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FOCUS ARTICLE FOR THE SPECIAL ISSUE

ACCEL: A New Model for Identifying the Gifted

Robert J. Sternberg

Serious identification of the gifted started with the work of Lewis Terman early in the 20th century. Terman's model, based largely on IQ, may have made sense in the early 20th century, but it no longer makes sense today. The problems that society needs its gifted individuals to solve in the 21st century require much more than IQ—in addition to analytical, IQ-like skills, they also require creative, practical, wisdom-based, and ethical skills. In this essay, I discuss some of the background for the conventional IQ-based model of gifted identification and education and then consider the problems the world faces today and why IQ is insufficient to solve them. I then present a new model—ACCEL (Active Concerned Citizenship and Ethical Leadership)—that perhaps will better prepare our gifted students for the world of the future.

Keywords: ACCEL, creativity, ethics, gifted, intelligence, IQ, wisdom

This article is about an idea that has outlived its usefulness and about an idea I offer to replace it. How many times have you said to yourself, “It seemed like a good idea at the time!” Usually, when we say this, we mean that what seemed to be a wise idea or decision at one time, later, in retrospect, seems instead like a mistake: a questionable invention (the efforts of the Manhattan Project and other scientists to build nuclear bombs), a questionable marriage (Anne Boleyn's decision to marry Henry VIII), a bad electoral outcome (the decision of the German people to elect Adolph Hitler, as well as much more current but not entirely dissimilar mistakes), or any of scores of personal decisions that we all make in our everyday lives.

Some decisions, like the election of Adolph Hitler, were historically bad—bad at the time and bad forever more. But other decisions make sense at a certain time in history and make sense for that period but then are carried through well beyond their expiration date. Some might argue that the decision of the United States to institute an Electoral College is an example of such a decision. Perhaps, many years ago, in a largely rural society, it made sense in fulfilling its original function—to protect society from its own

misjudgments. Today, it does little more than occasionally thwart the will of the people once every generation or so in presidential elections. Today the College remains largely because smaller, low-population states would not want to give up on a system that specifically benefits them.

Smoking, of course, is an even more extreme example of an idea that has outlived its usefulness. Of course, smoking was always bad for smokers and the people around them, but once upon a time, no one knew that, at least not for sure. When I was a child, doctors would appear in commercials for cigarettes, arguing that one brand was better than another. For example, one ad told us that “20,679 say Luckies are less irritating” and another told us that “Reported by eminent doctors—in medical journals. Their own findings that: When smokers changed to PHILIP MORRIS, every case of irritation of the nose or throat—due to smoking—either *cleared up* completely or *definitely improved!*” (Gardner & Brandt, 2006). Although such claims perhaps seem silly now, at the time they did not. For that matter, there were many patent medicines once upon a time that people would buy that people probably would not buy today. Who knows what people are buying today that tomorrow people will look back upon in horror?

The Electoral College illustrates a general principle of ideas that have outlived their usefulness. Almost always, some constituency benefits from the ideas and is willing to fight for the continuation of a practice that may once have

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made sense, or have seemed to make sense, but no longer does. So it is with IQ as a sole or primary means of identifying the gifted.

IQ AS AN OUTMODED PRIMARY BASIS FOR IDENTIFICATION OF THE GIFTED

Once upon a time, using IQ as a primary or even sole means of identifying gifted individuals seemed to make sense (Terman, 1925), much as did the Electoral College or smoking a cigarette that somehow removed throat irritation. In the early 20th century, the intelligence tests of Binet and Simon (1916) were still a new invention, and Terman (1925) had an innovative idea of what could be done with them. Indeed, if one were to have a contest to name the most famous person in the history of the field of giftedness, Lewis Terman would be a very likely candidate to win the contest. A professor at Stanford, the “Terman Study” of gifted children became a—perhaps *the*—classic in the field. Terman made an invaluable contribution to the field essentially by putting it on the map. But his approach very much reflected his times, when Binet’s ideas about intelligence were gaining prominence and Terman and his colleague Maud Merrill were in a position to revise and enhance the Binet tests for use in the United States (Terman & Merrill, 1937).

But as noted above, ideas, even the best ones in the field of psychology, sometimes outlive their expiration date—consider the ideas of Freud, which were useful in Victorian times of sexual repression but much less in later societies where sexuality was not such a consuming issue. Today the greatest problems facing the world—those that we need gifted individuals to address—are not ones that IQ can directly address. There are lots of high-IQ people working on problems of global warming, interminable wars, staggering levels of air pollution, and the like but making relatively modest progress. Rather, what we need are the analytical skills measured by IQ supplemented by a broader range of skills and attitudes, such as creative, practical (common sense), wisdom-based, and ethical ones (Sternberg, 2003a). We also need gifted people passionate about solving problems rather than enhancing their own prestige.

Why would an emphasis on IQ as a major or sole basis for identifying gifted students seem to make more sense a century ago than today? In science, almost all good ideas have an expiration date. As discussed above, many good ideas have an expiration date. This is especially true in the sciences, including the psychological sciences. Leeches, for example, once seemed like a good idea for curing illnesses but today see little use. Even some of the greatest ideas of all time, such as Newton’s laws of physics, are now seen to be special cases rather than laws that are universally true.

The medical tests and procedures of the early 20th century were state of the art (and science) then but no longer represent current understandings. Mercury, for example, no longer is used to treat syphilis, because it is now understood how extremely toxic it is and because there are now better treatments.

WHAT IS THE PROBLEM WITH USING IQ TESTS AS A PRIMARY BASIS FOR IDENTIFYING THE GIFTED?

Binet’s and Terman’s tests were state of the art (and science) in the early 20th century. And variations of these tests continue to be used, although in much revised form (Roid, 2003). But there are a number of reasons why intelligence tests no longer should be used as sole or even primary means of assessing giftedness (see also Sternberg, 1990; Sternberg & Davidson, 1982, 1986, 2005; Sternberg & Reis, 2004).

First, contemporary definitions of intelligence are much broader than they were in the past. Some theorists, such as Gardner (2011), Renzulli (2012), and Sternberg (1981a, 1981b, 1984, 1993, 1997a), have argued for greatly expanded notions of intelligence. Gardner (2011), for example, includes linguistic, logical–mathematical, spatial, naturalist, musical, bodily–kinesthetic, interpersonal, and intrapersonal intelligences in his theory. Sternberg includes analytical, creative, and practical aspects of intelligence (1997a). Renzulli (2012) suggests that creativity and task commitment are critical to giftedness beyond intelligence (see also Dai & Sternberg [2004] for broader conceptions of the roles of affective and motivational elements in development and in giftedness). Even more traditional theorists, such as Carroll (1993), have proposed theories that are considerably broader than early theories of general intelligence (Spearman, 1927). For example, rather than focusing on just one *g* or general intelligence, there are eight sub-factors of *g* in the so-called Cattell-Horn-Carroll model (Willis, Dumont, & Kaufman, 2011): (*g*) fluid intelligence (*Gf*), crystallized intelligence (*Gc*), general memory and learning (*Gy*), broad visual perception (*Gv*), broad auditory perception (*Gu*), broad retrieval ability (*Gr*), broad cognitive speediness (*Gs*), and processing speed (*Gt*).

Second, the belief in intelligence as a fixed ability predetermined by your genes represents the thinking of the early 1900s but not of contemporary science. Estimates of the heritability of intelligence vary but generally hover around 0.5 (Plomin, DeFries, Knopik, & Neiderhiser, 2012), and those estimates are moderated by the fact that the heritability of intelligence varies by social class (Turkheimer, Haley, Waldron, d’Onofrio, & Gottesman, 2003). Indeed, the heritability of intelligence or any other trait depends on the variability in the population. As Herrnstein (1973) pointed out some time ago, if the variation in environments is small, heritability will be higher and

if the variation in environments is large, heritability will be lower. Moreover, level of heritability does not preclude or even imply any particular degree of modifiability. Height is highly heritable but also highly modifiable (Sternberg, 1988). So although IQs may, on average, not move much from childhood to adulthood, they may move quite a bit more for individual cases. Moreover, the Flynn (1987) effect—the average increase in IQs by about 3 points every decade in the 20th century—shows that, at least over secular time, intelligence, at least as measured in part by IQ, is quite modifiable, although the mechanisms underlying that modifiability remain somewhat unclear. This effect is further discussed later.

Third, contemporary thinking is that there clearly is more to giftedness than intelligence (see essays in Renzulli, Gubbins, McMillen, Eckert, & Little, 2009; Sternberg & Davidson, 2005). Indeed, virtually every contemporary theorist of giftedness defines giftedness in terms broader than just intelligence (see Heller, Monks, Sternberg, & Subotnik, 2000; Sternberg & Davidson, 1986, 2005; Sternberg & Reis, 2004). Different theorists emphasize different elements, although cognitive abilities, achievement, motivation, and, sometimes, engagement with a particular area, are viewed as important in many of these theories. This essay does not attempt to provide a comprehensive review of every theory but rather discusses what foci are particularly important in today's world.

Contemporary Challenges That Identification Procedures Should Reflect

One way to address the question of how we should identify gifted individuals is to ask what challenges the world faces at a given point in time. In the days of Alfred Binet and Simon's (1916) work for the Ministry of Education in Paris, France, the goal that was set for Binet was to educate in an appropriate way children whose ability levels were substantially below those of other students. In those days, that was a major challenge because of vast societal ignorance about and prejudice against children (and adults) with major challenges in their intellectual abilities. The task of educating such children remains daunting today, but society has made enormous strides in educating children with special needs since the time of Binet.

One might ask just what are some of the major challenges the world is facing today in the early 21st century, as opposed to the challenges at the time of Binet. Here are a few:

1. What is to be done about global warming, which threatens to upend our notion of what "normal" weather is and also threatens many coastline cities, in the United States and elsewhere? Some island nations are already viewing the final days of their habitability.

2. How can we bring an end to the interminable and brutal wars that have enveloped the world, embracing much of the Middle East today and many parts of the African continent?
3. How can we reverse the trend toward illiberal autocratic governments, which are slowly replacing governments in countries, including in Europe, that once were liberal democracies?
4. With the advent of gene-splicing techniques that will make it possible to engineer humans to certain specifications, what safeguards can and should be put into place to head off the potential catastrophes in the people who are produced?
5. Similarly, how can we prevent the engineering and escape into the environment of bacteria and viruses that pose the threat of causing massive epidemics?
6. How can we greatly reduce the numbers of people becoming sick and even dying of illnesses resulting from air pollution and assorted human-engineered environmental toxins?
7. How does the world prevent increasing nuclear proliferation, which seems to be a ticking time bomb of its own that may lead to terrorists or extremely irresponsible governments (of which there now are a number) using nuclear weapons to blackmail or harm the populations of their perceived enemies?
8. How can we prepare people for today's job market whose skills have left them underemployable or unemployable due to changing societal demands (e.g., lack of demand for coal), increase in automation, and offshoring of many jobs?
9. How can we reduce the staggeringly high rate of incarceration in the United States, particularly of members of underrepresented minority groups?
10. How will we allocate potable water as it becomes an increasingly scarce commodity?

All of these problems have been around for a long time, and if one thing has become clear, it is that intelligence is not sufficient to solve these problems. The problem is not a lack of ideas about how to solve any of these problems; rather, it is a lack of people wanting to take fully into account interests other than their own or of those for whom they feel responsible, such as their family and friends.

What Skills Do IQ Tests Measure Anyway?

Conventional intelligence tests are not going to predict people's ability to solve complex problems such as these. Why? Consider a couple of problems that might appear on an intelligence test:

1. ocean: water:: beach: (a) umbrellas, (b) sand, (c) ocean, (d) bathers, (e) fish
2. What number comes next in the following series: 2, 5, 10, 17, 26, ? (a) 34, (b) 35, (c) 37, (d) 40, (e) 41

Problems like these will be moderately predictive of academic success and modestly predictive of conventional measures of life success, such as responsibility of one's job or income. IQ tests and their proxies—ACTs, SATs, GREs, etc.—do measure valuable skills, and it makes sense that scores on them would predict multiple real-world outcomes at a modest to moderate level. What are some of the skills they measure?

1. *Knowledge base.* Certainly it is an advantage in the world to know more rather than less—to have a larger vocabulary, to have more general information, to have a better grasp of quantitative laws, and so forth.
2. *Abstract analytical reasoning.* We need to be able to reason analytically—to improve our investment performance, to complete our tax forms, to analyze what political candidates are really saying, to assess scientific claims made in the popular press, to make sense of our intimate partner's or children's behavior, and so on.
3. *Mental speed.* Most tests are timed, at least in portions. Students in school and people in responsible jobs often have more to do than they can do if they work only at a slow mental pace; mental speed helps.
4. *Time management.* When you take a standardized test, you have to budget your time in order to finish the test and get as many right as possible.
5. *Educated guessing.* Often on standardized tests, we are not sure of the answer and so have to make an educated guess. Sometimes none of the answers even seem quite right. In life, too, we often have to make educated guesses.

But the tests will be poorly predictive of ability to solve serious problems such as the ones above. Why?

1. *Problem definition.* IQ test problems are given to you. In real life, you have to figure out what the problems are. Some people, including many politicians, still have not figured out that global warming is a problem. Indeed, they hasten to emphasize that it is not a problem. Perhaps they should move to Nauru and watch it disappear (and take them with it!).
2. *Multiple choice.* IQ test problems are often multiple choice or short answer. In contrast, real-world problems are not short answer or multiple choice. There is no one to provide the answer options. And the answers are often lengthy.
3. *Degree of definition.* IQ test problems are clean and well defined: They have a clear structure. In contrast, real-world problems are messy and ill-defined:

Their structure often is murky, to the point where it may not be clear at all just what the nature of the problem is.

4. *Answers.* IQ test problems have a unique correct answer. In contrast, serious real-world problems almost never do.
5. *Emotional backdrop.* IQ test problems do not evoke much of an emotional response and typically evoke no emotional response at all. In contrast, real-world problems, such as why your spouse left you or whether you should have children now, almost always have a strong emotional element that can sway our reasoning.
6. *Time span.* IQ test problems are quick studies. They usually can be solved in seconds or at most a minute or two. In contrast, real-world problems can take days, weeks, months, or even years to solve.
7. *Culture.* An attempt is made on IQ tests to provide problems that can be given in any culture, perhaps with minor modifications. The “right” answer should be the same in any culture. In contrast, real-world problems are often culture laden, and what is perceived as a good answer may vary widely across cultures.
8. *Stakes.* IQ test problems are relatively low stake. Any one problem does not count much toward the total score. In contrast, a single real-world problem can make or break a career, or a life.
9. *Setting of problem solving.* Examiners attempt to provide IQ test problems under highly controlled, sterile conditions (Davidson & Sternberg, 2003). In contrast, real-world problems are often presented under distracting or even chaotic conditions.
10. *Role of others.* IQ test problems are solved individually. In contrast, real-world problems usually involve other people, sometimes people whose interests are contrary to your own.

The bottom line is that giftedness has come to be defined largely or sometimes exclusively on the basis of performance on tests that present problems bearing little resemblance to the serious problems people confront in the real world (Sternberg, 1986). Moreover, the skills they measure are extremely narrow. Serious problems cannot be solved by abstract analytical thinking alone. The world needs a better way of identifying gifted children—or adults.

Why Do We Overemphasize IQ Tests?

The overemphasis on IQ and IQ-based skills is understandable. But where has this emphasis come from?

For one thing, when a society has a belief that a certain attribute is a good predictor of success, that attribute becomes a good predictor of success, regardless of its causal status. That is, society creates self-fulfilling prophecies

(Sternberg, 1997a, 1997b). With regard to IQ-related skills, to be admitted to advanced educational opportunities—gifted programs, prestigious colleges, top graduate or professional schools—one has to test well. Then, top firms and other institutions pick their new recruits from the top schools. So merely testing well helps one advance through a funnel in which poor testers get stuck. If we only admitted to top colleges people who are tall, then in a decade or two, height would predict success at a high level because the tall students were given opportunities other students were not given. (And height already is considered an advantage and is indeed correlated with success.) To some extent, IQ-based measures are proxies of socioeconomic status, so they continue the tradition of elevating to higher levels in society those who already are born at high levels (Sternberg, 1996). The difference is that now we can speak somewhat cavalierly of a meritocracy. And to some extent it is a meritocracy, just as it would be to some extent a meritocracy to have baseball players run bases where some start at home plate but others are given the advantage of starting at first, second, or third base.

I believe that there are several reasons (Sternberg, 2010a), most of them not so good:

1. *Pseudoquantitative precision.* IQ tests and their proxies give the appearance of giving very exact-sounding assessments of cognitive abilities. There is an apparent, if somewhat illusory, heft to numbers like an IQ of 131 or an SAT score of 760 or an ACT score of 32.
2. *Similarity.* The people making the decisions in society are people who have already advanced through the current system, so they are attracted to people who are like themselves (Sternberg, 1987, 1998).
3. *Entrenchment.* People are used to the current system—for example, of selecting students for gifted programs on the basis of conventional standardized tests. Inertia leaves them not wanting to change things.
4. *Cost.* It is costly to change systems, and many administrators are reluctant to engage in the effort and expenditures that would be necessary to change the current systems.
5. *Publication.* There exist numerous rating services, ranging from *US News and World Report* to local newspapers, that rate schools. A major source for these ratings—sometimes the only source of the ratings—is standardized test scores. So schools feel under pressure to use and raise scores on the tests.
6. *Superstition.* People come to believe that the tests are predictive—in the absence of any evidence of which they are aware—and then are afraid of what the consequences might be if the tests somehow disappeared.
7. The tests *are* moderately predictive of academic success, which is scarcely surprising, because Alfred

Binet created tests with academic content that would predict success in academic settings. That is, the tests essentially are achievement tests for academic knowledge and skills one should have acquired a few years before the testing, rather than the current knowledge measured by achievement tests. The upshot, though, is that children who have been socialized in families that valued these skills, from early in the children's lives, have a substantial advantage on such tests.

IQ and Rational Thinking

There is another and more serious problem, which brings us to the main message of this article. Intelligence tests are poor predictors of rational thinking (Stanovich, West, & Toplak, 2016). Perhaps at no time in the recent past has this been more blatantly apparent than during the 2016 U.S. presidential election. *The Economist* has referred to this election as embodying “post-truth” politics (“Yes, I’d Lie to You,” 2016, p. 18). The amount of lying was staggering (Greenberg, 2016). What is more frightening than the amount of shameless lying—one of the candidates rated only 15% of statements as true or mostly true and 70% of statements as false, mostly false, or pants on fire (“Donald Trump’s file,” 2016)—is that so many people accepted the lies without even a pretense of rational, critical thinking.

Much of the problem, as pointed out to me by my son Seth Sternberg, an Internet guru of sorts, is that people no longer even seek out the truth. In the 1950s and 1960s, when I was growing up, people got their news from major newspapers, magazines, and television networks. The news from all of these sources was more or less the same. There was an attempt on the part of reporters—Walter Cronkite (on CBS), Chet Huntley and David Brinkley (on NBC), and Howard K. Smith (on ABC)—to present the truth and to be viewed as objective. Today’s young people and many older people get much of their news from Internet sources—in particular, sources that represent their own point of view. Today, many of the networks are overtly partisan, although they may refer to themselves as fair, balanced, objective, or whatever, and their consumers actively seek out this often blatantly partisan news presented as fact. Perhaps it is not surprising that so many college students today, including at the most prestigious institutions, demand “safe spaces” where their views are unchallenged—they simply have not grown up in a world where they are accustomed to challenges to their often parochial points of view. Oddly, therefore, the Internet, which has the potential to provide us with a more global perspective, may be, for many, providing a local perspective, much like in the pre-television age. People could learn about many different perspectives using the Internet. Many of them instead are using the capabilities of the Internet merely to reinforce their own view of the

world. And when they hear politicians speak, mostly they listen to the politicians whose views agree with their own.

One could say, of course, that people always have been suckers for politicians' lies. After all, it is nothing new that politicians lie. But what is frightening is the pairing of this fact with another fact—that IQs, as measured by raw (unscaled)-score performance, increased roughly 3 points every decade during the 20th century (Flynn, 1987). These gains occurred all around the world. This gain amounts to roughly 30 points over a period of a century—two standard deviations of IQ! This means that an IQ of 130 in 1900—the 98th percentile on the Wechsler test—would have translated roughly into an IQ of 100 in 2000—the 50th percentile. Someone who was in the 98th percentile in 1900 would have been admitted to almost any gifted program; with that level of cognitive performance in 2000, the individual would have been classified as exactly average.

Although many results in the intelligence literature are questioned, I am aware of no serious researcher in the field of intelligence who questions the so-called Flynn effect of rising IQs. These statistics represent settled fact, not a point of view. But are people thinking better? Are they resisting politicians' lies better? Are they solving world problems better? Perhaps they are better suited to taking advantage of 21st-century technology, but in terms of solving the big problems society faces, it is unclear that the 30-point gain (and some places IQs are still increasing) has bought us much, or really, anything at all. Rather, it may actually have accompanied a decrease in wisdom as people use the Internet and other media to hear only what they want to hear.

THE ACTIVE CONCERNED CITIZENSHIP AND ETHICAL LEADERSHIP MODEL FOR IDENTIFYING AND DEVELOPING THE GIFTED

Ambrose and his colleagues (Ambrose, 2016; Ambrose & Sternberg, 2016a, 2016b) have described in some detail the range of challenges that the world today faces, as well as the faltering of efforts seriously to solve many, and arguably any, of these challenges. The question then is: If what we need is “gifted” people who can cut through the failure to solve the serious problems of the world today, how would we identify and then nurture the talents of those gifted people?

I recently have proposed a model of tertiary education that I believe applies equally well, or even better, to the education of gifted children. The model is called ACCEL, and the acronym stands for Active Concerned Citizenship and Ethical Leadership (Sternberg, 2016). What does that mean? And when we educate gifted children, what is our goal? Is it merely to identify smart kids and then give them enriched or accelerated education (Sternberg & Davidson, 2005)? Acceleration and enrichment are not even goals;

they are processes—means to an end. But to what end? I would argue that gifted education should be producing the next generation of active concerned citizens and ethical leaders (ACCEL).

Promoting higher-order thinking skills in the absence of leadership and active citizenship produces high-IQ, abstract analytical thinkers who are paralyzed in the face of practical, real-world problems and often respond in ways that show little knowledge of, and engagement with, the real world and the people in it (Sternberg, 2008b; Sternberg, Jarvin, & Grigorenko, 2011; Sternberg & Smith, 1985). Simply having a program that emphasizes leadership in the absence of advanced thinking skills does not produce excellent leaders, nor does having a gifted curriculum if that curriculum fails to connect with the leadership challenges of everyday life. The bottom line is that we do not want to produce students who score high on tests but who are content to live in an autocracy, nor do we want to produce students who value democratic ideals but lack the critical thinking skills to say why. Lest this all seems theoretical, consider that the world's largest country by population, China, is a one-party state. Much of the Middle East, many parts of Africa and Asia, and even some parts of Europe as well still are effectively under one-party rule—sometimes self-imposed by elections or the surface appearance of elections that are anything but. The governmental system perhaps is not working so well in the US either.

Our gifted programs, for the most part, are centered on selecting students for academic knowledge and skills and then developing these students' academic knowledge and skills. At some level, our current mentality of admitting and developing students works. There have been two major studies of academically gifted (high-IQ) children—the Terman study (Terman & Oden, 1959) in California and a study by Subotnik, Karp, and Morgan (1989) in New York. The studies both found the same thing: People with high IQs are more likely than other people to go to good schools, including colleges and universities; they are more likely to get good jobs; and on average they make good money—but not one person in either of these two large studies had any revolutionary, society-changing ideas. If we want to develop students who are going to change the world, we will not do it by selecting students merely on the basis of standardized tests or by teaching them in ways that develop only their academic knowledge and skills.

The ACCEL model recognizes that the greatest problem we have in our society is not a lack of leaders with high IQs or sterling academic credentials but rather a lack of transformational leaders who behave in ethical ways to achieve, over the long term as well as the short term, a common good for all. As Kellerman (2004), Lipman-Blumen (2006), and Sternberg (2008a) have pointed out, people often are seduced by toxic leaders who then proceed to wreak havoc on the countries in which they are elected. Because intelligence and rationality are largely unconnected

(Stanovich, 2010), and because gifted people are susceptible to foolishness (Sternberg, 2004a), gifted people are at risk, just like others, for being lured by bad leaders. Gifted people are especially susceptible to foolishness—unrealistic optimism, egocentrism, false sense of omniscience, false sense of omnipotence, false sense of invulnerability, and ethical disengagement—precisely because they think they are immune to these tendencies (Sternberg, 2008a).

Existing standardized tests are not going to identify the concerned, active citizens and ethical leaders of the future who will be wise rather than foolish. Indeed, there are many autocrats and would-be autocrats with what appear to be very high IQs who appeal to people, some of whom also have high IQs. The autocrats have to be pretty bright just to acquire or stay in power. Educators talk about developing leaders. What they need is to develop wise leaders who will serve people rather than looking to be served by them. How many contemporary major leaders in any domain serve as role models for the younger generation of today? Try naming them. Are you done yet? What educators lack, for the most part, is a model for providing positive leadership development. ACCEL provides such a model of leadership development.

When people think of *leadership*, they often think of someone bossing others around or at least showing people what they should do. I use the term leadership here in an entirely different way. Leadership as defined here refers to setting out on a path whereby one makes a positive, meaningful, and enduring difference to the world, at some level (Sternberg, 2003a, 2003b, 2016). That level may be the family, the community, the state, the nation, or many nations. Leaders, in this sense, are people who leave the world looking different from and better than it did before they were in it. Thus, in preparing ethical leaders, we are preparing people who will make a *positive, meaningful, and enduring difference to the world at some level*.

One might ask: Does the world not need followers too? In the end, are most people not followers rather than leaders? This question assumes that people are either leaders or followers. In fact, except in absolute dictatorships, all leaders are also followers. In a publicly traded company, and in many privately owned ones as well, even the CEO is responsible to a board of directors. And the board of directors is responsible to shareholders, as well as consumers, government regulators, and, arguably, even to a common good. So being a good and effective leader means being a good and effective follower as well. No one except an absolute dictator lacks responsibility to others besides him or herself. That is, leadership and followership are not mutually exclusive categories. They are two sides of the same coin. People need to be both leaders and followers. So one equally could say that followers need to make a positive and meaningful difference to the world. And if a leader is behaving irresponsibly, it falls to followers to remedy the

failure of leadership, usually peacefully, but not always (as in a revolution).

One also might question why our gifted students should need to take on so much responsibility as leaders often assume. But when I speak of leadership, I speak of it at multiple levels. For me personally, the most important leadership role I ever have taken on is in my family. Many, if not most, of us seek to make a positive, meaningful, and enduring difference to our family. The quality of leadership, in the end, is more important than the level of leadership. Moreover, if we do not develop leadership skills in our gifted students, who is it exactly that we want to become our future leaders?

One also might wonder about the whole concept of “ethical leadership.” Who is to define what is “ethical”? Let me distinguish here between the use of the terms *moral* and *ethical*. I use the term *moral* to refer to issues of right and wrong. What we learn in religious school classes is, for the most part, what is *moral*—do not kill, do not steal, and so forth. When I refer to *ethical leadership* here, I refer to a process of how problems are solved and decisions are made based on an ethical code—that decisions are made and problems solved not just on the basis of what will bring profit, or please shareholders, or even please consumers but also on the basis of what will be the right thing to do, based on a system of ethical reasoning and belief. That is, the *ethical* part of leadership is in the process of thinking based on an ethical code. It is asking what is the right thing to do and then forming a careful chain of reasoning as to how to reach the right course of action or correct a wrong course of action.

So what are the characteristics of gifted people who will be able to solve real-world problems that require a power and depth of thinking that goes beyond the kinds of characteristics needed to solve IQ test problems? I have suggested four (Sternberg, 2003c), although there, of course, are others as well.

CHARACTERISTICS OF EXPERT REAL-WORLD PROBLEM SOLVERS ACCORDING TO ACCEL

Critical (Analytical) Thinking

When schools teach for critical thinking, too often it is in contexts that do not transfer to students’ everyday lives (Sternberg, 1985a, 1985b). Students could learn critical thinking in literature or history or science and still make the same dumb decisions in their lives (Sternberg, 2002).

Although people reason all the time, not all of these inferences or conclusions are correct or justified by the data. Scholars have attempted to classify and study the various kinds of erroneous inferences (rickety reasoning) that people can make (see Sternberg, Kaufman, &

Grigorenko, 2008). In classifying types of inferences, they refer to everyday fallacies. It is in this realm of everyday thinking that schools most need to intervene but rarely do.

In contrast, the kinds of critical thinking skills measured by IQ-related tests are not all so relevant to everyday reasoning. When people reason in everyday situations, they deal with concrete, emotionally laden problems where there are powerful motivations for gain, such as making money or acquiring friends, romantic partners, clients, or allies. Reasoning skills applied to idealized situations are modest predictors of the messy reasoning of everyday life (Stanovich, 2010) and are largely different in kind from reasoning skills applied in everyday life (Nisbett, 1993). Moreover, people often do not apply reasoning skills in ways that maximize their own performance (Sternberg & Weil, 1980).

What I am proposing to emphasize in teaching for critical, analytical thinking goes beyond what is sometimes emphasized when students do academic work. I would encourage schools to emphasize the critical fallacies people make in their everyday reasoning. Consider some examples.

Fallacies of Relevance

Fallacies of relevance are committed when the premises of an argument have no bearing on its conclusion. The conclusion is irrelevant to the line of reasoning that led up to it. Arguments of this type are referred to as non sequiturs (from the Latin non sequitur, meaning “it does not follow”). Concerned citizens, of the kind developed by ACCEL schools, need to be able to decide on what bases to support political candidates. Political candidates, for the most part, encourage citizens to vote on the basis of reasons that are largely irrelevant to how the candidates will perform in office. For example: “You should vote for me because I have a beautiful family, I go to Church every Sunday, and I’m handsome.”

The statement sounds a bit absurd on its face, yet many candidates gladly circulate posters and pictures of themselves with their families—with everyone looking lovely—and emphasize their strict religious principles. None of these things are terribly relevant to being elected, but the strategy seems to work, at least in some parts of the country and for some political candidates.

Sales pitches for products take a similar form. When I was young, we were offered a *World Book Encyclopedia*. It was free—a good deal. We would not have to pay for the encyclopedia, only for some number of years of annual updates. Of course, the cost of the annual updates was really the cost of the encyclopedia, so it was irrelevant whether the money was for the annual updates or the encyclopedia. But that is how encyclopedias were sold in those days and it worked. And yes, we bought the encyclopedia—what a great deal!

The point is that the political candidates and the encyclopedia salesmen do not sell their wares just to people with

low IQs or SAT scores or whatever. They sell to people, many of whom are quite intelligent. Indeed, stupid people might want nothing less than an encyclopedia. Why bother? Really, almost all marketers sell their wares on the basis of irrelevant stimuli—beautiful women for purchase of perfumes; airplane pilots for watches being sold to people who will never fly a plane in their lives; happy, carefree young people for tobacco products. Companies invest billions of dollars in ads that appeal to fallacious reasoning. The products sell, even to people with high SAT scores.

Straw Man Arguments

Straw man arguments attempt to refute a claim by replacing it with a less believable statement (the straw man) and then attacking the straw man claim rather than dealing with the original claim (Sternberg, Kaufman, & Grigorenko, 2008). An interesting aspect of this argument is that it may contain good reasons against the straw man claim, but these reasons will be irrelevant to the original claim.

Consider again the role that critical thinking needs to play in active concerned citizenship of the kind developed by ACCEL schools. As an example, a politician recommends targeted cutting of defense spending and is then called “weak on defense.” Another politician supports a woman’s right to choice on abortion and is said to support murder. Or a politician does not support a woman’s right to choice on abortion and is said to be anti-woman. The point is that, in each case, a straw man is created that may, but probably does not, support the politician’s true position, and then an opponent attacks the straw man rather than the original position.

Representativeness

The representativeness heuristic is used in making a judgment regarding the probability of an uncertain event according to (a) how obviously the event is similar to or representative of the population from which it is obtained and (b) the degree to which the event reflects the noticeable features of the process by which it is generated (such as randomness; Kahneman & Tversky, 1971).

Consider an example: Penny has been trying to decide for whom to vote. She keeps hearing that Mr. Jones, who is running for the legislature, is an upstanding family man who puts his family first and takes care of his children. She decides to vote for him because she wants someone with a sense of responsibility and who looks at his constituents as part of his greater family.

In this particular instance, Penny assumes that the politician’s behavior toward his family is representative of his behavior outside of it. But she has no logical basis for assuming that the politician’s behavior toward his family will represent the politician’s behavior outside the family situation. Indeed, many Nazi officers were “good family men.” Moreover, in all likelihood, she knows nothing of the

politician's behavior toward his family. Many of the politicians caught up in prostitution and other stings previously had conveyed an impression of being "good family men."

Creativity

Creativity is skill in coming up with ideas that are novel, surprising, and useful in some way (Sternberg, *in press*; Sternberg & Lubart, 1995). Creative people constantly ask themselves whether what they were doing yesterday is what they should be doing today, tomorrow, and the next day. The worst way to assess creativity is through multiple-choice questions. Nevertheless, let us start with a multiple-choice question: Which airline will you not be flying any-time soon? (a) Northwest, (b) Texas Air, (c) Braniff, (d) Eastern, (e) all of the above.

The correct answer is (e) because all of the airlines mentioned have disappeared. Airlines are like every other business. If they do not innovate, they die. The list of failed businesses seems endless. Businesses fail when their owners lack the creativity to adapt flexibly to new circumstances and constraints in the environment.

Active concerned citizens and ethical leaders need to be creative because what works or seems to work in one place or at what point in time in a family, or job, or society often does not work at another place or point in time. When we look back on past practices in our own society—absence of suffrage for women, slavery, internment of American citizens of Japanese descent during World War II, McCarthyism—we sometimes properly gasp in horror. It is only through creativity and realizing that any society, no matter how good, can be better, that we can see through our own flaws and make our society and its elements better.

Some people believe that creativity is an ability with which people are born. But creativity is not genetically determined. Rather, creativity is a decision process. It is a decision not just to follow the crowd but rather to consider unconventional paths or methods that could lead to similar or better outcomes than those originally intended. And it is not just about esoteric decisions among scientists, writers, or artists. It is about everyday decisions of all kinds. Behind the decision to consider other paths or methods are several attitudes toward life.

- *Thinking outside the box.* Creative people change their patterns of thought. They do not keep doing things the same way just because you always have done things that way.
- *Being willing to take sensible risks.* Creative people are willing to take risks and even to fail. They know that they will make mistakes, but they are ready to learn from them.
- *Being resilient in the face of obstacles.* If one lives a creative life, the question is not whether one will

encounter obstacles but rather what one will do in the face of them. Creative people always get pushback, often from people who are threatened by change. And those who are threatened often are in powerful positions.

- *Realizing that creative ideas do not sell themselves; people need to be persuaded of their value.* The hardest part of creativity often is not coming up with novel and useful ideas but, rather, persuading others to accept them.
- *Realizing that what works at one time or in one place often does not work at another time in a different place.* Many people have a creative idea at some time or another, and they cannot let go of it. Long after the value of the idea has passed, they stick with it. Their early creativity thus degenerates into a lack of creativity later on.

A problem in our educational system is that schools do not always encourage creativity and sometimes inadvertently discourage it, both in instruction and in assessment. By the time students get to college, they often find it hard to rediscover their creativity. What is to be done?

- *Inform young people that creativity is a learned skill, not an inborn ability.* Many students are not creative because they think they cannot be. If they tell themselves they are not creative, they will not be because they will never try.
- *Role-model creativity.* Students will model what they observe, not what they are told. If one wants young people to think creatively, show them how to do it.
- *Provide opportunities for young people to think creatively.* You will not get creativity if you always tell youngsters what to do and how to do it. Nor will schools truly value creativity if they limit their assessments to short-answer and multiple-choice tests. Provide opportunities for young people to do independent projects, products, and portfolios that enable young people to display their creative powers. Creativity is not just for art or writing class: It is a learnable skill for making all of the choices that we make in all of the things that we do.
- *Encourage creativity.* Do not just hope for students to show creativity. Tell them explicitly that you value their thinking outside the box.
- *Reward creativity.* When students show creativity, praise them and tell them you are proud that they are thinking for themselves, not just following what others tell them to think or do.

Common Sense

Common sense, which also might be called “practical intelligence,” constitutes the tacit or usually unspoken knowledge needed to navigate the everyday world (Sternberg et al., 2000). Common sense, as it is sometimes said, is anything but common. Yet there are few things more important for an active concerned citizenry and for ethical leaders than to have basic common sense. But what, exactly, is common sense? Common sense is what one needs to know to succeed in life that typically is not explicitly taught and that even is not often verbalized.

Standardized tests do not measure common sense. Really, grades do not measure common sense, and neither do any of the other conventional measures used in college admissions. Yet common sense is truly important in life and in any society.

Over the years, my colleagues and I have done a number of research studies on common sense, which we studied under the rubric of practical intelligence (Sternberg et al., 2000). Our goal in this work has been to understand how common sense functions, how it can be assessed, and how much it contributes to success in life.

The way we have measured common sense is to present to people kinds of problems such as they would encounter in their everyday lives. In our college admissions work, for example, we showed movies with various scenarios (Sternberg, 2010a). In one scenario, a movie shows roommates discussing how to divide payments among them, given that the sizes of the rooms in their flat are unequal. In another example, we showed a student entering a party where he did not know anyone present. In yet another example, we showed a student approaching a professor to ask for a letter of recommendation, only to discover that the professor did not know who he was. In one more example, we showed a college student and his girlfriend starting to make out on a couch; at that point, a friend knocks on the door and wants help with a problem. Finally, another example showed students trying to maneuver a bed to go up a winding staircase that clearly would not fit the bed. In each case, the movie stopped in the middle of the scene and students were asked how they would handle the situation.

In work on managers, we presented managerial personnel with problems that they might encounter in their management work, such as dealing with a difficult subordinate, dealing with a task that somehow never seemed to get done, or dealing with a boss who never could be satisfied (Sternberg et al., 2000). We had similar problems for military officers, salespeople, and individuals in other occupations.

In work with younger children (Chart, Grigorenko, & Sternberg, 2008), we presented practical problems relevant to the lives of youngsters. Youngsters constantly face practical problems, from dealing with teachers, to dealing with friends, to dealing with siblings, to dealing with parents.

The question, of course, was how well individuals taking the assessment could solve the problems. Their responses

were scored in a variety of ways. In one method of scoring, responses of test-takers were compared to those of experts in their fields. In another method of scoring, responses were scored in terms of how practical they were with respect to time, place, and material and human resources available, as well as with respect to how persuasive they were. Our findings were quite similar from one domain to the next and one subject population to the next.

First, common sense is correlated with IQ but only minimally. Someone could be high in common sense but not in IQ, high in IQ but not in common sense, high in both, or low in both. Quite simply, IQ and common sense are not mutually good predictors of each other.

Second, scores on measures of common sense are correlated with each other across domains. In other words, if you are high in common sense, say, as a manager, you probably will have fairly good common sense as a salesperson. The correlations are by no means perfect, but common sense in one domain is a better predictor of common sense in another domain than is IQ.

Third, common sense predicts performance in jobs, at least for managers, at about the same level as IQ. Because it is only minimally correlated with IQ, both measures—common sense and IQ—can help to predict who will be a successful manager.

Fourth, common sense predicts success in college over and above the prediction obtained by scores from standardized tests. In our research, the increment has not been large, but it has been statistically significant.

Fifth, common sense is not the same as personality. One cannot get a good reading on a person’s common sense by administering a personality test to the individual.

Sixth, common sense in a domain increases with experience. However, our research suggests that it is not experience per se that predicts gains in common sense but, rather, what one learns from the experience. From this point of view, simply asking a person how much job experience he or she has is not likely to tell you a whole lot about the person’s common sense as relevant to that job. You need to figure out what the person has learned from the job.

Seventh, common sense does not always transfer well from one cultural or subcultural context to another, because what is considered commonsensical in one environment may be considered foolish in another. There is thus always risk in crossing cultures. Crossing cultures does not pertain only to going from one country to another. Businesses have different cultures and so do universities. So what is common sense in one environment may be anything but in another. For example, at a Research I university, it is common sense that a professor better publish in prestigious journals if he or she wants to achieve tenure. But at a community college, publishing in such journals may count little or even negatively because it could be seen as taking away time from teaching. One has to figure out the lay of the land before one draws conclusions.

Wisdom and Ethics

Wisdom is the use of one's knowledge and skills for a common good, balancing one's own against others' and larger interests over the long and short terms, through the infusion of positive ethical values (Sternberg, 2004b). When I tell colleagues and friends that the chief goal of a school ought to be to educate its students for active concerned citizenship and ethical leadership (ACCEL), I sometimes get objections, such as that (a) schools should not be in the business of teaching ethics; instead, parents and churches should each teach ethics; (b) on the contrary, the purpose of the school should be to instill the knowledge that students will need for success in their careers and their lives; (c) if teachers reinforce with students that the students just should do the right thing, that should not take more than about five minutes; or (d) you cannot really teach ethics, can you?

Here is what I answer back (see also Sternberg, 2010b):

First, few leaders in any field—business, education, law, medicine, politics, even clergy—fail because they lack points on standardized tests. More likely, they fail because they lack ethics (Sternberg, 2009a). Almost every day, newspapers and other media cover some kind of serious ethical scandal on the part of our leaders. Look at today's newspaper—whatever day you read this article. Chances are there will be a report of an ethics scandal. Even worse, sometimes citizens learn of these scandals and just shrug their shoulders—for example, reelecting politicians who have demonstrated serious ethical breaches in the performance of their duties. (One such politician was elected to Congress in my own state of New York despite a conviction on major tax evasion. He has resigned his seat—under pressure from party leaders, not, apparently, from his constituents. More recently, the leaders of both houses of the legislature in New York State were indicted—a sad commentary on the state but also on how we are preparing and then choosing our leaders.) Our society will fail our next generation if we cannot educate our youth to do better than what they often see in the world around them. Sure, knowledge is important, but knowledge without ethics is empty.

Second, almost any educator will tell you that ethical lapses—plagiarism, cheating on tests, outright lying, and the like—are on the increase. In my own field of psychology, ethical lapses are harming the field's reputation, both internally and externally (Sternberg & Fiske, 2015). Maybe it is the Internet—it is easier than ever before to lift text from an online document and paste it into one's own document without making proper attribution. Maybe it is cell phones, which can be used in various ways illegitimately to communicate exam answers. Or maybe it is just a loosening of societal standards, whereby students hardly even see as cheating what students in the past would have viewed as gross violations of integrity. Whatever the reasons for the increasing ethical lapses, they are not going to fix

themselves. College is one of our last chances to work with students to teach them that ethical lapses are not OK—that society expects better from them.

Third, contrary to some popular views, it often is not easy to do the “right thing.” Nor is it even obvious to everyone in many cases what the right thing is, as successive debates over military interventions in far-away countries have shown. Ethical debates often are complex, and what colleges can do best is to teach students how to reason ethically and thereby to draw conclusions that they can support and defend. In my own research on ethics, I have argued that ethical behavior sometimes is challenging because there is not one step in ethical thought and action but, rather, eight. Examples of such steps are deciding (a) whether there even is an ethical lapse taking place; (b) whether a lapse is serious enough to justify anyone's intervention; (c) whether the lapse, if it exists, justifies one's own personal intervention or is none of one's business; (d) how to cope with the consequences if one's ethical action backfires and one loses friends or even one's job; and (e) how to translate one's ethical thinking into ethical action.

Consider the position of a member of senior management in a large corporation. In every decision she makes, she has ethical responsibilities to at least four different groups of constituents: to herself and her family, to her company's shareholders, to her company's employees, and to all of the company's numerous stakeholders (e.g., customers, suppliers, competitors) who will be affected in any way by the decisions that she and her company make. In any single decision situation, these four responsibilities can and often do conflict with each other. Such conflicts are ethical conflicts, can be very complex, and for their solution require ethical reasoning far more advanced than the training traditionally provided in the home or in Sunday school. Institutions of higher learning have an obligation to prepare their students for such complex decision situations, not only for their own sake but also for the benefit of the society that they serve.

Fourth, students best learn about ethical leadership not only through learning abstract principles of the kinds that tend to be taught in ethics courses or even at home and in church but also through concrete case studies in their fields of endeavor whose applications to their own lives and work the students immediately can see. For example, as a youngster, I learned about ethics at home and in Sunday school, but I did not learn how to apply these principles in my own field of psychology, such as in issues of informed consent, statistical testing of hypotheses, client relations, and the like. I hope to see instituted in universities and opened to all students an ethical leadership track, which will provide specially designated courses that infuse principles of ethical leadership into disciplinary instruction. That is, students would encounter ethical challenges in their own field of endeavor, be asked to apply what they learn to their extracurricular activities, and be required to do a capstone project

applying what they learned in their courses to their own ethical leadership. In such a track, teachers do not “teach ethics,” per se but rather create opportunities for students to learn for themselves, through guided instruction, how to think and act ethically in their life and their work.

One can scarcely open the newspaper without finding examples of smart, well-educated people who have behaved in ethically challenged ways: for example, Bernard Madoff and the numerous investment advisers who have come to be called mini-Madoffs because their Ponzi schemes were similar to Madoff’s. President Obama called the bonuses awarded to some of the same Wall Street executives who helped to create the current economic mess “shameful” (Stolberg & Labaton, 2009). Even some of the president’s own proposed political appointees had to withdraw for ethically questionable behavior. And then, of course, there are people like Rod Blagojevich, the former governor of Illinois, and Kwame Kilpatrick, Detroit’s former mayor, who seem to have had few ethical standards at all.

What is frightening about ethical lapses is not that they happen to the ethically outrageous but that they can sneak up on just about all of us. Darley and Latane (1970) opened up a new field of research on bystander intervention. They showed that, contrary to expectations, bystanders intervene when someone is in trouble only in very limited circumstances. For example, if they think that someone else might intervene, bystanders tend to stay out of the situation. Darley and Latané (1970) even showed that divinity students who were about to lecture on the parable of the good Samaritan were no more likely than other bystanders to help a person in distress.

Drawing in part on Darley and Latané’s (1970) model of bystander intervention, I have constructed a model of ethical behavior that applies to a variety of ethical problems (see Sternberg, 2015). The model’s basic premise is that ethical behavior is far harder to display than one would expect simply on the basis of what we learn from parents, school, and religious training. To intervene, to do good, individuals must go through a series of steps, and unless all of the steps are completed, people are not likely to behave ethically, regardless of the ethics training or moral education they have received and the level of other types of relevant skills they might possess, such as critical or creative thinking. The steps start with recognizing that there is even a problem to be dealt with and end with action. The most difficult step is acting ethically even in the face of pressure to “go along to get along.”

Consider these eight steps of behaving ethically and the example of what a student should do if she sees a friend cheating on a test (Sternberg, 2015):

1. *Recognize that there is an event to react to.* The student may choose simply “not to see” or to ignore the cheating on the test.

2. *Define the event as having an ethical dimension.* The student may see her fellow student cheat and not even define the cheating as an ethical lapse.
3. *Decide that the ethical dimension is significant.* The student may believe that cheating is just what students do these days. She may feel that the cheating is an ethical lapse but not believe that it is sufficiently significant to be worth her or anyone else’s attention.
4. *Take responsibility for generating an ethical solution to the problem.* The student may believe that cheating occurred and that it is a serious problem but not her problem. It is a problem for the teacher or for someone other than her to deal with.
5. *Figure out what abstract ethical rule(s) might apply to the problem.* The student may believe that a serious ethical lapse occurred but then wonder whether what she observed really fits into the definition of cheating. After all, who is to say what constitutes cheating?
6. *Decide how abstract ethical rules actually apply to the problem, in order to suggest a concrete solution.* The student may believe that what she observed definitely constitutes cheating but not know whether in this kind of instance, one really ought to do anything about it.
7. *Formulate an ethical solution, at the same time possibly preparing to counteract contextual forces that might lead you to act unethically.* The student may want to report the cheater but be reluctant to because of possible adverse consequences for her, such as losing a friend or losing multiple friends if it gets around she is a “snitch.”
8. *Act.* In the end, you could be a wonderful ethical thinker, figure out all you need to do, be prepared to do the right thing, and then do nothing. One has to make the leap from thought to action. The student may feel that she should report the student and then just end up doing nothing.

We would like to think that peer pressure to behave ethically leads people to resist internal temptations to misbehave. But often exactly the opposite is the case. In the Enron scandal, when Sherron Watkins blew the whistle on unethical behavior, she was punished and made to feel like an outcast. In general, whistle-blowers are treated poorly, despite the protections they are supposed to receive.

I have argued that ethical behavior typically requires eight steps and that if you miss any one of them, you are not likely to behave fully ethically. Schools can produce students who are smart and knowledgeable but ethically challenged. By alerting students to the steps in ethical behavior and the potential difficulty of going through them all, students may come to understand why it is so easy to slip into unethical behavior and be more likely to think and behave ethically. Given the problems we face in today’s world, that seems like an urgent priority.

In the 1960s, the late Stanley Milgram did a series of studies while a faculty member at Yale University (see Milgram, 2009). Although the initial studies are old, they have been replicated many times since, across time and place. Milgram would have two study participants enter a room. One would be assigned, seemingly at random, to the role of learner and the other to the role of teacher. Unbeknownst to the teacher, who was a naïve subject, the role assignments were rigged and the learner was a confederate of the experimenter.

The teacher and learner were informed that they would participate in an experiment on the effects of punishment on learning. On successive trials, the teacher would read to the learner a list of words to be learned and the learner would repeat back the words he remembered. When the learner made a mistake, the teacher would use an apparatus that would deliver an electric shock to the learner.

The apparatus was designed so that each successive shock would be heavier than the last one. Shocks on the device were arranged in increments of 10 volts, ranging from just 10 volts up to 450 volts. The switches at the high end, near 450 volts, had labels like “slight shock,” “moderate shock,” “extreme shock,” “danger: severe shock,” and at the top of the scale, “XXX.” The teacher was given a sample 45-volt shock to show him that the apparatus really did deliver shocks and that they were painful.

Once the experiment started, the learner began to make mistakes. So the teacher shocked him. (In the initial experiments, participants were male, but later experiments involved female participants as well.) After a while, the teacher heard the learner groan, later scream, still later complain about his heart, yet later demand that the experiment stop, and finally fall silent. It might seem that the teacher would stop delivering shocks once the learner started to protest, but the experimenter would reply, when the teacher indicated that he wanted to stop the experiment, with responses ranging in a graded sequence: “Continue please” ... “Go on” ... “The experiment requires that you continue” ... “It is absolutely essential that you continue” ... “You have no choice.”

As you may know, the experiment was not really on the effects of punishment on learning but rather on obedience. Psychiatrists asked to estimate what percentage of subjects would administer the maximum level of shock estimated that it would be less than 1%. In fact, it was roughly two thirds.

When I have taught introductory psychology, I have asked my 150 or so students how many of them would have gone to the end and, typically, only one or two jokers say they would have. The rest of the students strenuously deny that they would have administered the maximum shock. Yet, roughly two thirds of them would have gone to the end of the shocks, even though they cannot imagine that they would have. They do not yet realize the harm of which they are capable. We all are susceptible to believing

that only other people act in ways that are heartless, cruel, or indifferent and then possibly rationalizing them as humane.

Fortunately for the learner in the Milgram experiments, the shock machine was a phony and, as mentioned earlier, the learner was a confederate and a trained actor. The experiments as originally conducted never would pass muster with today’s ethical requirements because subjects could not be adequately debriefed. No matter what the debriefing said, roughly two thirds of the subjects in a typical running of the study left the experiment knowing that they might have killed the subject had the shocks been real.

The usual interpretation of the Milgram experiment has been that people are remarkably obedient and that it is because of this typically unrealized potential for obedience that horrors like the Nazi or Rwandan genocide or the brutal reprisals in Syria could take place. Stephen D. Reicher of the University of St. Andrews and his colleagues (Reicher, Haslam, & Smith, 2012) have suggested that agents of tyranny identify actively with their leaders. Moreover, they are motivated to display “creative” followership in working toward goals that they believe their leaders set. In other words, people do not just passively obey; they behave proactively to curry favor with their admired leaders or role models. Sound familiar?

In a related demonstration, Philip Zimbardo, formerly a professor of psychology at Stanford, randomly assigned college students to one of two groups: prison guard or prisoner (see Zimbardo, 2008). He placed them in the basement of the Stanford Psychology Department and then observed how they acted. To his dismay and the dismay of anyone who has since learned of the study, the guards rather quickly started acting like sadistic prison guards and the prisoners started acting in ways betraying learned helplessness—they were essentially browbeaten into submission.

And, as mentioned earlier, in yet another study, Darley and Batson (1973) found that even most divinity students on their way to give a lecture on the Good Samaritan failed to help a person in obvious distress if their other priorities, such as arriving on time for the lecture, were more important to them at the moment. The study showed that intense ethical training provides relatively little protection against bad behavior in an ethically challenging situation. Since that study was published, episodes of horrendous abuse of children at the hands of clergy, while other clergy in the know stood idly by, have reinforced this lesson in gory detail. Really, no training offers ironclad protection.

Society often exerts severe pressures to conform accompanied by fear of punishment for noncompliance, desire to please or curry favor with one or more persons in a position of power, rationalization of one’s actions, and what I have called *ethical drift*—one’s declining ethical standards in the face of group norms whereby one is not even aware that one’s standards are dropping (Sternberg, 2012).

To be clear: The power of situational variables in no way excuses bad behavior. Rather, such variables should help us

understand, in part, why such behavior occurs in certain situations, why we are all potentially susceptible to it, and, most important, what we can do about it.

How do you avoid falling into the trap of ethical drift? How do you teach students to learn to avoid this trap? First, you need to realize that almost anyone, including yourself, is capable of behaving abysmally under certain circumstances. Second, you need rather regularly to ask yourself whether situational pressures are leading you to behave in ways that once would have seemed totally inappropriate and wrong to you. Third, you need to ask yourself whether you are rationalizing behavior that once would have seemed unacceptable to you. And fourth, you need to be willing to take a stand and do the right thing, realizing that although there may be serious short-term costs to acting ethically, you are willing to accept those costs so you can live with yourself and others over the long term.

One last thing: You may still be thinking that although other people may fall prey to ethical drift—or even a sudden drop off the ethical cliff—you would never succumb to situational pressure to conform. For example, you may just feel you know you would not have gone to the top of the shock apparatus or have let a child abuser continue to abuse children, regardless of the situational pressures placed on you. You may be right, but research has not found any personality characteristics that reliably predict who will succumb to such extreme pressures and who will not.

PASSION

If there is one consistent finding in the literature on creativity, it is that people do their most creative work in fields about which they are passionate (Kaufman & Sternberg, 2010). In the absence of passion, it simply is hard to marshal one's resources to do creative work.

The practical implication of this finding is that parents and professors alike, if they want the young people for whom they are responsible to succeed, need to emphasize the importance of the young people's finding their passion. In the best case, the child's passion fits his or her parent's desires. More often, the young person's passion is a mismatch for the parents' ambition. As a professor, I cannot even count the number of unhappy undergraduates I have met who felt stifled by their parents' ambitions for them. On the one hand, they wanted to please their parents. On the other hand, they wanted to find themselves. And parents range from being mildly disappointed when their children find their own dreams to threatening to withhold funds if the children do not comply with the parents' wishes. In one case, a student told me that his parents offered to pay for college as long as he studied engineering. Although the pressure is not usually quite so blatant, it often is intense.

At the time I am writing this article, there is a lot of pressure in society to major in a field that will make one a lot of money. The irony is that if one looks at successful people, defined only in terms of income, large numbers of them majored in the liberal arts. Science and engineering majors tend to start out with higher salaries but, in the long run, liberal arts majors do at least as well economically. Perhaps this is because the skills they learn in the liberal arts translate well into success in higher level positions but not necessarily in lower level positions, where more often one is paid to do what one is told rather than to think one's own thoughts.

MEASUREMENT AND DEVELOPMENT OF ACCEL SKILLS

Some might be reluctant to pursue the ACCEL model, believing that the analytical, creative, practical, and wisdom-based and ethical skills can be neither measured nor developed. But this belief would be incorrect.

The Rainbow Project

In one study (Sternberg & the Rainbow Project Collaborators, 2006; see Sternberg, 2010a), we used an expanded set of analytical, creative, and practical skills tests on 1,015 students at 15 different institutions (13 colleges and two high schools). Our goal was not to replace conventional standardized tests but to devise assessments that would supplement such tests, measuring skills that these tests do not measure. In addition to multiple-choice tests as found on conventional standardized tests, we used three measures of creative skills and three of practical skills:

- *Creative skills.* The three additional tests were captioning cartoons, writing creative short stories using two of a number of suggested titles, and orally telling creative stories based on a picture.
- *Practical skills.* The three additional tests were everyday situational judgments based on movie scenarios, a common-sense questionnaire based on problems found in work life, and a common-sense questionnaire based on problems confronted in school.

We found that our tests significantly and substantially improved upon the validity of the SAT for predicting first-year college grades (Sternberg & the Rainbow Project Collaborators, 2006). The increase in squared multiple correlational prediction reached 50%. The test also improved equity: Using the test substantially reduced ethnic group differences relative to the SAT/ACT.

The Kaleidoscope Project

The Kaleidoscope Project (Sternberg, 2009b, 2010a; Sternberg, Bonney, Gabora, & Merrifield, 2012) has been used now for many years to admit undergraduate students to Tufts University. Each year, all 15,000+ applicants have been given a selection of essays assessing analytical, creative, practical, and wisdom-based skills. The applicants have the option of completing one of the essays and then the analytical, creative, practical, and wisdom-based skills demonstrated through these essays and other aspects of the application are rated. Most but not all applicants have completed the Kaleidoscope essays.

The exact Kaleidoscope prompts vary from year to year (see Sternberg [2010a] for a complete list through 2009). An example of an analytical essay would be to state one's favorite book and why it is one's favorite book. A creative exercise might involve rendering a creative drawing, designing a new science experiment, or imaging what the world would be like today if some past event in history had turned out differently. A practical exercise might involve explaining how one convinced another person of something the person did not initially believe. A wisdom-based exercise might ask how one planned, later in life, to make the world a better place. The questions differ in the skills they emphasize. No question is a "pure" measure of any single component of successful intelligence. Scoring of the exercises is holistic and is completed by admissions officers using rubrics. We have found that, with training, scorers can achieve good interrater reliability (consistency) in their evaluations.

After Kaleidoscope was introduced, application numbers increased, and the mean SAT scores of accepted and enrolling students increased. In addition, there were no statistically meaningful ethnic group differences on the Kaleidoscope measures. Students rated for Kaleidoscope achieved significantly higher academic averages in their academic work than students who were not so rated by the admissions staff. In addition, research found that students with higher Kaleidoscope ratings were more involved in, and reported getting more out of, extracurricular, active citizenship and leadership activities in their first year at Tufts.

Panorama

Panorama is an adaptation of Kaleidoscope that has been used at Oklahoma State University. It first was used when I was provost and senior vice president at the university. Although I left before data were analyzed, the assessment was resulting in students being admitted who previously would not have been admitted.

Instruction for Analytical, Creative, Practical, and Wise Thinking

Instructional studies are a further means of testing the theory (Sternberg & Grigorenko, 2001; Sternberg, Grigorenko, & Zhang, 2008; Sternberg, Jarvin, & Grigorenko, 2009). Several sets of studies investigated instruction for academic skills. Four sets are briefly described here.

In a first set of studies, researchers explored the question of whether conventional education in school systematically discriminates against children with creative and practical strengths (Sternberg, Ferrari, Clinkenbeard, & Grigorenko, 1996; Sternberg, Grigorenko, Ferrari, & Clinkenbeard, 1999). Motivating this work was the belief that the systems in most schools strongly tend to favor children with strengths in memory and analytical abilities.

A test of analytical, creative, and practical skills was administered to 326 children around the United States and in some other countries who were identified by their schools as gifted by any standard whatsoever. Children were selected for a summer program in (college-level) psychology if they fell into one of five ability groupings: high analytical, high creative, high practical, high balanced (high in all three abilities), or low balanced (low in all three abilities). Students who came to the summer program were then divided into four instructional groups. Students in all four instructional groups used the same introductory psychology textbook (a preliminary version of Sternberg, 1995) and listened to the same psychology lectures. What differed among them was the type of afternoon discussion section to which they were assigned. They were assigned to an instructional condition that emphasized either memory, analytical, creative, or practical instruction. For example, in the memory condition, they might be asked to describe the main tenets of a major theory of depression. In the analytical condition, they might be asked to compare and contrast two theories of depression. In the creative condition, they might be asked to formulate their own theory of depression. In the practical condition, they might be asked how they could use what they had learned about depression to help a friend who was depressed.

Students in all four instructional conditions were evaluated in terms of their performance on homework, a midterm exam, a final exam, and an independent project. Each type of work was evaluated for memory, analytical, creative, and practical quality. Thus, all students were evaluated in exactly the same way. Our results suggested the utility of the theory of successful intelligence. This utility showed itself in several ways.

First, we observed that when the students arrived at the program, the students in the high creative and high practical groups were much more diverse in terms of racial, ethnic, socioeconomic, and educational backgrounds than were the

students in the high-analytical group, suggesting that correlations of measured intelligence with status variables such as these may be reduced by using a broader conception of intelligence.

Second, all three ability tests—analytical, creative, and practical—significantly predicted course performance. When multiple regression analysis was used, at least two of these ability measures contributed significantly to the prediction of each of the measures of achievement.

Third and most important, there was an aptitude–treatment interaction whereby students who were placed in instructional conditions that better matched their pattern of abilities outperformed students who were mismatched. In other words, when students are taught in a way that fits how they think, they do better in school. Children with creative and practical abilities, who are almost never taught or assessed in a way that matches their pattern of abilities, may be at a disadvantage in course after course, year after year.

A follow-up study (Sternberg, Torff, & Grigorenko, 1998) examined learning of social studies and science by third-graders and eighth-graders. The 225 third-graders were students in a very low-income neighborhood in Raleigh, North Carolina. The 142 eighth-graders were students who were largely middle to upper-middle class studying in Baltimore, Maryland, and Fresno, California. In this study, students were assigned to one of three instructional conditions. In the first condition, they were taught the course that basically they would have learned had there been no intervention. The emphasis in the course was on memory. In a second condition, students were taught in a way that emphasized critical (analytical) thinking. In the third condition, they were taught in a way that emphasized analytical, creative, and practical thinking. All students' performance was assessed for memory learning (through multiple-choice assessments) as well as for analytical, creative, and practical learning (through performance assessments). As expected, students in the successful-intelligence (analytical, creative, practical) condition outperformed the other students in terms of the performance assessments. More important, however, was the result that children in the successful-intelligence condition outperformed the other children even on the multiple-choice memory tests.

We extended these results to reading curricula at the middle school and the high school level. In a study of 871 middle school students and 432 high school students, we taught reading either analytically, creatively, and practically or through the regular curriculum. At the middle school level, reading was taught explicitly. At the high school level, reading was infused into instruction in mathematics, physical sciences, social sciences, English, history, foreign languages, and the arts. In all settings, students who were taught using our model substantially outperformed students who were taught in standard ways (Grigorenko, Jarvin, & Sternberg, 2002).

A larger scale study was conducted with 196 teachers and 7,702 students (Sternberg et al., 2014). The study

spanned 4 years, nine states, 14 school districts, and 110 schools. Although there were some promising results, there was no definitive superiority of our teaching methods over conventional ones that crossed schools and contents. What we learned is that when one greatly upscales the methods, teacher training and monitoring become key: Fidelity is lost unless one constantly checks up on whether teachers are teaching the way they are supposed to.

CONCLUSION

There are various models for updating our identification, teaching, and assessment of gifted children (e.g., Gardner, 2011; Renzulli, 2012; Sternberg et al., 2009). None of these models is likely to be perfect under all circumstances, and some may be better for some students than for others. But the models all recognize that the world has changed greatly since the early 20th century, when Lewis Terman conducted his studies of the gifted based on Stanford-Binet IQ. In the ensuing century, the world has changed, and the field of gifted education has to move with it. The greatest challenges the world faces today are not going to be solved by increased IQ points no matter how long the Flynn effect perseveres. These problems require our gifted to display active concerned citizenship and ethical leadership skills, which we as a society can develop by identifying, teaching, and assessing gifted children for analytical, creative, practical, wisdom-based and ethical skills.

REFERENCES

- Ambrose, D. (2016). Twenty-first century contextual influences on the life trajectories of the gifted and talented. In D. Ambrose & R. J. Sternberg (Eds.), *Giftedness and talent in the 21st century: Adapting to the turbulence of globalization* (pp. 15–42). Rotterdam, The Netherlands: Sense.
- Ambrose, D., & Sternberg, R. J. (Eds.). (2016a). *Creative intelligence in the 21st century: Grappling with enormous problems and huge opportunities*. Rotterdam, The Netherlands: Sense.
- Ambrose, D., & Sternberg, R. J. (Eds.). (2016b). *Giftedness and talent in the 21st century: Adapting to the turbulence of globalization*. Rotterdam, The Netherlands: Sense.
- Binet, A., & Simon, T. (1916). *The development of intelligence in children* (E. S. Kite, Trans.). Baltimore, MD: Williams & Wilkins.
- Carroll, J. B. (1993). *Human cognitive abilities: A survey of factor-analytic studies*. New York, NY: Cambridge University Press.
- Chart, H., Grigorenko, E. L., & Sternberg, R. J. (2008). Identification: The Aurora Battery. In J. A. Plucker & C. M. Callahan (Eds.), *Critical issues and practices in gifted education* (pp. 281–301). Waco, TX: Prufrock Press.
- Dai, D. Y., & Sternberg, R. J. (Eds.). (2004). *Motivation, emotion, and cognition: Integrative perspectives on intellectual functioning and development*. Mahwah, NJ: Lawrence Erlbaum.
- Darley, J. M., & Batson, C. D. (1973). From Jerusalem to Jericho: A study of situational and dispositional variables in helping behavior. *Journal of Personality and Social Psychology*, 27, 100–108. doi:10.1037/h0034449
- Darley, J. M., & Latane, B. (1970). *The unresponsive bystander: Why doesn't he help?* New York, NY: Appleton Century Crofts.

- Davidson, J. E., & Sternberg, R. J. (Eds.). (2003). *The psychology of problem solving*. New York, NY: Cambridge University Press.
- Donald Trump's file. (2016). *Politifact*. Retrieved from <http://www.politifact.com/personalities/donald-trump/>
- Flynn, J. R. (1987). Massive IQ gains in 14 nations: What IQ tests really measure. *Psychological Bulletin*, *95*, 29–51. doi:10.1037/0033-2909.95.1.29
- Gardner, H. (2011). *Frames of mind: The theory of multiple intelligences*. New York, NY: Basic Books.
- Gardner, M. N., & Brandt, A. M. (2006). "The Doctors' Choice Is America's Choice": The physician in US cigarette advertisements, 1930–1953. *American Journal of Public Health*, *96*(2), 222–232. <http://doi.org/10.2105/AJPH.2005.066654>
- Greenberg, D. (2016). Are Clinton and Trump the biggest liars ever to run for president? A short history of White House fabulists. Retrieved from <http://www.politico.com/magazine/story/2016/07/2016-donald-trump-hillary-clinton-us-history-presidents-liars-dishonest-fabulists-214024>
- Grigorenko, E. L., Jarvin, L., & Sternberg, R. J. (2002). School-based tests of the triarchic theory of intelligence: Three settings, three samples, three syllabi. *Contemporary Educational Psychology*, *27*, 167–208. doi:10.1006/ceps.2001.1087
- Heller, K. A., Mönks, F. J., Sternberg, R. J., & Subotnik, R. F. (Eds.). (2000). *International handbook of giftedness and talent*. Amsterdam, The Netherlands: Elsevier.
- Herrnstein, R. (1973). *IQ in the meritocracy*. New York, NY: Little Brown.
- Kahneman, D., & Tversky, A. (1971). Subjective probability: A judgment of representativeness. *Cognitive Psychology*, *3*, 430–454. doi:10.1016/0010-0285(72)90016-3
- Kaufman, J. C., & Sternberg, R. J. (Eds.). (2010). *Cambridge handbook of creativity*. New York, NY: Cambridge University Press.
- Kellerman, B. (2004). *Bad leadership: What it is, why it happens, why it matters*. Boston, MA: Harvard Business School Press.
- Lipman-Blumen, J. (2006). *The allure of toxic leaders: Why we follow destructive bosses and corrupt politicians—And how we can survive them*. New York, NY: Oxford University Press.
- Milgram, S. (2009). *Obedience to authority*. New York, NY: Harper Perennial Classics.
- Nisbett, R. E. (1993). *Rules for reasoning*. New York, NY: Psychology Press.
- Plomin, R., DeFries, J., Knopik, V. S., & Neiderhiser, J. M. (2012). *Behavioral genetics* (6th ed.). New York, NY: Worth.
- Reicher, S. D., Haslam, S. A., & Smith, J. R. (2012). Working toward the experimenter: Reconceptualizing obedience within the Milgram paradigm as identification-based followership. *Perspectives on Psychological Science*, *7*, 315–324. doi:10.1177/1745691612448482
- Renzulli, J. S. (2012). Reexamining the role of gifted education and talent development for the 21st century: A four-part theoretical approach. *Gifted Child Quarterly*, *56*, 150–159. doi:10.1177/0016986212444901
- Renzulli, J. S., Gubbins, E. J., McMillen, K. S., Eckert, R. D., & Little, C. A. (Eds.). (2009). *Systems & models for developing gifted programs for the gifted & talented* (2nd ed.). Mansfield Center, CT: Creative Learning Press.
- Roid, G. H. (2003). *Stanford-Binet intelligence scales* (5th ed.). Itasca, IL: Riverside.
- Spearman, C. (1927). *The abilities of man*. New York, NY: Macmillan.
- Stanovich, K. E. (2010). *What intelligence tests miss: The psychology of rational thought*. New Haven, CT: Yale University Press.
- Stanovich, K. E., West, R. F., & Toplak, M. E. (2016). *The rationality quotient: Toward a test of rational thinking*. Cambridge, MA: MIT Press.
- Sternberg, R. J. (1981a). A componential theory of intellectual giftedness. *Gifted Child Quarterly*, *25*, 86–93. doi:10.1177/001698628102500208
- Sternberg, R. J. (1981b). Testing and cognitive psychology. *American Psychologist*, *36*, 1181–1189. doi:10.1037/0003-066X.36.10.1181
- Sternberg, R. J. (1984). What should intelligence tests test? Implications of a triarchic theory of intelligence for intelligence testing. *Educational Researcher*, *13*, 5–15. doi:10.3102/0013189X013001005
- Sternberg, R. J. (1985a). Teaching critical thinking, Part 1: Are we making critical mistakes? *Phi Delta Kappan*, *67*, 194–198.
- Sternberg, R. J. (1985b). Teaching critical thinking, Part 2: Possible solutions. *Phi Delta Kappan*, *67*, 277–280.
- Sternberg, R. J. (1986). Identifying the gifted through IQ: Why a little bit of knowledge is a dangerous thing. *Roeper Review*, *8*, 143–147. doi:10.1080/02783198609552958
- Sternberg, R. J. (1987). Liking versus loving: A comparative evaluation of theories. *Psychological Bulletin*, *102*, 331–345. doi:10.1037/0033-2909.102.3.331
- Sternberg, R. J. (1988). *The triarchic mind*. New York, NY: Viking.
- Sternberg, R. J. (1990). *Metaphors of mind: Conceptions of the nature of intelligence*. New York, NY: Cambridge University Press.
- Sternberg, R. J. (1993). *Triarchic abilities test*. New Haven, CT: Unpublished test.
- Sternberg, R. J. (1995). *In search of the human mind*. Orlando, FL: Harcourt Brace College.
- Sternberg, R. J. (1996). *Successful intelligence*. New York, NY: Simon & Schuster.
- Sternberg, R. J. (1997a). The triarchic theory of intelligence. In D. P. Flanagan, J. L. Genshaft, & P. L. Harrison (Eds.), *Contemporary intellectual assessment: Theories, tests, and issues* (pp. 92–104). New York, NY: Guilford Press.
- Sternberg, R. J. (1997b). What does it mean to be smart? *Educational Leadership*, *54*(6), 20–24.
- Sternberg, R. J. (1998). *Cupid's arrow: The course of love through time*. New York, NY: Cambridge University Press.
- Sternberg, R. J. (Ed.). (2002). *Why smart people can be so stupid*. New Haven, CT: Yale University Press.
- Sternberg, R. J. (2003a). WICS: A model for leadership in organizations. *Academy of Management Learning & Education*, *2*, 386–401. doi:10.5465/AMLE.2003.11902088
- Sternberg, R. J. (2003b). WICS as a model of giftedness. *High Ability Studies*, *14*, 109–137. doi:10.1080/1359813032000163807
- Sternberg, R. J. (2003c). *Wisdom, intelligence, and creativity synthesized*. New York, NY: Cambridge University Press.
- Sternberg, R. J. (2004a). Why smart people can be so foolish. *European Psychologist*, *9*, 145–150. doi:10.1027/1016-9040.9.3.145
- Sternberg, R. J. (2004b). Wisdom and giftedness. In L. V. Shavinina & M. Ferrari (Eds.), *Beyond knowledge: Extracognitive aspects of developing high ability* (pp. 169–186). Mahwah, NJ: Lawrence Erlbaum.
- Sternberg, R. J. (2008a). The WICS approach to leadership: Stories of leadership and the structures and processes that support them. *The Leadership Quarterly*, *19*, 360–371. doi:10.1016/j.leaqua.2008.03.008
- Sternberg, R. J. (2008b). Wisdom, intelligence, creativity, synthesized: A model of giftedness. In T. Balchin, B. Hymer, & D. J. Matthews (Eds.), *The Routledge international companion to gifted education* (pp. 255–264). New York, NY: Routledge.
- Sternberg, R. J. (2009a). Ethics and giftedness. *High Ability Studies*, *20*, 121–130. doi:10.1080/13598130903358485
- Sternberg, R. J. (2009b). The Rainbow and Kaleidoscope projects: A new psychological approach to undergraduate admissions. *European Psychologist*, *14*, 279–287. doi:10.1027/1016-9040.14.4.279
- Sternberg, R. J. (2010a). *College admissions for the 21st century*. Cambridge, MA: Harvard University Press.
- Sternberg, R. J. (2010b). Teaching for ethical reasoning in liberal education. *Liberal Education*, *96*(3), 32–37.
- Sternberg, R. J. (2012). Ethical drift. *Liberal Education*, *98*(3), 60.
- Sternberg, R. J. (2015). Epilogue: Why is ethical behavior challenging? A model of ethical reasoning. In R. J. Sternberg & S. T. Fiske (Eds.), *Ethical challenges in the behavioral and brain sciences* (pp. 218–226). New York, NY: Cambridge University Press.
- Sternberg, R. J. (2016). *What universities can be: A new model for preparing students for active concerned citizenship and ethical leadership*. Ithaca, NY: Cornell University Press.
- Sternberg, R. J. (in press). A triangular theory of creativity. *Psychology of Aesthetics, Creativity, and the Arts*.

- Sternberg, R. J., Bonney, C. R., Gabora, L., & Merrifield, M. (2012). WICS: A model for college and university admissions. *Educational Psychologist, 47*, 30–41. doi:10.1080/00461520.2011.638882
- Sternberg, R. J., & Davidson, J. E. (1982). The mind of the puzzler. *Psychology Today, 16*, 37–44.
- Sternberg, R. J., & Davidson, J. E. (Eds.). (1986). *Conceptions of giftedness*. New York, NY: Cambridge University Press.
- Sternberg, R. J., & Davidson, J. E. (Eds.). (2005). *Conceptions of giftedness* (2nd ed.). New York, NY: Cambridge University Press.
- Sternberg, R. J., Ferrari, M., Clinkenbeard, P. R., & Grigorenko, E. L. (1996). Identification, instruction, and assessment of gifted children: A construct validation of a triarchic model. *Gifted Child Quarterly, 40*, 129–137. doi:10.1177/001698629604000303
- Sternberg, R. J., & Fiske, S. E. (Eds.). (2015). *Ethical challenges in the behavioral and brain sciences: Case studies and commentaries*. New York, NY: Cambridge University Press.
- Sternberg, R. J., Forsythe, G. B., Hedlund, J., Horvath, J., Snook, S., Williams, W. M., ... Grigorenko, E. L. (2000). *Practical intelligence in everyday life*. New York, NY: Cambridge University Press.
- Sternberg, R. J., & Grigorenko, E. L. (2001). A capsule history of theory and research on styles. In R. J. Sternberg & L. F. Zhang (Eds.), *Perspectives on thinking, learning and cognitive styles* (pp. 1–21). Mahwah, NJ: Lawrence Erlbaum.
- Sternberg, R. J., Grigorenko, E. L., Ferrari, M., & Clinkenbeard, P. (1999). A triarchic analysis of an aptitude–treatment interaction. *European Journal of Psychological Assessment, 15*(1), 3–13. doi:10.1027//1015-5759.15.1.3
- Sternberg, R. J., Grigorenko, E. L., & Zhang, L.-F. (2008). Styles of learning and thinking matter in instruction and assessment. *Perspectives on Psychological Science, 3*, 486–506. doi:10.1111/j.1745-6924.2008.00095.x
- Sternberg, R. J., Jarvin, L., Birney, D., Naples, A., Stemler, S., Newman, T., ... Grigorenko, E. L. (2014). Testing the theory of successful intelligence in teaching Grade 4 language arts, mathematics, and science. *Journal of Educational Psychology, 106*, 881–899. doi:10.1037/a0035833
- Sternberg, R. J., Jarvin, L., & Grigorenko, E. L. (2009). *Teaching for wisdom, intelligence, creativity, and success*. Thousand Oaks, CA: Corwin.
- Sternberg, R. J., Jarvin, L., & Grigorenko, E. L. (2011). *Explorations of the nature of giftedness*. New York, NY: Cambridge University Press.
- Sternberg, R. J., Kaufman, J. C., & Grigorenko, E. L. (2008). *Applied intelligence*. New York, NY: Cambridge University Press.
- Sternberg, R. J., & Lubart, T. I. (1995). *Defying the crowd: Cultivating creativity in a culture of conformity*. New York, NY: Free Press.
- Sternberg, R. J., & the Rainbow Project Collaborators. (2006). The Rainbow Project: Enhancing the SAT through assessments of analytical, practical and creative skills. *Intelligence, 34*, 321–350. doi:10.1016/j.intell.2006.01.002
- Sternberg, R. J., & Reis, S. M. (Eds.). (2004). *Definitions and conceptions of giftedness*. Thousand Oaks, CA: Corwin.
- Sternberg, R. J., & Smith, C. (1985). Social intelligence and decoding skills in nonverbal communication. *Social Cognition, 3*, 168–192. doi:10.1521/soco.1985.3.2.168
- Sternberg, R. J., Torff, B., & Grigorenko, E. L. (1998). Teaching triarchically improves school achievement. *Journal of Educational Psychology, 90*, 374–384. doi:10.1037/0022-0663.90.3.374
- Sternberg, R. J., & Weil, E. M. (1980). An aptitude–strategy interaction in linear syllogistic reasoning. *Journal of Educational Psychology, 72*, 226–239. doi:10.1037/0022-0663.72.2.226
- Stolberg, S. G., & Labaton, S. (2009, January 30). Obama calls Wall Street bonuses “shameful.” *The New Times*. Retrieved from http://www.nytimes.com/2009/01/30/business/30obama.html?_r=0
- Subotnik, R. F., Karp, D. E., & Morgan, E. R. (1989). High IQ children at midlife. *Roeper Review, 11*, 139–144. doi:10.1080/02783198909553190
- Terman, L. M. (1925). *Genetic studies of genius: Mental and physical traits of a thousand gifted children* (Vol. 1). Stanford, CA: Stanford University Press.
- Terman, L. M., & Merrill, M. A. (1937). *Measuring intelligence*. Boston, MA: Houghton Mifflin.
- Terman, L. M., & Oden, M. H. (1959). *The gifted group at mid-life: 35 Years' follow-up of the superior child*. Stanford, CA: Stanford University Press.
- Turkheimer, E., Haley, A., Waldron, M., d'Onofrio, B., & Gottesman, I. (2003). Socioeconomic status modifies heritability of IQ in young children. *Psychological Science, 14*, 623–628. doi:10.1046/j.0956-7976.2003.psci_1475.x
- Willis, J. O., Dumont, R., & Kaufman, A. S. (2011). Factor-analytic models of intelligence. In R. J. Sternberg & S. B. Kaufman (Eds.), *Cambridge handbook of intelligence* (pp. 39–57). New York, NY: Cambridge University Press.
- Yes, I'd lie to you. (2016, September 10). *The Economist*, p. 18. Retrieved from <http://www.economist.com/news/briefing/21706498-dishonesty-politics-nothing-new-manner-which-some-politicians-now-lie-and>
- Zimbardo, P. (2008). *The Lucifer effect: Understanding how good people turn evil*. New York, NY: Random House.

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