in Freedom to Learn



If American football were a food additive or a drug, it would be banned by the FDA. Or, if financial interests prevented its banning, its package would at least carry a surgeon general's warning: **Football causes brain damage**. For a layman's summary of the evidence, take a look at Malcolm Gladwell's article, *Offensive Play*, which appeared in last week's *New Yorker* (Oct. 19 issue).

Gladwell's article is based largely on his interviews with two neuropathology researchers--Anne McKee and Bennet Omalu--who are specialists in a condition called chronic traumatic encephalopathy (CTE), a progressive neurological disorder caused by trauma to the brain, which has symptoms similar to those of Alzheimer's Disease. The most reliable physical marker of CTE, observable only in post-mortem assays, is abnormal tangles of the protein tau in the brain.

McKee has been examining the brains of ex athletes who played contact sports--mostly football players but also some boxers--who died and whose families gave permission. At the time of Gladwell's interview, McKee had examined 16 such brains and found clear evidence of CTE in every one of them. In similar studies, Omalu reported that he found clear evidence of CTE in all but one of the ex football players that he had studied (the single exception was a running back who had not played football very long). Some of these men had died young, some old, but all (except the one) had definite evidence of the kind of brain damage that is known to cause dementia, including severe memory impairment, loss of judgment, and sometimes damaging personality changes. One of McKee's subjects was an 18-year-old boy who had played only high-school football, and even he had the telltale tau marker of CTE. Omalu has also collected stories from the wives of ex football players, detailing the debilitating behavioral changes they had witnessed, often beginning at an age far younger than that at which Alzheimer's Disease first manifests itself.

Football is a sport in which physically powerful boys or men, some of whom are beefed up way beyond normal size and strength, repeatedly line up and smash their heads against one another or throw one another to the ground. Head smashing is intrinsic to the sport. They wear helmets, of course, but no helmet so far designed--or even so far imagined--can protect the brains of these young men from the repeated bangings they receive. Gladwell's article refers to studies showing that even in practice sessions the brains of these players take multiple beatings. According to McKee and Omalu, it is the repeated head banging, which is part of the game itself--not any particular massive blow--that is the primary cause of the CTE that they are observing.

Although the tau evidence is relatively new, other evidence for the brain-damaging effects of football is not new. In fact, arguments for dropping school football programs because of such effects have been put forth periodically for decades. Yet high schools and colleges--including the college with which I am affiliated--now push their football programs harder than ever, and watching NFL games on television is a national pastime. Those pushing football at the

college level, especially, are educated people. They know that football damages brains; they know what they are doing, just as cigarette manufacturers knew for decades what they were doing. Yet they continue to do it because the football program is so lucrative. In our sports-crazed world, football, perhaps more than anything else, is what keeps alumni interested in their alma maters and keeps donations flowing in. It is high time that alumni started rebelling. In his article, Gladwell implicitly compares the outrage that we as a society have expressed about the abuse of dogs, in dog fighting, with our lack of outrage about the abuse of boys and young men, in football.

Gladwell's article has led me to reflect more broadly on the corruption of play that occurs when we focus too strongly on competition, when winning becomes more important than just having fun. Before going further, however, let me admit that I have long enjoyed competitive sports. I played and enjoyed varsity basketball, baseball, and track & field in high school; I coached basketball as a means of working my way through college; and my wife will tell you that I'm still (at age 65) a sometimes overly competitive person. When I see someone catching me on my bicycle, or on my kayak, I speed up even though I'm just out for a pleasant ride, and I'm the only one in the family who takes board games such as Scrabble seriously. My wife and stepdaughter quite appropriately tease me, no end, about all this. At a gut level, I buy into the competitive orientation of our society; but my head tells me that we've gone way too far. We push our children into competitive games and act as if "just playing" without competing is a waste of time. By turning play into competition we, as a society, are damaging everyone's health.

Beyond Brain Damage

Health damage caused by our heavy focus on competition extends beyond football and brain damage.

When winning in any activity trumps just having fun, people "play through the pain," so minor injuries of all types turn into major ones.

When winning trumps just having fun, some people take steroids or other drugs that improve performance but do long-term damage.

When winning trumps just having fun, only a few select individuals make the teams, and the rest of society become merely vicarious players, who grow fat and soft as they munch and watch from the stands or their living room couches.

When winning trumps just having fun, good sportsmanship too often goes down the drain.

All this applies to all our activities, including our jobs, not just to sports. Life should be playful, joyful. The compulsion to win can drain the fun out of everything we do, and it can destroy our health in the process.

What do you think? What good and bad experiences have you, your children, or others whom you know had with competitive sports? I would value your comments. I plan to continue the theme of competitive play--or of competition *versus* play--for the next two or three posts, and I hope to take your experiences, thoughts, and questions into consideration.

The Biological Distinction Between Play and Contest, and Their Merging in Modern Games

Contest and play have separate biological roots and functions.

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Last week I began a series of posts dealing with competitive play. Now, in this second essay of the series, I want to step back and reflect on the origin of competitive play. I see it as a conjoining of two originally distinct categories of behaviors, which serve very different functions--play and contest.

The Distinction Between Play and Contest in Animals

In non-human animals, play is always non-competitive. Some animal play may look competitive from a distance, but close inspection shows that it is not. Young mammals of almost all species playfully chase one another and wrestle, but none of that behavior is oriented toward defeating the other. In fact, close inspection shows that animals at play deliberately avoid actions that could turn the friendly encounter into an antagonistic one. In play fights, the stronger of the two self-handicaps so as to make the game more fun for both parties, and no animal pins the other long enough to provide any sense of victory or defeat. In play chases the players take turns being the pursuer and the pursued, and in play fights they take turns adopting the on-top versus underneath positions. The playful nip is never delivered as a hurtful bite.[1]

Animals also avoid showing nonverbal signals of aggression during play; instead, they repeatedly exchange play signals. For monkeys and apes the basic play signal is the smiling or laughing "play face;" for dogs, wolves, foxes, and other canids it is the "play bow," in which the animal lowers its front quarters (accompanied by tail wagging in dogs). These signals are, essentially, signs of non-aggression. If one animal is accidentally hurt in play, the other exhibits a spate of play signals to indicate that hurt was not intended.

Play, by definition, is voluntary behavior that serves no immediate purpose outside of itself (for a full definition, see Nov. 19, 2008, post). In human terms, it is done just for fun. In social play (play involving more than one individual), each must take care to keep the other pleased, so the other doesn't quit. That is why, in animals, play cannot be competitive. If it were, the weaker or less skilled would immediately quit, as it is no fun to be humiliated or defeated.

Animal behaviorists distinguish sharply between *play fighting* and *ritualized fighting* in animals. While the former is for fun and is cooperative, the latter is for some extrinsic prize and is antagonistic. Ritualized fighting is a variety of actual fighting that is conducted in such a way as to reduce the chance that either party will be physically wounded. It is, essentially, a nonviolent means of establishing which animal would win if the encounter were violent. It is aimed at determining who is stronger, braver, or more skilled. The combatants are most often males, and the prize, depending

on species and situation, may be the opportunity to mate with a female who is looking on and is motivated to mate with the winner (so she can produce sons who can win such contests). Or, more generally, the prize may be movement up the dominance hierarchy, which itself may have many rewards, including increased opportunities to mate in the future.

In contrast to the joyful frolicking of play fighting, ritualized fighting is grim. It is characterized not by play signals, but by serious signals of aggression. Cats arch their backs, raise their fur, and hiss at one another; antelope paw the ground while staring menacingly at each other and may also test each other's strength by butting heads or pushing each other with their antlers; macaque monkeys stare and screech at one another; gorillas puff themselves up and pound their chests. If these tactics fail to establish a clear winner and loser--that is, if neither participant is sufficiently intimidated to back down--the ritualized fight usually turns into an actual, violent fight, which ends only when one runs away or goes into a submissive posture, which is a nonverbal way of saying, "I lose, I am humiliated, I am unworthy of mating, I will no longer contest your superiority." Quite literally, in such contests, the level of circulating testosterone goes up in the winner and down in the loser, whether or not any actual violence occurred. Aggression and sex are closely related in most mammals.

The Expansion of Play and Avoidance of Contests by Hunter-Gatherer Humans

We humans, of course, are mammals. We have inherited from our primate ancestors both playfulness and aggressiveness. We differ from those ancestors, however, in our extraordinary capacity for learning and the cultural transmission of values, attitudes, and habits. Some cultures have taken an egalitarian, non-aggressive direction, and they have done so in part by maximizing play and minimizing contests. Other cultures have gone in the opposite direction; they trivialize true play and place great value on contests.

The most egalitarian societies that anthropologists have found are hunter-gatherer band societies. Examples are the Ju/'hoansi, the Hazda, the Mbuti, the Aka, and the Efé in Africa; the Batek in Peninsular Malaysia; the Agta in the Philippines; the Nayaka in India; and the Aché in Paraguay. These societies avoid any social ranking. They have no powerful chief or "big man," they make all decisions by consensus, and they eschew violence as a means of settling conflicts. The hunter-gatherer way of life requires an enormous amount of sharing and cooperation, well beyond that shown by any of our primate relatives. As I have pointed out in previous posts, hunter-gatherers use play and humor to promote friendships, to deflate puffed-up egos, and to maintain the spirit of equality and sharing upon which their way of life depends (see especially the June 11, 2009, essay; also see Note 2). To that I now add the observation that hunter-gatherers avoid competition in their play and do not engage in contests.

Anthropologists who have lived in hunter-gatherer cultures report that adults and children alike, in such cultures, take care to avoid any sense of winning or losing in their play. For example, P. Bion Griffin, who has studied the Agta, told me in response to a survey question that the one consistent rule of play that he observed was that "no one should win and beat another in a visible fashion."[2] In an extensive discussion of play among the Ju/'hoansi, Lorna Marshall pointed out that even their more formal games, which have explicit rules and could be played competitively, are played non-competitively.[3] In fact, the explicit goal in most such games is cooperation, not competition. A good example is

the "melon game," which is essentially a line dance in which the players toss a small melon over their heads, from one player to the next, while simultaneously singing and dancing. The goal is to keep the melon in the air as long as possible without breaking the rhythm of their dance. The game requires enormous skill, but the skill goes into cooperating to keep the melon in the air while staying in step, not into winning by determining who is first or last to drop it.

In one of his articles about the Mbuti, Collin Turnbull illustrated these people's attitudes toward competition by describing mock tug-of-war games that they played as part of their celebration of the honey season. The purpose of these games is not to win, but to ridicule the very idea of winning, and also to exchange good-natured teasing between the sexes. The men and boys take one side of the vine rope and women and girls take the other, and they sing in antiphony as they pull. Here are Turnbull's words: When the men and boys start to win, "one of them will abandon his side and join the women, pulling up his bark-cloth and adjusting it in the fashion of women, shouting encouragement to them in a falsetto, ridiculing womanhood by the very exaggeration of his mime." Then, when the women and girls start to win, "one of them adjusts her bark clothing, letting it down, and strides over to the men's side and joins their shouting in a deep bass voice, similarly gently mocking manhood." Turnbull continues: "Each person crossing over tries to outdo the ridicule of the last, causing more and more laughter, until when the contestants are laughing so hard they cannot sing or pull any more, they let go of the vine rope and fall to the ground in near hysteria. Although both youth and adults cross sides, it is primarily the youth who really enact the ridicule. ... The ridicule is performed without hostility, rather with a sense of at least partial identification and empathy. It is in this way that the violence and aggressivity of either sex 'winning' is avoided, and the stupidity of competitiveness is demonstrated."[4]

The Merging of Play and Contest in Post Hunter-Gatherer Cultures

Agriculture, first developed about 10,000 years ago, brought the eventual downfall of egalitarianism and the rise of competitive, hierarchically organized societies. It also promoted the development of competitive play. People in all agricultural and industrial cultures, unlike those in hunter-gatherer cultures, play competitive games.[5] In our own society such games include all formal sports and almost all board games and card games. Such games seem to be best understood as a conjoining of play and contest. In fact, depending on the players' attitudes and the rewards (or lack of rewards) available to the winners, games that are designed to be competitive can vary along the whole continuum from pure play at one end to pure contest at the other.

Games with a competitive structure are pure play when conducted in the manner of the Mbuti's tugs of war, where nobody cares about winning. They are also mainly play when scoring and striving to win are viewed simply as an enjoyable aspect of the game, not as anything that has consequences beyond the game itself. However, when trophies or other prizes are added to the scene, or when spectators are added who will judge winners more favorably and losers less favorably, or when the players measure themselves by whether they win or lose, the games become less playful and more like contests. At the extreme, where winning is all-important, the games are pure contests, not play at all.

The addition of female cheerleaders to male sports in schools seems to be almost explicitly designed to mimic the situation present during ritualized and actual fighting in animals, where males battle it out to win the favors of females. And, at a gut level, the link to sex seems to be present in all serious competitive games, at least for males. Among post-

pubertal boys and men, testosterone level goes up in winners and down in losers--just as it does for animals engaged in ritualized fights. That's true not just for physical sports, such as football or soccer, but also for board games such as chess.[6].

In our society it is hard to be against competition. Competition ranks high in our society's hierarchy of values. But cooperation also ranks high; and, let's face it, competition and cooperation are opposites. We like to pretend that they are not, but hunter-gatherers knew better. I myself, like so many people in our society, have mixed feelings about competitive games. I can't get myself to be completely against them. I do, however, think that we have gone overboard in pushing children into competitions and reducing their opportunities for fully non-competitive play--the kind of play that they themselves most often choose when adults are not around. In my next post I plan to explore the moral values enshrined and practiced in contests versus play, and in the post after that I plan to describe the ways by which we as a society subvert children's strong urges to play and push them into contests instead. We do this especially in our schools, which, by design, force children into almost continuous contests.

As always, I greatly value your input. Does my distinction between play and contest make sense? What do you think are the relative values of each to children's development? Your thoughts will play a role in my next two essays.

NOTES

*Some hyperlinks in these posts are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines.

[1] For general discussions of the noncompetitive nature of animal play, and of animal play signals, see: Bekoff, M. (2001). Social play behavior: Cooperation, fairness, trust, and the evolution of morality. *Journal of Consciousness Studies, 8*, 81-90; Fagen, R. (1981). *Animal play behavior*; or Power, T. G. (2000), *Play and exploration in children and animals*.

[2] Peter Gray. Play as the foundation for hunter-gatherer social existence. *American Journal of Play, 1*, 476-522, 2009.

[3] Marshall, L. (1976), *The !Kung of Nyae Nyae*.

[4] Turnbull, C., "The Ritualization of Potential Conflict Between the Sexes among the Mbuti," in E. Leacock & R. Lee (Eds.), *Politics and History in Band Societies* (1982), 133-155.

[5] For a summary of cross-cultural research correlating competitive games with social values and economic systems, see: Brian Sutton-Smith & John M. Roberts, "The Cross-Cultural and Psychological Study of Games," in G. Lüschen (Ed.), *The Cross-Cultural Analysis of Sport and Games*, (1970).

[6] For references on the effects of winning and losing on testosterone production, see: Archer, J. (2006). Testosterone and human aggression: An evaluation of the challenge hypothesis. *Neuroscience and Biobehavioral Reviews, 30*, 319-345.

Some Lessons Taught by Informal Sports, Not Taught by Formal Sports

Real life is an informal sport, not a formal one.

Published on November 11, 2009 by Peter Gray in Freedom to Learn

Imagine an old-fashioned sandlot game of baseball. A bunch of kids of various ages show up at the vacant lot. They've come on foot or by bicycle. Someone brought a bat, someone brought a ball (which may or may not be an actual baseball), and several came with fielders' gloves. They decide to play a game. The two reputably best players serve as captains, and they choose up sides. They lay out the bases--which might be hats, Frisbees, or any other objects of suitable size. There may not be enough players to fill all the standard positions, so they improvise. No adult authority is present to tell the kids what to do or to settle disputes. They have to work all this out themselves. This way of playing is what I refer to as the *informal* way of playing sports.

Now imagine a Little League game of baseball. It's played on a manicured field, which looks like a smaller version of the fields where professional games are played. Most kids are driven to the field, partly because it is a distance from home and partly because their parents are behind this activity. Many parents stay for the game, to show their support for their young players. The teams are predetermined; they are part of an ongoing league. Each team has an adult coach, and an adult umpire is present to call balls, strikes, and outs. An official score is kept, and, over the course of the season wins and losses are tracked to determine the championship team. This way of playing is what I refer to as the *formal* way of playing sports.

I can imagine many reasons why parents today value formal sports over informal sports for their children. For reasons that I discussed in the post of July 29, 2009, many parents are afraid to let their children play in settings where there is no adult supervisor, or where they themselves (the parents) aren't present to watch. To them, the formal game seems safer, because of the adult presence and direction. Some harbor hopes that their children will one day become professional athletes, or at least heroes on high school or college teams, so they value the expert training that the formal game may provide. Many parents see formal sports, unlike informal sports, as activities that can be recorded on children's résumés and help get them into something, sometime. Our cultural obsession with schooling has led many to the misconception that the only activities that count in children's development are those that are led by adults. All lessons are seen implicitly as coming top-down, from capable adults to incapable children. What, after all, could my precious child learn from other children?

I'm not against formal sports for children, as long as children really want them and prove that by taking all of the initiative to join; but I am saddened to see the huge decline in children's informal sports--and in all sorts of free, self-directed outdoor play--that has occurred during my years as an adult. As I have said before, I think that decline plays a big part in the epidemics of childhood obesity, depression, and perhaps other childhood disorders that we see today. There is a tendency to blame the decline in children's free outdoor play on the rise of electronic games and the ever-

increasing seductiveness of television programming. Those may contribute, but I think the bigger factor by far lies in the changed attitudes of adults, who no longer trust their children to play freely, on their own, outdoors.

The Lessons of Informal Sports

Informal sports, as well as other child-organized varieties of social play, teach lessons that cannot be taught, or cannot be taught as well, by adult-directed formal sports. Here's a summary of the most important of those lessons, as I see them.**

1. There is no real difference between your team and the opposing team.

In informal sports, the players can see at every moment that their division into two teams is arbitrary and serves purely the purpose of the game. New teams are chosen at every game. Billy may have been on the "enemy team" yesterday, but today he is on your team. In fact, teams may even change composition as the game goes along. Billy may start off on the enemy team, but then may move over to your team to make sides more even after two of your teammates go home for supper. Or, if both teams are short of players, Billy may catch for both teams. Clearly, the concept of "enemy" or "opponent" in informal sports is one that has to do with fantasy and play, not reality. It is temporary and limited to the game itself. Billy is just pretending to be your opponent when he is on the other side; he isn't in reality. It's in that sense like a pure fantasy game in which Billy pretends to be an evil giant trying to catch you and eat you.

In contrast, in formal, league sports, teams remain relatively fixed over a whole series of games. The result is development of a sense of team identity and, with it, a sense that "my team is better than other teams"--better even in ways that have nothing to do with the game and may extend to situations outside of the game. A major theme of much research in social psychology, and in political science, has to do with ingroup-outgroup conflict. Cliques, gangs, ethnic chauvinism, nationalism, wars--these can all be discussed in terms of our tendency to value people we see as part of our group and devalue people we see as part of another group. Formal team sports feed into our impulse to make such group distinctions, in ways that informal sports do not. Of course, enlightened coaches of formal sports may lecture about good sportsmanship and valuing the other team, but we all know how much good lecturing does for children--or for adults, for that matter.[1]

2. To keep the game going, you have to keep everyone happy, including the players on the other team.

In the minds of the players, the informal game is conducted just for fun. Nobody is forced or pressured to play. There are no coaches, parents, or other adults who will scold you or be dissappointed if you quit; no fans to please. There are no trophies or other prizes to win or lose. A score may be kept, and players may cheer each time one of their own crosses home plate or makes a great play, but tomorrow nobody will remember who won. Part of the definition of free play is that players are free to quit at any time (see definition of play). Because they are free to quit, the game can continue only as long as a sufficient number of players choose to continue. They will continue playing if they are having fun; they will find some reason to quit if they are not. Every experienced player knows that implicitly. Therefore, every player who wants to keep the game going is motivated to keep the other players happy, including those who are on the "enemy team."

This means that you show certain restraints in the informal game--restraints that go beyond those dictated by the rules and derive from your understanding of the needs and desires of the other players. You don't run full force into second base, bowling the second baseman over, if he is smaller than you and could get hurt--even though in the formal game that would be considered good strategy and a coach might scold you for *not* running as hard as possible. This attitude, in fact, is why children get hurt less frequently in informal sports than in formal sports, despite parents' beliefs that the adult-directed formal sports are safer. If you are pitching, you pitch softly to little Johnny, because you know he can't hit your fastball, and you know he would not have fun and would leave if you struck him out every time. You also know that even your teammates would accuse you of being "mean" if you threw your fastest pitches to Johnny. But you don't pitch *too* softly to Johnny, because you don't want to insult him. To be a good player of informal sports you have to hone your skills as a psychologist, to understand what others want. In the informal game, keeping people happy, so the game will continue, is far more important than winning. That's true in life as well.

3. Rules are modifiable and are generated by the players themselves.

Because nothing is standardized in the informal game, the players have to make up and modify rules to adapt to varying conditions. If the vacant lot is small and the only ball available is a rubber one that carries too well, a rule may be adopted saying that any ball hit farther than the rock in the outfield is an automatic out. This causes the players to concentrate on placing their hits, rather than smashing them. Alternatively, certain players--the strongest hitters--may be required to bat one-handed, with their non-dominant hand, or to bat with a broomstick rather than an actual bat. As the game goes on and conditions change, the rules may change further. None of this happens in Little League, where the official rules are inviolable and interpreted by an adult authority rather than by the players, and where conditions must be standardized to fit the rules.

Piaget noted long ago, in his classic study of children playing marbles, that children acquire a higher understanding of rules when they play just with other children than when their play is directed by adults.[2] Adult direction, in formal games, leads to the assumption that rules are determined by an outside authority and are not to be questioned. When children play just among themselves, however, with no official authority present, they come to realize that rules are just conventions, established to make the game more fun and more fair, and can be changed to meet changing conditions. For life in a democracy, few lessons are more important than that.

4. Conflicts are settled by argument, negotiation, and compromise.

In the informal game, with no umpire--or at least no authoritative umpire (there may be a kid "umpiring" because he has a broken ankle and can't play)--the players must not only make and modify the rules but must decide all along the way whether a hit is fair or foul, whether a runner is safe or out, whether the pitcher is or isn't being too mean to Johnny, and whether or not Julio should be allowed to hog his brand new glove rather than share it with someone on the opposing team who doesn't have a glove. Some of the better or more popular players may have more pull in these arguments than others, but everyone has a say. Everyone who has an opinion defends it, with as much logic as they can muster; and ultimately consensus is reached.

Consensus doesn't necessarily mean agreement. It just means that everyone consents; they're willing to go along with it for the sake of keeping the game going. Consensus is crucial if you want the game to continue. The need for

consensus in informal play doesn't come from some highfalutin moral philosophy; it comes from practical reality. If people don't agree, some will quit, and if too many quit the game is over. So you learn, in the informal game, that you have to compromise if you want to keep playing. Because you don't have a king who decides things for you, you have to learn how to govern yourselves. Hmmm--govern yourselves--I wonder if that skill is useful in real life.

Once I was watching some kids play an informal game of basketball. They were spending more time deciding on the rules and arguing about whether particular plays were fair or not than they were playing the game. I overheard an adult nearby say, "Too bad they don't have a referee to decide these things, so they wouldn't have to spend so much time debating." Well, is it too bad? In the long run of their lives, which will be the more important skill--shooting baskets or debating effectively and learning how to compromise? Kids playing informal sports are practicing many things at once, and the least important of those things may be the sport itself.

5. Playing well and having fun really ARE more important than winning.

"Playing well and having fun are more important than winning," is a line often used by Little League coaches after a loss, rarely after a win. But with spectators watching, with a trophy in the offing, and with so much attention to the score one has to wonder how many of the players believe him, and how many secretly think that Vince Lombardi had is right. The view that "winning is everything" becomes even more prominent in formal sports as you move up to high school and then to college sports, especially in football and basketball, which are the sports that American schools care most about.

But in informal sports playing well and having fun really are more important than winning. Everyone knows that; you don't have to try to convince anyone with a lecture. The whole point of the informal game is to have fun and stretch your own skills.You may stretch your skills in new and creative ways, which would be disallowed or jeered at in the formal game. You might, for example, try batting with a narrow stick, to improve your eye, or batting left-handed even though you normally bat righty. You might make behind-the-back catches in the outfield. If you are a better player than the others on the field, these are ways to self-handicap, which make the game more interesting not just for yourself but also for others. In the formal game, where winning matters, you could never do such things; you would be accused of betraying your team. Of course you have to be careful about when and where to make these creative changes in your play, even in the informal game. You have to know how to do it without offending others or coming across as an arrogant show-off. Always, in informal play, you have to be a psychologist!

In my experience, both as player and observer of informal sports, players in such games are more intent on playing beautifully than on winning. Beauty may involve new, creative ways of moving that allow you to express yourself and stretch your physical skills while still coordinating your actions to mesh with those of others. The informal game is an innovative group dance, in which all of the players create their own moves while taking care not to step on others' toes (for a description of the dance-like nature of a children's game of keep-away, see post of January 14, 2009).

Which is the better training for real life, the informal game or the formal one?

Real life is an informal sport, not a formal one. The rules are endlessly modifiable and you must do your share to create them. There are in the end no winners or losers--we all wind up in the same place. Getting along with others is far more important than beating them. What matters in the end is how you play the game, how much fun you have along the way, and how much joy you give to others. Live life like a sandlot ball game. And, please, let your child go out to play--with other kids, while you stay home or do something else that you would like to do. In play, no matter how loving your relationship, your child is better off without you.

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**This discussion is in some ways redundant to my March 4, 2009, discussion of the meta-rules of play.

[1] For a classic research study showing how formal team sports can exacerbate real-life tensions between two groups of young boys, see M. Sherif et al. (1961), *Intergroup conflict and cooperation: The Robbers Cave experiment*.

[2] J. Piaget (1965), *The moral judgment of the child*.

The Morally Questionable Lessons of Formal Sports I: A New Look at the Classic Robbers Cave Experiment

A sports tournament led boys to something like inter-tribal war.

Published on December 9, 2009 by Peter Gray in Freedom to Learn

I begin with a research story, a true one.

In the early 1950s, the social psychologist Muzafer Sharif and his colleagues conducted a now-classic experiment, on intergroup conflict and resolution of conflict, with 11- and 12-year-old boys at a summer camp in Oklahoma's Robbers Cave Park.[1] Sherif's procedure involved three phases:

(1) He began by dividing the boys, by a random procedure, into two distinct groups, who slept in different parts of the camp and were given separate sets of chores and activities, so they could develop a sense of group identity.

(2) Then he established conditions designed to induce hostility between the two groups. (Experiments of this sort could be done in the 1950s--a time before the era of research ethics review boards, and a time, before cell phones, when parents did not feel compelled to check up on their camping kids. The boys did not know they were participants in an experiment; they thought that they had been invited to take part in a regular camping experience.)

(3) Once the groups were sufficiently hostile, he tried various methods to reduce the hostility.

The famous result of the experiment--repeated in most introductory psychology textbooks, including my own--was that hostilities were best reduced by establishing *superordinate goals*, defined as goals that were desired by both groups and could be achieved best through intergroup cooperation. For example, to create one such goal the researchers staged a breakdown in the camp's water supply. In response to this crisis, the boys temporarily forgot their differences and worked cooperatively to explore the mile-long water line and find the break. With each such cooperative adventure, hostilities between the groups abated, and by the end of a series of such adventures the boys were arranging many friendly cross-group interactions on their own initiative.

Sherif's focus in this experiment was on ways to reduce intergroup hostility, but my focus here is on his method for *creating* the hostility, something not generally discussed in the textbooks. His procedure was remarkably simple. In phase two he invited the two groups of boys to compete with one another in a tournament involving a series of competitive games--including several games of baseball, touch football, and tug of war--all refereed by the camp staff. The members of the winning team would receive prizes, such as pocketknives, that were much valued by the boys. Formal sports conducted for prizes--that was how Sherif and is colleagues generated animosity between the groups. It apparently worked like a charm, not just in this experiment, but also in others that Sherif and his colleagues had conducted earlier.

As the series of games progressed, the two groups became increasingly antagonistic. Initial good sportsmanship gave way gradually to name-calling, harassment, accusations of cheating, and cheating in retaliation. As the hostilities mounted, they spread to camp life outside of the games as well as in the games. Even though the boys all came from the same background (white, Protestant, middle class) and had been divided into groups by a purely random procedure, they began to think of the boys in the other group as very different from themselves--as dirty cheaters who needed to be taught a lesson. Serious fistfights broke out on several occasions. Raids were conducted on the cabin of the opposing group. Some boys carried socks with stones in them, to use as weapons "if necessary." One group pulled down and burned the other group's flag. Many of the boys declared a desire not to eat meals in the same mess hall with the other group; and joint meals, when held, became battlegrounds where boys hurled insults and sometimes food at members of the other group. What at first was a peaceful camping experience turned gradually into something verging on intertribal warfare, all created by a series of formal sporting events.

Formal sports occupy a precarious space between play and reality

Let's step back momentarily from this experiment and reflect a bit on boys' play in general.

Much of boys' play involves mock battles. In some cases the battles lie purely in the realm of fantasy. The boys collaboratively create the battle scenes, decide who will play which parts, and, as they go along, decide who is wounded, or dies, or is resurrected. Some people, who don't understand boys' play, mistake such play for violence and try to stop it, especially when it is acted out in a vigorous, rough-and-tumble manner. But it isn't violence; it's play. We should think of those players not as warriors but as junior improvisational Shakespeares. They are using their imaginations to create and stage dramatic, emotion-inspiring stories. Play of this sort is non-competitive as well as nonviolent. No score is kept; nobody wins or loses; all are just acting out parts. There are also no fixed teams in play of this sort. If the play involves pretend armies, the players arrange the armies differently for each bout of play. Such play does not create enemies; rather, it cements friendships.

A step removed from such fantasy battles is the *informal* play of team games such as baseball, soccer, and basketball--games that are referred to as "sports" when played formally. These games, too, can be thought of as mock battles. There are two teams (armies), who invade one another's territory, defend their own territory from invaders, and strive to conquer one another, all ritualized by the rules of the game. By "informal" play of these games, I mean that the games are organized entirely by the players and have no obvious consequences outside of the game context. There are no trophies or prizes, no official records of victories or losses kept from one game to the next, no fans who praise winners or disparage losers. These games may be classed as "competitive," but they are really, at most, only pseudo-competitive. A score may be kept, and the players may cheer happily each time their team scores, but, in the end, nobody cares who won. The "losers" go home just as happy as the "winners." These games, too, cement friendships and do not create enemies. I wrote about the valuable lessons learned in play of this sort in my post of Nov. 11, 2009.

If the boys in Sherif's experiments had played *informal* games of baseball, touch football, and tug of war, rather than formal ones, I doubt that hostilities would have resulted. With no prizes or acknowledgments of victories and losses from outside authorities, the players would have focused more on having fun and less on winning. With no adult

referee, the players would have had to cooperate to establish the ground rules for each game and judge consensually when rules had or had not been broken. They would have had to argue out and negotiate their differences. Cheating and name calling, if they went too far, would destroy the fun and end the game. Players who weren't having fun would quit, so the only way to keep the game going would be to play in ways designed to ensure that everyone had fun. Boys everywhere know how to do that. In fact, it is reasonable to suppose that such informal games, if they occurred, would have brought the two groups of boys closer together because of the cooperation required, much like searching for the break in the water line.

Fantasy battles and informal sports are pure play, and pure play creates friendships, not enemies. Formal sports are not pure play, and therefore they have the capacity, under some conditions, to create enemies. Formal sports lie outside of the realm of pure play because they are controlled by officials who are not themselves players and because they have clear out-of-game consequences, in such forms as prizes or praise for victory. (See Nov. 19, 2008, post on the definition of play.) In formal sports it is not as clear as it is in informal sports that the battle is merely a pretend battle.

Formal sports occupy a space somewhere between play and reality, and, depending on a wide array of factors, a formal game can shift more toward one than the other. When the balance shifts too far toward reality, a defeat is a real defeat, not a pretend one, and those defeated may begin to perceive the other team as real enemies. Sherif and his colleagues apparently found a formula for setting up formal sports in a manner that quickly moved from play to real battles.

I plan to continue this topic in my next post, next week, with an examination of some more recent research studies having to do with the effects of competitive team sports on the moral values and behaviors of the participants. The effects appear to depend very much on whether the players are led to focus primarily on winning or primarily on playful enjoyment and on development of their own skills.

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[1] Sherif, M., Harvey, O. J., White, B. J., Hood, W. E., & Sherif, C. S. (1961). *Intergroup conflict and cooperation: The Robbers Cave experiment*. Norman: University of Oklahoma Book Exchange.

The Morally Questionable Lessons of Formal Sports II

How athletes justify cheating, lying, and deliberately hurting a person.

Published on December 16, 2009 by Peter Gray in Freedom to Learn

You are a big-league baseball pitcher. The opposing pitcher has been throwing some hard inside fastballs and has hit one of the batters on your team--maybe deliberately, maybe not. Should you retaliate by hitting their best batter with a high inside fastball? To do so is to deliberately risk injuring a fellow human being. To not do so is to let down your team, your coach, your fans (at least some of them)--who think that you must do this in order to even the score.

The next inning the opposing pitcher once again hits one of your batters. Some of your teammates leap off the bench and charge the mound, swinging fists at the pitcher and at the other players who have run in to "defend" their pitcher. Do you join them in this, despite your knowledge that you could seriously hurt someone and despite your inner sense that this is really infantile behavior, or do you remain on the bench and risk the scorn of your teammates for your cowardly refusal to fight?

You are a college basketball player. Your coach and everyone on your team knows that the star on the opposing team has just recovered from a serious ankle injury. Nobody says, "Let's try to make him injure that ankle again, to get him out of the game," but you know very well that that's what they mean when they say, "Let's run on him." Do you do it? Do you single him out and deliberately make him run more, jump more, and fall more than you would if he were not so vulnerable to injury? If you do, you are deliberately trying to hurt a fellow human being. If you don't, you may be letting down your teammates, your coach, and your whole dumb college, from the president on down, who believe that winning at sports is what makes their college look great.

Sadly, some athletes don't even seem to experience these "dilemmas" as dilemmas. *Of course* you must retaliate against the opposing pitcher. *Of course* you must join your team in the idiotic brawl. *Of course* you must drive against the opposing star in ways designed to get him out of the game. I've even heard sports announcers criticize pitchers for *not* throwing at a batter.

Situations like these don't happen in *informal* sports, where there are no coaches, no outside referees, no permanent teams (lasting from one game to the next), and no fans who give a hoot who wins. In the informal game you know that if you deliberately throw a fastball at someone, or swing fists at someone, or try to get someone to re-injure a recovering wound, you will get nothing but scorn from the other players, on your team as well as the other. The whole point of the informal game is to have fun. When you deliberately hurt someone else, you destroy their fun, so they quit and the game is over. In the informal game you would go easy on the kid whose ankle is vulnerable, not hard on him. Even little children know this.

Maria Kavussanu, at the University of Birmingham, in the UK, has for a number of years been studying sports morality. In one of her studies many college basketball, soccer, rugby, and field hockey players admitted (on anonymous questionnaires) to lying, cheating, and deliberately injuring others within the context of the game.[1] Interestingly, she

also found that the longer a person had been playing formal sports, the more likely they were to say that such behaviors are justifiable. This relationship between time in sports and acceptance of transgressions applied to women as well as well as to men, though the former claimed less acceptance of such behaviors, overall, than did the latter.

Other researchers, studying youth football (soccer) in Norway, have found that the degree of acceptance of such behavioral transgressions depends on the "motivational climate" set by the coach.[2] If the coach emphasizes the importance of winning, then acceptance of morally questionable actions goes up; if the coach emphasizes the joys of the game, good sportsmanship, and the value of developing your own personal skills, then acceptance of such transgressions goes down.

In subsequent research, Kavussanu and her colleagues found that athletes used eight psychological means of **moral disengagement** to justify their transgressions, both to themselves and others.[3] Here they are, with my own examples to illustrate them:

• *Moral justification* (describing the transgression as morally right, not wrong). "I had to do it to protect my team's honor. We're not patsies."

• *Euphemistic labeling* (using language that disguises culpability). "I bent the rules a little," instead of "I broke the rules." Or, "I dusted him off," instead of, "I deliberately hit him with a pitched ball."

• *Advantageous comparison* (comparing your actions to others' worse actions, which make yours look good). "I hit him, but I didn't throw at his head, like others would have in this situation."

• *Displacement of responsibility* (claiming that your action was not your choice, but that of a higher authority). "It was the coach's decision; my job is to do what the coach asks."

• *Diffusion of responsibility* (attributing the action to the whole group rather than yourself personally). "It wasn't just me; the whole team charged the pitcher."

• *Distortion of consequences* (minimizing the damage done). "Hey, it's a small injury; he'll be back in no time."

• *Dehumanization* (speaking of the opposition in ways that deny their humanity). "They're a bunch of animals. When you play them you have to treat them that way."

• *Attribution of blame* (blaming the victim). "He started it with his trash talk." Or, "If he's got a weak ankle he shouldn't be playing."

Sports metaphors abound in our society. Businessmen all too often use them to justify ruthless tactics as "good for the team." The sports metaphor promotes an "us against them" attitude and invites people to believe that anything is fair as long as it's within the letter of the law (the literal rules of the game) or isn't detectable by law enforcers ("It's not a foul if the ref didn't see it"). But the really successful people that I see around me--who measure success in happiness and wealth in friendships--don't use those metaphors. To them, life is an informal sport, not a formal one. The goal is to have fun and to help others have fun, too, regardless of which "team" they are on.

NOTES

*Some hyperlinks in these posts are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines.

[1] M. Kavussanu & N. Ntoumanis (2003). Participation in sport and moral functioning: Does ego orientation mediate their relationship? *Journal of Sport and Exercise Psychology, 25*, 501-518.

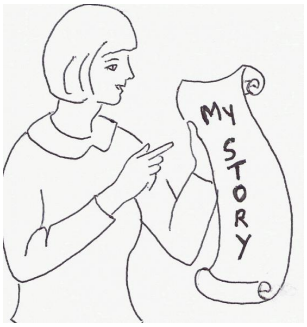
[2] B. W. Miller, G. C. Roberts, & Y. Ommundsen (2005). Effect of perceived motivational climate on moral functioning, team moral atmosphere perceptions, and the legitimacy of intentionally injurious acts among competitive youth football players. *Psychology of Sport and Exercise, 6*, 461-477.

[3] I. D. Boardley & M. Kavussanu (2007). Development and validation of the moral disengagement in sport scale. *Journal of Sport and Exercise Psychology, 29*, 608-628.

I Want Your Stories of Self-Directed Learning

Please share your stories about about freedom and learning.

Published on January 6, 2010 by Peter Gray in Freedom to Learn



Dear readers,

As you know if you have been following it for awhile, this blog is primarily about self-education, especially in children but also in adults. It's about learning that occurs through play, self-directed exploration, and self-initiated focused effort. The comments and emails I have received over the past few months suggest that many of you have stories to tell that are quite relevant to these themes. I would love to hear and perhaps share your stories, which can be about your children, others you know, or you. Your stories may be a great source of inspiration for other readers.

If you have a story to share, please email it to me at grayp@bc.edu. It can be as long as it needs to be for coherence, but please try to be succinct. (My guess is that most would be between 1/2 and 4 single-spaced pages long.) Please paste your story into the body of the email rather than send it as an attachment. If you have your own blog or website and would like to link your story to it for further information, you are welcome to do that.

Here are some topics that particularly interest me, about which I especially invite you to write:

• *Learning to read without schooling*. I am interested in how children learn to read in situations where they have no or little formal instruction in reading. I know that this occurs within a wide range of ages for children at Sudbury schools and in unschooling environments. If you have a story about this, I'm interested in all the relevant details you can provide. I plan to do a post on this soon and would like to include your observations.

• *Learning math without schooling*. Some young self-educators learn math because they love it. Others learn it because they want to go to college and have to take the math SAT, or because they need to know it to pursue some other interest that intrigues them. If you have a story about self-initiated math learning I want to hear it.

• *From play to careers: How interests developed in play become career paths*. Many lucky people find that their play, done at first purely for fun, evolves into a joyful way of making a living. I'm especially interested in cases where children or adolescents developed passionate interests through their play and then, as they grew older, found ways to make a living by pursuing those interests.

• *Becoming an expert through one's own initiative*. This topic overlaps with the previous one, but includes cases where the area of expertise is not necessarily a career path. How do people on their own initiative become extraordinarily skilled at some endeavor or extraordinarily knowledgeable about some subject? What seems to motivate them and how do they learn?

• *Age-mixed play and friendships: Contributions to children's and adolescents' learning*. Dan Greenberg, at Sudbury Valley School, has long claimed that free age mixing is the key to education at the school, and my research tends to confirm that. What stories do you have about age-mixed friendships and interactions and the roles they played in someone's education? I'm interested in the benefits to the older participants as well as to the younger ones, and I'm particularly interested in cases where the age differences are substantial (3 years or more).

• *Roles of adults in children's and adolescents' self-directed learning*. Some readers have wondered about the appropriate roles of adults in young people's learning. Adults can sometimes be intrusive, in unwelcome ways, and thereby interfere with children's and adolescents' experiences of self direction and initiative. I am interested here in ways by which adults can be helpful without being intrusive. For example, I am interested in apprenticeships and mentoring, whether formal or informal, where the initiative came from the young person.

• *Fantasy play: Listening to little actors and directors*. Young children engage in elaborate fantasy play. If you can listen to their play--or even tape record it--and then talk about what you learn from it, you may have a fascinating story to tell. What themes do they play at and how does the play relate to real life? What sorts of negotiations go on in setting up the play and in altering it as the play progresses? What do you think children are learning in the play you observed?

• *Making and enforcing rules at home*. One concern of many people who strive to be trustful parents (see posts of July 29 and August 5, 2009) is that of how to maximize children's autonomy and self-direction at home while still maintaining order and ensuring that their own (the parents') rights are respected. How has your family approached this concern? What roles do your children play in setting household rules and how well do the rules work?

I am planning posts on all of these topics--not necessarily in the order listed--and look forward to the opportunity to include your stories. They don't all have to be success stories; stories that highlight problems to be overcome are welcome too. To maximize the chance that I will be able to use your contribution, please try to send it to me within the next two or three weeks. You don't have to limit yourself to the topics above, and you may send more than one story if you wish.

Also, please include in your email answers to these questions:

• May I use all or (more likely) parts of your story in a future blog post and/or in a book I am working on? (If I use your story I might paraphrase parts and use direct quotations for parts, and I might edit quotations slightly--for grammar and brevity--without changing meaning.)

• In any use of your story, would you and/or whomever the story is about prefer to be anonymous or identified by real name?

If you have questions about any of this, please ask in the comments section, below, rather than by email. That way your questions and my answers will be shared with others.

Happy 2010 to you all,

Peter

The Dramatic Rise of Anxiety and Depression in Children and Adolescents: Is It Connected to the Decline in Play and Rise in Schooling?

Children are more anxious and depressed than ever before. Why?

Published on January 26, 2010 by Peter Gray in Freedom to Learn

Rates of depression and anxiety among young people in America have been increasing steadily for the past fifty to seventy years. Today five to eight times as many high school and college students meet the criteria for diagnosis of major depression and/or an anxiety disorder as was true half a century or more ago. This increased psychopathology is not the result of changed diagnostic criteria; it holds even when the measures and criteria are constant.

The most recent evidence for the sharp generational rise in young people's depression, anxiety, and other mental disorders comes from a just-released study headed by Jean Twenge at San Diego State University.[1] Twenge and her colleagues took advantage of the fact that the *MMPI*--the Minnesota Multiphasic Personality Inventory, a questionnaire used to assess a variety of mental disorders--has been given to large samples of college students throughout the United States going as far back as 1938, and the *MMPI-A* (the version used with younger adolescents) has been given to samples of high school students going as far back as 1951. The results are consistent with other studies, using a variety of indices, which also point to dramatic increases in anxiety and depression--in children as well as in adolescents and young adults--over the last five or more decades.

We would like to think of history as progress, but if progress is measured in the mental health and happiness of young people, then we have been going backward at least since the early 1950s. The question I want to address here is why.

The increased psychopathology seems to have nothing to do with realistic dangers and uncertainties in the larger world. The changes do not correlate with economic cycles, wars, or any of the other kinds of world events that people often talk about as affecting children's mental states. Rates of anxiety and depression among children and adolescents were far lower during the Great Depression, during World War II, during the Cold War, and during the turbulent 1960s and early '70s than they are today. The changes seem to have much more to do with the way young people view the world than with the way the world actually is.

Decline in Young People's Sense of Personal Control over their Fate

One thing we know about anxiety and depression is that they correlate significantly with people's sense of control or lack of control over their own lives. People who believe that they are in charge of their own fate are less likely to become anxious or depressed than are those who believe that they are victims of circumstances beyond their control. You might think that the sense of personal control would have increased over the last several decades. Real progress

has occurred in our ability to prevent and treat diseases; the old prejudices that limited people's options because of race, gender, or sexual orientation have diminished; and the average person is wealthier today than in decades past. Yet, the data indicate that young people's belief that they have control over their own destinies has declined sharply over the decades.

The standard measure of sense of control is a questionnaire, developed by Julien Rotter in the late 1950s, called the Internal-External Locus of Control Scale. The questionnaire consists of 23 pairs of statements. One statement in each pair represents belief in an *Internal locus of control* (control by the person) and the other represents belief in an *External locus of control* (control by circumstances outside of the person), and the person taking the test must decide which statement in each pair is more true. One pair, for example, is the following: (a) *I have found that what is going to happen will happen.* (b) *Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.* In this case, choice (a) represents an External locus of control and (b) represents an Internal locus of control.

Many studies over the years have shown that people who score toward the Internal end on Rotter's scale fare better in life than do those who score toward the External end.[2] They are more likely to get good jobs that they enjoy, take care of their health, and play active roles in their communities; and they are less likely to become anxious or depressed.

In a research study published a few years ago, Twenge and her colleagues analyzed the results of many previous studies that had used Rotter's Scale with young people over the years from 1960 on through 2002.[3] They found that over this period average scores shifted dramatically--for children aged 9 to 14 as well as for college students--away from the Internal toward the External end of the scale. In fact, the shift was so great that the average young person in 2002 was more External than were 80% of young people in the 1960s. The rise in Externality on Rotter's scale over the 42-year period showed the same linear trend as did the rise in depression and anxiety.

It is reasonable to suggest that the rise of Externality (and decline of Internality) is causally related to the rise in anxiety and depression. When people believe that they have little or no control over their fate they become anxious. "Something terrible can happen to me at any time and I will be unable to do anything about it." When the anxiety and sense of helplessness become too great people become depressed. "There is no use trying; I'm doomed."

Shift Toward Extrinsic Goals, away from Intrinsic Goals

Twenge's own theory is that the generational increases in anxiety and depression are related to a shift from "intrinsic" to "extrinsic" goals.[1] Intrinsic goals are those that have to do with one's own development as a person--such as becoming competent in endeavors of one's choosing and developing a meaningful philosophy of life. Extrinsic goals, on the other hand, are those that have to do with material rewards and other people's judgments. They include goals of high income, status, and good looks. Twenge cites evidence that young people today are, on average, more oriented toward extrinsic goals and less oriented toward intrinsic goals than they were in the past. For example, a poll conducted annually of college freshmen shows that most students today list "being well off financially" as more important to them than "developing a meaningful philosophy of life," while the reverse was true in the 1960s and '70s.[4]

The shift toward extrinsic goals could well be related causally to the shift toward an External locus of control. We have much less personal control over achievement of extrinsic goals than intrinsic goals. I can, through personal effort, quite definitely improve my competence, but that doesn't guarantee that I'll get rich. I can, through spiritual practices or philosophical delving, find my own sense of meaning in life, but that doesn't guarantee that people will find me more attractive or lavish praise on me. To the extent that my emotional sense of satisfaction comes from progress toward intrinsic goals I can control my emotional wellbeing. To the extent that my satisfaction comes from others' judgments and rewards, I have much less control over my emotional state.

Twenge suggests that the shift from intrinsic to extrinsic goals represents a general shift toward a culture of materialism, transmitted through television and other media. Young people are exposed from birth on to advertisements and other messages implying that happiness depends on good looks, popularity, and material goods. My guess is that Twenge is at least partly correct on this, but I am going to suggest here a further cause, which I think is even more significant and basic. My hypothesis is that the generational increases in Externality, extrinsic goals, anxiety, and depression are all caused largely by the decline, over that same period, in opportunities for free play and the increased time and weight given to schooling.

How the Decline of Free Play May Have Caused a Decline in Sense of Control and in Intrinsic Goals, and a Rise in Anxiety and Depression

As I pointed out in my posts of July 22 and July 29, 2009--and as others have pointed out in recent popular books[5]--children's freedom to play and explore on their own, independent of direct adult guidance and direction, has declined greatly in recent decades. Free play and exploration are, historically, the means by which children learn to solve their own problems, control their own lives, develop their own interests, and become competent in pursuit of their own interests. This has been the theme of many of my previous posts (see, for example, the series of posts on "The Value of Play" beginning with Nov. 19, 2008). In fact, play, by definition, is activity controlled and directed by the players; and play, by definition, is directed toward intrinsic rather than extrinsic goals (see definition of play).

By depriving children of opportunities to play on their own, away from direct adult supervision and control, we are depriving them of opportunities to learn how to take control of their own lives. We may think we are protecting them, but in fact we are diminishing their joy, diminishing their sense of self-control, preventing them from discovering and exploring the endeavors they would most love, and increasing the chance that they will suffer from anxiety, depression, and various other mental disorders.

How Coercive Schooling Deprives Young People of Personal Control, Directs Them Toward Extrinsic Goals, and Promotes Anxiety and Depression

During the same half-century or more that free play has declined, school and school-like activities (such as lessons out of school and adult-directed sports) have risen continuously in their prominence. Children today spend more hours per day, days per year, and years of their life in school than ever before. More weight is given to tests and grades than ever

before. Outside of school children spend more time than ever before in settings where they are directed, protected, catered to, ranked, judged, and rewarded by adults. In all of these settings adults are in control, not children.

In school, children learn quickly that their own choices of activities and their own judgments of competence don't count; what matters are the teachers' choices and judgments. Teachers are not entirely predictable. You may study hard and still get a poor grade, because you didn't figure out just exactly what the teacher wanted you to study or guess correctly what questions he or she would ask. The goal in class, in the minds of the great majority of students, is not competence but good grades. Given a choice between really learning a subject and getting an A, the great majority of students would, without hesitation, pick the latter. That is true at every stage in the educational process, at least up to the level of graduate school. That's not the fault of students; that's our fault. We've set it up that way. Our system of constant testing and evaluation in school--which becomes increasingly intense with every passing year--is a system that very clearly substitutes extrinsic rewards and goals for intrinsic ones. It is a system that is almost designed to produce anxiety and depression.[6]

School is also a place where children have little choice about with whom they can associate. They are herded into spaces filled with other children that they did not choose, and they must spend a good portion of each school day in those spaces. In free play, children who feel harassed or bullied can leave the situation and find another group that is more compatible; but in school they cannot. Whether the bullies are other students or teachers (which is all too common), the child usually has no choice but to face those persons day after day. The results are sometimes disastrous.

A few years ago, Mihaly Csikszentmihalyi and Jeremy Hunter conducted a study of happiness and unhappiness in public school students, in 6th through 12th grades.[7] Each of the 828 participants, from 33 different schools in 12 different communities across the country, wore a special wristwatch for a week, which was programmed to provide a signal at random times between 7:30 am and 10:30 pm. Whenever the signal went off participants filled out a questionnaire indicating where they were, what they were doing, and how happy or unhappy they were at the moment. The lowest levels of happiness by far (surprise, surprise) occurred when children were at school, and the highest levels occurred when they were out of school and conversing or playing with friends. Time spent with parents fell in the middle of the happiness-unhappiness range. Average happiness increased on weekends, but then plummeted from late Sunday afternoon through the evening, in anticipation of the coming school week.

As a society we have come to the conclusion that children must spend increasing amounts of their time in the very setting where they least want to be. The cost of that belief, as measured by the happiness and mental health of our children, is enormous. It is time to re-think education.

Another Way

Anyone who looks honestly at the experiences of students at Sudbury model democratic schools and of unschoolers--where freedom, play, and self-directed exploration prevail--knows that there is another way. We don't need to drive kids crazy to educate them. Given freedom and opportunity, without coercion, young people educate themselves. They do so joyfully, and in the process they develop intrinsic values, personal self-control, and emotional wellbeing. That's the overriding message of the whole series of essays in this blog. It's time for society to take an honest look.

In my last post I invited readers to submit their stories of self-directed education, and many of you have responded. That invitation is still open, but please respond soon (look back at the last post for details). Over the next several weeks I will post essays about how children learn to read through their self-directed play and exploration, how and why they learn math, and how they develop special interests and skills that lead eventually to careers. Stay tuned.

Notes

*Some hyperlinks in these posts are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines.

[1] Twenge, J., et al., (2010). Birth cohort increases in psychopathology among young Americans, 1938-2007: A cross-temporal meta-analysis of the MMPI. In press, Clinical Psychology Review 30, 145-154.

[2] For references, see Twenge et al. (2004).

[3] Twenge, J. et al. (2004). Its beyond my control: A cross-temporal meta-analysis of increasing externality in locus of control, 1960-2002. Personality and Social Psychology Review, 8, 308-319.

[4] Pryor, J. H., et al. (2007). The American freshman: Forty-year trends, 1966-2006. Los Angeles: Higher Education Research Institute.

[5] Examples of such books are Hara Estroff Marano's *A Nation of Wimps* and Lenore Skenazy's *Free Range Kids*.

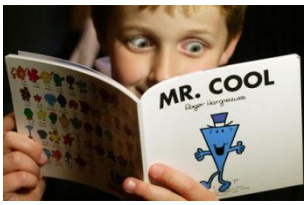
[6] Consistent with this claim is evidence that the more academically competitive the school, the greater is the incidence of student depression. Herman, K. C., et al. (2009). Childhood depression: Rethinking the role of school. Psychology in the Schools, 46, 433-446.

[7] Csikszentmihalyi, M., & Hunter, J. (2003). Happiness in everyday life: The uses of experience sampling. Journal of Happiness Studies, 4, 185-199.

Children Teach Themselves to Read

Unschoolers' accounts of how their children taught themselves to read.

Published on February 24, 2010 by Peter Gray in Freedom to Learn



The general assumption in our culture is that children must be taught to read. Vast amounts of research go into trying to figure out the scientifically best way to do this. In the education stacks of any major university library you can find rows and rows of books and many journals devoted solely to the topic of how to teach reading. In education circles heated debates--dubbed "the reading wars"--have raged for decades between those who believe that most emphasis should be placed on teaching phonics and those who take what is called a "whole language" approach to reading instruction. Many controlled experiments have been conducted comparing one instruction method to another, with kindergartners and first graders as the guinea pigs. The phonics people say that their method has "won" in those experiments, and the whole language people say that the experiments were rigged.

The evidence from the standard schools is that reading does not come easily to kids. Huge amounts of time and effort go into teaching reading, from preschool on through most of the elementary school years. In addition, educators encourage parents of young children to teach reading at home in order to prepare the children for reading instruction in school or to supplement that instruction. Large industries have developed around the creation and marketing of instructional materials for this purpose. There is no end to interactive computer programs, videos, and specially sequenced books designed--"scientifically," according to their proponents--to teach phonics and provide a growing base of sight words for beginning readers.

I recently read an article by two cognitive scientists claiming that the next development in reading instruction is going to be individualized instruction.[1] According to the authors, modern brain imaging methods will be used to figure out the unique learning style of each child, and digital text-delivery programs will be used to teach reading to each child according to his or her unique needs and way of learning. The authors and their colleagues are, indeed, working on developing such systems. To me, this seems silly. The unique needs of each child, as they affect learning to read, are not just functions of differences in brain hardware, but vary from day to day and moment to moment based on the child's specific experiences, wishes, and whims, which the child himself or herself controls. I'll begin to believe these researchers' claims when I see evidence that brain imaging can be used to predict, in advance, the contents of daydreams.

In marked contrast to all this frenzy about teaching reading stands the view of people involved in the "unschooling" movement and the Sudbury "non-school" school movement, who claim that reading need not be taught at all! As long as kids grow up in a literate society, surrounded by people who read, they will learn to read. They may ask some questions along the way and get a few pointers from others who already know how to read, but they will take the initiative in all of this and orchestrate the entire process themselves. This is individualized learning, but it does not require brain imaging or cognitive scientists, and it requires little effort on the part of anyone other than the child who

is learning. Each child knows exactly what his or her own learning style is, knows exactly what he or she is ready for, and will learn to read in his or her own unique way, at his or her unique schedule.

Twenty-one years ago two of my undergraduate students conducted a study of how students learn to read at the Sudbury Valley School, where students are free all day to do as they wish (look back at my essay on Sudbury Valley).[2] They identified sixteen students who had learned how to read since enrolling in the school and had received no systematic reading instruction, and they interviewed the students, their parents, and school staff to try to figure out when, why, and how each of them learned to read. What they found defied every attempt at generalization. Students began their first real reading at a remarkably wide range of ages--from as young as age 4 to as old as age 14. Some students learned very quickly, going from apparently complete non-reading to fluent reading in a matter of weeks; others learned much more slowly. A few learned in a conscious manner, systematically working on phonics and asking for help along the way. Others just "picked it up." They realized, one day, that they could read, but they had no idea how they had learned to do so. There was no systematic relationship between the age at which students had first learned to read and their involvement with reading at the time of the interview. Some of the most voracious readers had learned early and others had learned late.

My son, who is a staff member at Sudbury Valley, tells me that that study is now out of date. His impression is that most Sudbury Valley students today are learning to read earlier, and with even less conscious effort than before, because they are immersed in a culture in which people are communicating regularly with the written word--in computer games, email, Facebook, cell-phone texting, and the like. The written word is not essentially different to them than the spoken word, so the biological machinery that all humans have for picking up spoken language is more or less automatically employed in their learning to read and write (or type). I'd love to study this in some way, but so far haven't figured out how to do it without being intrusive.

Several weeks ago (see post of January 6, 2010), I invited readers of this blog who are involved in unschooling or Sudbury model schooling to write to me with stories about learning to read without formal instruction. Eighteen people--most of whom identified themselves as parents of unschoolers--kindly shared their stories with me. Each story is unique. Just as my students found in their study at Sudbury Valley, there seems to be no pattern to how unschooled children today are learning to read.

By listing and organizing the main points made by each story, I did, however, extract what seem to me to be **seven principles** that may cast some general understanding on the process of learning to read without schooling. I have chosen to organize the remainder of this essay around these principles and to exemplify each with quotations from stories that were sent to me. Some of the people who sent stories asked that I use only their first names and not their children's names, so I will use that convention throughout.

1. For non-schooled children there is no critical period or best age for learning to read.

For children in standard schools, it is very important to learn to read on schedule, by the timetable dictated by the school. If you fall behind you will be unable to keep up with the rest of the curriculum and may be labeled as a "failure," or as someone who should repeat a grade, or as a person with some sort of mental handicap. In standard schools learning to read is the key to all of the rest of learning. First you "learn to read" and then you "read to learn." Without knowing how to read you can't learn much of the rest of the curriculum, because so much of it is presented through the written word. There is even evidence that failure to learn to read on schedule predicts subsequent naughtiness in standard schools. One longitudinal study, conducted in Finland, found that poor reading in preschool and kindergarten predicted poor reading later on in elementary school and also predicted subsequent "externalizing problem behavior," which basically means acting out.[3]

But the story is entirely different for unschooled children. They may learn to read at any time, with no apparent negative consequences. The stories sent to me by readers of this blog include 21 separate cases of children learning to read in which the age of first real reading (reading and understanding of novel passages of text) was mentioned. Of these, two learned at age 4, seven learned at age 5 or 6, six learned at age 7 or 8, five learned at age 9 or 10, and one learned at age 11.

Even within the same family, different children learned to read at quite different ages. Diane wrote that her first daughter learned to read at age 5 and her second daughter learned at age 9; Lisa W. wrote that one son learned at age 4 and another at age 7; and Beatrice wrote that one daughter learned before age 5 and the other at age 8.

None of these children has difficulty reading today. Beatrice reports that the daughter who didn't read until age 8 is now 14 years old and "reads hundreds of books a year," "has written a novel," and "has won numerous poetry awards." Apparently, late reading is not inconsistent with subsequent extraordinary literary ability! This daughter did, however, show other signs of literary precocity well before she learned to read. According to Beatrice, she could recite from memory all of the poems in the *Complete Mother Goose* book by the time she was 15 months old. [Note: See Beatrice Ekwa Ekoko's excellent blog at http://radiofreeschool.blogspot.com/.]

The message repeated most often in these stories of learning to read is that, because the children were not forced or coaxed into reading against their wills, they have positive attitudes about reading and about learning in general. This is perhaps most clearly stated by Jenny, who wrote, regarding her daughter (now 15) who didn't read well until age 11: "One of the best things that came out of allowing her to read at her own pace and on her own initiative was that she owned the experience, and through owning that experience she came to realize that if she could do that, she could learn anything. We have never pressured her to learn anything at all, ever, and because of that, her ability to learn has remained intact. She is bright and inquisitive and interested in the world around her."

2. Motivated children can go from apparent non-reading to fluent reading very quickly.

In some cases unschooled children progress from non-reading to reading in what seems to observers to be a flash. For example, Lisa W. wrote: "Our second child, who is a visual thinker, didn't learn to read until he was 7. For years, he could either figure out what he needed to know from pictorial cues, or if stuck, would get his older brother to read to him. I remember the day he started reading. He had asked his older brother to read something to him on the computer and his brother replied, "I have better things to do than to read to you all day", and walked away. Within *days* [my Italics] he was reading quite well."

Diane wrote, "My first daughter could not read when she turned 5 in March but by the end of that year she could read fluently, out loud, without pause or hesitation." And Kate wrote that her son, at age 9, "taught himself to read" in a period of just one month. In that time span he deliberately worked at reading, on his own, and progressed from being a hesitant, poor reader to highly fluent reading, well beyond what a standard school would have regarded as his "grade level."

Such step-like progressions in overt reading ability may occur at least partly because earlier, more covert stages of learning are not noticed by observers and may not even be noticed by the learners. Karen attributes the rapid onset of reading that she observed in her son to a sudden gain in confidence. She wrote: "Over this past summer, son A [now age 7] went from hiding his ability [to read at all] to reading chapter books. In a summer! Now, six months later, he feels confident enough in his reading ability that I regularly get up in the morning to find him reading aloud to his sister. He even offers to read to his father and me. This was unheard of a year ago when he hid his ability level from us in his embarrassment and lack of confidence. I'm so glad we didn't push him!"

3. Attempts to push reading can backfire.

Three of the people who sent me stories wrote that they at some point attempted to teach reading to their non-reading child and that the attempt seemed to have negative consequences. Here is what they said.

Holli wrote that when her son was "about 3 1/2" she began trying to teach him reading. "I think the Bob books are stupidly repetitive and inane, but I found ones that were at least moderately engaging and had him start practicing them. ... He really was not ready yet, I think, for actual reading, and whether he was or not, he resented being made to do something that wasn't his idea, so he resisted. ... Pretty quickly I realized that in spite of the progress he was making in reading skill, I was doing more harm than good to my son, because I was making him hate reading. I immediately ceased formal instruction in reading, and just went back to reading to him whenever he wanted me to." Holli went on to note that, roughly two years later, her son "entirely surreptitiously" began to look at books on his own and eventually to read, apparently hiding his interest and practice so as not to feel pressured.

Beatrice wrote, of her daughter who learned to read at age 8: "I too am guilty of trying to 'make her' read, when she turned 6, worried that the kids at school would be learning this skill and not wanting her to be left behind. After a couple of weeks of insisting she read and keep a journal with me spelling everything and she copying it all out, she told

me flatly to ‘leave me alone,' that she would have no part in my scheme and would learn to read when she was ‘good and ready.'"

And Kate, a homeschooling mom in the UK, wrote, concerning her attempts to teach reading to her son: "By age 9 he was resistant to any English and reading became a regular battle. He resisted it and found it boring and he was distracted, so finally I got over my own schooly head and tried a new policy of letting go. I said that I would never make him read again or even suggest it.... Over the next month he quietly went to his room ... and taught himself to read.... I had spent four years teaching him the basics [when he wasn't interested], but am now sure that he could have learnt that in a few weeks."

4. Children learn to read when reading becomes, to them, a means to some valued end or ends.

There's an old joke, which I recall first hearing several decades ago, about a child who reached age 5 without ever speaking a word. Then one day, at lunch, he said, "This soup is cold." His mom, practically falling over, said, "My son, you can talk! Why haven't you ever said anything before?" "Well," said the boy, "up until now the soup has always been warm."

This story is completely apocryphal as applied to learning to talk, which is why we understand it to be a joke. Children learn to talk whether or not they really have to talk in order to get their needs met; they are genetically programmed for it. But the story, somewhat modified, could apply quite reasonably to learning to read. Children seem to learn to read, on their own, when they see some good reason for it. Many of the stories sent to me illustrate this idea. Here are some examples:

Amanda wrote, concerning her daughter who attends a Sudbury model school: "She had consistently told people that she didn't know how to read until she made brownies this past November [at age 7]. She asked her father and myself to make her favorite brownies for her, but neither of us was willing to make them. A little while later she ran into the room and asked me if I would turn on the oven for her and find her a 9x11 pan (she said, "9 *ex* 11" instead of "9 *by* 11"). I got her a pan and turned on the oven. Later she ran in and asked me to put the brownies in the oven. Then she said, 'Ma, I think I can read now.' She brought me a few books that she then read out loud to me until she jumped up and said, ‘those brownies smell done. Will you take them out now?' ... Now she tells people that she knows how to read and that she taught herself how."

Idzie, a 19-year-old unschooled but beautifully educated blogger, sent me a link to an essay, on her blog, about her own memories of learning to read. She wrote, in part: "When I was something like age 8 or 9, my mother was reading the first Harry Potter book aloud to my sister and me. But, well, she had things to do other than read, and if she read too long, her voice would get hoarse. So, being quite frustrated at how slow a process this was, and really wanting to know what happened next, I picked it up and began to read."

Marie, an unschooling mom, wrote about her son, now age 7: "[He] found the incentive to become a better reader through acting at a local theater. He has always been passionate about putting together ‘shows,' but now he is old enough to have real acting experience. He sees that reading is an integral part of this activity that he loves and it has

given him a strong reason to grow and develop as a reader. He recently had a part in A Midsummer Night's Dream and had to read and memorize Shakespeare. It took no instruction on the part of a 'teacher' whatsoever."

Jenny wrote that her daughter, who didn't begin to read books until age 11, was able to satisfy her love of stories by being read to, watching movies, and checking out CDs and books on tape, from the library. She finally began reading because there was no other way for her to satisfy her interest in video games, such as ToonTown, and manga books, which require reading that nobody would do for her.

5. Reading, like many other skills, is learned socially through shared participation.

Observations at Sudbury Valley School, and at other Sudbury model schools, suggest that many children there learn to read through age-mixed play. Non-readers and readers play games together, including computer games, with written words. To keep the game going, the readers read the words and the non-readers pick them up.

Vincent Lopez, a staff member at the Diablo Valley School, a Sudbury model school, sent me this sweet example of age-mixed learning: "In the art room they are making signs to imitate a TV show that had just started. It is in my opinion, a dumb, low-ethics, media-driven, free for all dating show; I've let this be known before. In their own way they are processing the future to come. ... but I digress. The jewel of this snippet is that the 5-year-old is attempting to read the sign with the help of his multi-aged peers. ...Students learn because they want to get the jokes, be more advanced like the peers around them."

Nearly all of the stories from home unschoolers include examples of shared participation in reading. One of my favorites is that presented by Diane, who noted that her daughter, who learned to read at age 5, became interested in reading because of the family's regular Bible reading time. Before she could read she insisted on having her turn at Bible reading, "and she would just make up words as her turn!"

Others wrote about shared family games involving words, or about shared television viewing in which the onscreen guide and captions would be read for the benefit of nonreaders. Over time, the nonreaders needed ever less help; they began recognizing and reading more and more words themselves. The most often mentioned examples of shared participation are those of parents, or sometimes siblings, reading stories to nonreaders, often as part of the bedtime ritual. Nonreaders look on, at the words as well as the pictures, and sometimes read some of the words; or they memorize books that have been read to them repeatedly, and then later they pretend to read the books while actually attending to some of the words. Pretend reading gradually becomes real reading.

In previous essays I have referred to the great Russian developmental psychologist Lev Vygotsky, whose main idea was that children develop new skills first socially, through joint participation with more skilled others, and then later begin to use the new skills privately, for their own purposes. That general principle certainly seems to hold in the case of reading.

6. Some children become interested in writing before reading, and they learn to read as they learn to write.

At least seven of the people who sent me stories said that their child was interested in writing, or typing, either before or simultaneously with their initial interest in reading. Here are four examples:

Marie wrote, of her son, now age 7: "He is an artist and spends hours drawing things, especially stories and inventions. So naturally he wished to make his pictures "talk" with captions, titles, instructions, and quotations. ... There was a lot of 'MOM? How do you spell *Superdog wants to go home*?' I would spell out the sentence and five minutes later, 'MOM? How do you spell *Superdog sees his house*?'" This boy learned to read, at least partly, by reading the sentences that he, himself, had written.

Beatrice told a similar story about her youngest daughter, who learned to read before age 5. "She learned to read from her desire to express herself through the written word. Starting from the time she could hold a pencil, be it writing a poem, a song, designing an ad, she needed me to tell her the spelling: 'How do you spell *beaver*, how do you spell *suggest*?'"

Lisa R. wrote of her son, who is presently in the midst of learning to read: "His reading skill relates to his writing efforts. ... He has written short notes and story titles using his own phonetic spelling. Sometimes he asks how to spell words for a note or a book. Through repetition, he now remembers some of these words."

Lisa W. wrote: "Our oldest child learned to read when he was 4 years old as a by-product of trying to find free online games on the computer. He would open the browser and ask me to spell *free,* then *online*, then *games*. All of a sudden he was reading."

7. There is no predictable "course" through which children learn to read.

Lest you leave this essay with the belief that I and the people who have contributed these stories have taught you something useful about how to "teach" or "help" your child to read, I assure you we have not. Every child is unique. Your child must tell you how you can help, or not help. I have no idea about that, nor does any so-called reading expert. My only advice is, don't push it; listen to your child; respond appropriately to your child's questions, but don't go overboard by telling your child more than he or she wants to know. If you do go overboard, your child will learn to stop asking you questions.

Quite a few of the people who wrote to me expressed surprise at the sequence that their child went through in learning to read. Some learned to read quite exotic words, which never appear in the primers, well before they learned simpler words. Some, as I said, learned to write before they could read. Some seemed to be learning at a rapid rate and then they just stopped for a couple of years before progressing further. We adults can enjoy watching all of this as long as we remember that it isn't our responsibility to change it. We're just observers and sometimes tools that our children use for their own chosen ends.

I am very grateful to the people who took time to write their stories so thoughtfully and send them to me. I hope that many of you who have just read this essay will add to these stories with stories of your own, in the comments section below. It's high time that we created a real account of the many ways that unschooled children learn to read, an account to contrast with all those rows of books on teaching reading that exist in the education section of every university library.

Finally, I can't resist ending with a little story about my son's learning to read. He was a very early reader, and one of the first indications of his reading ability occurred when he was about three and a half and we were looking at a Civil War monument in a town square somewhere in New England. He looked at the words, and then he said to me, "Why would men fight and die to save an onion?"

Notes

*Some hyperlinks in these posts are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines.

[1] D. Rose & B. Dalton (2009), Learning to read in the digital age. *Mind, Brain, and Education, 3*, 74-83.

[2] R. M. Savio (1989), Self-initiative in the learning process; and A. DelGaudio (1989), SVS Reading Study. Unpublished senior honors theses.

[3] A. Halonen et al., (2006). The role of learning to read in the development of problem behaviour: A cross-lagged longitudinal study. *British Journal of Educational Psychology, 76*, 517-534.

When Less Is More: The Case for Teaching Less Math in Schools

In an experiment, children who were taught less learned more.

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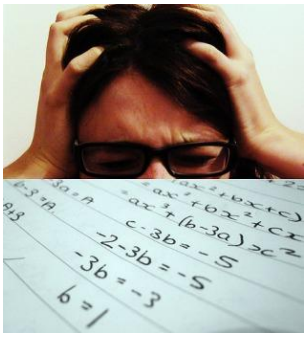

In 1929, the superintendent of schools in Ithaca, New York, sent out a challenge to his colleagues in other cities. "What," he asked, "can we drop from the elementary school curriculum?" He complained that over the years new subjects were continuously being added and nothing was being subtracted, with the result that the school day was packed with too many subjects and there was little time to reflect seriously on anything. This was back in the days when people believed that children shouldn't have to spend all of their time at school work--that they needed some time to play, to do chores at home, and to be with their families--so there was reason back then to believe that whenever something new is added to the curriculum something else should be dropped.

One of the recipients of this challenge was L. P. Benezet, superintendent of schools in Manchester, New Hampshire, who responded with this outrageous proposal: *We should drop arithmetic!* Benezet went on to argue that the time spent on arithmetic in the early grades was wasted effort, or worse. In fact, he wrote: "For some years I had noted that the effect of the early introduction of arithmetic had been to dull and almost chloroform the child's reasoning facilities." All that drill, he claimed, had divorced the whole realm of numbers and arithmetic, in the children's minds, from common sense, with the result that they could do the calculations as taught to them, but didn't understand what they were doing and couldn't apply the calculations to real life problems. He believed that if arithmetic were not taught until later on--preferably not until seventh grade--the kids would learn it with far less effort and greater understanding.[1]

Think of it. Today whenever we hear that children aren't learning much of what is taught in school the hue and cry from the educational establishment is that we must therefore teach more of it! If two hundred hours of instruction on subject X does no good, well, let's try four hundred hours. If children aren't learning what is taught to them in first grade, then let's start teaching it in kindergarten. And if they aren't learning it in kindergarten, that could only mean that we need to start them in pre-kindergarten! But Benezet had the opposite opinion. If kids aren't learning much math in the early grades despite considerable time and effort devoted to it, then why waste time and effort on it?

Benezet followed his outrageous suggestion with an outrageous experiment. He asked the principals and teachers in some of the schools located in the poorest parts of Manchester to drop the third R from the early grades. They would not teach arithmetic--no adding, subtracting, multiplying or dividing. He chose schools in the poorest neighborhoods because he knew that if he tried this in the wealthier neighborhoods, where parents were high school or college graduates, the parents would rebel. As a compromise, to appease the principals who were not willing to go as far as he wished, Benezet decided on a plan in which arithmetic would be introduced in sixth grade.

As part of the plan, he asked the teachers of the earlier grades to devote some of the time that they would normally spend on arithmetic to the new third R--recitation. By "recitation" he meant, "speaking the English language." He did "not mean giving back, verbatim, the words of the teacher or the textbook." The children would be asked to talk about topics that interested them--experiences they had had, movies they had seen, or anything that would lead to genuine, lively communication and discussion. This, he thought, would improve their abilities to reason and communicate logically. He also asked the teachers to give their pupils some practice in measuring and counting things, to assure that they would have some practical experience with numbers.

In order to evaluate the experiment, Benezet arranged for a graduate student from Boston University to come up and test the Manchester children at various times in the sixth grade. The results were remarkable. At the beginning of their sixth grade year, the children in the experimental classes, who had not been taught any arithmetic, performed much better than those in the traditional classes on story problems that could be solved by common sense and a general understanding of numbers and measurement. Of course, at the beginning of sixth grade, those in the experimental classes performed worse on the standard school arithmetic tests, where the problems were set up in the usual school manner and could be solved simply by applying the rote-learned algorithms. But by the end of sixth grade those in the experimental classes had completely caught up on this and were still way ahead of the others on story problems.

In sum, Benezet showed that kids who received just one year of arithmetic, in sixth grade, performed at least as well on standard calculations and much better on story problems than kids who had received several years of arithmetic training. This was all the more remarkable because of the fact that those who received just one year of training were from the poorest neighborhoods--the neighborhoods that had previously produced the poorest test results. Why have almost no educators heard of this experiment? Why isn't Benezet now considered to be one of the geniuses of public education? I wonder. [Note: Benezet's work was brought to my attention in a comment that Tammy added to my Feb. 24 post. Thanks, Tammy.]

For decades since Benezet's time, educators have debated about the best ways to teach mathematics in schools. There was the new math, the new new math, and so on. Nothing has worked. There are lots of reasons for this, one of which is that the people who teach in elementary schools are not mathematicians. Most of them are math phobic, just like most people in the larger culture. They, after all, are themselves products of the school system, and one thing the school system does well is to generate a lasting fear and loathing of mathematics in most people who pass through it. No matter what textbooks or worksheets or lesson plans the higher-ups devise for them, the teachers teach math by rote, in the only way they can, and they just pray that no smart-alec student asks them a question such as "*Why* do we do it that way?" or "What good is this?" The students, of course, pick up on their teachers' fear, and they learn not to ask or even to think about such questions. They learn to be dumb. They learn, as Benezet would have put it, that a math-schooled mind is a chloroformed mind.

In an article published in 2005, Patricia Clark Kenschaft, a professor of mathematics at Montclair State University, described her experiences of going into elementary schools and talking with teachers about math. In one visit to a K-6 elementary school in New Jersey she discovered that not a single teacher, out of the fifty that she met with, knew how to find the area of a rectangle.[2] They taught multiplication, but none of them knew that multiplication is used to find the area of a rectangle. Their most common guess was that you *add* the length and the width to get the area. Their

excuse for not knowing was that they did not need to teach about areas of rectangles; that came later in the curriculum. But the fact that they couldn't figure out that multiplication is used to find the area was evidence to Kenschaft that they didn't really know what multiplication is or what it is for. She also found that although the teachers knew and taught the algorithm for multiplying one two-digit number by another, none of them could explain why that algorithm works.

The school that Kenschaft visited happened to be in a very poor district, with mostly African American kids, so at first she figured that the worst teachers must have been assigned to that school, and she theorized that this was why African Americans do even more poorly than white Americans on math tests. But then she went into some schools in wealthy districts, with mostly white kids, and found that the mathematics knowledge of teachers there was equally pathetic. She concluded that nobody could be learning much math in school and, "It appears that the higher scores of the affluent districts are not due to superior teaching but to the supplementary informal 'home schooling' of children." [Note: A reference to Kenschaft's article was provided to me by Sue VanHattum, who writes a great blog called "Math Mamma Writes."]

At the present time it seems clear that we are doing more damage than good by teaching math in elementary schools. Therefore, I'm with Benezet. We should stop teaching it. In my next post--about two weeks from now--I'm going to talk about how kids who don't go to traditional schools learn math with no or very little formal instruction. If you have a story to tell me about such learning, which might contribute to that post, please tell it in the comments section below or email it to me at grayp@bc.edu within the next week.[3] I've already collected quite a few such stories, but the more I receive the more I'll have to say.

Notes

*Some hyperlinks in these postings are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines.

[1] L. P. Benezet (1935/1936). The teaching of Arithmetic: The Story of an Experiment. Originally published in Journal of the National Education Association in three parts. Vol. 24, #8, pp 241-244; Vol. 24, #9, p 301-303; & Vol. 25, #1, pp 7-8.

[2] Patricia Clark Kenschaft (2005). Racial equality requires teaching elementary school teachers more mathematics. Notices of the AMS, 52, #2, p 208-212.

Kids Learn Math Easily When They Control Their Own Learning

Math outside of school is fun, useful, and joyfully learned.

Published on April 15, 2010 by Peter Gray in Freedom to Learn

We fear it and loathe it; we admire but are also suspicious of those who are good at it; we place it in such high esteem that we make children study (or pretend to study) it almost every day of every year that they are in school; and we use it as a major criterion for college entry. We put math on a pedestal and then we avert our eyes, or else we spit at it--as happens with most things that we put on pedestals.

Math is that school subject that we can't BS our way through. That's one thing that makes it so scary to so many. There are right and wrong answers to every question, no partial credit. It also seems to many people that math performance reflects basic intelligence. To do badly is to come across as logically inept, so fear of failure is even greater in math than in other school subjects, and fear of failure always inhibits learning. I suppose the reason math counts so much on the SAT and ACT college admissions tests is that people think it is an index of general reasoning ability. But they are wrong.

The first step in coming to grips with math is to knock it off its pedestal. The real-life problems that are important to us are problems like these: Whom should I marry? Should I marry? Should gays be allowed to marry? What career should I go into and how should I prepare for it? If I invent gizmo X, will people buy it? Should corporations have the same constitutional rights as individuals? What's the best way to unplug the toilet? Math plays little if any role in solving such problems, nor do such problems have clear-cut right or wrong answers, demonstrable by some formula. Human intelligence and reasoning reside in wisdom, not math. Wisdom is the ability to bring one's values, likes and dislikes, knowledge about other people and their likes and dislikes, and general knowledge of the world together in a manner that leads to workable solutions to the problems that confront us--solutions that promote our own and others' happiness and decrease our own and others' miseries. Math has its purposes, indeed it has some valuable purposes in our modern world, but it is far from the core of intelligence. Humans were intelligent long before math was invented. Some of the smartest people I know--even some of the best scientists I know--are not particularly good at math.

The second step in coming to grips with math is to realize that math is not particularly difficult. There is nothing magical about it. You do not need some natural gift beyond that of a normal human brain to do it. Nor does it require the thousands of hours of study that we try to force upon school children. In fact, those thousands of hours of forced work at math, done for a grade and not for fun or for any practical use, are what make math seem so difficult and intimidating.

The best evidence I know that math is not hard comes from the experiences of people involved in the unschooling movement and the Sudbury "nonschool" school movement. I have written about these movements in previous posts. Unschoolers are homeschooling families that do not provide a curriculum for their kids or evaluate their learning in any formal way. Sudbury schools are those that are modeled after the Sudbury Valley School, where kids of all ages are free all day to interact with whomever they choose and pursue their own interests. Unschoolers and Sudbury schoolers defy

our cultural beliefs about what kids must do to succeed in our society. All available evidence shows that the kids in these settings grow up to become happy, productive, ethical members of the larger society, who continue to take charge of their own lives and learning throughout adulthood (for references to research on Sudbury Valley graduates, see my post of Aug. 13, 2008).

Several weeks ago I invited readers of this blog to send me stories about the self-directed learning of math. A total of 61 readers kindly responded, some with beautifully written pieces that could be stand-alone essays. I am extraordinarily grateful. Most of the stories came from unschooling parents who described math learning that they observed in their kids. It has taken me several days to organize and analyze qualitatively these stories to extract the common themes, but now I have completed that task in at least a preliminary way and am ready to relay those themes to you.

I have found it convenient to organize the stories into four categories based on the primary motive that seemed to underlie the math learning that was described. I have labeled the four categories as: ***playful math*** (which might also be called "pure math"), ***instrumental math*** (math learned as a tool to solve problems encountered in daily life), ***didactic math*** (math studied according to some curriculum or plan set out by someone other than the learner), and ***college admissions math*** (math learned for the explicit purpose of performing well or adequately on the SAT, or ACT, or some other test used for college admissions). As I relay the stories about each of these categories of math learning my convention will be to use only the first names of the storytellers and not to use children's names at all, as some requested anonymity. In what follows, I have put my own comments in Italics and the words of contributors in Roman after bullets, so as to help you guide your reading if you choose to skim.

Playful Math

I've chosen to start, most joyfully, with playful math. Playful math is what some call "pure math." It is what real mathematicians do, and it is also what 4-year-olds do. Playful math is to numbers what poetry is to words, or what music is to sounds, or what art is to visual perception. I will write later about math that is used *as a tool in play, but now I am writing about math that* is *play--math done for no other purpose than the sheer fun and beauty of it. Playful math involves the discovery or production of patterns in numbers, just as poetry involves the discovery or production of patterns in words, and music involves the discovery or production of patterns in sounds, and art involves the discovery or production of patterns in visual space.*

Four-year-olds have a knack for bringing the whole world around them into the realm of play. They play with words, so they are poets. They play with sounds, so they are musicians. They play with crayons, paints, and clay, so they are artists. And they play with numbers, so they are pure mathematicians. I've noticed that students at Sudbury Valley, who are free of any imposed curriculum, don't stop such play as they grow older. They continue to play with words, sounds, paints, and numbers and often become really good at such play. The same seems to be true for kids growing up in unschooling homes.

The earliest math play, by little kids, commonly involves the discoveries that numbers come in a fixed sequence, that the sequence repeats itself in a regular (base-ten) way, and that once you understand the pattern there is no end to how high you can count. Here are three quotations from unschoolers' stories that nicely illustrate this point:

• Evelyn wrote, of her 4 ¾-year-old son (who "insists that the ¾ be included"): "When he found out about connect-the-dot drawings, it started to click for him how numbers proceed in order. He started counting aloud all the time, when walking, when lying in bed, etc. ... The other day he was playing with one of his in-school friends, and her mother expressed shock that he did so well with the 'teen' numbers. . .. He counted to thirty for her in Spanish and then told her he could count to one million in English. So, since then, he has been counting morning, noon and night. This, as you can imagine, can sometimes be hard on others, and we have to remind ourselves it's a good thing! ... He is now at 5068 .... And when I tell people he is counting to one million, he says, 'No, ten million.' I hope I can survive it!"

• Lucy, in the UK, wrote about her son who has just turned 5: "He counted to one hundred once just for the fun of it whilst getting dressed. It was the first time I realized he could do that! He loves to line up number magnets and get me to tell him what the number is, particularly when the number goes into the millions! He can work out what a number is into the thousands from playing with fridge magnets. He has learned about odd and even numbers from walking around locally and noticing the numbers on houses. He can recognize them in other contexts now. He also learned to count in twos by predicting the next house number. We have never done any formal arithmetic or written anything down."

• Kathy wrote: "Our oldest son, who is 6, has always been fascinated by numbers. He could count to 199 before the age of 4. He loved to count, and to have me count, and to do rhythmic things with his body. He would jump while I counted, or bounce on the couch. He started on math when he wanted to know how many things he would have if he doubled them. We went through a doubling phase!"

In their continued math play, young children often discover the basic concepts of adding, subtracting, multiplying, dividing, and more. Once they have the concepts, the actual ways of performing these operations come easily. Here are a few quotations from the many stories that reinforced this idea:

• Janet wrote, of her young daughter: "She developed counting skills as most toddlers do, using fingers, food and toys, and game pieces and spaces on game boards and computer games. ... That naturally led to adding and subtracting with fingers and objects, and then doing that in her head. ... Often, seemingly out of the blue, she would ask questions like, 'Does four plus ten equal fourteen?' Me,'Yes.' She, 'Then does five plus ten equal fifteen and seven plus ten equal seventeen?' She quickly found patterns in the adding and subtracting of numbers and would apply these rules, which she discovered on her own, and increase the values used. This genuine interest in the patterns numbers create was most noticeable in her seventh year. ... I myself was quite terrified of math as a school child and teenager. But I have to say that [my experience watching and talking with my daughter] has given me a new appreciation for math and a sharpness of mind, with regard to calculations, that I had never previously felt. I also see real beauty in the unfolding of her relationship with numbers."

• Unschooling mom Lori wrote: "One thing just happened two minutes ago. My younger son [age 5] was building with Legos while I was in another room, and he called out to me with a smile on his face, while jumping on the couch, 'Mom! What is 4 plus 4 plus 4 plus 4?' I said, '16.' He smiled and said, 'What is 8 plus 8?' I said, '16.' He smiled more and said, 'What is 2 plus 2 plus 2...' and he got exactly the right number of 2's to go to 16. It was clear that he knew the answers to these questions before he asked. These were not memorized from having been taught, but concepts that he figured

out from working with Legos and playing around with the numbers in his head and on his fingers. And he was thrilled to manipulate the numbers, all on his own. To him, it was a game."

• A-L wrote of her young son: "When he was 3 or 4, one day he went into our living room where we have a large window and noticed that there were four rows of seven panes. 'So,' he said, 'if I count to seven four times then it's 28.' I don't think we'd ever talked about multiplication at that point, but he'd essentially figured out how it worked and how to do it on his own from looking at the arrangement of squares. He began experimenting with it on his own, [putting] buttons in rows arrayed like the panes of glass. He still had to count up most of his answers because he hadn't committed them to memory, but he understood how it worked and what it meant."

• And Barbara wrote this about her unschooled young daughter: "She had just been telling me what games she and her friend had been playing, and then we were both quiet for several minutes. All of a sudden she exclaimed, quite excitedly, 'Oh, I get it!!!' I asked her what she meant, and she replied, 'I understand division.' ... She then proceeded to explain that when you have a whole of something and you want to break it up into some number of equal parts, that's division. Then she asked me to quiz her, and she indeed knew how to do simple division. Before this moment we had never played around with division. I had never given her any problems to solve, nor had I even tried to explain what it was. ... My story doesn't explain how she has learned these math concepts. But I do know that our lifestyle gives her the time to integrate, ponder, and wonder about the things she sees and hears in the world around her. In her own way, she gets to make the connections, puzzle things out, and test her theories. And I am certain that when she 'gets' something she will remember it and use it because it is truly her discovery."

• Aurore wrote of her son: "One evening, at age 7, he had brought home a pack of Skittles. Like many kids, he likes to put them on a plate, sort them by color and play with them. On this day he had nine left and arranged them into three rows of three. He said, 'you know, the number nine is a square.' I told him that's what it's called, a square number, and that he could also make a square with four rows of four. He ended up making bigger and bigger squares ... When it became impractical to keep making squares with skittles (too big), or perhaps because he was just getting bored with doing that, he used a calculator to find more square numbers and wrote them down."

Some readers are no doubt thinking, "Well, a good teacher can use these sorts of demonstrations to teach math and thereby help children learn more quickly and efficiently than they could through self-discovery." But the problem with such reasoning is that every child is different and no teacher, no matter how brilliant, can get into every child's mind and come up with just the trick that will engage that mind at that exact time. That's why self-learning--learning in which the child is in charge--is almost always, in the long run, more efficient and enduring than anything that can be taught by even the most brilliant teacher.

Instrumental Math

Math is not just play. It is also a useful instrument (tool) in our daily lives, and to that extent we naturally learn it in our daily lives. Most of the math stories sent to me included at least some account of learning math as a tool in daily living. Here are a few choice quotations from those stories:

• Amy, a homeschooling mother of seven, wrote: "They all know how to divide and multiply, calculate percentages, add and subtract, just by handling money and cooking. I'm sure it helps that they have to share limited amounts of yummy snacks not only among the 7 of them but with various friends who are always around. Food and money teach kids a LOT of math, and it highly motivates them."

• Anne wrote: "All five kids learned to read recipes, measurements, how to divide and how to double or triple a recipe's ingredients. They read maps and figured out the mileage. They all played various card games and board games that use numbers and/or reasoning skills -- Uno, Skip-bo, Pinochle, etc. As they became involved in local sports, they learned how to keep the scorebook and figure out averages. One son learned how to make a spreadsheet to keep track of his team's batting averages. They all kept their own ledgers in their bank savings accounts."

• Vincente, a staff member at a Sudbury school, sent me this cute story: "Somehow we always end up with a lot of loose change, which needs to be rolled to be deposited. One of our very young students chose to do this [with my help]. We make stacks of five and count to fifty, stack and roll. This is just the beginning; it gets better. ... A week later I'm dodging vampires. Another of our mega-young invites me to play in one of the first role-playing adventures he's running. ... The penny-counter and others are watching us, learning. The dungeon master rolls 4 fives in a dexterity check, his vampire executing a superb jump and spin landing on one hand on a pencil thin branch. Out of secondary hearing the penny-counter's words clink into the space reserved for Peter's blog: ‘four times five is twenty, five four times is twenty.' Commutative property of multiplication--check."

• And this, from Jennifer: "Three years ago, my son [at age 8] was diagnosed with Type 1 Diabetes. Now, every meal is math. We calculate total carbohydrates from nutritional labels, total carbs for a meal, carb to insulin ratios by time of day, correction factors, percentages, etc. Now he NEEDS to know math to stay alive. He still hates memorizing times tables. ... If I asked him, "What is 3x6?" I just got a blank stare. Then one day at lunch he wanted cookies, so I said, ‘OK, if each cookie has 6 grams of carb and you are going to eat 3, how much carb is that all together?' Without even blinking, he replied, ‘18'.

But it's not just food and money. Here's another example:

• Beatrice wrote: "Playing the piano, my daughter told me she was doing math. She was encountering fractions--half notes, quarter notes, eighth notes, sixteenth notes, all in musical notation as well as in patterns and rhythm."

Many of the stories sent to me about instrumental math had to do with games. Most of the games that kids play today involve numbers, at least to keep score; and many of them involve really complicated math, which the players pick up eagerly in order to play the game. Here are a few representative quotations:

• H wrote: "I have 3 kids attending a democratic free school with no imposed curriculum. My kids have spent a lot of time playing online games. Real games, not those stupid educational ones. My 11-year-old son plays MapleStory and has figured out complex mathematical structures to play the game. ‘If I want to buy this helmet for this amount, how many hours do I have to play making this amount per hour in order to buy the helmet? If I sell this item in the market and the fee to sell is a certain percentage, how much will I have left after the fee? If I have this percentage of experience and I make a certain percentage per hour of experience, how many hours will it take to level up?' ... Plus in the game you work with three different currencies and have to be able to translate back and forth among them

regularly. Put these problems isolated from the game context to a bunch of 5th graders in ‘real' school and ask them to show their work and see what you get."

• Rebecca wrote: "Before my oldest son was ‘school age' he learned to solve basic math problems so that he could save the world from enemy invaders."

• Gillian wrote: "My 10 year old and 5 year old are unschooled and there is no way to avoid them being exposed to math if they live a stimulating life. In particular, the computer and PS3 games that my son plays -- World of Warcraft, Second Life, Uncharted, City of Heroes -- have math concepts built into them in a completely natural way. I do not particularly like games that are deliberately 'educational' and my children have never liked them. Any time I have tried to direct them to those games they lose interest very quickly, perhaps because those games are often condescending in tone and less complex than a well-designed game. But give them intelligent games to play and almost inevitably they learn lots of things that schools try to cover in the school syllabus, and they learn them in a much more natural and effortless way."

• And Erica wrote: "My sons (ages 11 and 7) made up a game together called ‘Draw Fight'. It's a strategy game that uses addition and subtraction. Each of them draws their own character and ... each character gets 50 points to spend at the beginning of the game towards his fighting skills, weapons, health, and armor. Choosing where to spend your points is very important because some of the things are worth more than others. After each player has had a turn to attack, you must add up your damage points done to the enemy character and subtract points that were taken from your character. The player with the most points remaining at the end of the game wins."

Beyond the world of food, games, and handling your own money, math is also an essential tool in some careers--such in physics, engineering, and accounting. People who freely choose such careers eagerly learn the math they need as part of their self-training, regardless of any deficiency in their previous math education. Here are quotations from three stories about math for careers:

• Terry, a homeschooling (but not unschooling) mom, wrote: "My oldest always balked at math.... He fought me about doing any math workbooks and I started asking for less and less in the way of math. ... We stopped after 5th grade. He had always enjoyed pretty much unlimited computer time and enjoyed writing games and programs in a self-taught way. He was offered [at age 17] an internship doing programming at a company that auctions municipal bonds. He did so well that they hired him and he is still working there at age 20. He really has a knack for programming and finds the bond and tax stuff fascinating. He is often on the phone with big-time bank executives who have no idea that they are talking to someone so young. He still can't tell you what 6 times 7 is without having to add it in his head. He took placement tests to get into community college and did badly on the math part and was supposed to take a remedial math class. This bothered him because you have to pay to take the remedial math, but you don't get credit for it. So ... he did *two days of math study* [my emphasis] and re-took the test. This time he placed out of both the remedial math and the basic math courses. If he sees a reason to learn something, he will do it. Otherwise, forget it!"

• Dan, a Ph.D. candidate in anthropology, wrote to me explaining that the out-of-context math courses he took in college left him poorly trained for the statistics he needed in his graduate work. He added: "Through a lot of self-teaching and a little mentorship, I am [now] better at statistics than most of the professors I encounter."

• A colleague of mine, a highly esteemed biologist whose work includes the development of mathematical models, wrote in an autobiographical sketch that he performed poorly in math in high school and college and learned little. He wrote: "I took one year of math in college, freshman calculus, and it almost killed me. In graduate school I had strong reason to learn math so I did. I purchased *Calculus for Dummies*, practiced hard, and pestered more knowledgeable graduate students when I got stuck. It wasn't exactly fun, but every time I figured something out I had a feeling of triumph that motivated me to take the next step. I published my first theoretical paper while still a graduate student and now I'm a well-known theoretical biologist."

Didactic Math

If this were a typical article about math education, it would be entirely about didactic math--math as it is taught by "expert" educators to naïve students. Our society is so convinced that this is how math must be learned that even parents who become unschoolers are often reluctant, at first, to give up the formal or semi-formal teaching of math. They tend, for awhile, to succumb to the cultural beliefs that (a) math must be learned to be successful in our society and (b) math is no fun, so most people will not learn it on their own. But over time, watching their kids, they change their minds and stop the instruction. Here are two quotations that nicely express these points:

• Rebecca wrote: "With my son's apparent agreement, we succumbed to using a packaged program, with a video component.... And then it happened. Both my son and I lost our enthusiasm. He was bored. I didn't like the way things were going in the material ... repetition, repetition, and more repetition. So, after internal writhing, I pried my white-knuckled hands from the crutch of the packaged, predictable, lock-step curriculum and told my son that I was done with my part in making that happen. ... Letting go of the math curriculum (and expectations) has been a huge weight off of my mind. For so many years I had a split home-learning personality--'we unschool, except in math.' I was all tied up in knots about math and felt I had to strongly encourage (coerce?) my son to adopt a traditional approach to learning it." Rebecca went on to explain that her initial concern for teaching math had to do with expectations about college. For years she couldn't let go of the idea that her son must attend college to have a good life and he must learn math in order to get into college (even though he was not yet 9 years old!).

• Carin2Learn wrote: "I confess that it was a moment of almost-panic that motivated me to show my son the math worksheet website. ... He also claimed he wanted a math workbook. I bought him one, and it remains unused. Thankfully there is more to math than sitting down and writing."

A number of other respondents pointed out that math lessons and programs are easy for kids who choose to do them and are allowed to do them in their own ways, on their own schedules. Here are several quotations to that effect:

• Carlotta wrote, about her son who did no formal math lessons until age 12: "He then shot through Key Stage 3 Maths in about 3 weeks of doing just a little bit here and there. He found it almost ridiculously easy, doing things like memorizing his tables (with some interest in the various patterns that he spotted) in less than an hour. Trigonometry easy peasy, equations no problem. ... OK, so he had spent a considerable amount of his younger years playing the markets on Runescape and solving other mathematical problems in various (fun) games...but that had been it. SOO much less sweat."

• Fawn wrote: "My 11-year-old daughter was home schooled for grades 2-5. We did very little formal math instruction, maybe an hour a week total. She had a workbook she could do when she felt like it, and if she had a question I would briefly explain, but she was pretty much on her own. At the end of 4th grade she scored way above grade level on a standardized math test. She is now in 6th grade in a traditional school, at her request, and she has a 94 average in math."

• Leslie wrote: "We did some hands-on stuff, but honestly, I was handicapped by my own math education to the point that when I would try to explain to my kids how to do something, one of them would interrupt me and say, 'you're confusing me--this is how I do it' and then explain some much more elegant way of coming to the right answer that showed me that they had a much better understanding of HOW math worked than I ever did. It always humbled me."

• An anonymous commenter on my last post wrote: "One friend of mine was an unschooler and the extent of her son's math education was reading Murderous Maths when he felt like it. At 14 he decided he'd like to take algebra at the community college. He picked up a textbook and learned all of arithmetic in a few weeks. Another friend put her son into school at 5th grade. After the testing the school said her son would never be at grade level by the end of the year. He caught up in a month."

• Chris, whose daughter went to a traditional school, wrote: "[She] was diagnosed with learning disabilities. In grade school she could intuitively give me the answers to complex homework math problems involving large fractions or long division, but she didn't consciously know how she got the answers. She would weep loudly when I tried to show her the steps to 'write out' the problem for her homework, wailing, 'That is not how the teacher told me to do it!' Then she would try to work out what to her were the meaningless magical steps of long division that she could not remember correctly and so never gave her the right answer. She refused to accept my version of the 'steps,' even though it gave the right answer, because it was not the way her teacher told her to do it."

College Admission Math

And now, finally, we come to the math that middle-class parents most worry about. For some odd reason we have decided, as a society, that all young people who go to college--even those who want to become poets or linguists--must show their mettle on a test of ability to do a certain amount of algebra, geometry, and trigonometry that they will never again use as long as they live. And so, some companies make lots of money tutoring kids--kids who have already 'taken' thousands of hours of math in school--to do those tests. And quite often the tutoring does the trick because the young people at this point want to learn what they must to get into the college of their choice. Then they can promptly forget, forever, the math that they had put into their temporary memory banks. Here are two pieces about how unschooled kids prepare for the math SAT or ACT.

• Leslie wrote this about her son who was entirely unschooled until he went to college: "The first real formal math he did was when he studied for the ACT test. When he was younger, we had math workbooks and even a couple textbooks around the house, but they barely got looked at. ...The 'dirty little secret' about math is that it just doesn't take as long to learn it as we're culturally indoctrinated to believe it takes. My son learned enough math in just a few weeks to get a

33 on the ACT test just by studying some ACT test prep books." [Note: In the United States, the ACT is most commonly used in the middle states and the SAT is most commonly used on and near the two coasts.]

• To find out more about how kids with no formal math training deal with college admissions math, I interviewed Mikel Matisoo, the Sudbury Valley staff member who is most often sought out by students who want help in preparing for the math SAT. He told me that the kids who come to him are usually those who have relatively little genuine interest in math; they just want to do well enough on the SAT to get into the college of their choice. He said, "The way the SAT is structured it is relatively easy to prepare directly for it; there are certain tricks for doing well." Typically, Mikel meets with the students for about 1 to 1 ½ hours per week for about six to ten weeks and the students may do another 1 to 1 ½ hours per week on their own. That amounts to a range of about 12 to 30 hours, total, of math work for kids who may never before have done any formal math. The typical result, according to Mikel, is a math SAT score that is good enough for admission to at least a moderately competitive college. Mikel explained that the kids who are really into math, and who get the top SAT scores, generally don't seek him out because they can prepare on their own.

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And so, dear parents, please stop worrying about your kids' learning of math. If they are free to play, they are likely to play with math and learn to enjoy its patterns. If they live real lives that involve calculations, they will learn, in their own unique ways, precisely the calculations that they need to live those lives. If they choose to go to college, they can learn quickly--from a test preparation book, program, or tutorial--the specific math tricks necessary to do well enough on college admissions math. If they choose some career that involves math, they will eagerly find ways to learn the specific kinds of math that they need for that career. Your worry is only a hindrance.

And so, dear educators, please step out of your boxes and take a look at these remarkable educational movements--the unchooling and Sudbury movements--and study them to see, from a different point of view, how education can work in such a painless and joyful manner when kids are free and in charge of their own learning. Nobody, at least no student, benefits from the thousands of hours of forced math "study" that we put kids through in our schools. The same amount can be learned in a small fraction of that time by kids who are free.

Note

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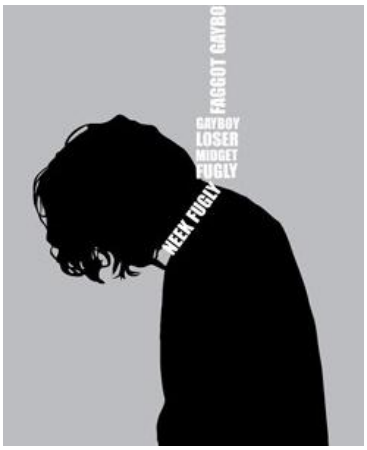
School Bullying: A Tragic Cost of Forced Schooling and Autocratic School Governance

Antibullying laws will work only when students make the laws.

Published on May 12, 2010 by Peter Gray in Freedom to Learn



Let's say you are 15 years old, or 13, or 11, and for some reason--a reason over which you have no control--you have been singled out by your schoolmates as an object for scorn and humiliation. Every day at school, for you, is another day in hell. You are called "whore," "bitch," "slut;" or "fag," "pussy," "scum;" or worse. People deliberately bump into you and knock your books out of your hands in the hallway. Nobody sits with you at lunch, or, if they do, those people are harassed until they stop sitting with you. These bullies are not the brutish looking comic-strip bullies, whom nobody likes and who steal other kids' lunch money. No, these bullies are among the popular kids--the athletes, cheerleaders, preppies. They are popular not just with most of the other kids but also with the teachers, school administrators, and adults in the larger community.

The law requires that you attend school, regardless of how you feel about it and how you are treated. You are not one of the privileged minority whose parents have the means to send them to a private alternative school or to convince the school board that they can educate them adequately at home. You have no choice.

What do you do? If you are like most of the hundreds of thousands of picked-on kids who suffer like this every day you somehow suck it up. You harden yourself and somehow survive it. You may be the only person who will ever know the full extent of your suffering. You may think about killing yourself; you may even fantasize some violent revenge against the whole school, as the whole school seems to be your enemy. If you are like most kids such thoughts remain in the realm of fantasy. But every once in a while, in a particularly vulnerable person, the despair or rage or both erupt into violence, either against the self or against the whole school, and only then does school bullying become an issue to the larger community.

Here's how Helen Smith, in her book The Scarred Heart, tells one such story, that of the suicide of 13-year-old April Michelle Himes of Richland, Washington: *"Kids at school called her fat, threw things at her and pushed her around. They ridiculed her with rumors that she stuffed tissues in her bra. She attempted suicide and her parents admitted her to an inpatient mental hospital program and sought counseling but said it didn't help. After missing fifty-three out of the required one hundred and eighty days of school, she was told that she would have to return to school or appear before a truancy board which could then send her to a juvenile detention center. She decided the better alternative was to go into her bedroom and hang herself with a belt. ... In times past, she could have just dropped out of school, but now kids like her are trapped by compulsory education."*

In my home state of Massachusetts we've been hearing a lot recently about school bullying and suicide. A year ago, headlines were made when 11-year-old Charles Joseph Walker-Hoover hanged himself rather than face another day of bullying at the supposedly "good" charter school he attended in Springfield. Then, in January of this year, Phoebe Prince, a 15-year-old immigrant from Ireland, hanged herself after months of bullying by students at the public school she attended in the affluent community of South Hadley.

The outrage that followed Prince's suicide, coming so soon after Walker-Hoover's, forced the hands of the Massachusetts legislature. Just last week they passed, unanimously, an anti-bullying bill that was then immediately signed into law by the governor. The whole state felt that something had to be done, so that Charles's and Phoebe's deaths would not have been in vain. So they created a law.

I'm not surprised by the legislators' unanimous votes for this bill, nor by the governor's well-publicized signing of it. Given the emotional climate, they probably saw no other choice. Anyone who voted against it would have been seen as unsympathetic to the grieving parents and as soft on bullying. But this new law is not going to solve the bullying problem, and it will almost certainly create legal and bureaucratic nightmares.

Why Anti-Bullying Legislation Will Not Solve the Bullying Problem

The new anti-bullying law requires that every school employee--including cafeteria workers, janitors, and bus drivers as well as teachers and administrators--report any bullying incident that they see to the principal, who is then required to investigate the incident and take appropriate disciplinary action. In addition, the law requires that every student in Massachusetts, from kindergarten through 12th grade, in every school, participate every year in an "anti-bullying curriculum." On the surface, these may look like good things, but you don't have to scratch very deeply to see the problems.

The first problem with the reporting requirement is that very often--maybe most often--the staff member will have no way to know whether a particular act represents good-natured teasing or real bullying. This is especially true in large schools, where individual staff members don't know everyone. Teasing among friends is a normal, healthy part of adolescence, especially for boys. The best of friends may repeatedly call one another names that sound horrid to outsiders. For many boys, this is their way of hugging.

A cafeteria worker hears a kid calling another kid "loser" a couple of times and then, by law, has to report it and the principal has to investigate it. This is going to keep the principal very busy and will cause a lot of perfectly good, normal, compassionate kids to get into trouble. It'll be like the no tolerance policy on weapons, which has led kids to get suspended for such infractions as bringing a nail clipper to school; or like the no-tolerance policy on sexual harassment, which caused a third-grade boy to be suspended for kissing a little girl on the cheek. Civil liberties lawyers in Massachusetts are already saying that the new law is likely to run afoul of free speech rights. It will be one more form of top-down control over the behavior of kids in school; one more requirement that makes school feel even more restrictive and prison-like than it already does.

Another problem with the reporting requirement is that it will lead the bullies to hide their bullying from adults even more effectively than they already do. The modern-day bullies that have driven kids to suicide are, by all reports, already very good at hiding their transgressions and looking innocent to adults. This is why teachers and principals so often fail to believe the victims, or the victims' parents, when they are told about harassment. They don't see it. In their view the accused are among the best kids in the school, so they jump to the conclusion that the complaint must represent a psychological problem on the part of the complainer, and then they recommend therapy. The new law is not going to solve this problem. It's still going to be one kid's word against the words of a whole group of other kids; and the latter will often be the smoother talkers.

A third problem with the reporting requirement is that it will cause the "us versus them" gulf between students and staff at schools to become even wider than it is today. Kids will feel that they have to behave even more differently when a staff member is around than is already the case. Because staff members must bring them up for even minor infractions of the new speech code, staff will appear even more than now to be the enemy. So, students' reports to teachers and principals about harrassments will be seen as tattling to the enemy, even more so than it already is; and students who have the gall to make such reports will be singled out for further abuse, even more than they already are.

What about the other part of the law, the part that requires students to participate every year in an anti-bullying curriculum? A new course, a new curriculum, a new set of tests--these have become the knee-jerk reactions of our culture to every problem that we perceive among kids (see my post of Oct. 8, 2008, for another example of this reaction). In fact, many anti-bullying school programs and courses have been tried over the past twenty years, in other countries as well as in the United States, and many outcome studies have been conducted to see if they work. So far, no program has proven itself to be very effective.

Two major reviews of such outcome research have been published, and both concluded that there is little if any evidence that any of the programs tried so far produce meaningful positive gains [1]. At best, such programs may produce slight decreases in bullying, and at worst they may produce slight increases in bullying. The same has been found for top-down programs aimed at modifying other aspects of adolescents' behavior. For example, the much-touted D.A.R.E. program designed to make kids immune to the temptations of drugs has been shown time and again to be ineffective, and three years ago it was included, in an article published by the American Psychological Society, in a list of interventions that are more likely to cause harm than good.[2]

The Root Cause of School Bullying

Bullying occurs regularly when people who have no political power and are ruled in top-down fashion by others are required by law or economic necessity to remain in that setting. It occurs regularly, for example, in prisons. Those who are bullied can't escape, and they have no legislative or judicial power to confront the bullies. They may report bullying to the prison guards and warden, but the guards and warden may not know whom to believe and may have greater vested interest in hiding bullying than in publicizing it and dealing with it openly. Recently I read the acclaimed book by Chen Guidi and Wu Chuntau, *Will the Boat Sink the Water?*, about peasant life in modern day China. The peasants are not allowed to move off the land and they are governed, top down, by petty bureaucrats. The peasants have no

political power and no due process of law, and so the bullies, who can best intimidate others, rise to the top. Should we be surprised to discover that at least some of our schoolchildren respond to forced confinement and dictatorial governance in the same manner as prisoners and Chinese peasants?

In our culture's fondest image of schools, the teachers and principals are infinitely kind, nurturing, and wise adults who know what's best for kids and can solve their problems. But really, of course, teachers and principals are human beings, with all the foibles of human beings everywhere. Most are indeed kind people, but they are far from all knowing or all wise; and nobody, truly nobody, is above self-interest. As a nation we decided long ago that there is no such thing as a benign dictatorship. To have a moral society the people who are governed must do the governing. That's our foundational principle as a nation, and if our children are to be educated for democracy, wouldn't it be nice if our schools, where children spend so much of their lives, were living embodiments of democracy?

There is only one way to get rid of the bullying and the general sense of unfairness that pervades our schools, and that is to restructure radically the way the schools are governed. If our children are required to be in school, then they must be granted a real voice in the way the school is run. If they are not granted such a voice, then school is prison and we can expect students to react in many of the same ways that prisoners everywhere react.

I've been involved for many years with a school where the students and staff together, on a one-person-one-vote basis, make all of the school rules and where the rules are enforced through a judicial system in which students of all ages serve as jurors. This school, like any other, has students who are potential bullies (for who is not potentially a bully?), but its democratic governance is remarkably effective at nipping incipient bullying before it becomes hurtful.

Because the students have power, they feel ownership of the school and have a vested interest in keeping it peaceful. Their legal power promotes an attitude of responsibility, which leads them to use not just the schools' legislative and judicial systems but also the full force of peer pressure and friendly persuasion to promote peace and justice. There is no "us versus them" distinction between staff and students at this school. They work together to create a community in which people can feel free and unafraid. I'm not talking about a fantasy school. I'm talking about a real school that has existed for over 40 years and has been replicated many times throughout the world.

I'll say more about all this in my next post, where I'll present the tried and true formula for creating a school that truly is a moral community.

NOTES

*Some hyperlinks in these posts are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines.

[1] K. W. Merrell et al. (2008), How effective are school bullying intervention programs? A meta-analysis of intervention research. *School Psychology Quarterly, 23*, 26-42; and J. D. Smith et al. (2004), The effectiveness of whole-school antibullying programs: A synthesis of evaluation research. *School Psychology Review, 33*, 547-560.

[2] Lilienfeld, S. O. (2007). Psychological treatments that cause harm. *Perspectives on Psychological Science, 2*, 53-70.

Freedom from Bullying: How a School Can Be a Moral Community

Every school should be, first and foremost, a moral community.

Published on June 8, 2010 by Peter Gray in Freedom to Learn

Many years ago, as part of my early studies of the Sudbury Valley School, I sat in on a school meeting at which the main agenda item had to do with a complaint made about a new student's clothing. A new teenaged enrollee had been coming to school wearing a leather jacket with a swastika painted on it. At most schools this kind of offence would be quickly and efficiently handled by the principal, who would call the student into his or her office and order the student to remove the jacket and never bring it back to school. But that's not how Sudbury Valley handles things. Sudbury Valley has no principal. It is run--entirely run--in democratic fashion by the School Meeting, which includes all students (age 4 on through high-school age) and staff members together. [For more about the school, see Children Educate Themselves IV: Lessons from Sudbury Valley.]

The debate that I listened to that day was one befitting the Supreme Court of the United States. There was talk on the one hand of freedom of speech. Did freedom of speech include the right to wear a swastika? I remember one teenaged girl thoughtfully raising the question this way: "Suppose we ban the swastika? Does that mean we could also ban the hammer and sickle, under which terrible atrocities were committed? And what, then, about the American Flag? Some people might be offended by it, because of atrocities such as slavery and the mass murder of Native Americans that were committed under this banner. Once we start interfering with free speech, where do we stop?"

On the other side, several presented the argument that the swastika is a hate symbol in a way that the hammer and sickle or the flag of any other country is not. History was presented--not to teach history, but simply as part of the process of putting forth an argument that was directly germane to the decision that the group had to make. As the debate continued, the tension between the right of free speech and the right to freedom from offensive speech came into sharp focus.

Most of the people who spoke were staff members and older students, but many younger students were present, by choice (as nobody has to attend school meetings). I could see by their expressions that even the youngest were fully engaged by the discussion. When it came time to vote, their vote was truly informed. They had heard all the arguments, on both sides of the question. An issue about clothing had become a deeply moral question about freedom and how one person's freedom sometimes conflicts with another person's freedom, which is why laws are needed. For the record, the swastika was banned, and the school now has a general rule against the display of hate symbols and the use of words that are commonly understood as expressions of hate toward any group of people, even where hate was not intended.

What does this have to do with bullying? Everything.

In the standard school, the principal, in demanding that the student not wear the swastika, would himself have been engaged in an act of bullying. He would have been using his superior power to inflict his will upon the student, who had no power in that setting. The only lesson that the swastika-wearing student would likely have taken away is that "might makes right"--the lesson of a bullying environment.

At Sudbury Valley, the entire community of people who were affected by the decision made the decision. It was made thoughtfully, morally, through established democratic procedures. The swastika-wearing student, who had the same right to vote as everyone else, knew that it wasn't just one person but the majority of people--including his age-mates as well as the adults and little kids--who were opposed to his wearing that jacket. And he could hear the reasons, presented not by some superior, but developed in an open discussion in which all voices were heard. At the same time, those who were offended by the swastika, and who felt bullied by the student's wearing of it, learned that they didn't have to accept such bullying. They could voice their concern, and their voice was heard and taken seriously by the whole community. That is the messy, inefficient system called democracy.

Some years later, my graduate student Jay Feldman spent hundreds of hours at Sudbury Valley, observing and making notes on students' interactions, both indoors and outdoors on the school campus. His main goal was to understand how education occurs in the school's free environment, but in his report he also noted the astonishing lack of any persistent bullying at the school. Many of the vignettes that he recorded demonstrate ways by which the students themselves, in this environment, nip bullying in the bud when it begins to occur.[1]

His observations made clear that one potent force against bullying at the school derives from the free age mixing that occurs there. The presence of little children, who are known to all, seems to bring out the nurturing qualities in older children, and the spirit of nurturance then transfers even to interactions among age-mates. I wrote about this in a previous essay (Why We Should Stop Segregating Children By Age, Part III). Another potent force, however, clearly comes from the democratic procedures through which the school operates and the spirit of equality and respect for one another that such procedures engender. That is my focus here.

One of the school's most frequently cited rules--made, of course, through democratic vote of the School Meeting--is that referred to as *Infringement of Rights*. Basically, the rule is this: If you say or do something to someone that is potentially offensive to that person, and if that person asks you to stop but you don't stop, then you have infringed upon that person's right not to be harassed, and that person, or anyone else, can then "bring you up" to the Judicial Committee. The Judicial Committee, or JC, is a standing jury, which meets every day. It is composed of school members of all ages--there is always at least one little kid, one middle kid, one older kid, and one staff member--who serve for a certain designated period of time.

Most often, in simple cases of teasing, the JC attempts to "mediate" the case, that is, to bring it to a conclusion satisfactory to both parties without any formal charges. The accused may apologize and the accuser may accept the apology after explaining how the teasing made him or her feel, and that may be the end of it. If such teasing were to occur again, however, the JC would have to decide on some appropriate punishment for the person who inflicted the teasing. Perhaps that person would be banned, for a week, from the area of the school where the teasing occurred.

What a simple, elegant rule! It solves the problem (in most cases) of deciding whether or not a specific name, joke, or action is "all in good fun" or harassment. It's harassment if the target says, seriously, "I don't like this, so please stop it." In some cases, however, it takes students a while to learn that they have the right to voice objections to teasing, and in those cases someone else may bring up the offender if he or she believes that the target felt harassed or might reasonably have felt so. When this happens the arguments before the JC become more complicated. Not surprisingly, most complaints about teasing are brought by little kids against other little kids. Older kids, in this environment, have usually learned to settle such disputes and respect one another's rights without the JC.

Serving on the JC, which everyone does from time to time, is itself an education in concern for others. On the JC students of all ages have the mature task of listening to and trying to understand both parties in a dispute. The school's judicial system is not designed for education--it is designed for the very practical purpose of settling disputes--but, in fact, each case tried is a real-life lesson in human sensitivity for everyone concerned.

Sudbury Valley calls itself a school, but it is first a foremost a democratic, moral community. Every school member, regardless of age and regardless of status as student or staff, has legal power equivalent to every other member of the school. The official system of authority at the school is not one of bullying; it is not top-down authority based on power differentials. Every voice is respected, and when people are listened to and respected they no longer have a need to bully. In fact, in that environment, they learn that bullying backfires. It does not achieve any useful ends, and it puts you at odds with the rest of the community in ways that make you uncomfortable and lead you to change your ways.

Wouldn't it be nice if all of our schools were, first and foremost, moral communities?

Notes

*Some hyperlinks in these postings are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines.

[1] Examples can be found in Gray, P. and Feldman, J. (2004). Playing in the Zone of Proximal Development: Qualities of Self-Directed Age Mixing Between Adolescents and Young Children at a Democratic School. *American Journal of Education, 110*, 108-145.

ADHD and School: The Problem of Assessing Normalcy in an Abnormal Environment

ADHD diagnoses derive from schools' intolerance of normal human Diversity.

Published on July 7, 2010 by Peter Gray in Freedom to Learn

According to the most authoritative recent data, approximately 8% of children in the United States, aged 4 to 17, have been diagnosed as having ADHD (Attention Deficit Hyperactivity Disorder).[1] The same reports note that the disorder is about three times as frequent in boys as it is in girls, so this means that roughly 12% of boys and 4% of girls have received the diagnosis. Think of it. Twelve percent of boys--that's approximately *one boy out of every eight*--has been determined by some clinical authority, using official diagnostic criteria set out by the American Psychiatric Association, to have this particular *mental disorder*!

If only teachers' ratings were used, the numbers would be even greater. In one study involving 16 different schools and more than three thousand children, teachers filled out the standard ADHD diagnostic checklist of behaviors for the students in their classrooms.[2] In that study, where teachers' ratings were not averaged in with the ratings made by parents, 23% of elementary school boys and 20% of secondary school boys were diagnosed as having ADHD. What an amazing finding. By teachers' ratings, nearly *one fourth* of all elementary school boys and *one fifth* of all secondary school boys has the mental disorder, ADHD!

ADHD is Fundamentally a School Adjustment Problem

What does it mean to have ADHD? Basically, it means failure to adapt to the conditions of standard schooling. Most diagnoses of ADHD originate with teachers' observations.[3] In the typical case, a child has been a persistent pain in the neck in school--not paying attention, not completing assignments, disrupting class with excessive movements and verbal outbursts--and the teacher, consequently, urges the parents to consult with a clinician about the possibility that the child has ADHD. Using the standard diagnostic checklists, the clinician then takes into account the ratings of teachers and of parents concerning the child's behavior. If the ratings meet the criterion level, then a diagnosis of ADHD is made. The child may then be put on a drug such as Adderall or Concerta, with the result, usually, that the child's behavior in school improves. The student begins to do what the teacher asks him to do; the classroom is less disrupted; and the parents are relieved. The drug works.

The diagnostic criteria for ADHD, as outlined by DSM-IV (the official diagnostic manual of the American Psychiatric Association), clearly pertain primarily to school behavior. The manual lists nine criteria having to do with inattention and another nine having to do with hyperactivity and impulsivity. If a child manifests at least six of either set of nine, to a sufficient degree and over a long enough period of time, then the child is identified as having one or another version

of ADHD. Depending on which set of criteria are manifested, the child is given a diagnosis of *ADHD Predominantly Inattentive Type*; *ADHD Predominantly Hyperactive-Impulsive Type*; or *ADHD Combined Type*.

Here, for you to peruse, are the complete lists of criteria, quoted directly from DSM-IV:

Inattention

1. Often does not give close attention to details or makes careless mistakes in schoolwork, work, or other activities.
2. Often has trouble keeping attention on tasks or play activities.
3. Often does not seem to listen when spoken to directly.
4. Often does not follow instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions).
5. Often has trouble organizing activities.
6. Often avoids, dislikes, or doesn't want to do things that take a lot of mental effort for a long period of time (such as schoolwork or homework).
7. Often loses things needed for tasks and activities (e.g. toys, school assignments, pencils, books, or tools).
8. Is often easily distracted.
9. Is often forgetful in daily activities.

Hyperactivity & Impulsivity

1. Often fidgets with hands or feet or squirms in seat.
2. Often gets up from seat when remaining in seat is expected.
3. Often runs about or climbs when and where it is not appropriate (adolescents or adults may feel very restless).
4. Often has trouble playing or enjoying leisure activities quietly.
5. Is often "on the go" or often reacts as if "driven by a motor".
6. Often talks excessively.
7. Often blurts out answers before questions have been finished.
8. Often has trouble waiting one's turn.
9. Often interrupts or intrudes on others (e.g., butts into conversations or games).

OK, after reading this list, who is surprised that so many boys have been diagnosed as having ADHD and that teachers usually initiate the diagnostic process? Raise your hand (but please don't blurt out your answer before I call on you).

How convenient that we have this official way of diagnosing kids who don't sit still in their seats, often fail to pay attention to the teacher, don't regularly do the assignments given to them, often speak out of turn, and blurt out answers before the questions are finished. They used to be called "naughty"--sometimes with a frown, sometimes with a smile of recognition that "kids will be kids" or "boys will be boys"--but now we know that they are, for biological reasons, mentally disordered. And, wonder-of-wonders, we even have an effective treatment. We can give them a powerful drug--a preparation of methylphenidate or amphetamine, both of which have effects on the brain similar to those of cocaine (but without the euphoria) and are, for good reasons, illegal to take unless you have been diagnosed

with a mental disorder and given a prescription. The drug works. The children become more tractable and classroom management becomes easier.[4]

The most common subtype of ADHD is the Predominantly Inattentive Type. This is the disorder that used to be called just ADD. A highly respected pediatrician at Yale University who treats (with drugs) many children diagnosed with this disorder made this interesting confession: "*A disproportionate number of children labeled 'ADHD without hyperactivity' are exceptionally bright and creative children. I've often thought that these kids find their own inner theater much richer and more interesting than the outer theater of the classroom and, so, naturally, focus on it at the expense of classroom attention. . . The proper fix for this problem would be done at the school level, a place where I am unlikely to have any significant effect. I can, however, help these children concentrate and return their attention to the classroom.*"[5]

Why Do So Many Kids Have Difficulty Adjusting to School?

From an evolutionary perspective, school is an abnormal environment. Nothing like it ever existed in the long course of evolution during which we acquired our human nature. School is a place where children are expected to spend most of their time sitting quietly in chairs, listening to a teacher talk about things that don't particularly interest them, reading what they are told to read, writing what they are told to write, and feeding memorized information back on tests. As I have detailed in previous essays, during the entire course of human history until very recently, children were in charge of their own education. They learned by following their own inner, instinctive guides, which led them to ask countless questions (their own questions, not someone else's), to converse with others as equal partners, to explore their world actively, and to practice the skills crucial to their culture through self-directed play in age-mixed groups. [See Children Educate Themselves II: The Wisdom of Hunter-Gatherers.]

From my evolutionary perspective, it is not at all surprising that many children fail to adapt to the school environment, in ways that lead to the ADHD diagnosis. All normal children have at least some difficulty adapting to school. It is not natural for children (or anyone else, for that matter) to spend so much time sitting, so much time ignoring their own real questions and interests, so much time doing precisely what they are told to do. We humans are highly adaptable, but we are not infinitely adaptable. It is possible to push an environment so far out of the bounds of normality that many of our members just can't abide by it, and that is what we have done with schools. It is not surprising to me that the rate of diagnosis of ADHD began to skyrocket during the same decade (the 1990s) when schools became even more restrictive than they had been before--when high-stakes testing became prominent, when recesses were dropped, when teachers were told that they must teach to the standardized tests and everyone must pass or the teachers themselves might lose their jobs.

Schools' Intolerance of Normal Human Diversity

Why do some kids adapt to school better than do others? The answer to that does lie in biology--normal biology, not abnormal biology. For good evolutionary reasons, members of our species vary genetically in ways that create diversity in personality.[6] People have always lived in communities, and communities--as well as the individuals within them--benefit from diversity. It is good that some people are relatively restrained while others are more impulsive, that some

are relatively passive while others are more active, that some are cautious while others are bolder, and so on. These are among the dimensions that make up normal personality. In situations where people are free, they find ways of behaving and learning that fit best with their biological nature, and through those means they make unique contributions to the communities in which they live. Normal human environments always have a variety of niches that people can occupy, and people who are free naturally choose niches where they are most comfortable and happy, the niches that match best with their biological nature.

But school, especially today, does not have a variety of niches. Everyone is expected to do the same thing, at the same time, in the same way. Everyone must pass the same tests. Some people, apparently most, have a personality that allows them to adapt sufficiently well to the school environment that they pass the tests and avoid behaving in ways that the teachers can't tolerate. School may take its toll on them, but the toll is not so obvious. The toll may manifest itself as diffuse anxiety, or moderate depression, or cynicism, or suppression of self-initiative and creativity; but the school system can absorb all that. Those characteristics become viewed as "normal." Unless they become really extreme, they don't get DSM-IV diagnoses. It's the kids whose personalities do not allow them to go along with the system who get the ADHD diagnoses. And most of those are boys.

One of the biological characteristics that predisposes for ADHD in the school environment, obviously, is the Y chromosome. For evolutionary reasons, boys are, on average, more physically active, more adventurous (in the sense of taking risks), more impulsive, and less compliant than are girls. A normal distribution of such traits exists for both boys and girls. The distributions overlap considerably, but are not identical. The cutoff on the distribution that gets you a diagnosis of ADHD in our present society happens to be at a point that includes about 12% of boys and 4% of girls. In another setting, where they could choose their niches, most of those kids would do just fine.

An Illustrative Story

I'll conclude with a true story to illustrate all this. It pertains to a young man whom I have known well since he was thirteen years old. Throughout his school years he was funny, playful, extraordinarily impulsive, and a huge pain in the neck to essentially all of his teachers. He rarely completed a school assignment and was constantly disruptive in class. He truly could not focus on any of his school lessons and he seemed unable to prevent himself from saying what was on his mind rather than what he was supposed to say. His parents were regularly called in for conferences. When school officials asked his parents to take him to a clinic for ADHD diagnosis, his mother--a physician who knew that the long-term brain effects of the drugs used to treat ADHD have never been tested in humans and have proven deleterious in laboratory animals--refused to do so. The boy had all the characteristics of ADHD Combined Type, and I have no doubt that he would have received that diagnosis had his mother consented. Thanks to a relatively lenient and understanding assistant principal, he was passed along from grade to grade, even though he did almost none of the assigned work and failed most of his tests. He graduated from high school at the bottom of his class.

Then the good part of his life began. Clearly unfit for college, he did a year in an internship program and discovered that he enjoyed cooking and was good at it. After working in a restaurant for a while, he received recommendations that got him into a culinary school, where he loved the work and excelled. Now, at the age of 22, he has an excellent job as

assistant to the chef in a very busy, very successful restaurant. In this setting, which requires constant, active, hands-on work and the kind of mental brilliance that involves attending to and responding to many competing and immediately demanding sources at once, he shines. He has found his niche. He learned nothing from his 13 years of public schooling, but, because of his buoyant personality, school did not destroy him. When he was finally out of school, free to pursue his own interests in the real world, he found his niche and now is thriving there. The real world, thank goodness, is very different from school.

Update: Followup posts addressing questions raised by this post

The "ADHD Personality": Its Cognitive, Biological, and Evolutionary Foundations

Experiences of ADHD-Labeled Kids Who Switch from Conventional Schooling to Homeschooling or Unschooling

Notes

*Some hyperlinks in these posts are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines.

[1] For ADHD prevalence data, see: Vissar et al. (Feb., 2007), *Pediatrics 119*, S99-S106; Centers for Disease Control and Prevention (Sept. 2, 2005), "Mental health in the United States: Prevalence of Diagnosis and Medication Treatment for ADHD," *MMWR: Morbitidy and Mortality Weekly Report 54*, 842-846; and Mayes et al (2009), *Medicating Children: ADHD and Pediatric Mental Health* (Harvard University Press), p 2.

[2] Nolan et al. (2001), Teacher reports of DSM-IV ADHD, ODD, and CD symptoms in schoolchildren. *Journal of the Academy of Child and Adolescent Psychiatry, 40*, 241-249.

[3] See Mayes et al., p 4.

[4] In order to make ADHD not appear to be just a school problem, DSM-IV adds the stipulation that the symptoms must be seen in at least one other setting, not just in school. However, it does not stipulate that the other setting has to be radically different from school. It is easy to see how parents, after being convinced that their child has ADHD from the school reports, might "see" such symptoms at home or in another setting--especially while doing homework, or when involved in some adult-directed activity such as lessons or formal sports outside of school. Nevertheless, the failure of these symptoms to manifest themselves so much in settings outside of school probably explains why rates of ADHD diagnoses based just on teacher reports are so much higher than those based on a combination of teachers' and parents' reports.

[5] Sidney Spiesel, quoted by Mayes et al., p 12.

[6] For a documented discussion of the evolutionary foundation for diversity in personality in humans and other species see P. Gray (2010), *Psychology, 6th Edition*, pp 560-570.

I Want Your Stories of ADHD in Homeschoolers, Unschoolers, and Free Schoolers

Send me stories of ADHD-diagnosed children not in conventional schooling.

Published on July 20, 2010 by Peter Gray in Freedom to Learn

Dear readers,

As I pointed out in my last post, one in every eight boys and one in every twenty-five girls in the US has been diagnosed with ADHD (Attention Deficit/Hyperactivity Disorder), and most of them are taking powerful stimulant drugs as treatment. Surveys have shown that most ADHD diagnoses are initiated because of the child's disruptive behavior in school or failure to complete school assignments. A great many research studies have shown that the stimulants do lead ADHD-diagnosed children to comply with school rules and focus on their school assignments better than they did without the drugs.

But what about children not attending a conventional school? Is ADHD also a problem for them? Do those children also require drugs in order to function well? I have searched the ADHD research literature, which is huge, and found no studies addressing that issue. As a small, first step toward remedying that deficit, I am hereby inviting homeschoolers, unschoolers, Sudbury schoolers, and free schoolers to submit their stories about ADHD. If your child is not attending a standard school and has been diagnosed with ADHD, and if you and the child are willing, I ask you to send me that story. If you have access to an email list of families who are doing schooling in some unconventional way, please send a link to this post out to them with a request to participate. I would like to obtain as large and broad a sample as possible. This is not truly scientific research, but it could be a valuable first step in developing hypotheses about the functioning of children who have ADHD characteristics but do not attend a conventional school.

There are two ways to submit your story. You might post it--*anonymously and without identifying details*--as a comment, directly below, on this blog post. The advantage of that is it would make your whole story available to readers. Be sure to do it anonymously, however. I will delete stories that seem to run the risk of identifying the ADHD-diagnosed child. The second alternative is to email your story to me--at grayp@bc.edu. If you take this option, please let me know if it is OK for me to quote from your story or not. If not, then I will use your story only in the statistical tabulation of the results. I will treat any emails I receive confidentially, and if I do (with your permission) include a quotation, I will leave out any names or other identifying details.

As a guide, here are some questions I hope you will address (but please tell the story in any way that makes sense to you--you don't have to follow this outline):

1. How old was the child when the ADHD diagnosis was made? What kind of schooling was the child involved with at the time? Describe the child's behavior that prompted the diagnosis.

2. How old is the child today? What kind of schooling is the child involved with now? How would you describe the child's behavior now?

3. Is the child currently taking a stimulant drug (such as Ritalin, Adderall, Concerta, or any of the other preparations of methylphenidate or amphetamine used to treat ADHD)? If not, has the child ever taken such a drug in the past? What effects does (or did) the drug have on the child? If the drug treatment was stopped, why was it stopped?

4. Please elaborate in any way you wish.

If I receive a sufficient number of stories to warrant any sort of analysis, I will post that analysis as an essay on this blog. To be sure that your story is included, please post or email it ASAP.

Again, please circulate this request widely. I want to hear the full range of stories about ADHD for children not doing conventional schooling. It would be valuable to reach and include people who are not regular readers of this blog.

Thank you in advance for helping to circulate this request.

-Peter

The "ADHD Personality": Its Cognitive, Biological, and Evolutionary Foundations

For good evolutionary reasons, some people are highly impulsive.

Published on August 19, 2010 by Peter Gray in Freedom to Learn

Last month I posted an essay linking the dramatic increase in diagnosed ADHD (Attention Deficit Hyperactivity Disorder) to our increasingly restrictive system of schooling (see ADHD and School). I presented evidence there that (a) the official, DSM-IV diagnostic criteria for ADHD focus primarily on school-related issues such as sitting in seat, completing assignments, and not interrupting teachers; (b) most diagnoses of ADHD begin with referrals from teachers or other school personnel; (c) teachers' ratings, if used alone, would produce far more ADHD diagnoses than is the case when those ratings are balanced by parents' ratings; and (d) the rapid increase in ADHD diagnoses occurred over the same period that high-stakes standardized testing increasingly dominated the school environment. My overriding point was that, because of the increased competitive and standardized nature of schooling, behaviors that in the past would have been regarded as within the range of normal are now considered to be abnormal. At present, in the United States, roughly 12% of boys and 4% of girls have been diagnosed with ADHD. What kind of a society are we if we consider 12% of boys (*one out of every eight*) to be *mentally disordered* in this way and in need of strong psychoactive drugs as treatment?

Some people who commented on that post objected to my sociological analysis by referring to evidence that the brains of people diagnosed with ADHD are in some ways different from those of other people. To them, the evidence of a brain difference is somehow proof that ADHD is a "medical" or "biological" disorder and that a sociological analysis of it is out of place. But if you give it some thought, you will quickly realize that there is no contradiction at all between biological and sociological analyses of ADHD or any other condition referred to as a disorder. My goal in that essay was to explain the extraordinary increase in rate of ADHD diagnosis that has occurred over the last two or three decades. I don't think that increase is primarily due to a change in brain structures in the general population; I think it is primarily due to a change in social values and especially in the conditions of schooling. Today, as a society, we are far less tolerant of children who don't adapt well to our system of compulsory education than we were in the past, and so we diagnose them and give them drugs.

For a somewhat (but not fully) analogous case, consider homosexuality. Homosexuality is biologically a condition of the brain; but the decision to label it as a disorder, or not a disorder, is a social judgment. Until 1973, homosexuality was on the American Psychiatric Association's list of official mental disorders, but in that year it was removed. Suddenly, gay people were no longer "disordered." That decision clearly reflected a change in social values, a change that made it possible for people with the brain condition of homosexuality to live happier lives than they had been able to before, when they more or less had to stay in the closet and were subject to terrible abuse and even arrest if they did not. With

regard to homosexuality we have as a society become more liberal and accepting. With regard to the kind of childhood rambunctiousness and impulsiveness that leads to a diagnosis of ADHD, however, we have as a society become less liberal and accepting.

The story for ADHD, of course, is not fully analogous to that for homosexuality. The condition we call ADHD is clearly one that can vary in degree. A few people--and I think that is *very* few people--who are diagnosed with ADHD have the condition to such an extreme degree that most of us would consider it to be a disorder, worthy of some kind of treatment, under almost any social conditions. But most people with the diagnosis have the condition to a much lesser degree than that--a degree that interferes especially with schooling and certain other school-like activities, as they are structured today, but may actually be helpful in other settings.

In the remainder of this essay I'll describe briefly current thinking concerning the cognitive and neural foundations for ADHD and explain further why I think our focus should be on changing our system of schooling to accommodate children's diversity rather than on changing children's brain physiology to accommodate schooling.

The basic cognitive characteristic of ADHD appears to be high impulsiveness and reduced "executive control."

According to the most widely accepted cognitive model of it, the fundamental problem in ADHD is not one of attention so much as one of impulsiveness.[1] By a wide variety of measures, people diagnosed with ADHD are more impulsive, less reflective and controlled, than other people. This impulsiveness is believed to underlie all or most of the distinguishing behavioral characteristics shown by such people. Impulsiveness leads them to be *easily distractible*, which is why they are seen as *inattentive*. It also leads them to be *impatient* and *restless*, unable to tolerate tedium or to sit still unless something truly grabs and retains their interest, which is why they may be seen as *hyperactive*. And it leads them to be highly *emotionally reactive*; they tend to respond immediately, emotionally, overtly, to stressful or otherwise arousing situations. The model is no doubt overly simplistic, but it is nevertheless useful as a beginning point for thinking and talking about ADHD.

Cognitive psychologists and neuroscientists commonly use the term *executive control* to label the mechanisms by which the brain inhibits impulsive behavior, reflects, and then acts on the basis of reflection rather than impulse. Although executive control is generally thought of as a good thing, it seems obvious that it can also, if too strong, be a bad thing. The opposite of impulsive is inhibited. Some people are too inhibited for their own good. They stew constantly over what is the right thing to do, or over the possible negative consequences of every alternative, and therefore they don't do anything. While the highly controlled person sits and watches an emergency, trying to figure out the best possible response and worrying about the risks, the impulsive person jumps in and saves someone's life.

The value of diversity along the controlled-impulsive personality dimension

Most psychologists would say that psychological wellbeing is maximized by a certain optimal degree of executive control. The overly controlled person suffers from too much inhibition, and the overly impulsive person suffers from too little of it. I agree with that when we are talking about extremes. However, between the extremes there is a broad range on the control-impulsiveness dimension that is potentially quite compatible with psychological wellbeing and

contribution to society. The trick, for each person, is to find niches within their environment that play to their strengths rather than to their weaknesses. In general, people who are highly controlled are great in jobs that require lots of reflection and relatively little action, and people who are highly impulsive are great in jobs that require lots of action with relatively little time for reflection. This has nothing to do with degree of intelligence. You can be intelligent and impulsive, making terrific snap judgments; and you can also be intelligent and reflective, making good judgments after thinking things through very carefully.

We are a highly social species. Never in our evolution as humans did we survive on our own, as separate individuals. We always depended on our cooperative relationships with others, and the same is true today. From this point of view, it is not surprising that natural selection would have supported a broad range of personality types. People of different personalities are well adapted to make different kinds of contributions to the community (and, thereby, also to themselves). Ideally, they would all be valued for the unique contributions they can make and would be helped by others in their areas of weakness. Certainly this was true in hunter-gatherer bands, and we see it operating today within healthy families, tight-knit friendship groups, and well-run businesses. The dimension of control versus impulsivity is, I suggest, one of the most obvious and important dimensions of normal, healthy personality variation. In the course of our evolution, it was valuable that some of us were relatively more controlled and reflective while others of us were relatively less controlled and more action-oriented than the majority.

It is not hard at all to think of conditions in which ADHD-like characteristics are socially valuable.[2] *Distractibility* may result in efficient monitoring of changes in the environment, so that sudden dangers or new opportunities, which others would have missed, are detected. *Impatience* may be a valuable counterweight to the tendency to dwell too long on a way of thinking or behaving that isn't going anywhere. *Impulsive action* may underlie bravery in the face of dangers that would keep others immobile. *Difficulty following instructions* may imply independence of mind, which can lead to novel ways of seeing and doing things. *Emotional reactivity* may be a good counterweight to the tendency of overly controlled people to hold in their emotions and ruminate. One thing I have observed (informally) in people diagnosed with ADHD is that they rarely hold grudges; they let their emotions out and then get over it.

But in school, of course, all of these things are bad; they all get you into trouble. School--at least school as usually defined these days--is a place where you must concentrate on what you are told to concentrate on, no matter how tedious; follow the teachers' directions, no matter how inane; complete assignments for the sheer purpose of completing them, even though they accomplish nothing useful; and, while doing all of that, control your emotions. The school classroom is not a place that values bravery, inventiveness, independence of mind, or emotional reactivity. So, of course, impulsiveness comes across as a "disorder" in school. Today we tend to define school as the primary environment of the child, so impulsiveness is the number one mental disorder of childhood.

The brain system underlying the controlled-impulsive dimension appears to include the prefrontal cortex and to involve dopamine as a neurotransmitter.

Neuroscientists have made much-touted progress in understanding the brain, but still that understanding is extremely superficial. We have no idea, really, how the brain does any of the amazing things it does (beyond the simplest

reflexes), but we do have some ideas about which parts of the brain are most involved in which functions. The areas of the brain that seem to be most crucial for executive control appear to lie within the prefrontal lobes of the cerebral cortex and in connections between the prefrontal cortex and other parts of the brain (including the striatum and the basal ganglia), which are involved in initiating and inhibiting actions. At least some of these neural connections involve dopamine as the predominant neurotransmitter, which is significant because the stimulant drugs used most often to treat ADHD--preparations of amphetamine or methylphenidate--all exert their effects by prolonging the action of dopamine in neural synapses.

Not surprisingly, therefore, researchers looking for brain correlates of ADHD have focused on the prefrontal cortex and on dopamine. The results of such research are highly variable from lab to lab, with much controversy resulting. Also, the results are often confounded because most of the people in the ADHD groups have been treated with stimulant drugs, either at the time of study or in the past, so it is not clear if any brain difference observed is a correlate of the ADHD itself or is caused by long-term effects of the drug. However, overall, the research suggests that people with ADHD, compared to other people, may have (a) slightly reduced neural mass in the prefrontal cortex, (b) reduced activity in some parts of the prefrontal cortex while performing certain tests of executive function; and (c) fewer dopamine receptors in certain parts of the brain that receive input from the prefrontal cortex. All of these differences are highly variable from individual to individual and observable only as a result of statistical averaging. So far no biological marker of ADHD has been found that is sufficiently reliable to be used as an aid in diagnosis.[3]

The studies of brain differences are interesting, but they have no bearing at all on the question of whether ADHD is a disorder or a normal personality variation. All personality variations have a basis in the brain. Of course they do. The brain controls all of behavior, so any difference that is reflected in behavior must exist in the brain. The only means by which natural selection can produce personality variation is through altering genes that affect the brain. If people diagnosed with ADHD differ behaviorally in any consistent way from other people, then their brains must in some way be different. Even if the research to date showed no difference at all in the brains of people with and without an ADHD diagnosis, I would argue that a difference exists. The researchers just haven't looked in the right places, or with the right tools or systems of measurement.

The potential risks of the stimulant drugs used in ADHD treatment.

The stimulants used to treat ADHD are powerful drugs that alter radically the chemical environment of the brain, and we don't know their long-term effects in humans. Their immediate side effects are well documented. In degrees that vary from drug to drug and person to person, the drugs can cause insomnia, anorexia, weight loss, suppression of growth in young children, headaches, Tourette's Syndrome, dullness of mind, depression, psychotic episodes, and a host of other negative effects that the drug companies are required to list. Some people cannot tolerate the drugs at all because of these effects, but most, through experimentation, can find a stimulant drug and a dose that is tolerable.

The drugs do, in most people, improve school performance. Students complete more assignments and get higher grades when taking the drugs than when they don't. This is true even for students who are not unusually impulsive and have never been diagnosed with ADHD. That is why many non-ADHD students in high school and college take the drugs

illicitly (they commonly get them from ADHD-diagnosed students who secretly aren't taking the drugs). There is no evidence that the drugs improve long-term learning and retention of information, but they definitely improve school performance and grades in the short run.[3]

The use of stimulants to improve school performance is somewhat analogous to the use of steroids to improve athletic performance. In both cases the highly competitive environment promotes use of the drugs. Teachers, parents, and students themselves see that the drugs improve performance on standardized tests, and all regard that as a good thing. In our school-obsessed society, performance on such tests has become, more or less, the measure of a person's worth, so anything that improves such performance is worth the discomfort it may produce. Now, as preschools are becoming more and more like elementary schools, with assignments and tests, we are seeing a rapid rise in the number of preschool children--in the age range of 2 to 4--being given the drugs.[3] Nobody knows what long-term effects the drugs may be having on those little children's developing brains.

In fact, nobody knows the long-term effects of the drugs on anyone's brain. One possibility, which has some research support, is that the drugs prevent the normal developmental processes that lead most people to become less impulsive, more controlled, as they grow beyond childhood and adolescence (I plan to discuss that more fully in my next post). Today we see more and more people who retain the diagnosis of ADHD into adulthood and continue to take stimulant drugs. Is that partly because many of those adults were taking stimulants during earlier stages of their development, which may have interfered with normal brain development? Studies with animals have shown quite clearly that the drugs can have such effects (I'll describe some of those studies in my next post), but so far studies testing this hypothesis in people have not been conducted.

In general, psychoactive drugs do have long-term effects, and most often those effects are in the direction of increasing long-term dependence on the drugs. An interesting and still controversial example concerns the use of antipsychotic drugs to treat schizophrenia. These have long been considered to be the wonder drugs of modern psychiatry, as they make patients with schizophrenia more manageable and often allow them to live independently outside of mental hospitals. On the other hand, we now know that in developing countries, where drug treatment for schizophrenia is much less common than it is in developed countries, people are much more likely to overcome the disorder as they grow older.[4] One quite reasonable interpretation of this observation is that the drug treatments turn what would be a temporary condition into a chronic condition.[5]

Might the same be true for ADHD? At this point we don't know. Drug companies have no incentive to conduct or support such studies--neither for schizophrenia nor for ADHD--and the studies required to answer the question would take too long and are too complex to make good doctoral dissertations. Even with the best of will, such studies are almost impossible to conduct in a way that produces clearly interpretable results. For ethical and legal reasons, you can't randomly assign people to different treatment conditions and follow them over a prolonged period, as would be required for a true experiment.

You can, however, conduct such experiments with animals, and the animal research to date suggests that the stimulant drugs indeed may produce long-term effects in the direction of prolonging the ADHD condition. In one study, George Ricaurte and his colleagues assigned one group of monkeys to treatment with Adderall (one of the most common drugs

for ADHD) and assigned the other group to placebo treatment.[6] They gave the Adderall orally, at a dose that produced the same blood level of drug that would normally be found in human beings treated for ADHD. After four weeks on Adderall they stopped the treatment for two weeks, then killed the animals and examined their brains. The main result was that the ADHD-treated monkeys showed a 30% to 50% reduction in dopamine and in dopamine transporter molecules in the striatum, which is one of the brain areas considered to be crucial for impulse control. At this point nobody knows what would happen with drug treatments longer than four weeks, and nobody knows if a longer period of recovery following termination of the drug would or would not result in a renewal of normal levels of striatal dopamine.

Given the unknowns and the suggested dangers that come from the animal research, I think we should err on the side of caution in treating ADHD with stimulant drugs. Our first line of attack should be to find alternative means of schooling, so that people can learn in their own chosen ways and are not judged by performance on standardized tests. Then, drug treatment should be reserved only for those few individuals who are so impulsive that they cannot function well or live happily in any of the niches available in our society.

In my last post I put out a call for stories about the experiences of people who have been diagnosed with ADHD and then have been homeschooled, unschooled, or transferred to a school (such as a Sudbury school) where students are in charge of their own learning. So far I've received about 20 such stories, mostly from homeschooling families. Before analyzing and writing about them, I'd like to receive more such stories, especially from those involved in unschooling or schooling of the type where children control their own curriculum and ways of learning. Please supply such a story if you have one, and please help spread the word to others. See the last post for further information.

Notes

*Some hyperlinks in these posts are automatically generated and may or may not link you to sites that are relevant. Author-generated links are distinguished from automatic ones by underlines.

[1] This model, which is now considered the standard cognitive model for ADHD, was initially proposed by Russell Barkley and his colleagues (1997), "Behavioral inhibition, sustained attention, and executive functions: Constructing a unified theory of ADHD," *Psychological Bulletin, 121*, 65-95.

[2] See, for example, Jensen & colleagues (1997), *Journal of the American Academy of Child and Adolescent Psychiatry, 36*, 1672-168.

[3] See Mayes & colleagues (2009), *Medicating Children: ADHD and Pediatric Mental Health* (Harvard University Press).

[4] K. Hopper & colleagues (2007). *Recovery from schizophrenia: An international perspective* (Oxford University Press).

[5] I have reviewed the evidence for this in P. Gray (2010), *Psychology, 6th edition* (Worth Publishers), pp 643-644.

[6] G. Ricaurte & colleagues (2005). "Amphetamine treatment similar to that used in the treatment of ADHD damages dopamine nerve endings in the striatum of adult nonhuman primates. *The Journal of Pharmacology and Experimental Therapeutics, 315*, 91-98.

Experiences of ADHD-Labeled Kids Who Switch from Conventional Schooling to Homeschooling or Unschooling

These kids and parents manage ADHD better without conventional schooling.

Published on September 9, 2010 by Peter Gray in Freedom to Learn

Several weeks ago (see post of July 20, 2010) I posted a call for stories about children who have been diagnosed with ADHD (Attention Deficit Hyperactivity Disorder) and have been homeschooled, unschooled, or "free schooled." I received 28 such stories and subjected them to a qualitative analysis.

My analysis of these stories suggests that (1) most ADHD-diagnosed kids do fine without drugs if they are not in a conventional school; (2) the ADHD characteristics don't vanish when the kids leave conventional school, but the characteristics are no longer as big a problem as they were before; and (3) ADHD-diagnosed kids seem to do especially well when they are allowed to take charge of their own education. In what follows I will elaborate upon and support each of these conclusions primarily with quotations from the stories. But, first, here are some numbers concerning whom the stories were about and who wrote them.

Of the 28 stories:
- 19 were about boys and 9 were about girls.
- 26 were written by a parent of the ADHD-diagnosed child; the other two were written, respectively, by the diagnosed person himself (who is now a 24-year-old man) and by an older sister of the diagnosed person.
- 24 were about children who were diagnosed with ADHD through a formal clinical procedure; the other 4 were about children who were labeled by medical or school officials as "ADHD" but whose parents, while agreeing that the child showed the full set of ADHD characteristics, chose not to proceed with formal diagnosis.
-21 were about children who started their education in a conventional school (at least through part of kindergarten) and then left conventional schooling; the other 7 were about children who had never attended a conventional school.
-21 described their nonconventional schooling as "homeschooling," 5 described theirs as "unschooling," and 2 described theirs as "alternative schooling" (one was described as a small private school in a home, "similar to homeschooling," and the other as "loosely based on Sudbury Valley").

And now, here are the three conclusions, along with some of the quotations that led to each conclusion.

Conclusion 1: Most children who had been medicated for ADHD while in conventional schooling were taken off of the drugs when removed from conventional schooling, and those who were never in conventional schooling were never medicated.

Research studies have regularly revealed that most children who attend a conventional school and are diagnosed with ADHD take stimulant drugs (dopamine reuptake inhibitors) as treatment.[1] That is not true of this sample of ADHD-labeled children outside of conventional school. Of the 28 children in this sample, 13 were never medicated (these

were mostly children who were never in a conventional school or who were removed from conventional school very shortly after the diagnosis), 9 were medicated for at least part of the time that they had been in a conventional school but were removed from medication after removal from school, and only 6 (21% of the full sample) were being medicated at the time the story was written.

Of the six who were medicated at the time the story was written, one was on Strattera (a non-stimulant norepinephrine reuptake inhibitor), one had just started his first day of homeschooling and was taking Vyvance (a stimulant), and the remaining four were still on stimulants even though they had been homeschooled for a year or more.

Here is a sample of comments made concerning children who had been removed from conventional school and taken off of stimulants. (Each bulleted comment concerns a different child. The numbers in parentheses refer to the story number in my notes):

• (#13): *"We decided [when he was in 3rd grade in public school] to switch from Strattera to Adderall. We tried various doses but weren't getting what we needed, so we tried Vyvanse and Concerta at various doses. They just weren't working for him. There seemed to be a short-term improvement, or at least a perceived improvement but it really didn't fix the problem. In all this, his anxiety was paralyzing, so, of course, we ended up on Prozac. ... As parents, it was exactly where we didn't want to be, having a drugged kid just to keep him in school. ... he was being pulled from class daily for being disruptive--making noises, interrupting teachers, asking to leave. He and his special ed. teacher were in constant battle. After a particularly ugly IEP (in January, 2009) we pulled the plug. We finished the year with homeschooling and he made more progress in 3 months than he had made in 3 years of traditional public school. We continued with the meds for another month or so but discontinued them from that point on."*

• (#23): *"My little brother was put on ADD medication at the age of 7, because he was not able to focus well in school or in his martial arts classes. I saw his personality immediately dull when they put him on the drugs, but he was much better able to function in organized learning settings. When he was 15, though, he took himself off of the meds, and only then did he realize, and begin to vocalize, that he had been having paranoid delusions for years as a result of the medications. As a 10 year old, he was terrified during every shower b/c he thought terrorists were poisoning the water. My brother wasn't so disruptive on the medications, but he never excelled in school until his last two years of high school, when he attended a private school that was loosely based on Sudbury Valley. Now, he is a fantastic musician, is attending college, and has never had any more problems with delusions or paranoia. He hates the drugs he was put on and has a lot of lingering anger about it to this day."*

• (#7) *"At age 8 ½ we decided to try Adderall, because he was struggling with attention and learning... He developed severe depression at age 10 [while on Adderall]. He was placed on a few more drugs. Each drug seemed to make him better for a few months, and then worse. When a drug caused a side effect, he would be given another one to combat the side effect. ... He developed a B12 deficit because of the Adderall. This gave him obsessive-compulsive behaviors, and we had to give him B12 injections. ... Then [after altering his diet and removing toxins from his environment] we weaned him off of the Adderall. There was no difference in his focus or activity at that point. He was/is fine. We continue to homeschool him. ... It was just the best thing we could have done for our child. He is now 16 and planning to go to college."*

• (#22) *"By 4th grade (this time a private school w/ an advanced curriculum) her 7 teachers WANTED her tested. We tried Ritalin for a few months, but it only resulted in a daytime compliant zombie that wanted to work even harder at night to pursue her knowledge. By spring they asked for a conference, refunded our deposit for the coming year .... They agreed she was a classroom mgmt problem, because she could do anything but listen."* [The story goes on to describe the success of homeschooling, without drugs, and the fact that she has been accepted to a four-year college.]

• (#1) *"And now that we are homeschooling (and he is thriving academically, socially, and behaviorally), medication is no longer a subject of consideration. We are excited about homeschooing--it has changed our lives for the better; we have our son back."*

• (#2) concerning a boy who had been on various drugs in 3rd & 4th grades in public school after a previous period of homeschooling without drugs): *"We pulled him out of school and went back to homeschooling. I took him off the meds to get a baseline on his behavior Things improved for him so quickly that I never restarted Rx medications."*

• (#14) *"As a child, around age 5, I was diagnosed with ADHD. I was put on Ritalin and continued on the drug until the age of 11. After coming off the drug my parents noted that I was less angry and generally happier with what was going on around me, as well as less prone to tantrums. At the end of 5th grade my parents made the choice to homeschool me. I was homeschooled from grades 6 to 10 [without drugs] and during that time I pulled ahead in my math work and got A's on all of my tests. I was able to study how I wanted to, fidget when I wanted to. . .. Then [beginning with grade 11] I was returned to school [for some but not all courses]. ... I was [then] put back on a new form of Ritalin. We tried it for a month, and I went into a severe depression from the effects. After a month I was pulled back off it and that was the end of talks about drugs for the condition. ... I am now 24, married, and expecting a child. I went to college after my senior year ... and joined the Guard. I have noticed in the course of my life that I am calmer for the most part now. I still have urges, ... not what I consider bad urges, but urges to say what is on my mind and to express an opinion whenever I can. ... Overall, I am happy. I love my life, my wife and my family."*

In contrast to these quotations, those who have kept their child on a stimulant after starting homeschooling report the drug to be very helpful. Here are the three most positive pro-drug comments:

• (#6) *"We tried Concerta, but he went crazy. Eventually we tried Strattera (a non-stimulant ADHD medication, a norepinephrine reuptake inhibitor) and it helped so much. He now has that second to think about what he's going to do and he makes better choices. No more temper tantrums, throwing things, hitting, or reckless behavior."*

• (#10) "*Off meds she is inattentive, argumentative, and unpleasant to be with. On meds she is productive, fun, and kind. She does have the side effect of appetite suppression, so we have to get creative to get enough calories into her. That is easily accommodated, though, and we have been happy with her progress both socially and academically in the three years that we have homeschooled."*

• (#27) *"Once the drug [Focalin XR-a stimulant] kicked in, everything changed. He not only grasped concepts, he remembered them. He flew through three years of math in six months. He will start high school in the fall, with over 20 hours of high school credit, and honors level high school science under his belt [from his homeschooling years]. He is becoming the brilliant kid I only saw in flashes before the drugs."*

Conclusion 2: The children's behavior, moods, and learning generally improved when they stopped conventional schooling, not because their ADHD characteristics vanished but because they were now in a situation where they could learn to deal with those characteristics.

Only two or three of the respondents reported that the ADHD-like behavior disappeared when the child was removed from conventional school. The great majority said or implied that such characteristics remained but were no longer such a big problem, primarily because, out of school, the child could be active and self-directed without being disruptive and had opportunities to learn how to cope with his or her personality characteristics. Here are some relevant quotations.

• (#16) *"He learns fine as long as he is moving. I have the feeling that in a formal mass education setting, the focus would still be on getting him to sit still. As it is, he would be entering 8th grade in the local government school, but he's doing sophomore/junior level work and even has some AP credits. He's teaching himself German and Latin because he wants to. I have no desire to squelch his joy of learning just to get him to sit still! ... He's well adjusted socially and behaves appropriately. However, when he's with other kids with ADHD, we notice they sort of snowball each other's behaviors."*

• (#17). *"She is a terrific free-range learner. She is sometimes afraid that she is 'behind' and will find websites and books describing what she should know and just devour them. She was reading on an 8th grade level at 3rd grade 3 years ago, so she's reading somewhere on a high school level now. ... Her behavior is normally excellent. Sometimes she has outbursts of exuberance that can be both inconsiderate and difficult to stop, like running through the house shouting late a night."*

• (#18). *"I think the real advantage of homeschooling has been in the development of my son's social skills. He is a thoroughly nice person, both kind and empathetic. I just don't see how he could have learned to socialize as well at a school where he was being made to feel that he was unacceptable all day."*

• (#12, about a boy who at age 5 was diagnosed with ADHD, Sensory Integration Dysfunction, and Pervasive Developmental Disorder and who began homeschooling shortly after that): *"Today [at nearly age 16] he is an articulate, outgoing and confident young man. He takes no medication ... has no odd behaviors ... and impresses every adult he meets. ... His learning style is nothing that could ever be harnessed in the classroom. He almost intuits how to fix everything from cars to air conditioners to ..."* (This writer goes on to describe how her son is preparing himself for a career through apprenticeships in the trades and at an antique store, in ways that would not have been possible in school.)

• (#13) *"His anxiety is gone [since leaving public school and starting homeschooling]. As far as schooling goes, he definitely has a hard time completing his work. He is indeed easily distracted. ... He's still impulsive and demanding but we can handle it much better than the school could and we're all less stressed for it. He takes some classes through local groups and museums and still has a hard time attending to the teachers, but he manages now that it isn't an all-day everyday prospect."*

• (#20) *"As I mentioned, my son's friendships are always volatile. While he loves being with them, his tendency to 'lose it' or be 'hyper' often gets him into scrapes and he will quite often fall out with them. Being out of school has allowed*

him to walk away when this happens, to come home, reflect on the situation, talk about it and to not engage in the downward spiral of anger and resentment through being with them all day every day. He is learning about life, about life skills and, most importantly, how to be a happy and fulfilled adult."

• (#24) *"... her public schools years of K-3 were mostly disastrous.. . . In response to repeated encouragement by the resource teacher, when she was in third grade we took her to a psychologist and came home with a diagnosis of ADHD and a prescription for Metadate. We tried it for about a week, and the testing results did show a noticeable improvement in areas such as short-term memory (from 0/10 to 5/10 on one test, for example). Nevertheless, we couldn't bring ourselves to continue the meds: she was awake until very late at night, had a glazed look in her eyes, developed a small rash on her thighs, etc. ... Instead we started her for fourth grade in a small private alternative school for grades K-7/8. It has about 14 or 15 kids and is like a big home-schooled family. ... Getting her out of public school was the best decision we could have made. ... And as for us as parents: before we bailed out for the world of alternative schooling, we felt like we were raising not a child, but rather a set of problems in need of a set of solutions. No more."*

• (#28). *"We started homeschooling in kindergarten. It was a disaster. Sitting down for 10 minutes a day for a lesson was like pulling teeth. She would weep and cry that she hated school. 'Do you hate stories?' No. 'Do you hate games?' No. 'What do you hate?' Sitting DOWNNNNN! (Wail). I persevered through kindergarten, but with nothing to show for progress after a year of trying. For 1st grade I modified my style a little and let her do things like play Legos, doodle, or 'sew' while we read. It helped a little. ... By 2nd grade I had given up. ... She was not learning to read. .... Then one day I walked in and she was reading The Chronicles of Narnia. It had just clicked, at around age 8. ... She still misspells atrociously. And her behavior in groups can still be very wild--she is so excitable and dramatic and sometimes scares other children a little. ... As I've gotten to know her better, I find it more and more odd that we label these children the 'learning disabled.' She does naturally the things other children find so hard--word problems in math, seeing large complex solutions to problems, being a creative problem solver, having a unique perspective on a book she read. The things that are hard to TEACH. And she struggles with the things that are so easily remedied.... calculators and spell-check anyone?"*

Conclusion 3: Many of these children seem to have a very high need for self-direction in education, and many "hyper focus" on tasks that interest them.

A staff member who works at one of the Sudbury model schools emailed me this interesting comment about kids who had been diagnosed with ADHD before coming to that school:

"The ADHD label is applied to two very different sorts of kids. One type really has "Attention Surfeit Disorder." Most of these get deeply involved in exactly what they want to do... They do their thing--with other kids when it overlaps with other kids' interests, and without other kids when they are caught up in something that other kids aren't interested in. They get labeled ADD not because they can't attend but because they have no coping mechanisms for enforced boredom..... The other type are simply physically active to the point of being problematic when quiet is called for. These kids may get themselves ejected from JC [Judicial Committee] or the School Meeting when they can't control themselves, and generally have long records for Running and Roughhousing and for Disturbingly Noisy activities. A combination of

not calling unduly for quiet (most of these kids can be outside running and roughhousing to their hearts' content most of the time without bugging anyone) and a fair and reasonable JC that helps these kids discern time and place makes this problem less for us and gives the kids a sense of justice and time and place that informs them and lets them develop the ability to shift gears when quiet and serene are called for."

In the sample of stories I received, many of the kids seem to fall clearly into the first category. They seem to be kids who have an even greater need for self-direction in education than do typical kids. (If you are a regular reader of my blog, you know my view that all normal kids learn better in settings where they are in control of their education than in settings where someone else is in control.) In this regard, it is not surprising that the few kids in this sample who were still on ADHD medications during homeschooling seemed to be primarily those whose homeschooling was structured by the parent and modeled after the education one would receive in a conventional school.

A number of the quotations that I have already presented allude to the ADHD-labeled child's need to control his or her own learning. Here are a few more:

• (#3) "*She chooses her own subjects and learning material daily. ... She learns much better if she can follow an interest and then hyper focus on it. She may pick something different, and seemingly unrelated, every day, and then tie that randomness into a major project that she will work on for a month."*

• (#5) *"It seems to be a matter of interest. If he is into something he will be focused and attentive for long stretches, if not he gets antsy. As an example, at our local homeschool conference a robotics club had a booth and had a robot there. My son would have stayed there asking questions about the robot for the rest of the afternoon if I had not moved him along."*

• (#19) *"We've been unschooling for several years now. He is 11 .... He is energetic and rambunctious at times, but often finds an interest that holds his attention for hours on end. The only time he fits the ADHD diagnosis is when he is bored or uninterested in something. Or he will be particularly rambunctious after sitting for long periods of time (whether he was engaged or bored while sitting still doesn't matter)."*

• (#20) *"After a while [of parent-directed homeschooling] it became impossible for him to learn. His anxiety increased to a level that we were forced to allow him to take anti-anxiety drugs, which he did for a few months.... I then stumbled on self-directed learning/unschooling and have not looked back! ... It all made perfect sense. My son makes choices about what he wants to learn, he makes his own decisions about when and how he will learn it, he has learnt to define his own boundaries and takes responsibility for his own learning. If he is interested in something, we facilitate and provide resources, links, take him to places that supply the stuff he needs. He has taken a huge interest in music technology. ... He has produced some amazing music, he has found out about a variety of things he is interested in, he has self-defined interests which avoid institutions. . . . He is wise, and he knows what choices to follow more than we do. Never would I have believed last year, when everything was so bleak and traumatic, that a year on, everything would be looking so rosy, and so absolutely fascinating as we follow just what it means to give your child the freedom to be themselves."*

• (#22) *"Our homeschooling started out with a curriculum program that she hated following. She would just want to read all of the history book . . . The piecemeal, parsing out of knowledge that is "curriculum" always galled her. We*

started unschooling and everything fell into place. .... The "problem" is that she loves knowledge, wants to go at her own pace (fast), ignoring some subjects while pursuing others, and delving into specialized interests no one else her age has."

• (#21) *"We began unschooling about four years ago. ... Today she's 14.5 years old... She is creative, responsible, fun to be around. She has no trouble reading and is skilled at using math in her everyday life. ...She has no signs of the problems the school district saw in her when she was 9 years old. // She was in a large, chaotic class with several children who required one-on-one aids, the district was in the first year of implementing Everyday Math (which I called Everyday Crying) and the books they were giving the children to read, IMO, were boring. Tests made her anxious and she was overloaded sensorily by the noise and smells at the school, especially in the cafeteria. // Since she's been home she's just bloomed. People who know her find it hard to believe that anyone ever questioned her intelligence or ability to focus. She's smarter and more responsible than many adults I know."*

Before concluding, I should say that this is obviously just a preliminary study. It is, however, as far as I can tell, the only study that anyone has conducted to date concerning ADHD-diagnosed children's abilities to learn, and to cope without drugs, outside of the conventional school environment. My hope is that this preliminary study will draw the attention of the research community so that more formal, large-scale studies will be conducted. As a culture we are so used to thinking of school as the normative environment for children that we rarely even think about the possibility of children learning and developing well outside of that environment. I am very grateful to those who responded to my call for stories and took the time to write out, so clearly, the experiences of their ADHD-labeled son or daughter.

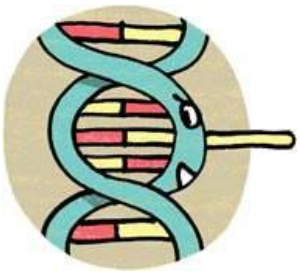
Notes

[1] See, for example, Mayes et al (2009), Medicating Children: ADHD and Pediatric Mental Health (Harvard University Press).

Cheating in Science, Part I: The Tragic Story of a Young Man's Suicide

A story of ambition, suspected scientific fraud, and suicide.

Published on October 5, 2010 by Peter Gray in Freedom to Learn



I begin with a true and tragic story. Many years ago I was a graduate student conducting research in one of the top biopsychology laboratories in the country. The lab chief was one of a handful of the world's most prominent research psychologists at that time, and many in the lab believed he was headed for a Nobel Prize.

As is often the case, this lab head was not doing hands-on research himself. He was busy writing articles and grant proposals and traveling around giving speeches. A fleet of graduate students and postdoctoral fellows conducted the research. He would put his name on reports of research that he had helped to design but that others had conducted. He didn't even understand fully the equipment that was used in those experiments.

A certain postdoctoral fellow in the lab--I'll call him Henry--was getting most of the fabulous results. At about the same time that I received my Ph.D. and took an assistant professorship at a more humble institution, Henry accepted an offer to become full professor at one of the most prestigious psychology departments in the country. The task of continuing the line of research he had been doing was then turned over to an excellent, conscientious graduate student in the lab he had left. That graduate student could not replicate any of Henry's famous findings. This led to repeated calls to Henry to come back and demonstrate how he got those fabulous results, to which there was no satisfactory response. With continued failures to replicate, and with continued defensiveness and evasiveness on the part of Henry, the suspicion grew, usually unstated, that Henry may have made up those findings. And then the tragedy happened. Henry committed suicide.

What a shock that was to me. I can't say that I really liked Henry; his ambition was such that he rubbed those who were beneath him, including me, the wrong way. But I knew him and felt I understood him. He was a real flesh and blood person to me, and when I heard of his suicide I cried. I could see him as a frail person--despite his burly physique and blustering style--caught up in a drive toward self-advancement, in a lab that was rewarding the "right" findings and had little interest in the "wrong" ones. He was not, in truth, a scientist at all. He wasn't interested in the questions he was supposedly pursuing in the lab. When the foundation for his self-advancement was pulled out from under him he toppled; he could no longer see any purpose in living.

I've been thinking lately about the whole question of cheating in science. It has been brought to mind, of course, by the recent media coverage of the Marc Hauser case at Harvard. Hauser is accused of fabricating data in at least some of his celebrated experiments on the cognitive abilities of monkeys. The Hauser case is reminiscent of another case of scientific fraud that also occurred in the Harvard Psychology Department. In the late-1990s, fast-rising Harvard psychologist Karen Ruggiero was found guilty of fabricating five experiments, which had been published in two articles, and of altering the data that appeared in a third article.[1] Her career was destroyed.

How common is scientific fraud? Nobody really knows. Defenders of science's purity often argue that such fraud is very rare, the product of a tiny number of "bad apples." But I doubt that. My suspicion is that the cases of fraud that are exposed are just the tip of the iceberg.

I've heard people argue that it would be against anyone's self-interest to cheat in science because cheating will be caught when someone tries to replicate the experiment and fails. But, in truth, replication is rare in most areas of science. Most scientists want to do something new, and funding agencies rarely provide grants to repeat already published experiments. Even when replications are conducted and fail, there are almost always ways to explain the discrepancies without suggesting fraud. No experiment can possibly be an exact replication of a previous one. This is especially true in the behavioral sciences. The subjects are different (different people, or rats, or ant colonies), the time in history is different, the ambient conditions (temperature, barometric pressure, color of the walls) are different, and so on. Failure to replicate may well be taken to indicate that the original findings are not as "robust" as previously believed, but it is almost never taken as evidence of fraud.

Even in the case of Henry, where every attempt was made to keep conditions exactly the same as those in the original experiments, the researchers continued to "explain" the failure, at least publicly, in terms of hypothetical changed conditions. They suggested in one article, for example, that the company from which they obtained the rats may have been breeding the animals in a way that had altered their behavioral reactions. My guess is that if Henry had remained alive and had been formally accused of fraud, nobody would have been able to prove it.

Proof of fraud in science rarely if ever comes from failure to replicate. It comes, most often, when the perpetrator of the fraud becomes so brazen that he or she fabricates or alters data in ways that make the fraud obvious to others. Hauser was caught, apparently, because he began to pressure his graduate students to get the results he wanted, which led them to become whistleblowers, which, in turn, led to an investigation revealing that his recorded data did not match that in his published papers.[2]

A graduate student complaint also triggered the investigation that led to Karen Ruggiero's downfall.[1] The student had asked Ruggiero for a copy of the original data for a certain experiment, and Ruggiero had refused. This led the student to suspect that the data might not exist, which led to the investigation. If Ruggiero had taken the trouble to produce a false paper record to "support" her falsified experiments, the investigation would not have happened.

Some other scientists have been caught cheating because their fabricated data, quite literally, was too good to be true. There is always a certain degree of random variability in real data, and repeated data sets that have no or almost no variability are powerful evidence of fabrication. You have to be either very brazen or very stupid to get caught at cheating in science.

Over the years a number of surveys have been conducted in which scientists were asked to report, on an anonymous questionnaire, on their own fraudulent behavior. A recent meta-analysis of those surveys reveals that, on average, about 2% of scientists admitted to fabricating or falsifying data, and 14% said that they had personal evidence of such behavior in one or more of their colleagues.[3] The percentage admitting to fraud was highest among scientists doing pharmaceutical, clinical, and other medical research, which either means that researchers in those fields fabricate lab data more often or lie less often on questionnaires than do researchers in other fields.

As the author of the meta-analysis, Daniele Fanelli, points out, the 2% figure is the lowest possible estimate of the percentage of scientists who have deliberately falsified data. No respondents would say that they had behaved fraudulently if they hadn't, but many, even on an anonymous questionnaire, might be expected to lie in the opposite direction. The meta-analysis also revealed that a full third of the respondents to the surveys admitted to more subtle forms of scientific cheating, such as failing to report data that contradicted their theories or dropping data points from analyses because of a "gut feeling" that they were inaccurate.

The purpose of science is to discover truths. Cheating completely defeats the purpose. Why, then, do scientists cheat? In my next post I'm going to delve more deeply into this question and suggest that many so-called scientists are not, in their heads, really scientists. Instead, they are still students, going through one hoop after another to reach the next level. To them, cheating in science is just like cheating in school, and "Who doesn't do that?"

Notes

[1] Price, M. (2010), "Sins against science" APA Monitor, 41 (#7), 44.

[2] Wade, N. (August 27, 2010), "Harvard researcher may have fabricated data," New York Times.

[3] Fanelli, W. (2009). "How many scientists fabricate and falsify research? A systematic review and meta-analysis of survey data." PLoS One, 4 (#5), 1-11.

Cheating in Science, Part II: School is a Breeding Ground for Cheaters

Cheating is most frequent among the "best" students today.

Published on October 30, 2010 by Peter Gray in Freedom to Learn

In my last post I described some instances of cheating in science; summarized some data about the percentage of scientists who, on anonymous questionnaires, admit to cheating; and ended with the question, "Why do scientists cheat?" Cheating--by publishing fraudulent data--completely destroys the purpose of science, which is to discover truths; so why do they do it? In answer to that question, I suggested, "Many so-called scientists are not, in their heads, really scientists. Instead they are still students, going through one hoop after another to reach the next level. To them, cheating in science is like cheating in school; and who doesn't do that?" Here I will elaborate on that suggestion.

The Structure of Compulsory Schooling Promotes Cheating

Our system of compulsory (forced) schooling is almost perfectly designed to promote cheating. That is even truer today than in times past. Students are required to spend way more time than they wish doing work that they did not choose, that bores them, that seems purposeless to them. They are constantly told about the value of high grades. Grades are used as essentially the sole motivator. Everything is done for grades. Advancement through the system, and eventual freedom from it, depends upon grades.

Students become convinced that high grades and advancement to the next level are the be-all and end-all of their school work. By the time they are 11 or 12 years old, most are realistically cynical about the idea that school is fundamentally a place for learning. They realize that much of what they are required to do is senseless and that they will forget most of what they are tested on shortly after the test. They see little direct connection--because there usually is none--between their school assignments and the real world in which they live. They learn that their own questions and interests don't count. What counts are their abilities to provide the "correct" answers to questions that they did not ask and that do not interest them. And "correct" means the answers that the teachers or the test-producers are looking for, not answers that the students really understand to be correct.

A high-school student whom I was once trying to help with math homework summed it up nicely to me. After a few minutes of pretending politely to listen to my explanation of *why* a certain way of solving certain equations worked and another did not, she exclaimed: "I appreciate what you are trying to do, but I don't *need* or *want* to know why the method works! All I need to know is how to follow the steps that the teacher wants and get the answers that she wants." This was an *A* student.

Students recognize that it would be impossible to delve deeply into their school subjects, even if they wanted to. Time does not permit it. They must follow the schedule set by the school curriculum. Moreover, many of them have become

convinced that they must also engage in a certain number of formal extracurricular activities, to prove that they are the "well rounded" individuals that top colleges are seeking. Anyone who really allowed himself or herself to pursue a love of one subject would fail all the others. To succeed, students must acquire just the limited information and shallow understanding that is needed to perform well on the tests; anything beyond that is wasted time. All of the top students learn that lesson.

In many cases the rules about what is and isn't cheating in school are arbitrary and have nothing to do with learning. If you create a summary sheet of the terms and facts relevant to a test and then consult that sheet while taking the test, you have cheated. However, if you create such a sheet and commit it to a form of short-term memory that lasts just long enough for the test and then vanishes, you have not cheated. If you create a term paper by copying out large chunks of other people's writing and pasting them together, that is cheating; but if you do essentially the same thing and then paraphrase sufficiently rather than use the copied paragraphs exactly, that is not cheating.

Students understand that the rules distinguishing cheating from not cheating in school are like the rules of a game. But in this case it's a game that they did not choose to play. They are forced to go to school, forced to do the assignments, forced to take the tests. They have little or no say in what they study, how they are tested, or the rules concerning what is or isn't cheating. Under these conditions, it's hard to respect the rules.

Teachers often say that if you cheat in school you are only cheating yourself, because you are shortcutting your own education. But that argument holds water only if what you would have learned by not cheating outweighs the value of whatever you did with the time you saved by cheating. If, by cheating in Subject X you gain more time to really learn Subject Y--which you care about, and which may or may not be a school subject--then have you really shortcut your education by cheating?

In my experience talking with students, the argument against cheating that makes most sense to them is the argument that by cheating they are hurting students who didn't cheat (but they correctly add that this argument applies primarily in those rare cases where the teacher grades on a curve). They see the "system" as an enemy and hold few qualms about cheating to beat it, but they generally don't see other students as enemies, and so they feel bad if they think their cheating hurts other students.

In fact, one of the biggest reasons why cheaters are sometimes caught is that they share their cheating with other students, and somewhere in the sharing the word leaks out to school officials. For example, a student who steals a copy of an upcoming test shares the copy with everyone in the class, and then someone tells the teacher. The problems that arise from the "students versus the system" attitude that schools promote are serious and endless. The honest student, who reports the cheating, becomes a ratfink.

In other respects, cheating to get high grades seems to many students to be a win-win-win situation. They want to get high grades, their parents want them to get high grades, and their teachers want them to get high grades. Teachers generally don't look hard to see cheating and often ignore it when they do see it, because the higher grades--especially on standardized tests--make them (the teachers) look good too. And many parents, far from deploring their children's cheating, are ready to go to court to fight any school officials who dare make an accusation of cheating.

Cheating is Rampant in Schools, Especially Among the "Best" Students

Not surprisingly, surveys show that cheating is very common in schools. In fact, if "normal" means what most people do, then school cheating is normal. On anonymous questionnaires, as many as 98% of students admit to some form of cheating and roughly 70% percent admit to repeated acts of the most blatant forms of cheating, such as copying whole tests from other students or plagiarizing whole papers. When asked in such surveys why cheating occurs, many students give the kinds of answers that I just discussed in the paragraphs above. When asked whether they consider cheating in school to be a serious moral offense, many if not most say no. The rates of cheating and reasons given for it are pretty consistent at all levels of formal education, at least from middle school on through college.[1}

The surveys also reveal an overall increase in amount of cheating in recent years and a shift in who does most of it. In times past, the most frequent cheaters were the "poor students," who cheated out of desperation just to pass. Today, however, the highest incidences of cheating are among the "best students," the ones destined for the top colleges and graduate schools (see Pytel, in Note 1). As one high-school graduate put it in a call-in to an NPR program on school cheating, "I was in honors classes in high school because I wanted to get into the best schools, and all of us in those classes cheated; we needed the grades to get into the best schools." (See Education-Portal, in Note 1.)

Apparently the "best" students today are driven as much by their own sense of desperation as poor students were in the past. They feel that they *must* get top grades and get into the top schools or else they will let everyone down who is important to them, including their parents and themselves. Not getting into the top schools is, to them, out and out failure. These are kids who are smart and hardworking, who would do well even without cheating, but who cheat to get the extra edge they feel they need to be seen as truly the best. They are like Barry Bonds or Roger Clemens taking steroids.

And, then, some of those top students choose science as a career.

The Continuity Between Cheating in School and Cheating in Science

Let's take the example of Bob, who decides at some point in college to go on to become a scientist. He makes this decision not because he really loves science or has some burning questions that he wants to answer through scientific methods. His own sense of curiosity was drilled out of him long ago. Rather, he decides to become a scientist because (a) he has always done well in science classes (only partly by cheating), (b) others have encouraged him to become a scientist, and (c) he sees that scientists have relatively high status and he would like that. In his gut, he doesn't really quite even know what it means to be a scientist, but he thinks it would be a good career.

So, Bob applies to and gets accepted into a graduate program in science leading to a Ph.D. Now, as a graduate student, he is in some sense "doing" science, as he carries out the research he must do for his doctoral dissertation. But is it "real" science, or is he still a student going through hoops? He finds that as he works on his research project--a project that was designed more by his advisor than by himself--he is not getting quite the results that his advisor expected. The advisor seems disappointed and is lavishing much more attention and praise on another Ph.D. candidate who is getting strong, positive, publishable results.

Bob gets worried about his future. He's working hard and, through no fault of his own, it's not paying off. So, the old habit of cheating returns. By manipulating just a few numbers, in some of his data sets, he turns statistically insignificant results into significant ones--results that lead to a much-praised dissertation and to a number of publications in prestigious scientific journals.

Bob has many ways to rationalize this cheating to himself. His advisor assigned him to a bum project; the laboratory conditions were not adequate for getting the expected results; the numbers he changed came from observations that may have been flukes; and he had to do this because otherwise his whole career was in jeopardy. The problem is that now his cheating has serious consequences. Bob may see himself as just doing what he had to do to go through another hoop, but others see his work as a serious scientific contribution. Every act of cheating in science pokes a hole in the scientific enterprise. Science absolutely depends upon honesty. Bob cheats because (a) he feels pressure to cheat, (b) he feels he's still really a student and not yet a scientist, and (c) he has a long history of cheating as a student and rationalizing that cheating.

And where does this end for Bob? At what point will he be done with hoops and become a "real scientist," motivated solely by the search for truth? When Bob becomes a post-doctoral fellow working in someone else's lab, he is still in some ways a student, still needing to prove himself so he can get a real job. Then, when he becomes an assistant professor in a university science department, there are still hoops to go through. He must publish research articles in respected journals in order to get tenure. It's "up or out" after seven years as assistant professor, and now Bob has a young family to support and "out" is not, in his mind, an option. The pressure to cheat may now be even stronger than before. And suppose he does get tenure. By this time the habit of cheating has become rather fixed. It has worked all along. Moreover, by now he has his own graduate students, and to support them he must get grants. Also by now he has a high reputation, which he enjoys in spite of his uneasy knowledge that it is not entirely deserved. To keep getting grants, to keep supporting his students, and to keep up that high reputation, he must continue getting strong, publishable, positive results. The hoops never end.

One of the tragedies of our system of schooling is that it deflects students from discovering what they truly love and find worth doing for its own sake. Instead, it teaches them that life is a series of hoops that one must get through, by one means or another, and that success lies in others' judgments rather than in real, self-satisfying accomplishments. Fortunately, most people manage to get off of that track, or largely off of it, once they leave school and begin to enjoy more freedom of choice. But some never get off of it; they are perpetually like students, constantly striving to impress others in ways that lead them through one hoop after another. Some of those become cheaters in science--or in business, or law, or politics, or ....

Notes

1. Summaries of surveys on school cheating and students' reasons for cheating can be found at the following: (a) Joan Oleck, "Most High-School Students Admit to Cheating." *School Library Journal* (03/10/2008); (b) Barbara Pytel "Cheating on the Rise"; (c) Education-Portal.com, "75 to 98 Percent of College Students Have Cheated"; and (d) Regan McMahon, "Everybody Does It: Academic Cheating is at an All-Time High," *San Francisco Chronicle* (09/09/2007)

Fight Bullying with Babies

Empathy can't be taught, but can be caught--from babies.

Published on November 24, 2010 by Peter Gray in Freedom to Learn

We humans are endowed by natural selection (or by God, if you prefer) with contradictory drives and emotions. We are

wired to be selfish, mean, and violent; and we are also wired to be generous, compassionate, and loving. The human drama--that runs through all religions, through all major accounts of history, and through the greatest and truest works of fiction--revolves around this duplex nature of ours. The devil and the angel are wrapped in a single skin. Our salvation depends always on our ability to feed the angel and starve the devil. This is no easy task. There are no sure routes to success. But our greatest assistants in this task may be babies and young children. That is the thesis of this essay.

Look closely at a baby. See its helplessness; feel its pain and joy; experience its faith that someone will care and provide. Look at a toddler, acting so bravely, walking and running, experimenting with language, sometimes deliberately being naughty, asserting its independence, and then crying out for Mommy when suddenly frightened. Do this repeatedly and the compassionate angel in you grows while the mean-spirited devil shrivels. Our species could not have survived more than a generation were it not for our powerful instinct to care and feel compassion for babies and young children. And that instinct is transferrable. We can apply it not just to babies and young children, but also to older children, to teenagers, to adults, and--as religious leaders have repeatedly shown--even to those who would be our persecutors and enemies.

A wise woman (my mother) once said to me: "If you want to feel compassion for someone who is really annoying you, imagine that that person is two years old." It works. We are all, in reality, not much different from two-year-olds. We are all, in our own clumsy ways, asserting ourselves in the world, expressing our joys and fears, and calling out for help that we desperately need. It's not hard to look at any human being, even the meanest one, and see the two-year-old.

My essay today was inspired by an article entitled Fighting Bullying with Babies, by David Bornstein, posted recently on the New York Times Opinionator blog. (I stole Bornstein's title for this essay, which is why I put quotation marks around it.) Bornstein's article is about the Roots of Empathy program, founded more than a decade ago by Mary Gordon in Toronto. Here I'll say a bit about Gordon's program and then describe some other examples that demonstrate the power of babies and young children to bring out the angel in us and squash the devil.

The Roots of Empathy Program

Mary Gordon founded Roots of Empathy after years of working with abusive parents and abused children. She saw the cycle. Children growing up unloved and surrounded by violence became unloving and violent parents. The idea behind her new program was to bring real babies and their moms (and sometimes dads) into school classrooms so that

children from all backgrounds could gain experience looking at babies, talking about babies, and thinking about what it is like to be a baby. The idea was that this would help set children on the road to becoming, ultimately, better parents.

She found, through experience, that her program also had a remarkable, more immediate effect on the classrooms that participated. The children who had this experience--of a monthly visit from a baby and parent--became kinder and more compassionate with one another. Bullying declined. Kids who were previously teased and taunted for being different were now in many cases admired for their differences. Apparently, the exposure to the infant, and the discussions of the thoughts and feelings that the infant evoked, served as a powerful force for the spread of compassion throughout the classroom--an effect that would last the whole month, from one baby visit to the next.

Here's a sample story from Gordon's book about her program.[1] In one eighth-grade class the toughest and meanest looking kid was Darren. He was two years older than the others because he had been held back, was already growing a beard, had a tattoo on the back of his partially shaved head, and was intimidating to all around him. Darren's mother had been murdered in front of his eyes when he was four years old, and he had lived in a series of foster homes. So, he had to look and act tough. But the 6-month-old baby who had been brought to the classroom melted him.

The mom had brought along a Snuggly, trimmed with pink brocade, which she used for holding the baby close to her. Near the end of the class visit--after the class had spent 40 minutes observing and talking about the baby--the mother asked if anyone would like to try on the Snuggly. To everyone's dismay, Darren raised his hand. With the Snuggly strapped on, he then asked the mom if she would put the baby into it. With, I imagine, much apprehension, the mother did just that. Darren then sat quietly for several minutes in the corner rocking, while the baby snuggled contentedly into his arms and chest. When it was time for the baby and mother to leave, Darren asked the mother and the instructor: "If a person has never been loved, can he still be a good father?"

The Roots of Empathy program has now spread throughout Canada and made inroads into a number of other countries. Kimberly Schonert-Reichl, a psychology professor at the University of British Columbia, has conducted controlled studies, not yet published, which purport to show that the program greatly reduces aggression and increases kindness not just on the day of the baby's visit, but throughout the school year.[2] In an essay I posted six months ago I claimed that no anti-bullying program tried in standard schools to date had been proven to be effective over the long run (see post of May 12, 2010). Schonert-Reichl's studies, when published, may lead me to revise that conclusion. Mary Gordon likes to say, "Empathy can't be taught, but it can be caught. You catch it from babies."

Pastor Daniel Dean and the HOPE Community Center and School in Tampa

I met Daniel Dean two months ago at a symposium on the value of free play that I helped to organize in Binghamton, New York. He was brought to the symposium by my friend Jerry Lieberman, who is president of the Florida Humanist Society. Jerry wanted my academic colleagues and me to meet Daniel and learn from him, and Daniel himself came with the hope of learning something from us. I don't know if Daniel learned anything worth knowing from us, but I certainly learned an enormous amount from him, and I intend to keep learning from him.

Daniel Dean, who was born in Jamaica but grew up in Florida, is a Christian pastor and community leader. He and volunteers built--literally built, with shovels, saws, and hammers--a community center on North 22nd Street in Tampa,

at a corner long known for drug dealing, prostitution, and violence. The mayor of Tampa had offered a vacant lot on this corner to anyone who would build something there that would help to improve the neighborhood, and Daniel took up the challenge. He and his wife Suzette, along with other volunteers, would build a center that would house a church on Sundays, a daycare and school on weekdays, and a community and recreation center, for people of all ages, on weekday evenings and at other times when school wasn't in session. Some people thought he was crazy. The place would be vandalized, destroyed before the roof went up. And if the roof did go up and children came, the children would be in constant danger from the "element" surrounding it. But Daniel thought differently, and so far he has been proven correct.

As Daniel worked at constructing the building, often with his two young sons working by his side, people from the neighborhood came over to ask about what he was doing and why. They were proud of his project, moved by his respectful relationship with his boys, and pleased to volunteer to help. Daniel also made a point of getting to know the people hanging around the bar across the street. They too were emotionally moved by the idea that a school for little children, as well as a community center for people of all ages, was being built right there, across the street from the bar. Daniel clearly trusted them, and trust breeds trustworthiness. Even before the center was completed, the fighting outside that bar stopped and the drug dealers and prostitutes started drifting away. Apparently, such activities were incompatible with the feelings evoked by the thought of a center for little children across the street.

The building was completed more than a year ago, and the school and community center are in full swing. The center is called HOPE (for Helping Our People Excel). The school now has 80 students, ranging from one-year-old infants up through high-school students. Most are from families that are close to or below the poverty line. In the evening, adults as well as children come to play checkers and chess, use the computers, take classes (such cooking), obtain help in finding employment, hold meetings, and socialize. They bring their babies and toddlers along, and the kids of all ages play in age-mixed groups. According to Daniel, the violence and vandalism on the street have stopped and there has been no violence or vandalism at all in the school. The people feel that this fine school and center are theirs, and they are proud of it, and nobody is going to destroy it. The sense of community ownership is a big part of the success, but I think that the more-or-less continuous presence of little children plays an equally big role. Daniel agrees.

According to Daniel Dean, every day at the school starts with an age-mixed recess. The kids play together and get to know everyone, of all ages. The older ones naturally develop big-brother, big-sister relationships with the little ones, and the sense of caring expands outward to encompass everyone in the school and, perhaps, beyond. I'm planning a trip to Tampa to visit this school, and I may tell you more after that. Meanwhile, for more about HOPE, see www.btministry.com/.

Cross-Cultural Evidence for the Pacifying Power of Babies and Young Children

In a review of research on children's social interactions conducted in many different cultures, anthropologist Beatrice Whiting concluded that boys and girls everywhere demonstrate more kindness and compassion in interactions with children who are at least three years younger than themselves than they do toward children closer to their own age.[3] She suggested that natural interactions with younger children and babies are the vehicle through which children and

teenagers exercise and develop their capacities to nurture others, and that these capacities, as they develop, may generalize to interactions with people of all ages.

Consistent with this theory, anthropologist Carol Ember reported long ago on a study that she conducted of boys, in the age range of 8 to 16, in a subsistence farming community in Kenya.[4] In this community, girls were expected to help their mothers care for younger children and infants at home, but in families where there were no girls of the appropriate age boys were required to do this task. Ember reported that boys who were regular babysitters at home (because they had no sisters to do it) were, on average, kinder, more helpful, and less aggressive in their interactions with their own peers than were boys who did not have such babysitting experience.

How Young Children Promote Kindness at the Sudbury Valley School

As regular readers of this blog know, my former student Jay Feldman and I have conducted research on age-mixed interactions at the Sudbury Valley School in Framingham, Massachusetts. At this school, students from age four on through high-school age are free to explore and play as they wish, with whom they wish, all day long. In our research, we documented many ways by which children and adolescents at the school regularly practice their nurturing skills through their self-chosen interactions with younger children. They read to them, comfort them, correct them when they violate rules, teach them games, help them do things that they cannot do alone, help them find lost objects, and take pride in their accomplishments. They are, I think, on their own initiatives practicing to be parents; and, more generally, they are practicing the kinds of abilities that will make them caring and valuable helpers and leaders to everyone around them.

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It is sad to see, in our age-graded society, that many if not most children and adolescents have few opportunities to get to know and to interact regularly with children who are much younger than themselves. If we want young people to grow up to be compassionate and caring, we need to allow them to exercise those capacities; and to do that we need to break down the barriers we have erected to keep young people of different ages apart. We are designed by nature to learn to be compassionate by observing and caring for littler ones while we ourselves are growing up.

Notes

[1] M. Gordon (2005). *Roots of Empathly*. Toronto: Thomas Allen Publishers.

[2] For a preliminary report of one of Schonert-Reichl's studies, Google *Evaluating the Effectiveness of the Roots of Empathy Program: Isle of Man, 2009-10*, and download the PDF.

[3] B. B. Whiting (1983). The genesis of prosocial behavior. In: D. L. Bridgeman (Ed.), *The Nature of Prosocial Development: Interdisciplinary Theories and Strategies.* New York: Academic Press.

[4] C. R. Ember (1973). Feminine task assignment and the social behavior of boys. *Ethos, 1*, 424-439.

[5] P. Gray & J. Feldman (2004). Playing in zone of proximal development: Qualities of self-directed age mixing between adolescents and young children at a democratic school. *American Journal of Education, 110*, 108-145.

Unsolicited Advice: I Hate It, You Hate It, and so Do Your Kids

Why do we especially dislike unsolicited advice from loved ones?

Published on December 22, 2010 by Peter Gray in Freedom to Learn

"Have a nice day," said the mom to her teenage daughter; to which the daughter replied, "*Motherrrr*, will you *pulleeeeze* stop telling me what to do!" I empathize with both parties in this old joke. Sometimes we get so overrun by unsolicited advice that even the most innocuous, benevolent advice becomes intolerable.

My wife and I have a wonderful marriage. One cause of our bliss is that we have both learned to avoid giving the other person unwanted advice. I remember one early step in that learning process for me. We were coming home from a movie, and my wife was driving. I noticed that she was keeping the car in second gear when she clearly should have shifted to third, maybe even to fourth. Stupidly, I told her so. She didn't say anything, but her curt manner of shifting and the silence I heard for the next few minutes spoke volumes. It said, among other things: "Look, buddy, I've been driving for years; I don't need you to micromanage my driving. Did you really have to interrupt our conversation about the movie, right now, to tell me how to drive!" All that, just from my polite, "Sweetie, I think you should be in a higher gear here; you'd get better gas mileage that way and it would be easier on the engine." I had to admit, as I thought about it, that if she had given similar advice to me, my unspoken reaction would have been about the same.

My wife and I are not the only people who generally dislike unsolicited advice. As part of my preparation to write this essay, I Googled "unsolicited advice" and found an Internet poll with this question: *Do you generally like unsolicited advice?* followed by three response choices: *Yes*, *No*, and *Only if the right person gives it*. When I last checked the poll, 847 people had responded, with 6% saying "Yes" (all of whom, I assume, came from another planet), 56% saying "No," and 38% saying, "Only if the right person gives it." Personally, I don't think it's just a matter of the right person; it's also a matter of the right time and the right way. Advice from friends, lovers, relatives, bosses, subordinates, experts, novices, and strangers can all be equally odious, depending on when it is given and how.

Sometimes, of course, unsolicited advice is welcome. If I'm stepping into the ocean and someone, anyone, comes over and advises me not to swim there because sharks were spotted there a few minutes age, I'm grateful. I hear this not so much as advice as useful, potentially life-saving information, which I didn't know before. I'd feel even more grateful, though, without even the slightest tinge of annoyance, if the Good Samaritan had entirely omitted the *advice* part of the message (to not swim there) and just given me the *information* part (about the sharks). Then I'd feel that a decision to stay out of the water was entirely my own, based on my own capacity to think rationally, and was not in any way coerced. I wouldn't, then, have even the slightest temptation to continue into the water just to prove that "I'll do whatever I blankety blank well choose to do, thank you!

Why do we react this way to unsolicited advice? Why don't we just accept it for what it often is--the other person's genuine concern and desire to help? Others who have written on this question have suggested a number of reasonable

answers. They suggest that the advice, justifiably or not, comes across to us as one-upmanship, or assertion of dominance, or criticism, or distrust, or failure to consider our own unique goals and priorities. I agree with all that, but I would add that the main, underlying answer has to do with our desire to protect our own freedom. In fact, I'm using this (and the next) essay on advice to segue into a planned series of essays on the psychology of freedom.

For good evolutionary reasons, to be discussed in a future essay, we human beings naturally crave freedom. We resist control from other people. We do this regardless of our age and regardless of whom it is who wants to control us. Married people resist control from their spouses; old people resist control from their middle-aged children; children of all ages resist control from their parents. And, of course, students resist control from their teachers, which is one reason why schools as we generally know them produce such poor results.

Unsolicited advice from loved ones can be especially threatening, because of our strong desire to please those persons. It's hard to ignore advice from loved ones, because we implicitly fear that failure to follow it will signal lack of love or respect. At the same time, we don't want to follow the advice, because we want to retain our autonomy. In fact, we especially don't want to follow the advice of a loved one because, each time we do so, it feels like a step toward changing the relationship from one between equals to one of unbalanced power. By complying, we may be signaling our future willingness to subordinate ourselves to the other person's will. "Yes, my dear, you are much smarter and more knowledgeable than I, so I'll always do as you say." Every act of compliance seems to tighten an imagined noose that the other has around our neck. The conflict between complying (to show our love) and not complying (to assert our freedom) creates frustration, and frustration leads to anger. And so, we feel more anger when a loved one tells us how to improve our driving--or our health, or whatever--than we do when a perfect stranger gives us such advice.

It's easier for most people to understand the nature of this conflict when thinking about husband and wife than when thinking about parent and young child. The parent and child are in some ways obviously unequal. The parent is bigger, stronger, more knowledgeable about many aspects of the world, and has control of more resources. But yet, in another sense, the parent and child are equals. They are equally valuable as individuals. They are equally privy to their own strongly felt drives, needs, and goals. And children, although in many ways not as knowledgeable as adults, are a lot smarter than most adults give them credit for. Children recognize their dependence on adults, but at the same time experience a powerful drive to assert their independence. From an evolutionary perspective, this drive is no accident; it is what motivates children always toward taking those risks that they must take to grow up, to find their own paths, to take charge of their own lives.

And so, my unsolicited New Year's advice to you is that you should be as cautious about giving unsolicited advice to your children as you are about giving it to your spouse. The more you refrain from giving unsolicited advice, the more likely it will be that your children will *ask* you for advice when they need it and will *follow* that advice if it is reasonable. I'll give some examples and evidence for this in my next essay.

How to Advise and Help Your Kids Without Driving Them (or Yourself) Crazy

Guidelines for really helping, not pestering, your kids.

Published on January 22, 2011 by Peter Gray in Freedom to Learn

We love our kids. We want to protect them. We want the best for them. We don't want them to make the same mistakes we made. We have walked this planet longer than they have and know some things that they don't know. And so we offer our kids advice and help that they didn't ask for and don't want, and they reject it or ignore it. And then what was a positive impulse to help becomes a confrontation.

In some instances our impulse to help leads us to become downright pests to our children. We tag metaphorically (and sometimes literally) after them, trying to direct them at every junction in the road and trying to prevent or at least cushion their every fall.

Some few children, sadly, succumb; they stop trying to think for themselves and begin to look to adults to direct their every move and solve their every problem. But most children, happily, resist. They refuse the role of puppet. They would rather make mistakes and suffer the consequences than do just what they are told.

Mother Nature knows that we can't possibly protect our children from all the pitfalls and dangers the world provides. We can't follow them around all of their lives, and we can't predict where all of the bumps and pits will lie. The road keep changing, so no matter how long we have walked it, we don't really know it. Children must learn to protect themselves, and to do so they must experience again and again the processes of making their own decisions, making and recovering from their own mistakes, and confronting and dealing with all sorts of dangers and disappointments. Therefore, Mother Nature--or, less poetically, the process of natural selection--designed our children to resist our attempts to control them. The "terrible twos" is no accident, nor are children's continuing self-assertions following age two.

Mother Nature has walked this planet longer than any of us and has a better plan for children's development than you, or I, or any child psychologist could possibly devise. We had better listen to her. The plan is implanted in our children's instincts, and we learn it by watching and listening to our children, not by fighting with them.

In my last post I wrote about the natural tendency that most of us have to dislike unsolicited advice, even, and maybe especially, when it comes from family members or others who love us and whom we love. We dislike such advice because it comes dangerously close to attempts at control. All of us, throughout life, want to maintain our autonomy; we resist control from others. When we *ask* for advice, we are still in control. In fact, our asking for advice is part of our means of rational self-control. But when others give us advice that we didn't ask for, it strikes us that they are trying to control us; and if we feel that we must follow the advice--perhaps because we are afraid of offending the advisor or

because we don't want to argue with that person--then we really are being controlled. Our children are just like us in this regard.

The all-time superstars in the ability to refrain from giving unsolicited advice, apparently, were hunter-gatherers (see my posts of August 2, 2008, July 2, 2009, and July 9, 2009; and the published article on hunter-gatherers that is available as a PDF on the biography page for this blog). The hunting and gathering way of life required an extraordinarily high degree of individual autonomy and initiative coupled with an extraordinarily high degree of cooperation and sharing. To achieve that mix, hunter-gatherers everywhere, it seems, independently developed a style of parenting in which even very young children were allowed to make their own decisions and learn from their own experiences. Our world today is in many ways different from that of hunter-gatherers, and I doubt if any of us could achieve the high level of trustful parenting that they achieved, but we can certainly move closer to that ideal.

Here, for your consideration, is a set of guidelines for being helpful to your children without being *too* helpful and for avoiding the tendency to give them advice that they don't want or need.

1. *When your child asks for help or advice, give only what was asked for.*

If your child asks you to tie a particular hard-to-tie knot for a project she is working on, just tie the knot; don't start helping with the rest of the project or making suggestions on how to do it. She wants to do it herself, in her own way. She wants, at the moment, to use you just as a tool, a knot-tying machine, and that's all you should be. She wants to do the whole project in her own way, and she doesn't want any advice about how to do it. That would spoil the fun. If she finds herself feeling that she has to do it the way you seem to want her to, then what was previously play becomes work. And next time she needs a little help on something, she won't ask you. In fact, she'll take pains to stay as far away from you as possible whenever she's doing anything that she wants to do herself.

If your child asks you for advice--about anything, be it her project, or how to get along better with a friend, or how to solve some homework problem--be as direct as you can and keep yourself tuned to her facial expressions and other expressions of interest or boredom so you know when to stop. If there is to be a discussion related to a question she asked, let her take the lead, or at least let her take an equal part. Once she's no longer taking an equal part, let the discussion stop before it turns into a lecture.

The matter is different, of course, if your child asks to join you in some project. If your daughter wants to help you rotate the tires on the car, for example, then you have every right to tell her just what to do. This is fundamentally your project, not hers, and in joining you she is saying, in essence, "teach me how to do this."

2. *Before offering unsolicited help or advice count to ten.*

For many of us, the offering of advice is reflexive, impulsive. We do it without thinking about its consequences. The old suggestion to count to ten before expressing anger works because even such a brief delay gives us a chance to think about the impulse and to control it. The same is true about giving advice. Before you start telling your son what he should wear when he goes outside, or what he should eat, or how he should speak, count to ten. Perhaps in those

seconds you'll decide that the advice would do no good, or isn't really that important, and you'll drop it. If the advice still seems important, you will give it, but the pause may lead you to give it in a more circumspect way, perhaps as a reasoned suggestion rather than an impulsive command.

3. ***Before trying to protect your child from danger, think of the potential benefits as well as the potential costs of the "dangerous" behavior.***

Many popular books and articles have been written about the damage we do to children, today, by overprotecting them. And they are right. Children, in their play, naturally and adaptively expose themselves to moderate dangers. The child climbing high in a tree, or skateboarding down a banister, or diving from a cliff, is experiencing the thrill of danger. Mother Nature drives children to do these things because she knows that they must learn to confront dangers and deal with them if they are to become successful adults. She has endowed children both with the drive to engage in "dangerous" play and with the good sense to know their own limits.

Children dose themselves with just the amounts of danger that they know they can handle, and that is how they learn to deal with the dangers and fears that will confront them throughout life. Hunter-gatherer parents recognized this, and so they allowed their children to play with fire, and with sharp objects, and out in the in the jungle where there were tigers, and at all sorts of dangerous-looking physical stunts. They had faith that their children knew what they were doing, and their faith was well placed.

Many parents today put their children into adult-directed sports because they think those activities are safer and better for their children than free play. But, in fact, there is evidence that children are more likely to sustain serious injuries in the former than in the latter (see post of Oct. 27, 2009, and see Mark Hyman's book, *Until it Hurts: America's Obsession with Youth Sports*). To meet the demands to "win" or to become "stars" in adult-directed sports, children play when injured; overuse certain muscles, bones, and joints because of the repetitive nature of the activity; and engage in physical confrontations and efforts that their good sense would not allow if they were playing on their own.

Many of our fears for our children are irrational, driven by the media. I live in one of the safest neighborhoods in the United States, and yet I see parents every day waiting at the school bus stop to pick up their kids because they are afraid they will be snatched by child molesters or kidnappers on the two-block walk from the bus stop to home. This is truly crazy. The chance that those kids will die in a traffic accident on the two-block drive home (because the parents are too lazy to walk it) is greater than the chance that someone would snatch them if they were walking home alone. In either case, the probability is negligible.

Before forbidding some kind of activity because it is dangerous, think about the question of how dangerous it really is, and weigh that against the exercise, skill, confidence, and emotional control--not to mention sheer fun--that your child gains by engaging in the activity. And think about the damage done by continuously implanting in your child the sense that he or she is incompetent to make decisions or to do anything alone, without protection.

4. ***Be on your child's side, not an opponent***.

When your belief about what your child should do is seriously different from your child's, even after you have thought about it, try not to turn the difference into a confrontation. Listen to your child. Try to understand what your child wants and why. Be an ally, not an opponent. Adopt your child's point of view. Maybe you can help your child think of a way to get what he or she wants without running the risk that has you worried. Or perhaps your child will convince you that it isn't such a risk after all.

5. ***Remember that your child is not you and is not a reflection of you*****.**

We call it "reproduction," but when we make a child we don't really reproduce ourselves. We don't even produce something that is a half-and-half mix of our self and our partner. Because of the genetic phenomena of crossing-over and random assortment of genes, with every child we make we produce an entirely new and different human being. Our task as parents is to get to know that human being and to help it along in the ways that it wants to be helped.

We make a serious mistake if we try to shape our children into replicas of our selves, or if we think of them as extensions or reflections of our selves. Because our children are different from us, their needs and priorities are different from ours. Any help and advice we give them, if it is to be real help and useful advice, must take that into account. We need to help them to be them, not try to turn them into us or into something that we think will make us look good.

6. ***Your goal as a parent is to foster your child's development, not to impress other adults with your parenting skills.***

Some parents seem to approach parenting as a competitive sport. They want to be the best parent around, in the eyes of all the other parents, or at least they don't want to look like a bad parent. Those parents are really thinking about themselves and their own status, not about their children. Don't fall into that trap. If you think your child would benefit from walking home from the bus stop, or even all the way home from school, without you or another adult along, then let your child do it. If you are worried that your neighbor will think you are a negligent parent and you value your neighbor's continued friendship, then explain your reasoning to your neighbor, but if he or she fails to understand, so be it. Your goal is to help your child, not to impress your neighbor.

7. ***The most significant and potentially valuable influence you can have on your child comes from macromanagement of the environment, not micromanagement of your child's behavior.***

Our primary responsibility to our children is not that of telling them moment-to-moment or day-to-day how to behave. Rather, our primary responsibility is to provide them with a healthy environment in which to develop--an environment that allows their developmental instincts to operate as they are meant to operate. You determine where you live and what choices in schooling your kids have, and you play a big role in setting the general tenor of the family. Those are the tasks to think about if you want to help your kids develop in the healthiest ways possible.

One of the best ways you can help your kids is to work with your community to create safe-enough outdoor places to play in your neighborhood, so they can get away from you and learn to get along with other kids without adult direction, can dose themselves with just the right amounts of danger without you looking on and worrying, and can find people who expand their horizons beyond what you and the rest of your family can provide.

Your job is not to protect your children from the world. Your job is to provide means for your children to learn, in their own ways, about the world and to prepare themselves for it. And, to the degree that you can, your job is to help make the world a better place--better for your children, your children's children, and everyone's children.

And now I invite you to tell, in the comments section below, about your own successes (or failures) in helping or advising your child and to share your own thoughts about the kind of "help" or advice that is or isn't helpful. I always welcome disagreements as well as agreements. This blog is, fundamentally, a forum for discussion.

Amy Chua Is a Circus Trainer, Not a Tiger Mother

Real tiger mothers let their cubs learn through play.

Published on February 16, 2011 by Peter Gray in Freedom to Learn

Everyone's been asking me for my thoughts on Amy Chua's *Battle Hymn of the Tiger Mother*, so I finally broke down, bought the book, and read it.

I'm embarrassed that my purchase has contributed even a smidgeon to the best-selling ranking of this book or to Chua's royalties.

I'd like to think that Chua wrote this book as satire, but she says it's an honest account and I take her at her word. That's why I can't enjoy the "humor" that others have claimed to find in Chua's extreme descriptions of her training methods.

"Training" is the correct word for Chua's approach to bringing up her daughters. Her methods involve as complete a subjugation of her daughters' wills as she, the ferocious "tiger mother," can muster. Chua decides which instruments they will play (piano for Sophia, violin for Lulu) and uses every means possible, short (apparently) of physical violence, to make them practice for hours per day. Her methods include fits of screaming, threats, bribes, insults, shaming, and lies (as when she promises a future respite from practice and then reneges). Her favorite method is to tell them over and over again that they will disgrace the entire family--especially their mother--if they come out any less than number one in an upcoming competition. She speaks proudly of all of this. At no point in the book, not even at the end when she claims in some respects to soften, does she express regret. To Amy Chua life is all about competition, and anyone who doesn't come out first is a failure. Chua calls this the "Chinese" way of parenting, but I'll avoid joining the controversy currently raging on the Internet as to whether or not she is thereby insulting an entire race or culture of people.

Chua makes sure that every minute of her daughters' time is occupied with activities of her (Chua's) choosing. Mostly, the daughters go to school, do homework, take music lessons, practice their instruments (usually with Chua standing over them criticizing), and travel to give recitals in prestigious settings. They are not allowed play dates, or pajama parties, or (apparently) any free time to play on their own or to hang out with other kids. They go on countless overseas trips with their well-heeled parents, but must spend much of the time on those trips practicing their instruments. Chua spares no expense in hiring the best, world famous instructors for her daughters and making sure that they perform before the most illustrious audiences.

For someone who occupies a prestigious position as a Yale law professor, Chua comes across as incredibly immature and ignorant in this book. Her outbursts of screaming anger are the tantrums of a two-year-old. Many of her claims, which are supposed to form the philosophical backbone of the book, are simply foolish and seem to represent her ignorance of real human life.

On page 29, Chua presents what seems to be the central tenet of her educational philosophy: "*What Chinese parents understand is that nothing is fun until you're good at it. To get good at anything you have to work, and children on their own never want to work, which is why it is crucial to override their preferences.*"

How sad and impossible life would be if this absurd statement were true! How does Chua account for every normal child's learning to talk or walk and enjoying it from the beginning; or my son's early enjoyment of reading and writing, which he learned entirely on his own through play; or Einstein's early love of mathematics; or my own childhood thrill in learning and becoming good at baseball with no formal instruction at all; or the enjoyment that all normal children (the ones not raised by "tiger mothers") everywhere and throughout history have gained from play of all sorts, at all stages of skill from novice to expert. Chua would have no way at all of understanding the success of students at the Sudbury Valley School, where all students take charge of their own education, pursue their own interests, and enjoy themselves every step of the way.

Chua herself comes across in this book as a cartoonish caricature that could be used to illustrate, by negative example, many of the ideas that I have presented in previous essays in this blog. I have argued that free play teaches children how to have fun in life, how to enjoy learning rather than see it as work, how to get along with others as equals, how to overcome narcissism, and how to control their impulses and regulate their emotions. Chua herself was raised under the thumbs of her own "tiger mother" and "tiger father." She herself had to get straight A's and win all the competitions to please her parents and had no time for play. And what kind of an adult did she become?

On page 97, Chua says, "The truth is, I'm not good at enjoying life. It's not one of my strengths." The purpose of life, if we go by Chua's example, is not enjoyment but winning and showing off. Her children, whom she views as extensions of herself, must present themselves as perfect in every public setting--in school, at musical performances, at fancy dinners for Chua's illustrious acquaintances and colleagues, and even in giving little prepared speeches about their grandmother who has died. Chua's values, throughout this book, are those of a narcissist. There is nothing here about the value of caring for people other than oneself and immediate family (who to Chua are extensions of the self). Her child-raising philosophy would be comically elitist if I could accept the book as fiction rather than autobiography. If everyone raised their children the "tiger mother" way, then everyone would be putting their children constantly into competitions and judging them by where they rank in each. In every competition, every child but one would be a failure--"garbage" to use the term that Chua is proud to say that she called one of her daughters when she failed to live up to Chua's expectations.

Why is this foolish book selling so well and generating serious controversy? I think the primary reason is that Chua's philosophy is not, in truth, as far off from the philosophy of most American and European parents and educators as we might want to believe. Our schools are set up to be one constant competition. We see "Western" parents driving around with bumper stickers bragging, "My child is an honors student." In school, learning is called work and *is* work, because all children in the class are forced through each lesson in the same way, at the same time, regardless of their preferences and predilections. The enjoyment supposedly comes from winning--getting A's, or high honors, or into Yale--but that comes only after you have become good, and to become good in these play-deprived conditions you must be forced against your will to work.

The philosophy of our school system is, in fact, the "tiger mother" philosophy; but in executing that philosophy many people in the school system are weak-willed and mushy. Grade inflation, trophies for mediocre performance, passing students who haven't learned the lessons--all these undermine the philosophy. So, Chua's book appeals to those who buy into our culture's mainstream philosophy of schooling and believe that a tougher approach would make the system work. Chua's "tiger mother" approach to parenting and education is the logical extension of the same, mainstream mentality that gave us "No Child Left Behind" and all the rest of the current drive to make our schools even more restrictive and confining and to give our children even less opportunity to play than is presently the case.

Perhaps Chua's book has a purpose after all, in the larger scheme of things. She didn't write it as satire, but nevertheless it *is* satire. It shows the absurdity of our culture's current beliefs about education, and it does so by carrying those beliefs out to their full, logical conclusion.

If we want a system of education that is consistent with our beliefs about freedom, self-determination, and the democratic ethos that many of us still claim to hold dear, then we need to found it on the philosophy of the real tiger mother, not that of the tiger trainer in the circus. Real tiger mothers let their cubs play, because they know that cubs are designed, by nature, to play in ways that teach them what they need to learn to grow successfully toward tiger adulthood. Tiger trainers, on the other hand, use the whip to train young tigers to do all sorts of things that tigers don't want to do, just for the purpose of entertaining others and showing off the trainers' skills.

What Do Chinese Americans Think of Amy Chua's "Tiger Mother" Book? An Analysis of Amazon Reviews

Many Chinese Americans feel angered and insulted by Chua's book.

Published on March 14, 2011 by Peter Gray in Freedom to Learn

My last post was a negative review of Amy Chua's *Battle Hymn of the Tiger Mother*. It is a sad sign of our times that many people in North America are taking this book seriously, as if it contributes meaningfully to discussions about parenting and education.

I found it interesting that the strongest negative reactions to the book, in the discussion section of my last post, came from two Chinese Americans. This led me to wonder how other Chinese Americans feel about Chua's book. Throughout the book, Chua talks about her method of parenting as the "Chinese" way. If this is true, and if this method is as successful as Chua claims it to be, then one would expect Chinese Americans to feel happy about the success of the book and to express praise for it. To satisfy my curiosity, I analyzed the reviews of the book that are posted at Amazon.com. I compared the reviews by those who identified themselves as Chinese Americans with all of the other reviews.

As of March 12, 2011 (the cutoff date for my analysis), there were a total of 368 Amazon reviews of Chua's *Tiger Mother* book. Of these, by my reading, 42 were by people who identified themselves as Chinese Americans. In order to write an Amazon review you must assign a certain number of stars to the book. One star means you strongly dislike the book; two means you dislike it; three means you are neutral; four means you like it; and five means you strongly like it. Based on these ratings, the Chinese American reviewers were two-fold more likely to strongly dislike or dislike the book than were other reviewers. Here are the percentages--in each case I give the percentage for Chinese reviewers first and that for the other reviewers second:

1 star: 40.5% vs. 20.9%

2 stars: 11.9% vs. 5.8%

3 stars: 2.4% vs. 11.7%

4 stars: 9.5% vs. 15.0%

5 stars: 35.7% vs. 46.6%

Polarized reactions to the book are reflected in these data, for both the Chinese and non-Chinese reviewers. In both groups, most people gave the book either 1 star or 5; few felt lukewarm about it. However, the Chinese group gave the book more 1-star reviews than 5-star reviews, while the non-Chinese group gave the book more than twice as many 5-star reviews as 1-star reviews.

My reading of the positive reviews indicated to me that those Chinese American reviewers who gave the book 5 stars generally like it for the same reasons that other 5-star reviewers do. Few in this category claimed to approve of the

extremity of Chua's parenting methods, but many felt that the book provides a good balance to what they perceive as over-permissive Western parenting practices. Some of the Chinese-American 5-star reviewers said they liked the book despite strongly disapproving of Chua's parenting methods. They liked it because of Chua's "honesty" and "humor" in describing what she did and/or because it helped them understand why their own parents treated them as they did.

Here, however, my focus is on the Chinese-Americans' 1-star reviews. Most of these were written with great passion and eloquence, by people who obviously feel strongly moved to separate themselves, as far as possible, from Chua. Some are several pages long and would be terrific blog essays by themselves. Here I present just a snippet from each review, organized into three categories: (1) reviews by people who are products of "Tiger parenting" or have witnessed others who had such parenting; (2) other reviews that focus on negative consequences of such parenting or on Chua's misplaced values; and (3) reviews that focus on Chua's stereotyping of Chinese parenting methods.

Reviews by People Who Were Products of "Tiger" Parenting, or Who Witnessed Its Effects in Others

• "Having been the product of such parenting and as a 'failure' by these 'Chinese' standards, I have much to say. ... This method of parenting is very close to dictatorships in the past or to oppressive parties, in how they impose their will upon others. This book may have been a last ditch attempt to resurrect the hands on, suffocating, coercive, and never ending demands style of parenting that some Chinese parents (not all) have done at some point in time. ... The biggest problem is that most kids need to explore and understand for themselves what is truly important in their lives. Not every child will grow being a happy professor, doctor, and lawyer and then go to their parents and say, 'Thanks mom and dad for driving me so hard to achieve these goals.' This is why some people, too depressed from this type of parenting, end up committing suicide or losing motivation to drive him or herself forward, because they did not develop their own capability to drive themselves. .... If people think the 'Chinese' method can create another Warren Buffett, Bill Gates, Peter Drucker, Albert Einstein, Ludwig van Beethoven or another visionary person who all of history will celebrate for ages, then they are gravely mistaken. From my experience, the 'Chinese' method of childrearing only worked for the first 18 years or so; then everything fell apart with myself suffering a period of hopelessness and despair."

• "As a person born in China back in the 80's and raised in a family with a similar father, though less abusive, I have to say the F word straight to her face! ... She is very clever at selling books, but low or lacking in humanity. She isn't rare for Chinese parenting, even though she isn't Chinese at all. It proves that abusive parents are everywhere, not limited to China. [In] my generation, abusive parenting was very common in China; slapping your children, beating them up with any weapons were not unheard of. The result? Lots of children committed suicide or had to swallow anti-depressant pills each day when they grew up. Prodigy? Nah, I haven't seen a single one among my abused Chinese classmates. ... [T]he academic fame Amy Chua has allowed her to sell her book more quickly than everyone else. Imagine if a nobody wrote a book talking about abusing her daughters; she'd probably be tried for child abuse."

• "I am Chinese American. I had a Tiger Mom. Yes, I recognize the cultural similarities. ... Yes, I had parents who criticized an A on a paper rather than an A+. ...Ms. Chua's 'insights" are merely for show. There is no critical evaluation

of her own motivations, nor any attempt at inquiry at whether her children truly are happy. Merely a laundry list of accomplishments to add to the author's formidable curriculum vitae."

• "I have witnessed several of my very outstanding friends with successful careers, who are still deeply struggling with the negative impacts from their childhood. ... Among them, Chinese or Americans, there is one thing in common -- a narcissistic mother who believes that she owns her child. Our children come through us, but not from us. Each child is a life of his or her own and one that each parent should respect and cherish."

• "I am from Taiwan. I spent the weekend reading two books. One is Amy Chua's 'Battle Hymn of the Tiger Mother' in English and the other one is 'Thank you, my son---A father's regret' in Chinese by Mr. Jing, who is also a professor in Taiwan. The latter story is sad; Mr. Jing exercised strict parenting in his family and insulted his elder son on his bad grades like Amy Chua did. The pain actually rooted in the son's heart. Then, when the son was 24 years old and left Taiwan in 2007, he emailed to his family not to email him or call him anymore. In short, he decided to disconnect his family since he cannot bear the words, of killing his self-esteem, from his family members who love him most and hurt him most."

Other Reviews Focusing on the Negative Effects of Such Parenting and on Chua's Misplaced Values

• "No matter what message the author wants her readers to get from her book, the message I get after finishing the book is '*A story of an emotionally (maybe physically as well) abused daughter who tried to escape from her control freak mother in a very confined household with nobody to turn to. Her father and her older sister turned a deaf ear on her. She finally succeeded when she grew old enough and realized that if she cries out in public, she will get enough attention and her abusive mother has no choice but to give in.*' The scary part is that it is not written by the abused but the abuser. ...Oh, one last thing, [this book has nothing to do with being] 'Chinese'. She is only using it as an excuse. Maybe more mothers in China behave her way because they are in a socialist dictatorship environment and they don't know better. But for the author, I don't think she can use this ploy because she is an American and a 'Yale law professor'. ... I don't see her publishing such a book as courageous and honest but as ignorant and arrogant."

• "You know what happens when you raise children to judge their efforts by test scores? They do anything to get test scores. And so you have rampant cheating in China's higher ed. Even Chinese scholarly research is tainted. /// You know what happens when you raise children to play music like sweatshop workers? They play music like machines. They may not inspire emotion from audiences, but maybe they will inspire jealousy of their technical proficiency from nearby mothers. (Oh, but that is the whole point of music, in her 'Chinese' mindset, anyway, right?) /// You know what happens when you deny your kids the chance to develop interpersonal skills? They become bitter and isolated from the world, and achievement-based recognition becomes their only 'interface' for social acceptance. A fragile interface indeed. /// This is the passing of guilt, from generation to generation. It certainly breeds performance."

• "If she is trying to be funny, I find her writing more disturbing than funny, and I find her tone unclear. Moreover, given that there exist a few parents who use her unusual techniques, it isn't funny to know that there are children familiar with the types of scenes she describes. ... The author simply comes across as not a balanced person and one who has a lot of deep issues she has not fully looked into and doesn't understand about herself. .... It is like a very rough draft

private journal of someone who has just begun therapy and will need several years of serious treatment finally to understand why she vents on people and intrudes so much on her children the way she does."

• "From the way she talks about others -- 'American moms', her in-laws, her daughters' friends, etc.., I felt she has no respect for others including her kids. ... PLEASE DON'T BUY THIS BOOK, unless you want to learn how to make your kids run away from home and never talk to you."

• "I cringed putting the book down after realizing Amy Chua actually was NOT finished being a parent... ... Ironically, the success or failure of her book's rhetoric now firmly rests on the shoulders of her adolescent girls; if they get into teen drugs, college pregnancy, or, hell, simply don't get the grade they thought they deserved -- are they now a failure? I don't think so; however, Amy Chua will be ...and her book will go down as a testament of self-righteous adulation from a racist bourgeoisie mother."

• "[I'm] a little amazed that so many non-Asians would embrace this as a rosy story with high praise for being a super mom. ...Let's be real. ... Asian doctors, lawyers, bio-scientists, engineers, musicians--most must have a Tiger Mom?! Oh, puh..llease. ..Touting 'Tiger Mom' as a true parenting model that 'Westerners' should emulate is so weird, so out of touch. Children under such circumstances will only perpetuate the same ugly cycle that the author had gone through during her childhood. It wouldn't be a surprise if one day these children rewrite the history of how they had been scarred and survived this Tiger's vicious claws. ... To think that 'Tiger Mom' Asian parenting style has some value, it is so sad. ... Please save your hard earned money and get something more entertaining. May I recommend Amy Tan's 'The Hundred Secret Senses: A Novel.'

• "The keywords in Ms Amy Chua's book title, 'Battle', 'Tiger', 'Superior,' reflect her own personal traits. Those are not the words or values that I want to instill onto my children. I have raised my daughters to do their best, to understand the importance of collaboration, and to have empathy toward those who are in disadvantaged positions."

• "Parenting is not war. Relax, love your children, spend time with them and enjoy!"

• "This is a sensational book about a mother who uses her Chinese ethnicity to cloak her cruelty. ... One message that I don't think the author addresses is how she expects her children to treat others if they learn from such a mean unpleasant role model. ... Every Chinese person I've talked to whose parents weren't like this are, right now, yes, at this moment, THANKING their parents."

Reviews that Focus on Chua's Stereotyping of Chinese Parenting

• "It is offensive, repugnant and irresponsible for her to present such an unfounded stereotype just to sensationalize and sell her book. .... My Chinese mother, my grandmothers, my relatives and most of the Chinese mothers I know and have heard of are not as Amy Chua portrays. ... If one delves into Chinese history and the upheld examples of heroic Chinese mothers, you get a different picture--good mothers are loving, nurturing, sacrificial and wanting what is best and happiest for their children, not the monster portrayed by Amy Chua. Amy Chua is more like an example of an abusive mother, driven by blind ambition and cruelty, and quite sadistic."

• "AS A CHINESE MOTHER, I DON'T WANT TO BE REPRESENTED BY AMY CHUA! ...All the Chinese parents I know here in the US are not parenting their kids in Amy Chua's way either. Education is important, but we also value many other things, such as healthy personality, happiness, kindness, and responsibility.... Success and fame to us are not as important as they are to Amy Chua. ...If Chua wants to talk about 'permissive mother' or 'demanding mother', she should say so. Or she can just use 'mother Amy Chua' to represent herself. Why does she use an ethnicity-orientated term, which is inaccurate and offensive! ... I felt hurt when reading Amy Chua's writing. Chinese mothers are not those cold-blooded controlling monsters ..., the impression Amy Chua creates."

• "No, being an American-Chinese, I can tell you most Chinese mothers DO NOT raise their kids by the way the author described, may they live in USA or Asia! ... My daughter is going to study in an ivy-league school this fall, but by no mean was she raised by these extreme cruel parenting ways. ... Please, next time when you meet a successful/bright Chinese kid, do not automatically think his/her mother is like a 'Ms. Chua'! ...Well, I guess if she didn't sell her book using the Chinese label, it may not draw in as much attention. What a smart market gimmick!"

• "I am a Chinese mother with two daughters. I have a Ph.D. from Yale, so I am not one of the 'losers' described by Amy Chua. I am absolutely appalled by her characterization of 'Chinese mothers'. ...Amy Chua is doing a lot of damage to a lot of people with this book . ... What concerns me the most is the damage to Chinese American children. They already need better grades, better records, more extra curricular activities and what not to get into college or post-graduate schools than their counterparts in any other groups. Now they have to deal with the stereotype of having a 'Tiger mother' behind their excellence, too? But I doubt Amy Chua would worry about that, given what she put her own children through in the name of 'love'."

• "Her book leaves the unfortunate impression that the extreme practices she employed during her daughters' formative years -- practices that have been roundly condemned by the American public as extreme and abusive -- could well be the norm among Chinese American parents. That impression is reinforced not only by the many references in her book to 'The Chinese way,' 'Chinese parents,' 'Chinese mothers,' the 'Chinese strategy,' or the 'Chinese method,' but as well by her standing as a Yale Law School professor."

• "The latest 'it' book about China has arrived, and in typical corporate publisher fashion, the author is no more Chinese than Britney Spears! Amy Chua, a professor at Yale Law School, was born and raised in Illinois and lived in Indiana and Connecticut. I can think of no less-Chinese states in America. Not to mention that she is married to a Jewish-Caucasian. Chua's parents spent more time in the Philippines than in China, nor does Chua speak a lick of Mandarin! How is it, then, that Chua is an expert on anything Chinese when the only Chinese word she speaks is her own name?

I hope that American and European readers who think that Chua is adding something of worth to discussions of parenting and education will read and learn from these Chinese Americans, who know better. These people cannot accept the book as containing useful advice, nor as an insightful memoire, nor as humor. The fact that so many people have spoken approvingly of Chua's parenting methods is real cause for concern.

The Human Nature of Teaching I: Ways of Teaching That We Share With Other Animals

What can we learn from animals by watching them teach?

Published on April 14, 2011 by Peter Gray in Freedom to Learn

So far, through more than 60 posts in this blog about learning and education, I've said almost nothing about teaching. That has been deliberate. In our culture we do too much teaching, or too much of what we call "teaching;" and much of that activity interferes with education more than it helps. Some readers have wondered if I'm just plain dead set against all forms of teaching. The answer to that, of course, is *no*. I'm just against teaching that is forced upon or foisted upon learners--teaching that is not a response to the learners' own desires to learn. I think forced or foisted teaching creates more harm than good; it blunts curiosity, promotes helplessness, and in some cases induces hatred and avoidance of the subject taught and even of the teacher. But teaching that is wanted by the learner is great. It's laudable, like any behavior that really succeeds in helping others achieve their goals.

My goal in this new series of essays is to examine teaching from the ground up. I start, here, with a definition of teaching and with evidence that teaching occurs in at least some non-human animals. An examination of teaching in other species may lead to insights that will be useful for understanding teaching in our species.

Definition of Teaching

Teaching *is behavior that is conducted by one individual (the teacher) for the purpose of helping another individual (the pupil) to learn something*.

That's a simple definition, but it may need just a bit of elaboration. Notice that teaching, by this definition, is always a form of assistance. The key actor in any instance of learning is the learner; the teacher just helps.

The phrase *for the purpose of*, in the definition, rules out the great majority of cases in which one individual's actions help another individual to learn. We all learn an enormous amount by watching others do things, but that doesn't mean that those others are teaching us. They are teaching us, according to the definition, only if their actions are done *for the purpose of* helping us learn. I may learn to use a new coffee machine by watching you use it, but you taught me only if you used the machine primarily or at least partly for the purpose of enabling me to learn. An outside observer might judge that you were teaching me by noting that you beckoned me to watch, that you performed the actions with slow, exaggerated motions, or that you didn't drink the coffee you made.

I should add also that by *purpose* I mean *function* and do not mean to imply anything about consciousness of function. The function of teaching is to promote another's learning, just as the function of digestion is to get food molecules into

the bloodstream and the function of the blink reflex is to prevent eye injury. When I say that ants teach other ants, I mean only that they engage in behaviors that came about (in this case through natural selection) for the function of helping other ants learn something, not that the ants are conscious of that function. We have no idea if other species of animals are conscious of teaching in the sense that you were conscious of teaching me to use the coffee machine.

Learning can be divided roughly into two categories--*skill* learning (learning *how*) and *informational* learning (learning *that*). Since teaching is always tied to learning, teaching comes in those same two categories--skill and informational. Both categories have been documented in nonhuman animals as well as in humans. Here are a few examples of both skill teaching and informational teaching in animals.

How Animals Help Their Young to Develop Skills

Providing materials and conditions for practice

Skill development, especially in mammals, often requires a great deal of practice. Young mammals come into the world highly motivated to practice the skills they need to survive, but in some cases they are unable, by themselves, to create the conditions necessary for practice. In these cases, teaching may occur simply by providing those conditions. Perhaps the best examples are found in cases of carnivores learning to hunt.

Kits, cubs, and pups, who must become good hunters in order to survive, spend endless hours practicing. They playfully chase and pounce on leaves blowing in the wind, and on each other, as ways of practice. But they also need practice with real prey, and to provide that practice the mother brings them real prey. In a groundbreaking series of field studies, Timothy Caro documented this for wild cheetahs.[1] At first, when the cubs are young, the mother cheetah brings them dead hares and gazelles, which they attack and eat. As they get older, however, she begins to bring back live hares and gazelles, which the cubs eagerly chase and attempt to capture. When the cubs fail to capture the live prey, as they almost always do at first, the mother chases it down and brings it back, so they can try again. She might do this several times before killing it so the cubs can eat. Eventually, after much of this practice, the young cheetahs became skilled at killing the prey themselves, and then they are ready to begin hunting on their own.

The mother cheetah's teaching is costly. It would be easier and less time-consuming for her to kill the game herself and give it dead to her cubs than to bring it back kicking and struggling and then to keep chasing it down as her cubs lose it. Moreover, Caro observed that sometimes the live prey gets away from the mother as well as from the cubs, resulting in loss of meat. Apparently, the gain to the cubs, in the development of their hunting skills, more than compensates for these costs.

Similar behavior is shown by mothers in many other predatory species. For example, mother meerkats (small mammals in the mongoose family) help their pups learn to kill and eat dangerous, stinging scorpions.[2] First the mother brings them dead scorpions, which they attack and eat. Then she brings them live scorpions with the stingers removed, until the pups are good at catching and killing them. Then, finally, she begins to bring them intact scorpions to kill.

We don't usually think of providing materials for practice as teaching, but it is one of the most valuable ways by which we humans help our children to learn, and it meets the criteria for teaching established by the definition above. By

providing access to toys, tools, and other equipment, or by other means of altering their environment, we, like mother cheetahs and meerkats, enable our young to practice valuable skills. Children can't learn skills that they have no opportunity to practice.

Demonstrating

We humans are natural imitators. We learn most new skills by watching how others do them and then imitating what we saw. In his coauthored book The Anthropology of Education, David Lancy contends, with good evidence, that watching others is, worldwide, the primary means by which people, especially children, learn what they need to know. Most such learning doesn't require teaching; we learn from watching others who are just going about their daily business, oblivious of us. However, in some cases a helpful person takes the trouble to show us how to do something by performing it, directly in front of us, specifically for that purpose. That is one of the most important human ways of teaching.

Demonstrating is very rare in the nonhuman world. In fact, the only nonhuman animals that appear to demonstrate at all are chimpanzees, and even for them it is a rare occurrence. The only clearly documented instances of it so far involve mother chimps teaching their offspring how to crack nuts.

Chimpanzee nut cracking is fascinating, because it is among the rare examples of a culturally learned and culturally transmitted tradition among nonhumans. This behavior has only been observed among certain groups of chimpanzees in West Africa, and in those groups the behavior is passed along from generation to generation. Groups of chimps elsewhere don't treat hard-shelled nuts as food, because they have no way of opening them. In certain parts of West Africa, however, chimpanzees crack nuts by the technique of placing the nut on a large flat rock (the anvil) and striking it repeatedly with an appropriately shaped stone or heavy stick (the hammer). The woody shells of the nuts are very hard, and cracking them is difficult. The anvil, the hammer, and the means of striking have to be just right. Young chimpanzees require years of practice before they become skilled, and--as researchers Cristophe and Hedwige Boesch have documented---their mothers assist them.[3]

The mothers help mostly by providing the young with materials for practice--an appropriate anvil and hammer and nuts to crack. But occasionally, when a young chimp has been trying really hard and is becoming frustrated, the mother will step in and show the youngster how to do it. In one case, which you can view on You Tube, the mother took the stick hammer from her daughter and then very slowly and deliberately, right in front of the daughter, turned the stick around so that the better surface was facing downward, and then proceeded to crack several nuts, using this correct orientation, while the daughter watched. After that the daughter held the stick just as her mother had and succeeded in cracking several nuts.

Demonstrating may be especially valuable for culturally acquired skills as opposed to skills that are heavily based in instinct. Young cheetahs may be born knowing the general movements required for hunting, so all they need is practice in order to perfect those movements; but young chimps have no instinctive knowledge at all of nut cracking, so that is

hard to learn and demonstrations can help. We humans have taken cultural transmission to the extreme level, so it is no wonder that demonstrating is a major means of human teaching.

How Animals Provide One Another With Useful Information

Much animal learning, in the informational as well as skill category, has to do with food. What is food and what isn't, and where is food to be found? Many animals learn these things by attending to others of their species who already know them. For example, given a choice of what to eat, young rats will eat whatever it is that the older rats in the colony are eating; and kittens learn the locations of food by following their mothers around. For the most part no teaching is involved in any of this; the knowledgeable individuals are just doing what they would normally do and the naïve ones learn by paying attention. In some cases, however, the knowledgeable individuals help out by directing the attention of the learners or by leading them to food.

Directing Attention

Examples of directing attention as a means of teaching are seen in chickens and other birds in the fowl family. The young learn what is food by seeing what their mothers' peck at on the ground. In some cases, hens perform a distinctive feeding display, only when their chicks are present, which apparently serves to attract the chicks' attention to a particularly nutritious type of food she has found [2]. This serves not just to promote the chicks' immediate eating of that food, but also helps them to learn that this is an especially valued food, so they seek it in the future.

Leading to Show Where

When a naïve individual follows a knowledgeable one to learn the location of food, the knowledgeable one might help out by making itself easy to follow. Such behavior has been documented most clearly in species of ants called tandem-runners.[4] These ants are regularly seen running in pairs, with one following directly behind the other and prodding it with its antennae. Researchers have shown that in such pairs the leader is always the one who knows where a new source of food is located and the follower, by following, learns where that source of food is and can then become a leader for another ant. The leader's behavior here is considered teaching, not just getting food, because the leader runs differently when being followed in his way than when not. It moves at only a quarter of the speed that it normally would, which allows the follower to keep up and gives it time to attend to landmarks along the way and learn the route. The slower movement is a cost to the leader, as it means that it takes more time to get to the food, but is a benefit to the learner and to the whole colony of ants, which regularly cooperate in this and other ways to survive.

.....

All of these ways of teaching, observed in animals, are among the most common ways of teaching among human beings. None of these examples of teaching involve reward or punishment or any attempt to manipulate the learner's motivation to learn. The learner is already highly motivated and trying to learn; the teacher just helps out. As I will argue in future essays in this series, we would all be more effective teachers if we took that lesson from animals to

heart. I should add, however, that there are certain well-delineated cases in which animals do use punishment in order to teach a lesson--and the lesson, in every such case, is "stay away from me." More on that in a future post.

If you have thoughts or questions about animal teaching and its relation to human teaching, please post them in the comments section below. I do read all comments and attempt to answer all questions. In my next post I'll discuss human teaching as it occurs in hunter-gatherer cultures.

Update. The next post in this series is now on line: The Human Nature of Teaching II: What Can We Learn from Hunter-Gatherers about Teaching Our Children?

References

[1] Timothy M. Caro & M. D. Hauser (1992). Is there teaching in nonhuman animals? *The Quarterly Review of Biology, 67*,151-174.

[2] Alex Thornton & Nichola J. Raihani (2010). Identifying teaching in wild animals. *Learning and Behavior, 38*, 297-209.

[3] Christophe Boesch (1991), Teaching among wild chimpanzees. *Animal Behaviour, 41*, 530-532.

[4] Hoppitt, Brown, Kendal, Rendell, Thornton, Webster, & Laland (2008). Lessons from animal teaching. *Trends in Ecology and Evolution, 23*, 486-493.

The Human Nature of Teaching II: What Can We Learn from Hunter-Gatherers?

How hunter-gatherers taught without coercion.

Published on May 2, 2011 by Peter Gray in Freedom to Learn

In my last post I defined teaching, very broadly, as *behavior that is conducted by one individual (the teacher) for the purpose of helping another individual (the pupil) to learn something*. I presented examples showing that, by this definition, teaching can be found even among non-human animals. Now I wish to examine teaching as it occurs, or occurred, in hunter-gatherer bands.

As I noted in an earlier post, all humans were hunter-gatherers until a mere 10,000 years ago, when agriculture first appeared in some parts of the planet. In other words, for about 99% of our million or so years on earth (more or less, depending on just how you want to define "human beings") we were all hunter-gatherers. Our basic human instincts, including our instincts to learn and to teach, were shaped to meet the needs of our hunter-gatherer way of life. We know a good deal about that way of life through studies of those groups of people, in various isolated parts of the world, who managed to survive as hunter-gatherers into the last half of the 20th century and were studied by anthropologists. Wherever they were found, these people lived in small bands, of roughly 20 to 50 people per band, who moved from campsite to campsite to follow the available game and edible vegetation. They had rich cultures, and children had to learn a lot to become effective adults.[1]

As I explained in that earlier post, hunter-gatherers had faith that their children would, on their own initiatives, learn what they needed to know, and so they did not worry about their children's education or attempt to control it. Moreover, hunter-gatherers held strongly to the values of personal autonomy and equality. They believed that it is wrong for anyone to try to control another person's life, either in the short run or the long run, even if that other person is a child. Hunter-gatherers believed that it is presumptuous for anyone to think that they know what is best for another person. So, they did not "teach" in the sense of trying to get their children to do things that the children were not already motivated to do. But they did teach by my broad definition of teaching. They deliberately behaved in ways that were designed to help their children learn what the children wanted to learn. Here are the major categories of ways by which adult hunter-gatherers' helped their children learn.[2]

Providing children with ample time to play and explore and thereby to learn

Hunter-gatherer children were the freest human children ever to have walked the earth. Hunter-gathers believed that children learn through their own, self-directed, self-initiated play and exploration, so they allowed their children unlimited time for such activities. In a survey of hunter-gatherer researchers that I helped to conduct some years ago,

all said that the children in the group that they had studied were free to explore on their own, without adult guidance, essentially from dawn to dusk every day.[3] They were allowed such freedom beginning at about age 4 (the age at which, according to hunter-gathers, children "have sense" and do not need to be watched regularly by adults) on into their mid to late teenage years, when they began to take on adult responsibilities. By providing children with food and other subsistence needs, and by not burdening them with many chores, hunter-gatherer adults allowed their children ample time to educate themselves.

Providing children with the culture's tools so they could practice using them

In order to learn to use the tools of the culture, children must have access to those tools and be allowed to play with them. Hunter-gatherers recognized that, and they allowed their children nearly unlimited opportunities to play with the tools of the culture, even dangerous ones such as knives and axes. (There were some limits, however; the poison-tipped darts or arrows that adults used for hunting were kept well out of small children's reach.) The adults also made scaled-down versions of tools--such as small bows and arrows, digging sticks, and baskets--specifically for young children, even toddlers, to play with. Providing children with playthings is one means of teaching that is common to our culture and hunter-gatherer cultures. However, hunter-gatherers were more likely than we are to allow their children to play with the real versions of the culture's tools, not pretend ones. Even the scaled-down tools were real; the small bows, arrows, axes, and digging sticks functioned just like the bigger versions.

Allowing children to observe and participate in adult activities, and tolerating children's interruptions

Hunter-gatherer adults recognized that children learn by watching, listening, and participating, and so they did not exclude children from adult activities. By all accounts, they were enormously tolerant of children's interruptions, and they allowed children into their workspaces even when that meant that the work would go slower. On their own initiatives, children often joined their mothers on gathering trips, where they learned by watching and sometimes helping. By the time they were young teenagers, boys who were eager to do so were allowed to join men on big-game hunting expeditions, so they could watch and learn. By the time they were in their middle teens, they were actively contributing to, rather than detracting from, the success of such trips. Within a few years after that, they were full-fledged hunters.

In camp, children often crowded around adults, and young ones climbed onto adults' laps, to watch or "help" them cook, or make hunting weapons and other tools, or play musical instruments, or make beaded decorations; and the adults rarely shooed them away. As illustration of the adults' tolerance of children's interruptions of their activities, here is a typical scene described by anthropologist Patricia Draper:

"One afternoon I watched for 2 hours while a [Ju'/hoan] father hammered and shaped the metal for several arrow points. During the period his son and grandson (both under 4 years old) jostled him, sat on his legs, and attempted to pull the arrowheads from under the hammer. When the boys' fingers came close to the point of impact, he merely waited until the small hands were a little farther away before he resumed hammering. Although the man remonstrated

with the boys, he did not become cross or chase the boys off; and they did not heed his warnings to quit interfering. Eventually, perhaps 50 minutes later, the boys moved off a few steps to join some teenagers lying in the shade."[4]

Showing how, and presenting information, to children who wished to know

When children asked adults to show them how to do something or to help them do it, the adults obliged. As one group of hunter-gatherer researchers put it, "Sharing and giving are core forager values, so what an individual knows is open and available to everyone; if a child wants to learn something, others are obliged to share the knowledge or skill."[5] In the course of natural daily life, an adult might show a child the best way to swing an axe, or might point out the difference between the footprints of two different, closely related mammals--but only if the child wanted such help. In an interview study, hunter-gather women (of the Aka culture) described how, when they were young, their mothers had placed varieties of mushrooms or wild yams in front of them and explained the differences between those that were edible and those that were not.[6]

Another source for learning were the stories told--by men about their hunting trips, by women about their gathering trips, by both men and women about their visits to other bands, and, especially, by the older members of the band about significant events in the past. Elizabeth Marshall Thomas, who was one of the first to study the Ju/'hoan hunter-gatherers of the Kalahari Desert, noted that women in their sixties and seventies were especially great storytellers. The stories were not directed specifically to children, but the children listened and absorbed the meaning.[7] My guess is that the fact that the stories were directed to everyone, not specifically to children, made them all the more interesting and memorable to the children.

Exercising children's natural desires to share and give

Research in our culture has shown that infants, as young as 12 months old, delight in giving things to other people. In a series of little-known experiments conducted in the United States, nearly every one of more than 100 infants, aged 12 to 18 months, spontaneously gave toys to an adult during brief sessions in a laboratory room.[8] In our culture, such joyful and voluntary giving by infants is not much commented upon, but in at least some hunter-gatherer cultures it was celebrated, much like infants' earliest words are celebrated in our culture. In various ways, hunter-gatherer adults cultivated the giving instincts of infants and young children. For example, toddlers were invited to participate in the band's food sharing, by carrying food from one hut to another, which they did with great delight.

Among the Ju/'hoansi, grandmothers took special responsibility to initiate infants into the culture of sharing by playing games of give and take with them and by encouraging games in which infants would pass beads and other valued objects to others in the band.[9] This is the one example of systematic, deliberate adult influence on children's play that I have found in the hunter-gatherer research literature. No human trait was more crucial to the hunter-gatherer way of life than the willingness to give or share. Their survival depended on it (and so, really, does ours, if you stop to think about it).

Providing a trustful social environment within which to learn

The most important and general way by which hunter-gatherer adults helped their children learn was by providing an always supportive, always trustful environment. To educate themselves, children need to feel emotionally secure and confident. By trusting children to know what is best for themselves and by making that trust apparent, adult hunter-gatherers provided the conditions that all children need, if they are to feel confident about taking control of their own lives and learning. Because all adult members of the band cared about and provided for the emotional and physical needs of all of the children, and because it was a cultural taboo ever to deliberately hurt a child, the children grew up feeling that others were trustworthy, which is a prerequisite for becoming trustworthy oneself. In such an environment, children's instincts for self-education flourish. That is as true today as it ever was.

The secure child, raised in a setting where others are loving, trusting, and nonjudgmental, and where the tools and examples needed for education are available but not forced upon anyone, vigorously and joyfully undertakes the natural childhood task of self-education. Unfortunately, in our schools, we replace security with anxiety as the foundation for learning, and we keep children so busy doing what they are told to do that self-education becomes essentially impossible. In schools we "teach" in ways that subvert children's natural instincts to learn and that replace trust and security with distrust and anxiety.

And now, I invite you to add your comments and questions. I read all comments and try to respond to all serious questions. I prefer it if you put your thoughts and questions here rather than in a private email to me. By putting them here, you share with other readers and not just with me.

For more on hunter-gatherer education, see these posts: Children Educate Themselves III: The Wisdom of Hunter-Gatherers; and The Natural Environment for Children's Self-Education: How The Sudbury Valley School is Like a Hunter-Gatherer Band.

Notes

[1] For a general discussions of hunter-gatherer education, see the above-lisrted posts and see Peter Gray, The evolutionary biology of education: How our hunter-gatherer educative instincts could form the basis for education today, in *Evolution, Education, and Outreach, 4*, 428-440. 2011.

[2] For an excellent discussion of teaching and learning in one hunter-gather culture (the Aka), see Barry S. Hewlett, Hillary N. Fouts, Adam Boyette, & Bonnie L. Hewlett (2011). Social learning among Congo Basin hunter-gatherers. *Philosophical Transactions of the Royal Society B, 366*, 1168-1178. I have made considerable use of this article in this essay.

[3] Peter Gray. Play as the foundation for hunter-gatherer social existence. *American Journal of Play, 1*, 476-522. 2009.

[4] Patricia Draper (1976), Social and economic constraints on child life among the !Kung. In R. B. Lee & I. DeVore (Eds.), *Kalahari hunter-gatherers: studies of the !Kung San and their neighbors*, pp. 199-217. Cambridge, MA: Harvard University Press., p 205-206.

[5] Hewlett et al. (2011)-see Note 2.

[6] Hewlett et al. (2011)-see Note 2..

[7] Thomas, Elizabeth M. (2006). *The old way*. New York: Farrar, Straus & Giroux.

[8] Hay, D. F., & Murray, P. (1982). Giving and requesting: Social facilitation of infants' offers to adults. *Infant Behavior and Development, 5*, 301-310. Also, Rheingold, H. L., Hay, D. F., & West, M. J. (1976). Sharing in the second year of life. *Child Development, 47*, 1148-1158.

[9] Bakeman, R., Adamson, L. B., Konner, M., & Barr, R. (1990). !Kung infancy: The social context of object exploration. *Child Development, 61*, 794-809. Also, Wiessner, P. (1982). Risk, reciprocity and social influences on !Kung San economics. In E. Leacock & R. Lee (Eds.), *Politics and history in band societies*. Cambridge, UK: Cambridge University Press.

How Hunter-Gatherers Maintained Their Egalitarian Ways: Three Complementary Theories

The important lessons from hunter-gatherers are about culture, not genes.

Published on May 16, 2011 by Peter Gray in Freedom to Learn

I'm taking a little break from my series on "The Human Nature of Teaching" in order to respond to questions about hunter-gatherer life in general, which were raised by my last post. As regular readers of this blog know, I have in previous posts commented on hunter-gatherers' playfulness; their playful religious practices; their playful approach toward productive work; their non-directive childrearing methods; and their children's playful ways of educating themselves. In all of those posts I emphasized the egalitarian, non-hierarchical nature of hunter-gatherer society. In today's post I present three theories as to how hunter-gatherers maintained the egalitarian ethos for which they are justly famous. I think all three of the theories are correct. They are complementary theories, not competing ones; and they are all theories about culture, not about genes.

First, before I get to the three theories, I must address this question: Is it true that hunter-gatherers were peaceful egalitarians? The answer is yes.

During the twentieth century, anthropologists discovered and studied dozens of different hunter-gatherer societies, in various remote parts of the world, who had been nearly untouched by modern influences. Wherever they were found--in Africa, Asia, South America, or elsewhere; in deserts or in jungles--these societies had many characteristics in common. The people lived in small bands, of about 20 to 50 persons (including children) per band, who moved from camp to camp within a relatively circumscribed area to follow the available game and edible vegetation. The people had friends and relatives in neighboring bands and maintained peaceful relationships with neighboring bands. Warfare was unknown to most of these societies, and where it was known it was the result of interactions with warlike groups of people who were not hunter-gatherers. In each of these societies, the dominant cultural ethos was one that emphasized individual autonomy, non-directive childrearing methods, nonviolence, sharing, cooperation, and consensual decision-making. Their core value, which underlay all of the rest, was that of the equality of individuals.

We citizens of a modern democracy claim to believe in equality, but our sense of equality is not even close that of hunter-gatherers. The hunter-gatherer version of equality meant that each person was equally entitled to food, regardless of his or her ability to find or capture it; so food was shared. It meant that nobody had more wealth than anyone else; so all material goods were shared. It meant that nobody had the right to tell others what to do; so each person made his or her own decisions. It meant that even parents didn't have the right to order their children around;

hence the non-directive childrearing methods that I have discussed in previous posts. It meant that group decisions had to be made by consensus; hence no boss, "big man," or chief.

If just one anthropologist had reported all this, we might assume that he or she was a starry-eyed romantic who was seeing things that weren't really there, or was a liar. But many anthropologists, of all political stripes, regarding many different hunter-gatherer cultures, have told the same general story. There are some variations from culture to culture, of course, and not all of the cultures are quite as peaceful and fully egalitarian as others, but the generalities are the same. One anthropologist after another has been amazed by the degree of equality, individual autonomy, indulgent treatment of children, cooperation, and sharing in the hunter-gatherer culture that he or she studied. When you read about "warlike primitive tribes," or about indigenous people who held slaves, or about tribal cultures with gross inequalities between men and women, you are not reading about band hunter-gatherers.

Even today some people who should know better confuse primitive agricultural societies with hunter-gatherer societies and argue, from such confused evidence, that hunter-gatherers were violent and warlike. For example, one society often referred to in this mistaken way is that of the Yanomami, of South America's Amazon, made famous by Napoleon Chagnon in his book subtitled *The fierce people*. Chagnon tried to portray the Yanomami as representative of our pre-agricultural ancestors. But Chagnon knew well that the Yanomami were not hunter-gatherers and had not been for centuries. They did some hunting and gathering, but got the great majority of their calories from bananas and plantains, which they planted, cultivated, and harvested. Moreover, far from being untouched by modern cultures, these people had been repeatedly subjected to slave raids and genocide at the hands of truly vicious Spanish, Dutch, and Portuguese invaders.[1] No wonder they had become a bit "fierce" themselves.

The hunter-gatherer way of life, unlike the agricultural way of life that followed it, apparently depended on intense cooperation and sharing, backed up by a strong egalitarian ethos; so, hunter-gatherers everywhere found ways to maintain a strong egalitarian ethos. Now, back to the main question of this post. *How* did hunter-gatherers maintain their egalitarian ways? Here are the three theories, which I think are complementary to one another and all correct.

Theory 1: Hunter-gatherers practiced a system of "reverse dominance" that prevented anyone from assuming power over others.

The writings of anthropologists make it clear that hunter-gatherers were not *passively* egalitarian; they were *actively* so. Indeed, in the words of anthropologist Richard Lee, they were *fiercely egalitarian*.[2] They would not tolerate anyone's boasting, or putting on airs, or trying to lord it over others. Their first line of defense was ridicule. If anyone--especially if some young man--attempted to act better than others or failed to show proper humility in daily life, the rest of the group, especially the elders, would make fun of that person until proper humility was shown.

One regular practice of the group that Lee studied was that of "insulting the meat." Whenever a hunter brought back a fat antelope or other prized game item to be shared with the band, the hunter had to express proper humility by talking about how skinny and worthless it was. If he failed to do that (which happened rarely), others would do it for him and make fun of him in the process. When Lee asked one of the elders of the group about this practice, the response he received was the following: "*When a young man kills much meat, he comes to think of himself as a big*

man, and he thinks of the rest of us as his inferiors. We can't accept this. We refuse one who boasts, for someday his pride will make him kill somebody. So we always speak of his meat as worthless. In this way we cool his heart and make him gentle."

On the basis of such observations, Christopher Boehm proposed the theory that hunter-gatherers maintained equality through a practice that he labeled *reverse dominance*. In a standard dominance hierarchy--as can be seen in all of our ape relatives (yes, even in bonobos)--a few individuals dominate the many. In a system of reverse dominance, however, the many act in unison to deflate the ego of anyone who tries, even in an incipient way, to dominate them.

According to Boehm, hunter-gatherers are continuously vigilant to transgressions against the egalitarian ethos. Someone who boasts, or fails to share, or in any way seems to think that he (or *she*, but usually it's a *he*) is better than others is put in his place through teasing, which stops once the person stops the offensive behavior. If teasing doesn't work, the next step is shunning. The band acts as if the offending person doesn't exist. That almost always works. Imagine what it is like to be completely ignored by the very people on whom your life depends. No human being can live for long alone. The person either comes around, or he moves away and joins another band, where he'd better shape up or the same thing will happen again. In his 1999 book, *Hierarchy in the Forest*, Boehm presents very compelling evidence for his reverse dominance theory.

Theory 2: Hunter-gathers maintained equality by nurturing the playful side of their human nature, and play promotes equality.

This is my own theory, which I introduced two years ago in an article in the American Journal of Play.[3] I will not go into detail about it here, because I have presented bits of the theory in other posts (see, for example, my post of June 11, 2009). Briefly, however, the theory is this. Hunter-gatherers maintained their egalitarian ethos by cultivating the playful side of their human nature.

Social play--that is, play involving more than one player--is necessarily egalitarian. It always requires a suspension of aggression and dominance along with a heightened sensitivity to the needs and desires of the other players. Players may recognize that one playmate is better at the played activity than are others, but that recognition must not lead the one who is better to lord it over the others.

This is true for play among animals as well as for that among humans. For example, when two young monkeys of different size and strength engage in a play fight, the stronger one deliberately self-handicaps, avoids actions that would frighten or hurt the playmate, and sends repeated play signals that are understood as signs of non-aggression. That is what makes the activity a *play* fight instead of a real fight. If the stronger animal failed to behave in these ways, the weaker one would feel threatened and flee, and the play would end. The drive to play, therefore, requires suppression of the drive to dominate.

My theory, then, is that hunter-gatherers suppressed the tendency to dominate and promoted egalitarian sharing and cooperation by deliberately fostering a playful attitude in essentially all of their social activities. Our capacity for play, which we inherited from our mammalian ancestors, is the natural, evolved capacity that best counters our capacity to dominate, which we also inherited from our mammalian ancestors.

My play theory of hunter-gather equality is based largely on evidence, gleaned from analysis of the anthropological literature, that play permeated the social lives of hunter-gatherers--more so than is the case for any known, long-lasting post-hunter-gatherer cultures. Their hunting and gathering were playful; their religious beliefs and practices were playful; their practices of dividing meat and of sharing goods outside of the band as well as inside of the band were playful; and even their most common methods of punishing offenders within their group (through humor and ridicule) had a playful element.[3] By infusing essentially all of their activities with play, hunter-gatherers kept themselves in the kind of mood that most strongly, by evolutionary design, counters the drive to dominate others.

Theory 3: Hunter-gatherers maintained their ethos of equality through their childrearing practices, which engendered feelings of trust and acceptance in each new generation.

As I have explained in a previous post, hunter-gatherers employed a style of parenting that others have referred to as "permissive" or "indulgent," but which I prefer to call "trusting." They trusted infants' and children's instincts, and so they allowed infants to decide, for example, when to nurse or not nurse and allowed children to educate themselves through their own self-directed play and exploration. They did not physically punish children and rarely criticized them. One researcher who suggested that the moral character of hunter-gatherers comes from their kindly child-raising methods is Elizabeth Marshall Thomas, who was among the first to study the Ju/'hoansi of Africa's Kalahari Desert. Here is what she had to say about the parenting she observed:

"*Ju/'hoan children very rarely cried, probably because they had little to cry about. No child was ever yelled at or slapped or physically punished, and few were even scolded. Most never heard a discouraging word until they were approaching adolescence, and even then the reprimand, if it really was a reprimand, was delivered in a soft voice. ... We are sometimes told that children who are treated so kindly become spoiled, but this is because those who hold that opinion have no idea how successful such measures can be. Free from frustration or anxiety, sunny and cooperative, the children were every parent's dream. No culture can ever have raised better, more intelligent, more likable, more confident children.*"[4]

One esteemed contemporary researcher who has implicitly if not explicitly supported the parenting theory of hunter-gatherer moral development is fellow PT blogger Darcia Narvaez, author of the blog Moral Landscapes. It is difficult to prove with empirical evidence that the kindly, trustful parenting of hunter-gatherers promotes development of people who treat one another kindly and who eschew aggression, but the theory makes intuitive sense. It makes sense that infants and children who are themselves trusted and treated well from the beginning would grow up to trust others and treat them well and would feel little or no need to dominate others in order to get their needs met.

The childrearing theory overlaps with my play theory, because hunter-gatherers allowed their children, including teenagers, to play essentially from dawn to dusk. The children grew up believing that life is play and then went on to conduct esssentially all of their adult tasks in a playful mood--the mood that counters the drive to dominate.

In sum, my argument here is that the lessons we have to learn from hunter-gatherers are not about our genes but about our culture. Our species clearly has the genetic potential to be peaceful and egalitarian, on the one hand, or to be

warlike and despotic, on the other, or anything in between. If the three theories I've described here are correct, and if we truly believe in the values of equality and peace and want them to reign once again as the norm for human beings, then we need to (a) find ways to deflate the egos, rather than support the egos, of the despots, bullies, and braggarts among us; (b) make our ways of life more playful; and (c) raise our children in kindly, trusting ways.

And now, I hope to hear from you in the comments and questions space below. I read all comments with the intent of learning from them, and I try to respond to all serious questions. I prefer if you put your comments and questions here rather than in a private email to me. By putting them here, you share with other readers, not just me. -- Peace be with you.

Reference Notes

[1] Salamone, F. A. (1997). *The Yanomami and their interpreters: Fierce people or fierce interpreters?* Lanham, Maryland: University Press of America.

[2] Lee, R. B. (1988). Reflections on primitive communism. In T. Ingold, D. Riches, & J. Woodburn (Eds), *Hunters and gatherers 1,* 252-268 Oxford: Berg.

[3] Gray, P. (2009). Play as a foundation for hunter-gatherer social existence. *American Journal of Play, 1*, 476-522.

[4] Thomas, E. M. (2006). *The old way*. New York: Farrar, Straus & Giroux. p 198-199.

The Human Nature of Teaching III: When Is Teaching an Act of Aggression?

Coercive teaching is always an act of aggression

Published on June 3, 2011 by Peter Gray in Freedom to Learn

Teaching is a word that has something of a halo around it. We tend to think of it as altruistic. But then there's this: I'll teach you a lesson you'll never forget, you little #@s#*&^!

Not long ago, teaching children was more or less synonymous with beating children.

There was a time in our history when teaching children was pretty much synonymous with beating them. Most of what the Bible, for example, has to say about teaching children concerns beating. Here are some lines from Proverbs:

- "*Do not withhold correction from a child, for if you beat him with a rod, he will not die. You shall beat him with a rod and deliver his soul from hell.*" (Proverbs 22:13-14)
- "*Foolishness is bound up in the heart of a child, but the rod of correction shall drive it far from him.*" (Proverbs 22:15)
- "*Blows that hurt cleanse away evil, as do stripes the inner depths of the heart.*" (Proverbs 20:30)
- "*He that spares his rod hates his son, but he that loves him chastens him*." (Proverbs 13:24)

My guess is that the Biblical authors understood that children would learn on their own, without teaching, most of the skills and information they needed to know, but wouldn't learn obedience on their own--at least not obedience of the unquestioned, subservient sort that Biblical and societal injunctions demanded. So obedience had to be taught, and punishment was the means for teaching it.

The church-run schools of the 17th, 18th, and 19th centuries, which served as the models for subsequent state-run compulsory schools, were clearly meant to be correctional institutions (see A Brief History of Education). They were built on the assumption that children are natural sinners. To save their souls and turn them into good servants, children had to be taught to suppress their willfulness and obey their superiors. The explicitly stated purpose of many of those schools was to teach the fear of God, and, as a corollary, to teach the fear of teachers, fathers, and other earthly lords and masters. As I noted in an earlier post, one German schoolmaster proudly kept a record of all the beatings he administered in 51 years of teaching: "*911,527 blows with a rod, 124,010 blows with a cane, 20,989 taps with a ruler, 136,715 blows with the hand, 10,235 blows to the mouth, 7,905 boxes on the ear, and 1,118,800 blows on the head.*"

Perhaps that schoolmaster, like the author of Proverbs, would contend that all those beatings were altruistic. Perhaps they were administered purely for the good of the children, not to satisfy a sadistic craving. Perhaps each blow was preceded, quite genuinely, with the statement, "This is going to hurt me more than it hurts you; it's entirely for your good." Hmmm...

Even today, obedience is the main lesson of schooling, and punishment is the main vehicle for teaching it.

What about the teaching that goes on in modern schools? Surely we have made progress. Or have we?

The lessons in schools are still mostly about obedience. Children must obey the school rules, which they have no voice in creating, and must obey all of the "requests" (which are really demands) made by their teachers. They must do their assignments, all in accordance with the teachers' precise directions on how and when to do them, whether or not the assignments seem reasonable or worthwhile. The children who get into trouble in school today are still the ones who don't obey. In fact, today's children must spend far greater portions of their lives obeying schoolteachers than did children of any time in the past. We rarely admit it, but teaching in schools today is at least as much about breaking children's wills, and getting them to follow the teacher's will, as it was in times past. In fact, if children are too willful in school today we drug them.

Beating is no longer the choice mode of punishment in schools (though corporal punishment is still permitted in 20 US states). Now the primary tool of school coercion is the grade. Teachers, parents, and society in general drill into children's heads the idea that high grades are essential to success in life. You need at least minimal grades to pass from one level to the next in school and eventually get out of it. You need higher grades to get into college. You need the highest grades to get into any of the "best" colleges; and many kids are made to feel that if they don't get into one of those "best" colleges they will be lifetime failures, disappointments to all who know them. I've known kids who would far rather get a beating than a B. Brutality of punishment is in the eye of the punished.

Hmm.... Are we really more humane in our methods of schooling now than we were when beatings were the norm? Perhaps we feel better about administering grades than beatings, but do the kids feel better? Our method of punishment in school today seems to create more anxiety, more depression, more anger, more cynicism, and more cheating than did the beatings of times past. You got the beating and it was over; but grades and the anxiety they create never end, at least not as long as you are in school. Hey, I'm not for going back to beatings. I'm for chucking out the whole system, as those of you who've read my previous posts know.

Any coercive teaching is an act of aggression

Now, to the question posed in the title to this essay: *When is teaching an act of aggression?* My answer is that any coercive teaching is an act of aggression. Any teaching that that is not wanted by the student, but is forced on the student, is an act of aggression. Any educational use of rewards or punishments to make students learn is an act of aggression.

Why do I say that use of *rewards*, not just use of punishments, is an act of aggression? Because rewards are rewards only if they can be withheld, and their withholding is no different from punishment. Is a "B" for "good performance" a reward or a punishment? For the student who feels she "desperately needs" an A, it's punishment. A trophy is reward for the one who gets it, but punishment for the one who doesn't. Some psychologists have long argued, quite simplistically, that reward is good and punishment is bad as motivation in teaching, but, the truth is, reward and punishment are two sides of the same coin. You can't use one without the other. The carrot is reward for the one who

gets it but punishment for the one who doesn't; the stick is punishment for the one who gets it but reward for the one who doesn't.

Let me be clear in stating that I am not against all uses of punishments and rewards. Every society in one way or another punishes people who violate the serious rules of that society. I'm not against punishment for crimes. Even hunter-gathers, who are so reluctant to use violence (see my last post), have ways of punishing people who violate the core rules of their society. If a hunter-gatherer adult engages in some taboo act--such as trying to boss other people around, or having sex with a first-degree relative or with someone else's spouse, or refusing to share food, or striking a child--the whole social group may, in concert, punish that person. The first round of punishment involves ridicule. The group will talk loudly, in belittling terms, about the person, or they may make up and sing songs designed to shame the person; and the ridicule will continue until the appropriate apologies are made and the behavior is corrected. If ridicule doesn't work, the next step is shunning. People will act as if the offending person no longer exists. That is severe punishment, and it almost always brings the offender around. Either that, or it causes him to leave the band and try his luck with another. Ridicule and shunning are clearly acts of aggression (even if they are not acts of violence), but they are justifiable acts of aggression, aimed at correcting truly antisocial behavior.

What I am against is the use of punishment and rewards as part of teaching children skills and knowledge or teaching them to follow arbitrary rules, rules that have nothing to do with social justice. A child who truly hurts another person or violates some serious social rule may need to be punished for it. That's entirely different from punishing a child for not doing what the teacher asked or for not feeling like doing arithmetic today or this year.

Punishment is so fully and intimately woven into the fabric of our schooling system that it's impossible for most people to see how to separate education from punishment. They can be separated only by the radical step of allowing children to take charge of their own education. When that happens, teaching only occurs at the request of the student, and only occurs to the degree that the student wants it. Most people in our society think that can't work; but we know it works for children in hunter-gatherer societies (see this essay); and we know it works for children in our society who attend Sudbury model schools or engage in the kind of homeschooling that goes by the name of unschooling (see this essay). Punishment is inevitable when you feel your job is to make a child learn something that the child doesn't want to learn. A teacher whose continued employment depends on making her students pass a state-mandated test full of questions that are of no interest to the students has to use coercive means.

Use of punishment in teaching may make the teacher feel anger toward the child, as well as make the child feel anger toward the teacher.

You might argue, as the author of Proverbs might, that punishing is not an act of aggression if the punisher believes it is a benign act and does not feel aggressive, or angry, while doing it. I suppose you could say, in that case, that it is aggression from the viewpoint of the one being punished but not from that of the one giving the punishment. But here's something to think about. Is it even possible, generally, to administer punishment without feeling anger toward the one being punished?

In my early days as a researcher I conducted some experiments on learning under conditions of stress, which involved giving "moderately painful" electric shocks to rats. I convinced myself that giving those shocks, for the purpose of making scientific discoveries, was a benign act. But then, as I carried out the experiments, I noticed something strange: The act of shocking those rats made me feel angry toward the rats! When I did experiments with rats that did not involve punishment I generally liked the rats; but when I shocked the poor beasts I felt anger toward them. Anger *toward them*, not toward me, the person who perhaps deserved the anger. And then, when I began teaching in college I started to notice the same thing happening. I found myself feeling anger toward the students who got low grades in my courses. Why? They hadn't done anything to hurt me. And then I began to notice that it wasn't just me. My colleagues also seemed to feel and in various ways express anger at the students to whom they were giving low grades. The low grades came from poor test performances, not from any sort of offensive behavior toward we teachers; so why should they generate anger in us?

There are various ways of explaining this, but my guess is that it has to do with the way we are wired. Punishment and anger are entwined in our nervous systems. Throughout our evolution as primates, we administered punishment primarily if not entirely to those who made us angry. We punished those who hurt us; we punished sexual rivals; we punished those who seemed to be trying to usurp our position in the dominance hierarchy. Something in my nervous system says that if I am punishing those rats or students (with shocks or D's), then I must be really mad at them. If there's no real reason why I should be mad at them, then, through some unconscious process, I make something up. I'm not saying that this always happens, but it seems to be a pretty strong tendency.

I suspect that this effect--in which low grades engender anger in the grader as well as in the student--occurs more often than most teachers are prepared to admit. I suspect that is part of the reason why teachers burn out. I suspect it is one of the causes of the adversarial relationship that so often occurs between teachers and students at all levels of our educational system.

What do you think? Is it possible to separate education of children from punishment of children? Is punishment always an act of aggression or not? Is reward essenstially no different from punishment? Is my hypothesis that punishment makes the punisher angry toward the punished, not just the reverse, wild speculation? What do you think? Please let me know in the comments space below.

As always, I prefer if you put your comments and questions here rather than in a private email to me. By putting them here, you share with other readers, not just with me. I read all comments and try to respond to all serious questions. Of course, if you have something to say that applies only to you and me, then send me an email.

How Does School Wound? Kirsten Olson Has Counted Some Ways

Dr. Kirsten Olson's interviews identified seven kinds of school wounds.

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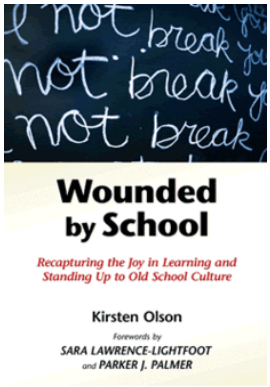

Let me introduce you to Dr. Kirsten Olson. She is an educational researcher, activist, consultant, and writer deeply concerned about children, learning, and the conditions of our schools. She is, among other things, president of the board of directors of IDEA (the Institute for Democratic Education in America). I met her for the first time, for lunch and conversation, a couple of weeks ago, and then I eagerly read her latest book, *Wounded by School: Recapturing the Joy in Learning and Standing up to Old School Culture*. If you have ever gone to school, or have a child in school, or might someday have a child in school, or care about children in school, I recommend her book to you.

Wounded by School is the outcome of research that Olson began when she was an education doctoral candidate at Harvard. As one who loves learning and has always had high esteem for education, Olson intended to conduct research into the delights and enlightenment experienced in the course of schooling. But when she began interviewing people to learn about such positive effects, she found that they talked instead about the *pain* of school. Here is how Olson's doctoral advisor, Sara Laurence-Lightfoot put it in a forward to the book:

"*In her first foray into the field--in-depth interviews with an award-winning architect, a distinguished professor, a gifted writer, a marketing executive--Olson certainly expected to hear stories of joyful and productive learning, stories that mixed seriousness, adventure, and pleasure, work and play, desire and commitment. Instead, she discovered the shadows of pain, disappointment, even cynicism in their vivid recollections of schooling. Instead of the light that she expected, she found darkness. And their stories did not merely refer to old wounds now healed and long forgotten; they recalled deeply embedded wounds that still bruised and ached, wounds that still compromised and distorted their sense of themselves as persons and professionals.*"

As her project expanded, Olson began interviewing people of all ages, from schoolchildren on up to grandparents, people from a wide range of socioeconomic backgrounds and occupying a wide variety of careers. She was struck by the earnestness and emotion that came forth as people talked about the wounds that they still felt in relation to their schooling. Olson was pioneering a direct way to understand the effects of school on psychological development. She asked people who had been there how school affected them.

In her book, Olson categorizes the wounds into seven groups, and she illustrates each with quotations from interviews. Then, in later chapters, she describes how caring parents, teachers, and students themselves can help prevent and heal the wounds. Here I'll simply list and describe in my own words Olson's seven categories. (I've added my own twist to the description of each type of wound, so if you find fault in the descriptions, the faults may be mine rather than Olson's.)

The first four categories of wounds all seem to result primarily from the restrictions that are placed on students' behavior and learning in school--the preset curriculum, the narrow set of permissible learning procedures, the tests in which there is one right answer for every question, and the often-arbitrary rules that students have no role in creating. These categories are:

1. Wounds of creativity. School stifles creativity. This is perhaps the most obvious wound of school. Students' own passions and interests are generally ignored. Students' unique, creative ways of solving problems and their outside-the-box answers to questions, which fail to match the teachers' answer sheets, are not understood and are graded as wrong by busy teachers. Rote learning and tests that have one right answer for every question leave no room for creativity. Olson's informants who went on to live creative lives apparently did so *despite*, not because of, schooling. They had to recover or rebuild the creative spirit that had been so natural to them before starting school. My own guess is that altogether too many others rarely think about creativity once they have lost it in school; they may not even notice this wound. And then there are those who remain creative in those realms that school doesn't touch, but become uncreative in the realms covered by the school curriculum. How many people have totally lost mathematical creativity because of the ways it was taught in school?

2. Wounds of compliance. In school students must continuously follow rules and procedures that they have no role in creating and must complete assignments that make no sense in terms of their own learning needs. Students generally cannot question these rules and assignments; if they do they are smart-alecks, or worse. To avoid getting into trouble, they learn to obey blindly, and in the process they learn to be bad citizens in a democracy. Democracy requires citizens who question the rules and insist on changing those that are unfair or don't make sense. They also hurt themselves by going through life following narrower paths than they might if school had not taught them that it is dangerous to explore the edges.

3. Wounds of rebellion. Some students respond to the arbitrary rules and assignments by rebelling rather than complying. They may in some cases feel intense anger toward the system that has taken away their freedom and dignity, toward teachers who seem to be complicit with that system, and toward the goody-goody students who go along. They may manifest their scorn by sitting in the back of the classroom, making snide remarks, blatantly flouting rules, and rarely if ever completing assignments. Rebellion may sometimes be a healthier response than compliance, but if it goes too far it may hurt even more than compliance. Failure in school may cut off valued future paths. Anger toward schooling can lead to a turning away from all forms of learning. And, perhaps most tragically, the rebellion can take forms that physically harm the self and others, especially if the person turns to drugs, promiscuous sex, and crime as forms of self-expression and self-identity.

4. Wounds of numbness. The constant grind of school, doing one tedious assignment after another according to the school's schedule, following the school's procedures, can lead to intellectual numbness. Many of Olson's respondents described themselves as "zoned out" or "intellectually numb" as long as they were in school. Intellectual excitement is

rarely rewarded in school, but doggedly grinding it out, doing what you are supposed to do, never missing a deadline, is rewarded. Brilliant work in one subject at the expense of ignoring another might earn you an A and an F in the two classes; but good-enough, non-inspired work in both subjects might earn you an A in both. This is one of the many ways by which schooling kills intellectual enthusiasm. When students do demonstrate enthusiasm, it is usually about something that has nothing to do with their lessons.

The remaining three categories of wounds identified by Olson all seem to be inflicted by the ways that people are ranked and sorted in school. You can be wounded differently depending on whether you are ranked low, high, or middling.

5. Wounds of underestimation. In her interviews Olson found that some described ways in which they were wounded by assumptions made about them because of their race, social class, gender, or performance on one or another test that was supposed to measure intelligence or aptitude. In some cases, it seemed easier to go along with the assumption than to fight it, so the assumption became a self-fulfilling prophecy. More generally, a low grade achieved in a course or set of courses can unduly discourage people from following what had been their dream. A would-be biologist chooses a less-desired track because of a D in tenth grade biology. A would-be author concludes that professional writing is beyond her scope because an English teacher could not see the sparkle of her essays or the brilliance in her non-conventional sentence structure and gave her below-average grades. If only students knew how many great achievers in our society received poor school grades in the realm of their achievement! If only teachers knew.

6. Wounds of perfectionism. High grades and high scores on intelligence tests, too, can wound. Students who develop identities as high achievers may feel extraordinary pressure to continue high achievement, in everything. For them, even an A- in a course, or getting only the second best part in the class play, or rejection by the top Ivy League school, may feel like terrible failure--failure to live up to the image that others have of them, or the image that they have of themselves. The wound of perfectionism explains why so many "top" students cheat, when they feel that they must to get the grade that everyone expects them to get (see *School is a Breeding Ground for Cheaters*). When grades are the measure of perfection, everything is done for the grade. In school, "perfection" and intellectual numbness are quite compatible. For an excellent description of how the wound of perfectionism can interfere with real education, I refer you to the courageous valedictorian speech given a year ago by Erica Goldson.

7. Wounds of the average. The middling student, who is neither sinking nor soaring in the eyes of the school officials, may suffer from invisibility. In Olson's interviews, these people described themselves as feeling insignificant, as people who don't really matter much. In the worst cases, they developed self-identities as people who are unimportant, who do not make waves, who go along but never lead.

How unnecessary all this is! Education, as I have explained before, does not require an imposed curriculum, or forced assignments, or grading and ranking (see, for example, Lessons from Sudbury Valley). In settings where students direct their own learning, each person has his or her own unique interests and sets of skills and weaknesses. There is no uniform scale on which to rank some as better or worse than others. That kind of school is much more like the real world than is the standard school that we have been talking about here. In the real world we need all kinds of people, all kinds of unique talents and personalities, to make things work and to make life fun.

What about you? Have you or your children been wounded by school? I invite you to describe your school experiences, including wounds, in the comments section below, either anonymously or not depending on your preference. Whether your experience leads you to agree or disagree with thoughts in this essay, I invite you to share that experience. This blog is, among other things, a forum for sharing experiences and ideas about what works and doesn't work in education.

As always, I prefer if you post your comments and questions here rather than send them to me by private email. By putting them here, you share with other readers, not just with me. I read all comments and try to respond to all serious questions. Of course, if you have something to say that applies only to you and me, then send me an email.

Addendum: For a somewhat different but compatible view of the wounds of schooling, see my previous essay, *Seven Sins of Our System of Forced Education*.

What Einstein, Twain, and Forty Eight Other Creative People Had to Say About Schooling

"I was at the foot of my class." -Thomas Edison

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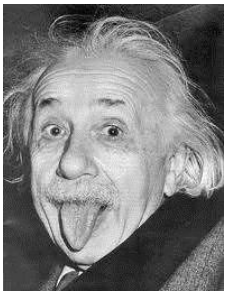

Throughout history, from Plato on, creative people have spoken out against the stultifying effects of compulsory education. Here are quotations from fifty such people, which I have culled partly from my own reading but mostly from various other websites.

Albert Einstein

- It is, in fact, nothing short of a miracle that the modern methods of education have not yet entirely strangled the holy curiosity of inquiry; for this delicate plant, aside from stimulation, stands mainly in need of freedom; without this it goes to wrack and ruin without fail. It is a very grave mistake to think that the enjoyment of seeing and searching can be promoted by means of coercion and a sense of duty.
- One had to cram all this stuff into one's mind, whether one liked it or not. This coercion had such a deterring effect that, after I had passed the final examination, I found the consideration of any scientific problems distasteful to me for an entire year.
- Whoever undertakes to set himself up as a judge of Truth and Knowledge is shipwrecked by the laughter of the Gods.

Plato

- Knowledge that is acquired under compulsion obtains no hold on the mind.

Chuang Tzu

- Reward and punishment is the lowest form of education.

Mark Twain

- I have never let my schooling interfere with my education.
- Soap and education are not as sudden as a massacre, but they are more deadly in the long run.
- Education consists mainly in what we have unlearned.
- In the first place God made idiots. This was for practice. Then he made school boards.

Oscar Wilde

- The whole theory of modern education is radically unsound. Fortunately in England, at any rate, education produces no effect whatsoever. If it did, it would prove a serious danger to the upper classes, and probably lead to acts of violence.
- Education is an admirable thing, but it is well to remember from time to time that nothing that is worth knowing can be taught.
- Everyone who is incapable of learning has taken to teaching.

Winston Churchill

- How I hated schools, and what a life of anxiety I lived there. I counted the hours to the end of every term, when I should return home.
- I always like to learn, but I don't always like to be taught.

Woody Allen

- I loathed every day and regret every moment I spent in a school.

Dolly Parton

- I hated school. Even to this day, when I see a school bus it's just depressing to me. The poor little kids.

George Bernard Shaw

- There is nothing on earth intended for innocent people so horrible as a school.
- What we call education and culture is for the most part nothing but the substitution of reading for experience, of literature for life, of the obsolete fictitious for the contemporary real.

Finley Peter Dunne

- It don't make much difference what you study, so long as you don't like it.

Thomas Edison

- I remember that I was never able to get along at school. I was at the foot of the class.

Henry David Thoreau

- What does education often do? It makes a straight-cut ditch of a free, meandering brook.
- How could youths better learn to live than by at once trying the experiment of living?

Bertrand Russell

- Men are born ignorant, not stupid; they are made stupid by education.
- Education is one of the chief obstacles to intelligence and freedom of thought.

Benjamin Franklin

- He was so learned that he could name a horse in nine languages; so ignorant that he bought a cow to ride on.

H. L. Mencken

- The average schoolmaster is and always must be essentially an ass, for how can one imagine an intelligent man engaging in so puerile an avocation.

George Saville, Marquis of Hallifax

- The vanity of teaching doth oft tempt a man to forget that he is a blockhead.

Joseph Stalin (Hmmm, a supporter of compulsory schooling.)

- Education is a weapon, whose effect depends on who holds it in his hands and at whom it is aimed.

Norman Douglas

- Education is a state-controlled manufactory of echoes.

Paul Karl Feyerabend

- The best education consists in immunizing people against systematic attempts at education.

Theodore Roosevelt

- A man who has never gone to school may steal from a freight car; but if he has a university education, he may steal the whole railroad.

H. H. Munro

- But, good gracious, you've got to educate him first. You can't expect a boy to be vicious till he's been to a good school.

Robert Frost

- Education is hanging around until you've caught on.

Gilbert K. Chesterton

- Education is the period during which you are being instructed by somebody you do not know, about something you do not want to know.

Ralph Waldo Emerson

- I pay the schoolmaster, but it is the schoolboys who educate my son.

Alice James

- I wonder whether if I had an education I should have been more or less a fool than I am.

Helen Beatrix Potter

- Thank goodness I was never sent to school; it would have rubbed off some of the originality.

Margaret Mead

- My grandmother wanted me to have an education, so she kept me out of school.

William Hazlitt

- Anyone who has passed through the regular gradations of a classical education, and is not made a fool by it, may consider himself as having had a very narrow escape.

Laurence J. Peter

- Education is a method whereby one acquires a higher grade of prejudices.

Anne Sullivan (I bow to her.)

- I am beginning to suspect all elaborate and special systems of education. They seem to me to be built up on the supposition that every child is a kind of idiot who must be taught to think.

Alice Duer Miller

- It is among the commonplaces of education that we often first cut off the living root and then try to replace its natural functions by artificial means. Thus we suppress the child's curiosity and then when he lacks a natural interest in learning he is offered special coaching for his scholastic difficulties.

Florence King

- Showing up at school already able to read is like showing up at the undertaker's already embalmed: people start worrying about being put out of their jobs.

Emma Goldman

- Since every effort in our educational life seems to be directed toward making of the child a being foreign to itself, it must of necessity produce individuals foreign to one another, and in everlasting antagonism with each other.

Edward M. Forster

- Spoon feeding in the long run teaches us nothing but the shape of the spoon.

William John Bennett

- If [our schools] are still bad maybe we should declare educational bankruptcy, give the people their money and let them educate themselves and start their own schools.

John Updike

- School is where you go between when your parents can't take you, and industry can't take you.

Robert Buzzell

- The mark of a true MBA is that he is often wrong but seldom in doubt.

Robert M. Hutchins

- The three major administrative problems on a campus are sex for the students, athletics for the alumni, and parking for the faculty.
- The college graduate is presented with a sheepskin to cover his intellectual nakedness.

Elbert Hubbard

- You can lead a boy to college, but you cannot make him think.

Max Leon Forman

- Education seems to be in America the only commodity of which the customer tries to get as little as he can for his money.

Phillip K. Dick

- The trouble with being educated is that it takes a long time; it uses up the better part of your life and when you are finished what you know is that you would have benefited more by going into banking.

David P. Gardner

- Much that passes for education is not education at all but ritual. The fact is that we are being educated when we know it least.

Ivan Illich

- The public school has become the established church of secular society.
- Together we have come to realize that the right to learn is curtailed by the obligation to attend school.

Marshall McLuhan

- The school system ... is the homogenizing hopper into which we toss our integral tots for processing.

Michel De Montaigne

- We only labor to stuff the memory, and leave the conscience and the understanding unfurnished and void.

Peter Drucker

- When a subject becomes totally obsolete we make it a required course.

C. C. Colton

- Examinations are formidable even to the best prepared, for the greatest fool may ask more than the wisest man can answer.

Paul Simon

- When I think back on all the crap I learned in high school, it's a wonder I can think at all.

John Dewey

- It is our American habit, if we find the foundations of our educational structure unsatisfactory, to add another story or a wing.

Anonymous (My favorite of all historical figures.)

- If nobody dropped out of eighth grade, who would hire the college graduates?
- Public school is a place of detention for children placed in the care of teachers who are afraid of the principal, principals who are afraid of the school board, school boards who are afraid of the parents, parents who are afraid of the children, and children who are afraid of nobody.
- The creative person is usually rebellious. He or she is the survivor of a trauma called education.
- You can always tell a Harvard man, but you can't tell him much.

Friends, yes, I know, this is a biased sampling of quotations! I have deliberately selected quotations that complain about the compulsory, standard system of schooling. But, I challenge you. Develop a list this long of quotations *supporting* compulsory schooling and see if the authors you quote rank close to these authors in creativity.

I invite you to contribute your own favorite quotations, or your own thoughts and questions about the quotations presented here, in the discussion section below. As always, I prefer if you post your comments and questions here rather than send them to me by private email. By putting them here, you share with other readers, not just with me. I read all comments and try to respond to all serious questions. Of course, if you have something to say that applies only to you and me, then send me an email.

Why Young Children Protest Bedtime: A Story of Evolutionary Mismatch

The monsters under the bed are real.

Published on October 11, 2011 by Peter Gray in Freedom to Learn

Infants and young children in our culture regularly protest going to bed. They make all sorts of excuses. They say they are not tired, when in fact they obviously are tired. They say they are hungry, or thirsty, or need to hear a story (and then one more story)–anything to stall. They talk about being afraid of the dark, or afraid of monsters in the closet or under the bad. Little babies without language, who can't yet describe their fears or try to negotiate, just scream.

Why all this protest? Many years ago, the famous behavioral psychologist John B. Watson argued, essentially, that such behavior is pathological and derives from parents' overindulgence and spoiling of children.[1] Remnants of that view still persist in books on baby care, where the typical advice is that parents must be firm about bedtime and not give in. This, the experts say, is a battle of wills, and you, as parent, must win it to avoid spoiling your child.

But clearly something is missing in this explanation from the experts. Why do infants and young children choose to challenge their parents' will on *this* particular issue? They don't protest against toys, or sunlight, or hugs (well, usually not). Why do they protest going to bed, when sleep is clearly good for them and they need it? The answer begins to emerge as soon as we leave the Western world and look at children elsewhere. Bedtime protest is unique to Western and Westernized cultures. In all other cultures, infants and young children sleep in the same room and usually in the same bed with one or more adult caregivers, and bedtime protest is non-existent.[2]. What infants and young children protest, apparently, is not going to bed *per se*, but going to bed alone, in the dark, at night. When people in non-Western cultures hear about the Western practice of putting young children to bed in separate rooms from themselves, often without even an older sibling to sleep with, they are shocked. "The poor little kids!" they say. "How could their parents be so cruel?" Those who are most shocked are people in hunter-gatherer societies, for they know very well why young children protest against being left alone in the dark.[3]

Until a mere 10,000 years ago we were all hunter-gatherers. We all lived in a world where any young child, alone, in the dark, would have been a tasty snack for nighttime predators. The monsters under the bed or in the closet were real ones, prowling in the jungle or savannah, sniffing around, not far from the band's encampment. A grass hut was not protection, but the close proximity of an adult, preferably many adults, was protection. In the history of our species, infants and young children who grew frightened and cried out to elicit adult attention when left alone at night were more likely to survive to pass on their genes to future generations than were children who placidly accepted their fate. In a hunter-gatherer culture only a crazy person or an extremely negligent person would leave a small child alone at night, and at the slightest protest from the child, some adult would come to the rescue.

When your child screams at being put to bed alone at night, your child is not trying to test your will! Your child is screaming, truly, for dear life. Your child is screaming because we are all genetically hunter-gatherers, and your child's genes contain the information that to lie alone in the dark is suicide.

This is an example of the concept of *evolutionary mismatch*. We have here a mismatch between the environment of our evolutionary ancestors, in which our genetic being was shaped, and the environment in which we live today. In the environment of our evolutionary ancestors, a child alone at night was in serious danger of being eaten. Today, a child alone at night is not in serious danger of being eaten. In the environment of our evolutionary ancestors, no sane parent–or grandparent, or uncle, or aunt, or other adult band member–would ever let a small child sleep alone. If a child were inadvertently left too far from an adult in the dark at night, the child's cry would be immediately heeded. Today, without the realistic dangers, the child's fear seems irrational, so people tend to assume that it is irrational and that the child must learn to overcome it. Or, if they read the "experts," they learn that the child is just testing their will and acting spoiled. And so, people battle their child rather than listen to the child and to their own gut instincts that tell them that any crying baby needs to be picked up, held close, and cared for, not left alone to "get over it."

What do we do about evolutionary mismatch? In this case, two alternatives appear. We can do what the "experts" advise and engage in a prolonged battle of wills, or we can do what our genes advise and figure out some not too inconvenient way to let our children sleep close to us. When my own son was small, long ago when I was a graduate student, the choice was easy. We lived in a one-room apartment, so there was no way to put him to bed separate from us. In some ways life is easier when you are poor than when you can afford an apartment or house with more than one room.

What do you do, or did you do, about your children's bedtime? Was it a problem? How did you resolve it? I'm especially interested in the experiences of people who have made the choice–contrary to most pediatricians' advice--to allow their children to sleep with them. How did you make that work?

Notes:

[1] Watson, J. B. (1928). *Psychological care of infant and child*. New York: Norton. // [2] Barry, H., & Paxson, L. (1971). Infancy and early childhood: Cross-cultural codes, 2. *Ethnology, 10,* 466-508. Morelli, G. A. *et al*., Cultural variation in infants' sleeping arrangements. Questions of independence. *Developmental Psychology, 28,* 604-613. // [3] Konner (2002). *The tangled wing: Biological constraints on the human spirit* (2nd ed.). New York: Holt.