***Age of Opportunity: Lessons From The New Science Of Adolescence***

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**Introduction**

The classic stereotype of adolescence is that it is a time characterized by confusion. Adolescence *is* a confusing time, but it’s not the people in the midst of it who are confused. Indeed, adults are far more bewildered by adolescence than are young people themselves.

We need to start thinking of adolescence differently. Fortunately, over the past two decades, there has been tremendous growth in the scientific study of adolescence. The good news is that the accumulated knowledge, which comes from behavioral science, social science, and neuroscience, provides a sensible foundation that can help parents, teachers, employers, health care providers, and others who work with young people be better at what they do.

I am a developmental psychologist specializing in adolescence. Over the course of my forty years in this field, I have conducted research on tens of thousands of young people, across the United States and around the world.

Many books about teenagers are published every year that are based mainly in the author’s experiences as a parent, teacher, or clinician. In contrast, I approach the topic from the perspective of a researcher, albeit one who has also been the parent of a teenager. This is not to say that personal observations or case studies are without value, only that they often tell just a small part of what is usually a very complicated story. Simply put, I place more weight on objective, scientific evidence than on anecdotes.

In this book, I use the term “adolescence” to refer to the period from ten until twenty-five. There is evidence from brain science that the brain doesn’t completely mature until sometime during the early twenties, so applying the term “adolescence” to people this age is also consistent with what we are learning from neuroscience.

**Chapter 1: Seizing the Moment**

You’re likely familiar with the idea that the early years- “zero to three” is the popular shorthand- are a time during which children’s experiences make a major, lasting difference in how their brains develop and their lives unfold. And this is true. But most people don’t realize that adolescence is a second period of heightened malleability. Scientists’ discovery that the brain is highly plastic during the early years has rightly prompted renewed interest in what we as a society can do to take advantage of this opportunity to offer young children the kind of experiences that will benefit them most. We must now make a similar commitment to adolescents.

**Adolescence Is the New Zero to Three**

Not only is the brain more plastic during adolescence than in the years that immediately precede it, but it is also more plastic during adolescence than in the years that follow it. The drop in plasticity as we mature into adulthood is just as significant as the increase in plasticity as we enter adolescence. In fact, adolescence is the brain’s *last* period of especially heightened malleability. One reason psychological problems are easier to treat in adolescence than they are in adulthood is that the problems become more entrenched as we get older.

**A New Approach**

The brain’s malleability doesn’t only permit change for the better, it also allows change for the worse. Infants who receive cognitive stimulation, like having their parents read to them, thrive because this exposure is taking place at a time when the brain is still being shaped by experience. But babies who are neglected or abused early in life can suffer especially long-lasting damage, because the maltreatment has occurred at an age when it is easier for the brain to be harmed by deprivation and other kinds of negative experiences. In other words, the discovery that the brain is highly plastic during adolescence is good news in principle, but it is only good news if we take advantage of it, by providing the sorts of experiences to young people that will facilitate positive development and protecting them from experiences that will hurt them.

Brain science explains not only why adolescence is a vulnerable period, but why it has become far more so, a period in which young people are more susceptible than in the past to risky behavior, mental health problems, and difficulties in making a successful transition into adulthood. When our capacity for self-regulation isn’t strong enough to rein in our arousal, problems are more likely to result- problems such as depression, substance abuse, obesity, aggression, and other risky and reckless behavior.

As the second and final stage of heightened brain plasticity, adolescence is probably the last real opportunity we have to put individuals on a healthy pathway and to expect our interventions to have substantial enduring effects. It isn’t impossible to help people change once they reach adulthood. But adolescence is probably our last significant window of opportunity.

**Chapter 2: The Plastic Brain**

**The Reminiscence Bump**

The special clarity of adolescent memories is so common that psychologists have given it a name: “reminiscence bump.” We recall adolescence more than any other periods because relatively more things happen for the first time during these years (first kiss, first job, first car), and the research shows that we remember novel things more than familiar ones. Because adolescence is a lot of “drama,” we would expect people to have more memories from this time.

Something is different about how everyday experiences are encoded during adolescence, as if the brain’s “recording device” is calibrated to be hypersensitive at this stage. When certain neurotransmitters, like dopamine, are released at the same time an event is experienced, the event is more easily remembered than when levels of these chemicals are not as high. These chemicals are released when we experience something that elicits strong negative or positive feelings. Brain regions responsible for strong emotions are especially sensitive during adolescence. As a result, the adolescent brain is chemically primed to encode memories more deeply. The reminiscence bump doesn’t exist because more emotional events take place in adolescence, but because ordinary events trigger strong emotions.

**The Adolescent Brain Is Plastic**

The reminiscence bump is but one piece of accumulating evidence that the adolescent brain is particularly sensitive to its environment- one factor that makes it a period of heightened neuroplasticity. One reason we are so much more likely to recall events from adolescence is that the brain’s amplified sensitivity to the environment leads us to encode experiences more deeply, in more detail, and more unshakably.

**Plasticity Has a Purpose**

When we say the brain is plastic, we mean something that is truer to the actual derivation of the word. “Plastic” comes from the Greek word *plastikos,* derived from the verb *plassein*, which means “to mold.” A plastic brain is a brain that can be molded- like industrial plastic before it has been hardened into its final shape. In this sense, the word “plastic” is in fact an excellent way to describe the brain in certain points in development, because just as plastic can be transformed from a soft, malleable state into one that is hard and rigid, so too does the brain change from being relatively more moldable to being relatively more fixed. The adolescent brain is more like plastic in its soft, pliable form than in the form it takes after it has been allowed to harden.

You probably wouldn’t be surprised to learn that researchers have found that children whose parents beat them become more aggressive, or that adolescents find whose parents beat them become more aggressive, or that adolescents find it easier to form close romantic relationships if they’ve been raised by happily married parents, or that preschoolers whose parents regularly read to them find it easier to learn once they start kindergarten. You also most likely have an intuitive sense of why spanking produces aggression, exposure to a happy marriage helps children develop more satisfying relationships later in life, and intellectual stimulation at home enables children to learn in school.

**A Precarious Time**

The fact that we can recall adolescence better than other periods and that this is a time of change in many brain regions are two pieces of evidence that the brain is likely to be especially plastic at this time. Another indication comes from statistics on the average age of onset of serious psychological disorders. The adolescent brain is extraordinarily sensitive to stress.

The average age of onset for serious mental health problems is fourteen. Different disorders have somewhat different age ranges when they are most likely to appear. Some have a very narrow age band, such as social phobia, which usually appears sometime between ages eight and fifteen. Others have a wide band, like panic disorder, which typically makes its first appearance sometime between sixteen and forty.

But with the exception of ADHD, separation anxiety disorder, learning disorders, and autism spectrum disorders, the age range for the typical onset of *every other major disorder* falls somewhere in the period between ages ten and twenty-five.

Very few serious psychological problems appear for the first time before age ten. On the other hand, if someone has not developed any psychological disorders by age twenty-five, the chances that he or she will develop one later are small.

Large scale surveys show that exposure to drugs during adolescence is more closely associated with addiction than is exposure during adulthood. Compared with people who don’t drink until they’re twenty-one, those who begin drinking before age fourteen are *seven* times more likely to binge drink as teenagers and *five* times more likely to develop a substance-abuse or dependence disorder sometime in their life. Similar evidence indicates that people who begin smoking regularly before age fifteen are at greater risk for nicotine dependence as adults than those who start in late adolescence. Parents should keep their teenagers away from alcohol, tobacco, and other drugs at all ages, but it is especially crucial to do so when they are younger than fifteen.

Adolescents’ vulnerability to mental illness and addiction is just one reason why plasticity during this period can be so risky. Other research suggests that the adolescent brain is more susceptible to the adverse consequences of concussions than the adult brain. High school football players who suffer concussions take longer to recover than do college players, and adolescents are more adversely affected by a second impact while the brain is still recovering from an initial hit.

Generally speaking, it is easier to treat psychological problems when they first emerge than later, after they have become more intractable. To the extent that the adolescent brain is more plastic, it is crucial that we not only prevent young people to being exposed to the sorts of stressors and substances that cause psychological disturbance, but that we treat psychological problems that have emerged in adolescence as early as possible. Some moodiness during adolescence is normal, but if a teenager has shown signs of emotional or behavioral problems that persists for longer than two weeks, it’s a good idea to have the situation checked out. Parents who believe their adolescent may be suffering from a problem like depression, anxiety, or substance abuse should not wait before seeking professional help. Once the window of plasticity has started to close, these problems become harder to treat.

**Chapter 3: The Longest Decade**

**Delayed Adulthood Is a Double-Edged Sword**

Most research on the importance of structure and supervision during adolescence has focused on high-school students, but it also applies to older adolescents, whose self-control is still developing, too. During the late teens and early twenties, self-regulation is improving, but the gains are gradual and, as anyone who spends time with college undergraduates knows, there are frequent lapses (often exacerbated by alcohol, stress, fatigue, or peer influences). Some people this age consistently demonstrate adult levels of self-regulation, and others consistently do not, but for most, self-control waxes and wanes depending on circumstances. Because the ability to rein in one’s impulses is still maturing, it is easily disrupted. The combination of an easily aroused reward-seeking system and day-to-day life that is unstructured and only minimally supervised, as it is for most college undergraduates who live away from home, can be problematic. At the size of the college population has swelled, so has the magnitude of this issue.

Delaying the transition into adult roles during the early and mid-twenties is a double-edged sword. On the one hand, it extends the period of unstructured life, elevating the risk that the sorts of problem behavior we associate with adolescence will persist until a later age. On the other hand, too much structure in the early twenties threatens to close the window of plasticity.

**Chapter 4: How Adolescents Think**

**Risky Business**

In virtually all arenas, adolescents take more risks than either children or adults, and the incidence of risky behavior usually peaks somewhere during the late teens. Violence peaks at this age. So do self-inflicted injuries, unintentional drownings, experimentation with drugs, accidental pregnancies, property crime, and fatal automobile crashes. These are very different sorts of behavior, but what they have in common is that they all involve risk taking.

One of the most puzzling things about this pattern is that by the time people have reached their late teens, they’re just as smart as adults. Their memories are excellent. Their ability to reason is just as good as it will be in their twenties or thirties. Performance on standardized tests of cognitive ability improves from birth onward and plateaus around age sixteen, when it remains remarkably stable for at least thirty years, before it starts to decline. According to surveys in which people are asked about risky behavior, adolescents are just as knowledgeable as adults about the dangers associated with various types of reckless acts. And contrary to stereotype, they are no more likely than adults to suffer from delusions of invulnerability. They know what can happen to you drive after drinking or take up smoking.

If adolescents are so smart, why do they do such stupid things? The answer has to do with how their brains develop.

**Phases in the Development of the Adolescent Brain**

The brain reaches its full, adult size by around age ten. The changes that take place in the brain during adolescence are not so much about *growth* as they are about *reorganization*.

*Phase One: Starting the Engines*. During this time teenagers become more emotional (experiencing and displaying higher “highs” and lower “lows”), more sensitive to the opinions and evaluations of others (especially peers), and more determined to have exciting and intense experiences- something psychologists refer to as “sensation seeking.” In most families, bickering and squabbling become commonplace between parents and children in early adolescence.

*Phase Two*: *Developing a Better Braking System*. As information begins to flow more rapidly across longer disturbances in the brain, advanced thinking abilities- so called “executive functions”- strengthen, which improves decision making, problem solving, and planning ahead. In the second phase adolescents’ thinking becomes much more adult-like. During middle adolescence- say, from fourteen to seventeen- parents often find that their children become much more reasonable and easier to discuss things with. A lot of the drama that had characterized the early adolescent years fades.

*Phase Three*: *Putting a Skilled Driver Behind the Wheel.* Although a fine-tuned braking system is in place by the end of the second phase, the teenager can’t always use the brakes effectively and consistently. In the third phase, which is not finished until the early twenties, the brain becomes more interconnected. During the late teens and early twenties, adolescents get better at controlling their impulses, thinking about the long-term consequences of their decisions, and resisting peer pressure.

**The Pursuit of Pleasure**

Dopamine serves many purposes in the brain, but one of its most important is to signal the experience of pleasure and motivate us to go after it.

Because things feel especially pleasurable during the first half of adolescence- between puberty and age sixteen or so- kids at this age go out of their way to seek rewarding experiences. At all ages we seek out things that make us feel good, of course. But adolescents will even put themselves in situations that are potentially dangerous, simply in pursuit of a potential reward. Like dopamine activity in the brain’s reward centers, sensation seeking- which is really nothing more than the dopamine squirt- also rises and falls during adolescence, peaking around age sixteen.

This isn’t just true regarding physical rewards, like food, drugs, or money. It’s also true for social rewards, like praise and attention from other people. This is one reason that adolescents are so sensitive to their friends’ opinions about them.

**Chapter 5: Protecting Adolescents from Themselves**

**Deterring Risky Behavior**

Adolescents are more likely than any other age group to experiment with alcohol, cigarettes, and illicit drugs. They are less likely to wear bicycle helmets or seat belts. They are more likely to binge drink, engage in cutting and other forms of deliberate self-injury, and attempt suicide.

Risky driving is especially common during adolescence. Adolescents are more likely to speed behind the wheel, get impatient with others who drive slowly, and say they like the sensation of driving fast.

Despite the fact that adolescents are healthier, stronger, and smarter than children, morbidity and mortality both increase between 200 and 300 percent between childhood and adolescence. Nearly half of all deaths during adolescence are due to accidents- and while motor vehicle crashes account for three-fourths of these fatalities, one-quarter of them are due to things like accidents involving swimming, poisonings, and guns. The second-and third-most common causes of death in adolescence also have nothing to do with illness or disease- homicide and suicide.

**The Peer Effect**

Adolescents do far more foolish and reckless things when they are with their friends than when they are by themselves. Official statistics provide plenty of confirmation for our personal recollections: the presence of a group of teenage passengers in a car when a teenager is behind the wheel more than quadruples the chance of a crash (and the risks of a crash increase sharply with each additional teen who is in the car), but adults driving with passengers are no more likely to crash than when they’re driving alone.

**The Social Brain**

The social brain is still changing in adolescence, and these changes help explain why young peoples’ concerns about what their peers think increase during this time. It hurts to be rejected at any age, but it’s actually more painful during adolescence than at any other time. (In fact, the pain of social rejection so closely resembles physical pain in neurological terms that taking acetaminophen, the active ingredient in Tylenol, actually can help alleviate it.) This super sensitivity to the opinions of others can have serious consequences. Many experts think that this may cause the spike in depression in adolescence and explain why it is so much greater among girls than boys. From an early age, girls are more sensitive to interpersonal events. Being female confers an advantage when it comes to empathy, but it raises the risk of depression in the face of social rejection.

**The Folly of Crowds**

The recklessness-enhancing effects of being around peers is strongest when adolescents actually know that there is a high probability of something bad happening. Vulnerability to this peer effect is still strong when people are in their twenties-which goes a long way toward explaining some of the surprising juvenile behavior of otherwise mature college undergraduates when they’re with their friends. One important implication of this research for parents is that they should try to minimize the amount of time their teenagers spend in unsupervised groups, because even adolescents who ordinarily are well behaved will be more likely to misbehave when they are with friends.

**Chapter 6: The Importance of Self-Regulation**

One of the most famous studies in the history of psychology is widely known as the “marshmallow test.” A preschool is seated at a table, and a small treat that the child enjoys, like a marshmallow, pretzel, or cookie, is placed on a plate directly in front of the youngster. The experimenter then explains that he or she is going to leave the room and that the child has a choice: “You can have this treat whenever you want, but if you wait until I return, you’ll get two of them, not just one.” The experimenter turns, walks out, and goes into a room with a one-way mirror, to watch what happens. The test measures what psychologists call “delay of gratification,” an important aspect of self-control.

A few kids give in right away. About a third are able to wait until the experimenter returns, which can take up to fifteen minutes. Most hold on as long as they can but end up eating the treat before the experimenter returns. Researchers use the marshmallow test to classify children either as “delayers”- the ones who wait the full fifteen minutes- or “nondelayers”- the ones who don’t.

The original marshmallow test was done nearly fifty years ago. Follow-up studies that have tracked the children as they grow up have found significant differences between delayers and nondelayers at all ages; the delayers consistently perform better on tests of self-control.

More remarkably, the people who were delayers when they were four years old turned out to be more successful in life as well as in the lab. As teenagers, the delayers had higher SAT scores and better coping abilities. As young adults, they had completed more years of schooling, were better at dealing with stress, and had higher self-esteem. The adults who had problems delaying gratification when they were preschoolers were more likely to be overweight and to have developed all sorts of behavioral problems, including drug abuse. The marshmallow test seems to gauge something about people that stays with them as they grow up.

A few years ago, researchers located some of the people who had been given the original marshmallow test, and conducted brain scans of them in their forties as they took new tests of self-control. Even in middle age, those who had been delayers when they were four showed more effective functioning of brain regions important for self-regulation and less arousal in regions that light up in the presence of awards. In other words, people who could exercise self-restraint when they were very young had less easily activated “accelerators” and better “brakes,” even as adults.

The marshmallow test may seem contrived, but it measures a skill we must use all the time in the real world. Life is constantly presenting us with choices between smaller immediate awards and larger delayed ones- between spending money today versus saving it for retirement, going out with friends the night before an exam or staying home to study, breaking a diet because of a tempting dessert or forgoing it in order to look better at the beach in a couple of weeks. Although all of us succumb at some moments and resist at others, people have general inclinations that surface and resurface. Some of us are delayers, others not.

**Determined to Succeed**

If you had asked experts several decades ago who distinguishes young people who do well in school from those who do not, they would have answered that success is closely tied to intelligence. It was seen as self-evident that the students who succeeded in school were, well, smarter. Experts debated how best to access intelligence, which aspects of it were most important, whether there were different kinds of intelligence or learning styles, and whether various types of intelligence tests were valid, but the assumption was that intellectual ability- however it was measured- determined who did well in the classroom.

As obvious as this may seem, when social scientists looked at the evidence, it turned out to be only partially true. Performance on IQ tests is highly correlated with how people do on other standardized tests, like the SAT, but this is because many of the items on these tests are similar, and because some people are just good test-takers. Only about 25 percent of school performance is accounted for by intelligence. The remaining 75 percent is due to something else.

It’s also true at the other end of the scholastic spectrum. Standardized test scores, like the GRE (taken by applicants to graduate school), LSAT (law school), and GMAT (business school), are correlated with grades, but the correlations are given very small, and once you start trying to predict success beyond grades in first-year classes, these tests don’t perform very well at all- probably because the further you go in postgraduate school, the less your performance depends on taking tests. And as with intelligence tests and the prediction of success in elementary school, the standardized tests used for admission to graduate and professional programs are only marginally predictive of who succeeds in the real world. These tests aren’t worthless- the just aren’t all that helpful.

One of the reasons tests of intelligence, talent, or ability don’t predict much in school, work, or life is that they don’t measure characteristics like determination, persistence, or “grit.” By determination, I mean more than the willingness or ability to work hard- although that is surely a part of it. People who are determined are also dedicated enough to maintain their focus and persevere even when the going gets tough. Determination involves conscientiousness, stamina, and sustained commitment. It requires delay of gratification- investing time and effort in an activity that may not have an immediate payoff, putting work in now for a reward that won’t come until much later, and that may not come at all. Surprisingly, there is no correlation between determination and intelligence, ability, or talent.

**Noncognitive Skills**

 Determination is part of what education experts refer to as “noncognitive skills.” Many experts now believe that it is these noncognitive factors that really distinguish children who succeed from those who don’t.

 Although I wholeheartedly agree with this reorientation, I think that “noncognitive skills” is a misnomer. The distinction isn’t really between thinking and nonthinking. It’s the difference between factors that are *intellectual* and those that are *motivational*.

 I also object to the “skills” portion of “noncognitive skills.” Determination, perseverance, and tenacity aren’t skills, like riding a bike, using a word processing program, or playing a G-major scale on the violin. Determination, perseverance, and tenacity are capabilities that are nourished, rather than skills that are acquired.

 With a piece of chalk and a blackboard, I can teach you how to diagram the parts of speech in a sentence or calculate the area of a rectangle. I can help you understand the cause of the American Civil War or the portrayal of women in early American literature by lecturing you on these topics. You can learn the symbols in the periodic table or the rivers of South America by reading a chemistry or geography textbook. But no amount of chalk, lecturing, or reading will help you develop the determination to sit at your desk and study for a grammar or geometry exam when you could be playing video games, or spend your spring break doing extra research for a term paper rather than going to Jamaica with your roommates.

 Nearly twenty years ago, my colleagues and I described the results of a massive study of high-school achievement in a book called *Beyond the Classroom*. Of all the findings we presented, none received more attention than those concerning ethnic differences in school performance. Across the nine very different schools and twenty thousand students we studied, Asian American adolescents consistently performed better than any other group. Being Asian was more predictive of success than coming from a wealthy family or a two-parent household- two demographic variables consistently associated with school success in hundreds of other studies.

 When we delved into this “mystery,” we found that Asian students were more likely to believe that sustained effort paid off. As a consequence, they spent twice as much time studying, were less likely to cut school, were more likely to concentrate when they were in class, and were more likely to do their homework. They got better grades because they worked harder.

 The determination to succeed is not cultivated through conventional academic instruction. Understanding what actually fosters it is crucial to helping children and adolescents do well in school, at work, and in life.

**Why Do We Neglect Motivation?**

The notion that perseverance pays off is hardly a revelation. It is a recurrent theme in the stories we read to our children (*The Little Engine That Could*), in classic works in literature (*I Know Why the Caged Bird Sings*), in popular movies depicting comebacks against all odds (*Rocky*), and in our cultural lore (*Washington’s troops at Valley Forge*). We certainly recognize that motivation is critical to success. I’m not sure whether we think it just develops naturally and can’t be cultivated, or that some people have it and others don’t. But tenacity can be fostered, and psychologists know exactly how to cultivate it.

 For whatever reason, this knowledge simply hasn’t spread to most parents- or to our educational system. Helping children develop the capacity to persevere is not in the curriculum. Given that America leads the world in college dropout rates, it clearly should be.

**How Much Does Motivation Matter?**

 It’s not surprising that people who work hard are more successful than those who don’t. What is surprising (at least to some) is that determination is more predictive of real-world success than intellect or talent. Adolescents who score high on measures of perseverance but only average on measures of intelligence are more successful than those who score high on measures of intelligence but only average on measures of perseverance.

 In my field, over 80 percent of scientific papers and grant proposals are rejected. The researchers who get their papers published and their studies funded are the ones who revise and revise again, not the ones with brilliant ideas. Certainly brilliance doesn’t hurt, but in my experience it matters less than persistence.

 The abilities needed in most jobs can often be acquired after one is hired, but capacities like perseverance and conscientiousness must be nurtured before adulthood. Employers typically say that they prefer to hire hard workers than those who have special skills. We shouldn’t be surprised that ten thousand hours of practice predicts success in a given activity. It’s not just that practice helps one develop skills; anyone who is willing to devote that much time to becoming better at something has what it takes to be successful.

**Self-Regulation Is at the Heart of Determination**

 Determination demands many things- a strong motivation to succeed, self-confidence, commitment to completing a task, a belief in the power of hard work, and a focus on the future rather than the present. But at its core, more than any other capacity, determination required self-regulation. The ability to control our emotions, thoughts, and behaviors is what enables us to stay focused, especially when things get difficult, unpleasant, or tedious. We rely on self-regulation to stop our minds from wandering, to force ourselves to push a little more even though we’re tired, and to keep still when we’d rather be moving around. Self-regulation is what separates the determined- and the successful- from the insecure, the distractible, and the easily discouraged.

 Self-regulation and the traits it influences, like determination, comprise one of the strongest predictors of many types of success: achievement in school, success at work, more satisfying friendships and romantic relationships, and better physical and mental health. People who score high on measures of self-regulation complete more years of school, earn more money and have higher-status jobs, and are more likely to stay happily married. People who score low on these measures are more likely to get into trouble with the law and to suffer from a range of medical and psychological problems, including heart disease, obesity, depression, anxiety, and substance abuse.

 People who can control their feelings are less likely to fly off the handle, which makes them less inclined to get into fights and arguments, less prone to emotional meltdowns, and easier to get along with- all good qualities to have in school, on the job, and at home. Good self-regulators are also less likely to overeat, develop addictions, commit crimes, and spend beyond their means. As a consequence, they are less likely to become ill, be arrested, or fall into financial difficulty. And they’re better at resisting distraction, focusing attention, and stopping themselves from obsessing over things they can’t do anything about. This allows them to be more productive, more able to make and carry out plans, and less likely to fall into a funk they can’t pull themselves out of.

 Adolescence is a key time to develop self-regulation. As we know from the marshmallow test, young children already have widely divergent levels of self-regulation. But the brain systems that govern this capacity remain highly plastic throughout adolescence. What’s crucial to note in this regard is that after adolescence, many basic intellectual capacities are not plastic in the same way.

 Although genes contribute to self-control, whether these genes help it or hurt it depends on the environment. And the most important environmental contributor to self-regulation is the family.

**Chapter 7: How Parents Can Make a Difference**

Psychologists now know that parents whose children are good at self-regulation lay a foundation by doing three things very well from the start. They are *warm*, they are *firm*, and they are *supportive* of their child’s growing sense of self-reliance. If you are a parent and you do these three things from the time your child is an infant, your adolescent will be better able to develop the ability to regulate his feelings, thoughts, and behaviors. If a parent hasn’t done these all along, it is still possible (although more difficult) to stimulate security, competence, and self-assurance during adolescence itself.

 Here, then, is a scientifically proven prescription for helping a child develop self-regulation.

**Be Warm**

 Warm parents are affectionate, generous with praise, and responsive to their children’s emotional needs. This contributes to self-regulation, because when children feel loved, they develop a strong sense that the world is a safe and benevolent place.

 Parents who are cold, aloof, or inconsistent in their warmth make their children feel insecure.

The key is not so much how a parent expresses warmth, but the child’s sense that he or she is loved, valued, and protected. Parental warmth makes children feel calmer when they are on their own, which is essential for the development for self-regulation.

**Be Firm**

Firmness refers to the degree and consistency of limits that parents impose on their child’s behavior. Firm parents have clearly articulated the rules they expect their child to follow, and they make demands on the child to behave in a mature and responsible fashion. Children raised in this way know what their parents expect of them and understand that there are consequences for violating their expectations.

We learn how to regulate ourselves by being regulated. Children acquire self-control by taking the rules that their parents have imposed on them and imposing them on themselves. When the external control isn’t there to begin with, the internal control won’t develop. If you don’t brush your child’s teeth for him when he’s young, he won’t know how to brush them himself when he gets older. Parental firmness contributes to children’s ultimate ability to manage themselves.

**Be Supportive**

Supportiveness refers to how much parents tolerate and encourage their child’s growing capacity for self-management. Parents who do this well use a technique that psychologists call “scaffolding.” Scaffolding is just what it sounds like- it’s support for kids as they develop the abilities they need to manage themselves. As a child’s self-management structure becomes stronger, the scaffolding can be gradually dismantled.

Scaffolding entails giving kids slightly more responsibility or autonomy than they’re used to- just enough so that they’ll feel the benefits if they succeed but not suffer dire consequences should they fail. For example, you phase in driving privileges for a newly licensed teenager, permitting him to drive by himself during daylight hours for a few months before you allow him to drive alone at night, and not allowing him to drive at all with his friends in the car until he has been driving, accident- and citation-free, for six months.

**Styles of Parenting**

Extensive research has found that three parenting styles predominate.

One style, called “autocratic,” describes relatively cold, firm, and psychologically controlling parents. Autocratic parents have adopted a “Do it because I say so” attitude toward their child, and they discipline by asserting their power and control, often in cold and punitive ways.

Another common parenting style, called “permissive,” is the opposite of “autocratic” parenting. Permissive parents are warm and supportive, but very lenient, too often indulging their kids’ whims and letting them have their way. These parents adopt a laissez-faire attitude, typically striving to keep their child happy by avoiding setting limits and steering clear of conflicts.

The third common style- “authoritative” parenting- is ideal; it is high in warmth, firmness, and support. Unlike permissive parents, authoritative parents don’t hesitate to set limits on their child’s behavior or maintain standards their child must adhere to. But unlike autocratic parents, who also have limits and standards for the child, authoritative parents discipline from a position of warmth rather than power, in ways that support, rather than squelch, the child’s growing sense of autonomy. In other words, authoritative parents are firm without being harsh, strict without being stifling.

**The Power of Authoritative Parenting**

The notion that authoritative parenting is superior to other styles of parenting now enjoys widespread acceptance among social scientists, and for good reason. Virtually without exception, research shows that children and adolescents who come from authoritative households are more self-reliant and more self-controlled than their peers from autocratic or permissive homes.

The power of authoritative parenting is so strong that its basic tenets even apply to people who aren’t parents- to teachers, coaches, and work supervisors. An authoritative approach to dealing with adolescents in the classroom, on the playing field, and in the workplace helps students learn, athletes excel, and employees succeed.

Authoritatively reared adolescents are more confident, more poised, more determined, and more self-reliant. This, in turn, makes them less susceptible to peer pressure, less likely to use or abuse drugs or alcohol, and less likely to commit serious crimes or more minor offenses, such as cheating on school tests or cutting classes. Because they’re better at regulating their emotions, adolescents from authoritative homes report less anxiety, less depression, and fewer psychosomatic problems, such as insomnia or excessive appetite. And because they’re better at delaying gratification, adolescents from authoritative homes do best in school, as measured by their grades, their attitudes toward schoolwork, the time they invest in their studies, and how many years of school they complete.

Teenagers from autocratic homes, in contrast, have been overpowered into obedience. If all a parent cares about is making sure his or her children don’t misbehave, autocratic parenting will work just fine. Because they have bene exposed to extreme parental firmness, teenagers from autocratic homes are less likely than other youngsters to use drugs or alcohol or get into other types of trouble. But when it comes to measures of psychological well-being, the disadvantages associated with autocratic rearing are readily apparent. Teenagers from autocratic homes have lower self-esteem than other youngsters, and are less socially poised. They are less self-reliant and less persistent, and as a consequence they give up more easily in the face of obstacles. When the going is easy, they do just fine. But when the going gets tough, adolescents from autocratic homes can’t muster the necessary fortitude. Autocratic parenting makes adolescents toe the line, but it prevents them from becoming self-assured or psychologically mature.

Adolescents from permissive homes are in some ways a mirror image of those from autocratic homes. They generally report levels of self-assurance, confidence, and social poise comparable to those seen in teenagers from authoritative households. On measures of misbehavior, though, permissively raised adolescents fare worse than their peers. Their drug and alcohol use is higher than other adolescents, their school performance is lower, and their motivation to achieve is weaker. Teens from permissive homes are more comfortable than other kids in social situations, but more susceptible to their friend’s influence. All in all, it appears as if parental permissiveness leads teenagers to be more oriented toward their peers and less oriented toward their parents and other adults, such as teachers.

**Helping Adolescents Develop Mature Self-Regulation**

Because brain systems that govern self-regulation are developing from birth through early adulthood, there is a vast window of opportunity for parents to help their children acquire the capacity for self-control (and, unfortunately, an equally long period during which parents can derail the process). The size of this window makes this particular brain system one of the most sensitive to environmental influence, because there are repeated opportunities to stimulate positive development, but just as many chances to do harm.

The single most important thing parents can do to raise healthy, happy, and successful kids is to practice authoritative parenting. My advice to parents, then, is straightforward. Be warm. Be firm. And be supportive.

**Chapter 8: Reimagining High School**

**Using School to Build Self-Control**

Most discussions of school reform focus, not surprisingly, on schools and teachers. They typically call for changes in the curriculum, in instructional methods, or in the selection, training, or compensation of teachers. Nearly twenty years ago, I noted that no school-reform effort would have any impact if students didn’t come to school ready and able to learn. The fundamental problem with American high-school achievement is not our schools. If parents don’t raise their children in ways that enable them to maintain interest in what their teachers are teaching, it doesn’t matter who the teachers are, how they teach, what they teach, or how much they’re paid. Without changing the culture of student achievement, changes in instructors or instruction won’t, and can’t, make a difference.

**Chapter 9: Winners and Losers**

**Protection During a Tenuous Time**

Simply put, adolescents who have trouble managing themselves benefit from having parents who can do it for them. The main tools in parent’s management toolbox are strictness, warmth, and supervision. Strict parents create and enforce rules and guidelines concerning how, where, and with whom their adolescents spend time. Warmth encourages adolescents to comply with these expectations because they want to make their parents happy. Supervision is added protection against rebellion.