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Abstract

The Flynn effect probably has multiple causes, and the target essays in this issue have expanded the number of possible causes behind it. This essay deals primarily with a different question: How important is IQ in the current world and should it perhaps be understood also in conjunction with a consideration of some kind of ethical intelligence?

Keywords

Flynn effect, cognitive intelligence, ethical intelligence

An Excursion Into Science Fiction

What would happen if super-intelligent beings landed on Earth? One model is that of *The Day the Earth Stood Still*, a movie based on a novella by Harry Bates. In this model, a being (Klaatu) lands on Earth who warns Earthmen that unless they reform themselves and act better, their planet is in danger of being destroyed. Klaatu looks and acts quite human but clearly comes from a civilization far more advanced than Earth's. Klaatu's robot, Gort, is a good robot whose goal is to protect Klaatu. A second model is that of H. G. Wells in *War of the Worlds*. In this model, octopus-like creatures land on Earth and create evil robots bent on destroying Earth. The invaders die when they are killed by microorganisms to which they have no resistance.

But what if the very intelligent beings, rather than landing on Earth, inhabited Earth without having to rocket here? Such a third model is that of H. G. Wells in *The Time Machine*. In the distant future, humanity has divided into two groups, the Eloi and the Morlocks. The Eloi are innocent and childlike, the Morlocks, cunning and depraved. The time traveler (whose name is never given) discovers that the Morlocks eat the Eloi and treat them as cattle on a farm to be slaughtered. Thus, the brighter of the two groups has become the oppressor of the less bright but more humane group.

So the highly intelligent may be good (*The Day the Earth Stood Still*) or bad (*War of the Worlds* and *The Time Machine*), and either humanlike or not in physical form. When they are bad, they are destructive and create a planet on which no one would want to live or, as the case may be, soon will live.

Science Misdefining Problems

Perhaps people really should pay more attention to science fiction because sometimes it better identifies the problems society faces than does science. In the field of psychology, researchers

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have spent a great deal of time and energy puzzling over what intelligence is, how it can be measured, and lately, why it, or at least its proxy, IQ, seems to have climbed rather steeply, around the world, during the 20th century. The assumption, as far as I can tell, is that the rise in IQ is a good thing and that it will bring humanity to a better place. Researchers have perhaps paid less attention to the question that many science fiction writers have addressed, from H. G. Wells to Isaac Asimov to Ray Bradbury: Are higher levels of intelligence actually good, bad, or a little bit of both, for humankind and the world in which it resides?

A stunning finding in Flynn's (1984, 1987, 1998, 1999, 2007) work is that IQs not only rose during the 20th century, but seemed to rise around the world. Moreover, whatever has caused the rise in IQs seems to work in one way at a secular level but in another way at an individual level. Obtaining increases in individual intelligence within a given time period are difficult, whatever the interventions one brings to bear.

A large literature has developed trying to understand why the Flynn effect (FE) occurs (see, e.g., Neisser, 1998), and that is the topic of this special issue as well. Kaufman (2010) shows quite convincingly that some but almost certainly not all of the increase may be a result of changing instructions on tests. Zhou, Zhu, and Weiss (2010) have shown other test-specific factors may matter as well. Both articles show the need to examine the actual test and its results carefully before leaping to conclusions about the FE or anything else!

The Kaufman (2010) article is of particular interest because it shows that when Flynn or anyone else compares the results of tests in successive editions, they should not immediately assume that the successive editions actually measure quite the same construct. As Kaufman points out, what appear to be small changes in test directions can change the psychological construct a test measures. This change may be larger for some groups (e.g., those who are less test-wise) than for others (e.g., those who are test-savvy). The Wechsler of today not only has directions that differ from those in the past, but also part scores. We should not assume that because the name of a test stays the same, the actual constructs measured stay just the same as well.

The Zhou, Zhu, and Weiss (2010) article is important because it shows that the FE is not equally distributed across ability levels. If one were to try to adjust an individual's IQ level by the FE, one would be embarking on a hazardous mission, because the effect varies in magnitude across the distribution of IQs. One might wonder why this matters, but in a capital case, where an IQ is being used as part of the evidence to determine whether a convicted killer has an IQ sufficient to understand the crime he or she has committed, misapplication of the FE to individual cases could have tragic results. The FE seems to apply in the aggregate, but it is extremely difficult to apply it in individual cases.

Both these articles—by Kaufman and by Zhou et al.—render frightening the use of the FE or even of tests such as the Wechsler Adult Intelligence Scale (WAIS) as a basis for establishing competency in criminal proceedings. With the stakes in such cases so high, can we really put enough faith into levels of IQ scores to draw sound conclusions? But the gist of my own essay is that the very use of IQ in such proceedings is ethically challenged, because such tests measure cognitive intelligence, not ethical intelligence, to be discussed later! Ethical intelligence—one's level of ethical reasoning and problem solving—may be more relevant than cognitive intelligence in such cases.

In the end, it is not clear that we will find any one factor that causes the rise in IQs. Flynn's (2007) own interpretation of the rise as due to technological and educational enhancement seems plausible, but no explanation satisfactorily accounts for the uniformity of the rise, given that technology and education have not increased in quality and availability everywhere. Probably there are multiple interacting causes, including the increased complexity of the world and the increase in intelligence needed to adapt successfully to this world.

In effect, the world becomes like a global parent that directs people to develop certain skills over others, such as abstract thinking and symbolic reasoning of the kinds measured by IQ tests. If we were to measure adaptation by tests of hunting or gathering skills, there probably would have been a decrease during the 20th century as more and more societies moved away from hunting/gathering models. Skills develop in part as a reflection of the demands of the environment: Abstract reasoning has become more important in today's world, hunting and gathering, less. Ethical skills, in contrast, were important in the past and remain crucially important today.

Flynn Effect for What?

I believe the science fiction writers have it right and that perhaps the scientists have it wrong, or at least, not quite right. We need to pay more attention not to whether intelligence or its proxy IQ is rising, but rather, to what the implications of rising intelligence will be, especially for ethical behavior. Unfortunately, we do not have strong empirical evidence, but that is not to say that we have none at all. Consider banking.

In the past couple of decades, banking has become a very different field from what it was before. Banking and especially investment banking have started to attract IQ whizzes from top schools who have come to realize that exotic investment vehicles can be constructed based on extremely complex mathematical models that bankers of a generation before never would have understood. Any number of people going into banking are now theoretical physicists or mathematics majors who did not find academic jobs or who preferred to use their skills in a more applied realm. These complex mathematical models, like all such models, worked as long as their assumptions were met. The problem is that the users of the models paid relatively little attention to whether the assumptions were met. The crucial assumption was that the assets on which the models were based were worth what they were supposed to be worth. When they were not and the ratings by rating agencies turned out to be spurious, the models crashed and almost took the United States and the world financial system down with them. Ironically, the bank failures were caused by people with better educations, better degrees, and probably higher IQs than the more boring, more risk-averse bankers who kept the financial system afloat over a period of many years. What is not clear is that their ethical intelligence is any higher than that of bankers in the past, and it may well be lower.

Such ironies are not limited to the financial world. When terrorists obtain atomic, biological, and/or chemical weapons on a large scale—and it seems to be matter of when rather than whether—the world will be imperiled by innovations that only could have come about as the result of the work of people with very high IQs. Those working on the Manhattan Project, for example, were the cream of the crop in terms of the physicists of the day. The ethical implications of this work seem to have been less thought out than the technical ones.

My career started with investigations of intelligence as measured by IQ tests (e.g., Sternberg, 1977), and when I started such work, I believed that the problem with research on IQ tests was that it put too much emphasis on products rather than on mental processes. By the next phase of my research (e.g., Sternberg, 1985), I concluded that the problem was that the tests themselves were limited, because they measured analytical intelligence, but not creative and practical intelligence. After all, you need creative intelligence to generate new ideas, analytical intelligence to ascertain whether they are good ideas, and practical intelligence to apply those ideas to the real world and to convince others of their value. But by the next phase of my research (e.g., Sternberg, 2003, 2009), I had concluded that my formulation was still incomplete, because it did not take into account wisdom, or whether one's intelligence and other skills are directed toward a common good through the infusion of positive ethical values.

In our fascination with the FE, we risk assuming that a good end for education would be continued increases in IQs in the 21st century—that is, a prolongation of the effects observed in the 20th century. Thus, for some scientists, it may be troubling that evidence suggests that the gains may be slowing or even reversing (e.g., Sundet, Barlaug, & Torjussen, 2004; Teasdale & Owen, 2005). But I suspect that what we really should be paying to is whether increasing IQs are bringing a situation closer to that of producing Klaatus or closer to that of producing Morlocks!

The high-IQ people our society produces do not eat people in the same way that the Morlocks ate the Eloi, at least in the H. G. Wells classic. But if we interpret the word “eat” more metaphorically, the picture looks grimmer. As I write this essay, unemployment and home foreclosures are at record rates, with people’s assets having been “eaten away” at a rate unprecedented since the Great Depression. What some member of our intelligent classes may be doing, at some level, is eating away at our future. This is scarcely scientific language, but that same language may have obfuscated the truly important issues of our time.

Scientists may tend to be uncomfortable with values and with things that are hard to measure, including values. So they may tend to be dismissive of the concern that paying great attention to increases in IQ may distract from the problem of how these increases are used. Nevertheless, the greatest problems facing humanity today seem not to be so much technical as ethical.

To my knowledge, there has been no study of whether ethical behavior increased during the course of the 20th century but we do know that many of the worst genocides of the twentieth century occurred at the end, during the 1990s (Sternberg & Sternberg, 2008). If people’s behavior is getting more ethical, it is hard to find signs of it. At a time when there are many wars and many poor people are losing their homes, increased attention to ethical behavior certainly would be welcome.

If cognitive intelligence were all it is cracked up to be, the world would not currently be in the economic mess that we are now in. In the extreme case, Bernard Madoff in the United States apparently created a \$50 billion Ponzi (pyramid) scheme that has bankrupted many individuals and organizations. What seems to be missing is ethical intelligence, or the use of one’s cognitive intelligence in reasoning and problem solving toward ethical ends.

Latané and Darley (1970) demonstrated 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 who was in need of—a good Samaritan! Drawing on their model of bystander intervention, I have constructed a model of ethical behavior that would seem to apply to a variety of ethical problems.

A Model for Enacting Ethical Intelligence

According to the model, enacting ethical behavior is much harder than it would appear to be, in part because it involves multiple, largely sequential, steps (Sternberg, 2009). To behave ethically, the individual has to

1. recognize that there is an event to which to react,
2. define the event as having an ethical dimension,
3. decide that the ethical dimension is significant,
4. take responsibility for generating an ethical solution to the problem,
5. figure out what abstract ethical rule(s) might apply to the problem,
6. decide how these abstract ethical rules actually apply to the problem so as to suggest a concrete solution,
7. prepare to deal with possible repercussions of acting in an ethical way, and
8. act.

Seen from this standpoint, it is rather challenging to respond to problems in an ethical manner. Unless people learn just how challenging it is, they may assume, falsely, that merely having attended religious school, or having been brought up correctly, or even having taken a course on ethics is sufficient to ensure their ethical behavior.

Is There Really an Ethical Intelligence of Some Kind?

Is there an ethical intelligence of some kind? Gardner (1999) has wrestled with the question of whether there is some kind of existential or even spiritual intelligence that guides people through challenging life dilemmas. Coles (1998) is one of many who have argued for a moral intelligence in children as well as adults. Is there some kind of moral or spiritual intelligence in which some children are inherently superior to others? Kohlberg (1984) believed that there are stages of moral reasoning, and that as children grow older, they advance in these stages. Some will advance faster and further than others, creating individual differences in levels of moral development.

The perspective of this essay is related but perhaps a bit different. People can certainly differ in their moral reasoning and moral development, but we can teach students as well as adults in the working world to enhance their ethical reasoning and behavior simply by instructing them regarding the challenges of thinking and acting in an ethical way. It is not enough to teach religion or values or ethics. One needs to teach children about the steps comprising ethical intelligence, as described above, so that they can recognize for and in themselves how and why it is that ethical behavior presents such a challenge. They need education and they need inoculation against the forces that are likely to lead them to fail to behave ethically because they do not make it through all eight of the steps as described above.

From this point of view, ethical thinking and action are not some kind of inherent characteristics, but something we can develop in virtually all children (assuming they are not psychopathic). But such development is difficult because, as we have seen, thinking and acting ethically are more of a challenge than would appear. Merely going to religion or ethics classes will not, in and of themselves, produce ethical behavior.

Conclusion

Differences in the manifestation of people's intelligence appear to be, at least in part, in their skill in completing a set of eight steps that, conjointly, produce ethical behavior. Failure of an earlier step is likely to lead to failure to execute the later steps. Teaching students abstract principles of ethical behavior or ethical rules is unlikely, in itself, to produce ethical behavior. Rather, students need to be taught the sequence of processes leading to ethical thinking, and to inoculate themselves against pressures—both external and internal—to behave in unethical ways.

There is an additional problem that we must face in today's society, and that is that some students simply do not see ethics as applying to them. In speaking of the challenges of leadership, and particularly of leaders who become foolish, I have spoken of the risk of ethical disengagement (Sternberg, 2008). Ethical disengagement (based on Bandura, 1999) is the dissociation of oneself from ethical values. One may believe that ethical values should apply to the actions of others, but one becomes disengaged from them as they apply to oneself. One may believe that one is above or beyond ethics, or simply not see its relevance to one's own life.

Oddly enough, some of the most ethically disengaged individuals can be those who teach others to be ethically engaged. During the past decade, there have been numerous instances of religious leaders abusing children, often very young ones. These instances have not only embarrassed the churches of which the religious leaders have been leaders but have also led to hundreds of millions of dollars in legal fees and settlements.

Many people today view their goal as to get ahead, and they are willing to do so in ways that are ethically challenged. As educators, I suggest that we have an ethical responsibility to teach our students to think and act not only smartly, but wisely and ethically—to develop not just their cognitive intelligence, but their ethical intelligence as well. We have had a FE for cognitive intelligence. If only we had it for ethical intelligence as well.

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