

Bridging the Gap  
The Reconciliation of Intelligence and Culture



Nils M Holm

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*If intelligence mattered,  
our spaceships would travel the  
galaxy at faster-than-light speed.*



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## Introduction

In the 2010's I haven't written a few essays about high IQ, high sensitivity, etc. Ever since people have asked me to write more about the topic, but this is a touchy subject — even a political one — and I am reluctant to get involved in this kind of discussion. I have started many essays and even books on this matter, but never managed to finish one, because they would be highly controversial, and I lack the ambition to propagate controversial matters in public. I sometimes discuss them in private, but even there only with people who care more about research than beliefs or personal agendas. Any discussion must lead to a goal, or it is a waste of time.

This text is one of my unfinished books. Unfortunately it lacks the most interesting part, the “reconciliation” part, because it involved the deconstruction of pretty much every narrative in which people in our modern, economic society believe. I have written that part, but I will not publish it, because it is probably as controversial as it gets. It plays with ideas like the abolition of competition, the value of friendship and loyalty, cooperation among human beings and groups of human beings, etc; things that have long been deemed unworthy of being part of the life of the phantom called the “homo economicus”. Anyway, I digress.

This text is unfinished and needs a little more editing, but is overall in a readable shape. People who have read it urged me to publish it, even in its incomplete form. Here you are. Enjoy!

Nils M Holm, Jan 2023

## The Gap

When the term “the gap” appears in this text, it denotes very specific phenomenon with very broad consequences. It can be expressed scientifically using statistics, but its implications can only be viewed from a bird’s eye view. They become most visible in the sociological context where they affect the lives of human beings at large and at the psychological level where they affect the lives of individual human beings. They influence and are influenced by culture, thereby forming our mental environment and being formed by it. If culture was not the way it was, writing this text would not make sense. On the other hand culture is being formed, or transformed, mostly by people on the far end of the gap. However, this transformation is a slow and painful process and it is slowed down at the expense of those forming it as well as those benefitting from the transformation. So bridging the gap between the main stream and those at the far end would benefit not only those that are currently being marginalized, but all of humanity in the end.

Viewed superficially, the gap is something that separates people with the ability to view reality in a faceted and differentiated way from those who do not have this ability. It is important to note at this point that those who do not have this ability do not in some way “lack” it. This ability is just an attribute, like gender, weight, height, hair color, or eye color. None of these attributes is strongly correlated to living a happy life or being a respected member of society. There are attributes, though, which are correlated with well-being and respect, most prominently beauty, strength, and intelligence. Even here, though, much of the the value of these attributes in the the eye of the beholder. Beauty is a blurry measure, too much strength may appear intimidating, and a big

difference in intelligence makes communication hard. None the less culture agrees that strong, beautiful, and intelligent people are desirable to have around.

Again this assumption is very superficial. Sometimes people are either strong or intelligent (even if popular movies may depict it otherwise), sometimes beauty (in the sense of fragility) is viewed as a weakness, particularly in men, and sometimes having around someone who is much more intelligent than you can be annoying. The picture should be clear at this point: it is rarely a clear-cut fact whether an attribute is desirable or not. It all depends on circumstance. This should be kept in mind when reading this text.

After having danced around the topic long enough: this text is about *intelligence*, or, rather, different levels of intelligence. A “level” here denotes not just a numerical range, but a rather vague quality. People who have the ability to absorb and process complex relations often think in a completely different way than the average person. It is almost as if they were using a different language than most people, even if they technically do not. Thus forms The Gap.

## The science of the Gap

The best correlate that science has for finding out how a person thinks is the “intelligence quotient” or, in short, IQ. This topic will be discussed more in detail later in this book. For now let us assume that IQ is a number that correlates with the “raw thinking power” of a person. This thinking power then correlates with certain qualities of thought and perception, such use of language (verbal skills), ability to solve logical problems, but also qualities like creativity, sensitivity, and empathy.

IQ is typically a single number roughly in the range from around 70 up to up to around 200, but the measure become very blurry at the high end. An IQ of 100 is average and an IQ in the range from 85 to 115 is “normal” or “standard”. People with an IQ below 70 will often have difficulties with everyday tasks. An IQ of 115 to 135 is sufficient (and typical) for a career in academia. About 85% of all people have an IQ between 85 and 115, which is why it is considered to be “normal”.

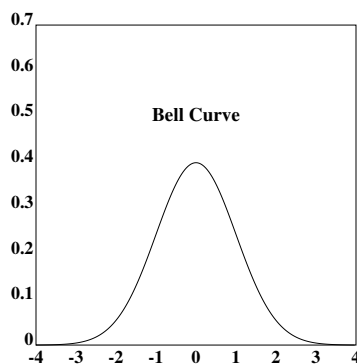


Fig.1 - The Bell Curve

Like many natural phenomena IQs are not distributed evenly but

along a curve known as the Bell Curve (fig.1). The average of the curve is marked by the zero on the X-axis (the horizontal axis). In the case of the IQ curve, the zero denotes a score of 100. The Y-axis indicates the probability of the corresponding score (this is not entirely true, but good enough for now). So the average score has the highest probability and lower and higher scores have lower probabilities. Note that scientists indicate probability with a value between (and including) zero and one, where zero means “impossible” and one means “certain”.

The range between the  $-1$  and the  $1$  on the X-axis of the curve is the “normal” or “standard” range. 84.1% of a sample are expected to fall into this range. The distance from the average (0) to the  $1$  or  $-1$  is called one “standard deviation”, denoted by the greek letter  $\sigma$  (sigma). So the  $\sigma$  can also be used to indicate an IQ:  $0\sigma$  would denote an IQ of 100,  $1\sigma$  an IQ of 115,  $2\sigma$  an IQ of 130, etc. Expressing a score as a distance from the average has the advantage of indicating how rare a score is. This will be discussed later in detail. Figure 2 shows the standard IQ range as a shaded area with a vertical line indicating the average.

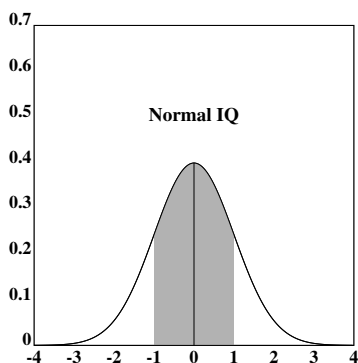


Fig.2 - The Normal IQ range

IQ is not only a measure of thinking speed and the qualities associated with thought, it is also a useful predictor for social interaction. When two people whose intelligence differs by a great degree talk to each other, especially about abstract topics, communication will often be tiring for both of them. This is not because one of the “knows better”, it is just because two completely different world views are being experienced and expressed.

When this phenomenon was first studied, the psychologist Dean Keith Simonton came up with the idea of the Window of Comprehension [Simonton1985]. Formally, the Window of Comprehension is range around a given score, much like the standard range around the average. The size of this range is 30 IQ points, but the correspondence to the size of the standard range is incidental. The window of an average person with an IQ of 100 corresponds exactly to the standard range from 85 to 115 (but, again, this is coincidence).

Communication for that person works best with people who are inside of the window and becomes more complicated as the difference between two scores increases. A person with an IQ of 100 can easily communicate with a person with an IQ of 110, less easily with a person with an IQ of 120, and may find it difficult to find common ground with a person with an IQ of 130. The same difficulty arises, for example, between IQs of 120 and 150. Figure 3 shows an IQ of  $1.5\sigma$  (corresponding to a score of about 123) and the Window of Comprehension (WoC) around that score (reaching from  $0.5\sigma$  to  $2.5\sigma$ ).

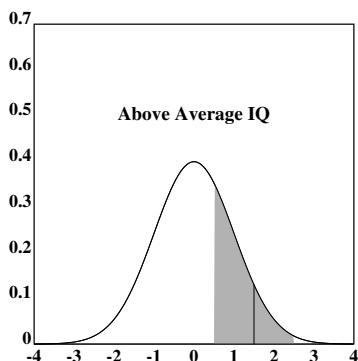


Fig.3 - Above Average IQ and Window of Comprehension

When shading the WoC of  $0\sigma$  and the Woc of  $1\sigma$  in the same bell curve (fig.4), there will be an overlap between the shaded areas, which means that a person with a  $0\sigma$  IQ will probably be able to find common ground with a person with a  $1.5\sigma$  IQ. The overlap between the windows is shaded darker in the figure. An IQ of  $1.5\sigma$  is already quite rare. Only about seven percent of the population score that high (or higher), but abstract communication with the average person is still possible.

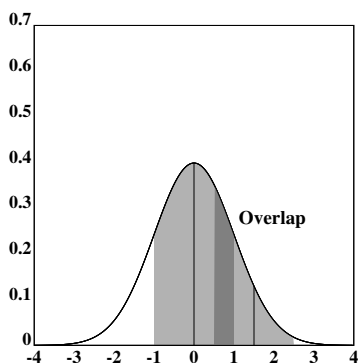


Fig.4 - Overlapping Windows of Comprehension

When IQ scores move further apart, there will be a point where there is no longer any overlap between two windows of comprehension. This is the point where communication about abstract topics becomes very hard or even impossible, because the worlds experienced by the corresponding persons may differ to such a degree that even the most basic assumptions can no longer be agreed upon. The absence of overlap between two windows of comprehension presents itself as a gap between the shaded areas (see figure 5).

The gap between a  $0\sigma$  window and a  $2.5\sigma$  (138 IQ points) window, as shown in the figure is small. For a  $4\sigma$  IQ, the gap would extend from  $+1\sigma$  to  $+3\sigma$ , which would probably make communication about abstract topics very much impossible. This means that a very intelligent person cannot communicate ideas to average persons. This is probably not a big surprise, as most “normal” people would not expect to understand more complex topics, like science, that are typically attributed to high intelligence.

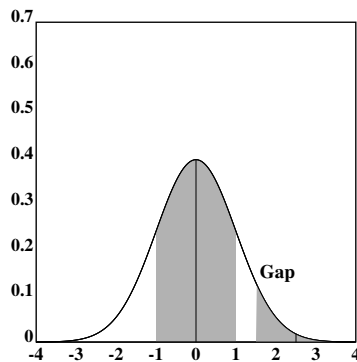


Fig.5 - The Gap

However, the gap also exists between higher IQs, like between a  $5\sigma$  IQ and a  $2.2\sigma$  IQ. The latter is the IQ of an average scientist.



So how is an extraordinarily intelligent person supposed to communicate their ideas and to whom?

## What is it like to be very intelligent?

Many people assume that the life of a highly intelligent person unfolds like this: learning to talk at an early age, learning to read before even going to kindergarten, always being the best in school, winning the annual math contest, learning to play a musical instrument, skipping classes, and graduating summa cum before attending university at a tender age and becoming a leading expert in the field.

Surprisingly, an IQ in the  $2\sigma$ .. $3\sigma$  range, a little bit of talent, a friendly environment, and a good measure of determination is sufficient for all of the above.

What is more likely for a person in the above- $3\sigma$  range is a life full of hurdles, misunderstandings, anxiety, depression, and marginalization. The more removed from the average, the more likely a person will fail to find their place in society.

It starts with childhood. All advice that the parents may gather from books, from peers, and from experts applies to children with average intelligence. Highly intelligent children develop differently. They are able to understand abstract concepts at an early age, which makes them very mature intellectually. At the same time, though, they are still children and need guidance when developing an understanding of their interaction with other people. This guidance can only be accepted when it makes sense intellectually, though. Telling a highly intelligent child that things are the way they are, because they are how they are, will not be acceptable to the child. This approach will work with a child that had does not have the intellectual capacity yet to infer abstract knowledge, but it will only frustrate a  $3\sigma$  child. This in turn will frustrate the parent, and tension between child and parents will develop. This development

is escalated by the great sensitivity and empathy that is often correlated with a high IQ.

The fault is not with the parents here. A  $3\sigma$  or higher IQ is simply too rare and this is why there is little literature on the topic and there are few (if any) experts. As a consequence parents often treat their child like an adult in areas where it needs consolation and validation and like a child where the child in fact has the same capabilities as an adult.

Imagine not being taken seriously when you have thought something through and come to a conclusion that is absolutely solid from your point of view and imagine this happening on a regular basis. At the same time imagine being left alone whenever you need emotional backup. This is basically what happens to many highly intelligent children. Parents think that their child needs no emotional support, because it acts so maturely, but at the same time, they deny their child the right to draw their own conclusions and make their own decisions. And this happens at an age where the internal model of the world forms in the child. It will not be a model that results in confidence, healthy boundaries, and good social skills.

This would not a good start for anybody, but it is a particularly bad starts for someone who will probably feel alienated from most of the people around them most of the time. When a highly intelligent child starts to attend kindergarten or school, this will be a weird experience. The other children look like them physically, but seem to be blunt, uninterested, savage, and maybe even cruel. One highly interlligent person I know told me that they were shocked to see how dead the eyes of most of the other children looked like. They could as well have been animated dolls or robots.

How life at school unfolds depends on many factors, of course, like the difficulties experienced in the previous upbringing, the tolerance of the classmates towards people who are different, the traits developed in order to deal with previous difficulties, etc. Because there are so many contributing factors, there are many different problems that can manifest at this point. Some high-IQ children are rather inconspicuous. They go with the flow, do not cause trouble, and show average performance. This can be a healthy strategy to deal with the absurd and, in their case, completely pointless reality of the education system, but it can also be some early form of resignation. Other children disconnect or dissociate from life at school, which is utterly dull and boring to them, and yet others cannot suffer the dullness in silence and start to become loud, insubordinate, and aggressive.

What all of them have in common is that the teachers will usually perceive them as not particularly intelligent or maybe even a bit simple-minded. So instead of skipping classes (which would alleviate the symptoms a little), they get detention, extra tuition where the stuff that is trivial to them anyway is repeated once more, etc. A  $2\sigma$  child may see the curriculum as a challenge and maybe thrive and try to be at the top of the class. A  $3\sigma$  child maybe and a  $4\sigma$  child certainly will be bored to such a degree that it either withdraws to an inner world or attempts to make the outer world more interesting by taking initiative, which their peers and teachers will typically experience as a disruption of the normal flow if things.

Note at this point that the converse is not necessarily true: a child that has or causes trouble at school is not necessarily highly intelligent. There can be lots of other reasons for children to behave in disruptive or withdrawn ways. This is part of the

problem: if there was a strong correlation, then high-IQ children would be easy to spot, but since they often behave in ways that are rather associated with average-IQ children that have different problems, high-IQ usually are not noticed as such.

There was a trend where parents with children who experienced trouble thought that their children must be very intelligent. I have talked to a clinical psychologist at a large clinic about this once while doing some research in the areas of high IQ and social integration. They told me that about 3% of the children that are tested at their place have a  $2\sigma$  or higher IQ, which is congruent with the underlying statistics. They also told me that in the more than 10 years that they had worked at the clinic they had never tested a child with a  $3\sigma$  or higher IQ.

Whatever problems manifest at the beginning of education will be cemented soon when the problem is not identified and addressed in a helpful way. The problems at school will increase the alienation felt at home. The parents of one person I know let their young adult child do an IQ test in order to find out if the child was “lazy” or “stupid”. To their big surprise the child scored far into the  $3\sigma$  range, but the conclusion they drew was that the child must then be lazy, and they withdrew their emotional support even further, because they were ashamed of having a child with such a serious flaw in their personality. The child, of course, registered the shift in perception and lost all confidence that had remained in the relationship with their parents. It is a sad society, indeed, in which the only explanations for trouble with the educational system are laziness and stupidity.

At this point the life of the highly intelligent person has taken so many turns that it is impossible to give an account of all the possible outcomes, so here follow some anecdotal snippets

gathered from communication with highly intelligent persons, mostly in the  $3.5\sigma$  to  $5\sigma$  range.

One person attended university and studied a field that they were passionate about, which caused a lot of trouble from the start, because their passion combined with a  $4\sigma$  IQ soon propelled them beyond the knowledge of their tutors and then their professors. A professor at a university, of course, is not used to a student winning an argument with them and may get very defensive about it. That the student was rather competitive and enjoyed being right did not exactly help his case. At some point the professor ruled an answer in an exam to be a mistake while the student asserted that his answer be correct. The professor did not give in, thereby ruining a perfect result in the eyes of the student. In frustration about the injustice the student left university. Outside of university they were just another person without any formal education that worked odd jobs.

Many of the people drop out of school, either by quitting or by being ejected. Some find their way back into the educational system by exploiting some loopholes. One person earned a high school diploma by attending the final examination without being a student at the school — an option that existed in their country but was known only by few. Some people social engineered their way into university or flat out asked if they could attend even without producing a diploma. Some have earned such a solid basis of knowledge and experience at young age that they manage to find a well-paying job even without ever having received any formal training. This is particularly true in our age where knowledge and material for all kinds of advanced topics are readily available on the Internet.

Having a job that pays the bills helps to find your way in this world,

and having a jobs that allows for some extras, like a new car, vacations in foreign countries, or maybe an own apartment, is seen as the ultimate goal by many. However, this can be a stale experience when you are always on your own. You may find a partner, but never feel any connection to them, because they do not share your interests, your values, your empathy, your sensitivity, etc. Many relationships of high-IQ people are uneasy compromises at best. The alienation they first felt at home and then at school and in later life extends also to their closest connections.

One person I know was happy when their father left the family, because “there was one less problem to deal with”. They often slept during the lessons at school, because the boredom was insufferable, and dropped out as soon as they could. They worked some odd jobs and then used a loophole to attain access to university. They started to study a variety of subjects and eventually dropped out again. They then worked several jobs in technology, but always quit after a short time. They married and were divorced. They had few friends, and the few friend they had they met rarely. At some point they wondered what it was that was lacking all the time and noticed that what they searched for was a home, a safe haven, a place where they belong. Of course, neither school nor university nor friends nor a wife or husband can offer this place. Only parents can. Ironically they later learned from their late father that he had experienced the same problems in his life, which was why he ran away from his family decades ago. Even at an age of 90 years he was still desparately looking for the place that he had never had. Sadly, he never found it and passed away in desparation and loneliness.

Of course not all lives of highly intelligent people are so bleak. I

have heard of one  $3\sigma$  person who works as a gardener and one who works as baker, and both seem to be rather comfortable. When there is at least some solid emotional foundation, high-IQ people can adapt to all kinds of situations with ease. This is why it is so important that they receive emotional validation and intellectual honesty at an early age, so they can learn that their perceptions and thoughts are valid and that it is alright to have boundaries.

Note that not much is said here about very successful people with a  $3\sigma$  or higher IQ. This is not because they do not exist, but because they are the exception to the rule, and the greater the distance from the average the greater the exception. I have heard that at a  $3\sigma$  IQ the rate of dropping out is as low as 30%. However,  $4\sigma$  is not just a little bit higher than  $3\sigma$ , The scale is exponential: an IQ of  $3\sigma$  is 17 times less likely than an IQ of  $2\sigma$ , but an IQ of  $4\sigma$  is 42 times less likely than an IQ of  $3\sigma$  (and 700 times less likely than an IQ of  $2\sigma$ ). Little is known about people with very high IQs. All knowledge I have myself is anecdotal, and will be summarized in the following chapters.



## The inside world of the highly intelligent

What does it feel like to be equipped with a high degree of intelligence? There are many different qualities to thought in general, and many of those qualities are affected by intelligence. The most obvious difference and the quality measured by IQ tests is what I would like to call raw thinking power. It is the speed at which mind solves specific, isolated problems. Such problems are often presented in the form of puzzles. Raw thinking power is about the same as the engine power of a car. Most of the time, more power means more speed.

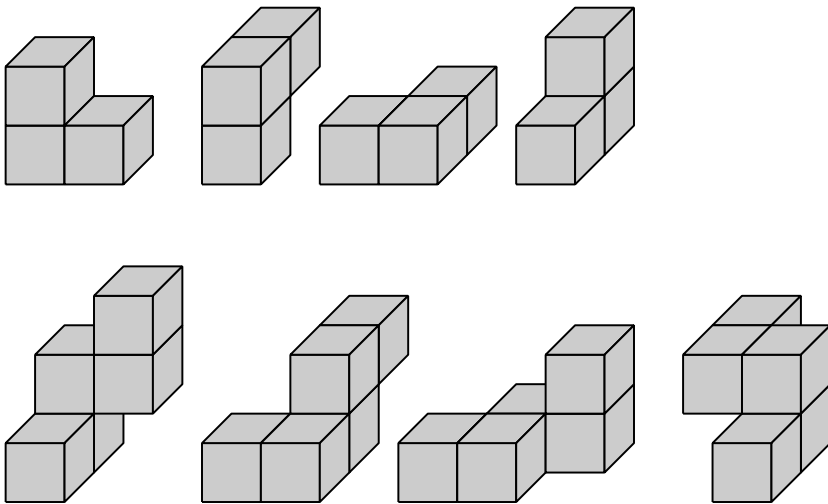


Fig.6 - A Puzzle

To understand what raw thinking power feels like, have a look at figure 6. The geometric shapes in the top row are all the same, but shown from different perspectives. Each shape in the top row can be created from any other in the same row by rotation in the three dimensions of space. Go ahead, try it!

The figures in the bottom row are not all the same. Only some can be created by rotating others. Which ones are the same?

Note that this puzzle is not an IQ test. How hard you find this puzzle to solve says little (if anything at all) about your general intelligence.

You may find the top row easy to imagine, but in the bottom row you may feel some mental “resistance”. Solving the puzzle takes more time and effort. Depending on your ability to solve spatial problems, this resistance will be more or less pronounced. If your ability is average, you may find the puzzle challenging. If your ability is in the  $2\sigma$  range, you may find it stimulating, and if your ability is in the  $4\sigma$  range, you may not feel much resistance at all. (The solution to the puzzle can be found on page ??.)

The more the IQ of a person is removed from the average, the less mental resistance they will typically experience in their lives. Skills like remembering things, formulating thoughts in speech or writing, understanding prose, solving mathematical or logical problems, recognizing patterns, etc, come easy to them. Not all skills are typically developed to the same degree, so the perceived resistance may differ in different areas. One person I know has a weakness in mathematical thinking, which in their case means that they score only  $1.5\sigma$  in math tests, but  $3\sigma$  to  $4\sigma$  in other tests. They recognize their weakness very distinctively. Whenever they try to solve a mathematical problem it feels like “wading through molasses” to them. Interestingly, they score very high in logical thinking when it is unrelated to mathematics.

Because little resistance is felt most of the time, highly intelligent people sometimes do not value their own thoughts and mental achievements, because they do not regard them to be special or

even worth mentioning. This is why they are sometimes perceived as arrogant, but this is a misunderstanding. To them some things that others struggle with are just very obvious. One person I know worked an odd job in a factory once, and a technician explained the machine they would be operating. At some point the technician pointed out a flaw in the machine and cautioned the person to operate it in a specific way in order to avoid the flaw. The high-IQ person then pointed out that the flaw would not be there if the machine was constructed in a slightly different way. Surprised, the technician asked if the person was an engineer, because their engineers had come to exactly the same conclusion. Slightly embarrassed, the high-IQ person said, “nah, it just occurred to me”. From that point on the technician treated them with contempt.

To people in general (although seemingly less so to people above a certain IQ threshold) life is about achievements. An achievement is a result whose accomplishment requires to overcome some mental resistance. Most people will not attempt to overcome such resistance unless there is something to gain by such an effort. Such a gain is usually in the form of money, reputation, recognition and the associated increase in social status. Because highly intelligent people rarely experience a substantial degree of mental resistance, they often do not associate it with social status. People who do associate mental effort with status typically perceive a person who can playfully solve hard problems as a threat, because they assume that they are also after recognition and will gain it more easily. Then being confronted with such playfulness may also hurt their pride, because they had to accumulate a lot of knowledge in order to be able to solve hard problems. In the above story, the oblivious high-IQ person hurt the pride that the technician felt about himself and the engineers of the company.

To the highly intelligent person, the picture looks entirely different. Imagine seeing a flower on the wayside and mentioning its beauty to a friend. The friend will probably stop, regard the flower, and agree that it is indeed beautiful. Sharing the discovery of the flower is not a notable achievement in the social sense and thus nobody gets hurt or threatened in their social status. The same happened in the story above. The high-IQ person found a flaw and a solution and thought that sharing their discovery would bring joy to the other person. The technician reacted by assigning social status to the discovery, which made the high-IQ person uneasy and they tried to play down the discovery, which only escalated the situation.

So there is a lot of playfulness in the minds of highly intelligent people. They perceive a lot of things that most people miss and draw conclusions and discover connections that most people are not aware of. Note that this is not an achievement, but merely a function of the particular human being, such as being tall, or short, having brown or blue eyes.

As most human beings high-IQ people share their thoughts and discoveries, but while most people receive mixed or even predominantly favorable feedback, highly intelligent people often run into a wall of misunderstandings, alienation, and even hostility towards them. There are different ways to cope with this experience. At one extreme, you can be very conscious about everything that goes on inside of yourself and limit the things you say to a subset that you figure out to be safe. At the other extreme, you can turn the problem into a “virtue” and become as arrogant and obtrusive as the people perceive you anyway.

Both of these solutions are unsatisfactory. Withdrawing from interaction with people, either externally, by not meeting many

people, or internally, by censoring yourself, means that you will never form a close connection to other people and it also means that those people will never benefit from all the insight you would have to share. Both parties lose. If you become arrogant and maybe even a little pushy, people will avoid forming close connections with you and they may reject things you say, because they do not like you. Both parties lose again. Unfortunately, in our current culture, the second alternative is perceived as more desirable, because at least you will be perceived as intelligent by other people and may become “successful” in a superficial way. The word successful is in quotes here, because having one’s talents exploited for some commercial means, even for good pay, is not something that creates a fulfilled life in the long run. So while the second alternative is perceived as more successful by most, the first one can lead to inner peace and contentment, which is a different (and maybe more desirable) form of success, even if perceived as a “losing strategy” by society at large.

There is, of course, a middle way. Being highly intelligent, one can attempt to predict how people react to certain insights and use empathy to sense the feedback of these people and adjust the level of sharing accordingly. Of course doing this all the time is taxing, like walking a proverbial minefield, but with some training, it can become a pretty effective and efficient strategy. Of course, even this strategy has its limits. There are some things that people are not ready to hear, no matter how carefully you address them. To most people, communication is a social function. They communicate in order to make sure that they are “on the same side”. Often this kind of communication leads to an adhering to rules and believes that do not serve any purpose any longer. Even worse, it may suppress open discussion and stifle progress. Highly intelligent people are most interested in making things work

than adhering to common sense. This is a very unfortunate dilemma: either they pretend to be part of the in-group and keep their solutions to themselves, or they attempt to communicate their solutions and are then exiled from the in-group. Again, society at large loses in both cases.

Most highly intelligent people are aware of this problem, either at an unconscious or at a very introspective level.

Their playful lightness of thought manifests in all kinds of different ways. Most people associate high intelligence with the ability to solve mathematical problems and puzzles, with features like eidetic memory or perfect pitch, or maybe with a great talent in one or multiple areas, like playing an instrument with virtuosity or having great knowledge of some advanced topic. The diversity among highly intelligent people is much larger than that, though, and does not always manifest in the way people expect it to. Great spatial visualization, for instance, may make a person a good architect, but may also make them a great sculptor. Some persons may be good at explaining things, or they may have an extraordinarily fine-tuned perception so that they recognize the most subtle things around them, or they may simply be good at seeing the big picture and perceiving connections of seemingly unrelated phenomena.

The latter in particular can make the person seem slow rather than intelligent. They take their time before they suddenly come up with an unexpected and typically unique solution. One person I know seemed to have trouble with long division in elementary school. They usually got the correct result, but their method was slow and complicated. What the teacher and the parent did not realize was that the child had invented the method themselves — and it worked! It just did not work as quickly as the method taught at

school. The kid was then subjected to extra lessons to learn the “correct” method. The child soon lost interest in mathematics and remained a sub-par student for the rest of their educational career. Of course the child had a much deeper understanding of long division than all the others students in class who just repeated the method that the teacher explained. Still, they were regarded as “having trouble with mathematical understanding”.

## The other side of the Gap

This chapter is named The “other” side of the Gap, because statistics predicts that the average reader will be on this, — i.e. the average — side of the gap. Let us do some quick calculations for those who are interested. Assume that the average reader has an IQ of 115. Reading a book is probably something that is more common for above-average people and reading non-fiction probably shifts the average even more to the right side of the bell curve. The “other” side of the gap is then at 145. The probability of having an IQ of 115 or more is about  $1/6$  and the probability of having an IQ of 145 or more is about  $1/740$ , so the probability of the average reader being on the other side of the gap is  $740/6$  or about 1 in 123.

So this chapter is mostly for those who wonder what it feels like to be on the other side of the gap. However, even if you *are* on the other side, it may make a lot of sense to compare notes.

The most common thing that people on the other side of the gap experience is loneliness. If a lot of abstract thought is going on in your mind and you are not able to share most of it, this is a very special kind of loneliness. To most people, being lonely depends on the number of familiar people around them. To them loneliness and being alone are strongly correlated. So the average person, when they feel lonely, they can go to a bar or join a club, or go to a gym, or do any activity that brings them into close proximity of other human beings. Let us say that you get along with every other person and “click” with one out of ten. In this case joining a club, or even just going to a bar will solve the problem of loneliness for you. It may take a few days or weeks, but it will work eventually. (Of course, there may be other factors that make that approach less successful, like social anxiety or trauma, but this is not what



this book is about.)

For highly intelligent people, though, there is this gap. Let us say that you get along with every other person *on your side of the gap* and click with one out of ten *on your side of the gap*. Then, given the gap described initially in this chapter, you would have to meet about 240 people before meeting one with whom you get along and about 1200 before you meet one with whom you really click. So you will probably not meet one in a bar and probably not even in a very large club.

At this point, many people who hear this will object and point out that there is much more to a personal relationship than intellectual exchange: friendship, romance, common activities, etc. “Just get over yourself, relax, and just enjoy the company of others” is an advice that most people on the other side of the gap have heard, and probably not only once. So let us have a look at the dynamics of personal relationships. What makes people meet and “enjoy each others company”?

The most common reasons why people meet strangers are attraction and entertainment, where attraction is probably the most common one. When you find someone attractive, you want to be close to them, want to talk to them, and want to do things together with them. For most people, such a relationship more or less quickly evolves into a sexual relationship. This is so common that the word “relationship” without further qualification often means a “sexual relationship” in colloquial language. Sexual attraction is a highly ephemeral effect, though. People get used to each other, the initial attraction fades away, and at that point what keeps the relationship going are common interests and values. When you interests are highly intellectual, though, and your values are a bit — or quite a bit — removed from the mainstream, where is the

basis for the relationship then?

But what about friendship and entertainment? Can you not just “lower your expectations a bit” while meeting people with whom you have no intellectual common ground? Of course you can do that, and I know a few people who do that on a regular basis, and what they all have in common is that they are very lonely and very unhappy. In fact a person on the other side of the gap may never feel as lonely as in a meeting with other people, which leads to a strange dilemma: either you are alone and lonely and suffer, or you go out, meet people with whom you feel lonely and suffer even more. It is a dilemma, because keeping your distance from people all the time causes less suffering, but also removes any chance of meeting the one who fits. Going out frequently increases the chances, but also causes a lot of suffering. Most highly intelligent people find their own kind of a bitter sweet spot between the extremes.

Where that sweet spot lies depends on factors other than intelligence. Some people are more introverted, some more extraverted, some can cope with pain better than others, some have at least a few people around them who can support them a little bit along the way. There are people who go out every day and return frustrated and depleted every evening, since years. Then there are people who only leave their homes for shopping, work (if they do not work from home), and solitary activities. No matter which way they choose, though, they can always use their intelligence to tilt the odds in their favor.

Joining university, even at older age, joining high-IQ societies, joining clubs with activities that are commonly associated with high intelligence, these are all things one can do to increase the chances of meeting people who are on the same wavelength.

For example, the normal distributions of Academia is shifted to the right by  $1.67\sigma$  [Matarazzo1972], so hanging out at a university makes a lot of sense, because the gap starts around an IQ of 155 there. The normal distribution also has a smaller standard deviation, though, so the “normal” intelligence in Academia ranges from 118 to 132. However, outliers exist, and if you are interested in abstract topics, where else would you go, if not to a university.

Of course there are foundations for inter-human relationships other than intellect. Love is probably the strongest bond between two human beings. However, love needs time to develop. Our culture is quick to use the word “love”, but what it mostly means is either “preference” or “lust”. Real love is what arises when two people who get along spend a lot of time with each other, share personal information, and agree at least upon the foundations that form their values. It requires dedication, reflexion, and tolerance.

Highly intelligent people certainly have the necessary dedication, because they are longing for a connection so much. Their intelligence is often also correlated with a high degree of introspection, so reflexion should not be much of a hindrance, either. This depends a lot on the individual, though. Some high-IQ people do not care much about the nuances of interpersonal relationships, because they are too absorbed in abstract topics. This can be a self-reinforcing mechanism: abstract topics are interesting, which makes people uninteresting, which increases the focus on abstract topics, etc. Once this mechanism is discovered, it can be abandoned, although this may take a while. Even though highly intelligent people are typically very good at changing habits, this is still a process that needs time.

The greater issue is that the ingredients for love have to be present on both sides of a relationship, and while it may not be

that hard to find people who are dedicated, it may turn out to be quite an endeavor to find people who are equally introspective, and the different world views across the gap may stress tolerance beyond its breaking point.

Some highly intelligent people are equipped with an extreme degree of introspection. It is probably correlated with intelligence, because intelligence lifts all perception to the abstract level, sometimes even the “own” behavior. People on the other side of the gap are sometimes quick to accept responsibility for the development of a relationship, sometimes to a degree that is no longer sufferable, because the other person cannot catch up. “Arguments” about difficulties experienced in a relationship of *two* highly intelligent and introspective people can take the form of a scientific discussion, where the factors that lead to the difficulty are examined with detachment and solutions are explored. Such an approach is often impossible and/or extremely frustrating for people who are used to “solving” problems by arguing and fighting. The Gap can definitely extend to the emotional plane as well.

Then there is tolerance. When everybody around you is on the same side of the gap, it is easy to be tolerant. When there is a gap in between things are not so simple any longer. Imagine living with someone who has theories about society that you do not share at all, and imagine them laying out their hypotheses in front of you all the time and expecting you to agree. Tolerance has its limits and the gap can stress this factor of a relationship quite a bit. World views can differ by a *huge* degree without one of the parties being right or wrong. Even if you know this, listening to someone who disagrees strongly can be burdensome. This is not a good foundation for developing a strong relationship.

Of course there are exceptions to the rule. There is one couple I know where there is probably a gap between the two, but one of them just assumes that the other one knows better. There is a strong emotional bond between them, and even if one of them is probably doing all the introspective work, the relationship functions, because the other one does not try to interfere much, but relies on the wisdom of the introspective one. They bought a house, founded a family, raised children and, as far as I know, still live happily together after a few decades. Such an approach can work, but I suspect that in an age where everybody wants to express themselves and be the master of their fates, it becomes less and less feasible.

Finally, here is a story about two highly intelligent people who searched pretty much all the time for someone they clicked with. Both suspected that there was a gap between them and the people they usually met, although it was not entirely clear to them what exactly the problem was. Both regularly visited meetings of high-IQ societies, but without finding someone who was on their wavelength. The trouble with high-IQ societies is that they either are  $2\sigma$  societies, with the gap starting at 150, or they have very few members and pretty much no local meetings at all. The two were intuitively aware of this fact, but continued to attend meetings anyway, just because they figured that chances are still best there.

Both of them were also very empathetic people and very intuitive thinkers. They could find out very much about a person in a split second and often knew very soon if they liked or (more often) did not like someone. After many fruitless visits to high-IQ meetings, one of them remembers the door of the meeting place opening and “an angel-like being entering the room”. Very intelligent people sometimes have an aura of radiant vulnerability around them,

which the other one recognized immediately, literally in a split second. They soon talked to each other and a caring and lasting friendship developed.

Highly intelligent people often hear criticism stating that “their standard are too high” or that they “make up excuses so they do not have to enter a relationship”. The people in that last example had heard such statements quite a few times, but all the nay-sayers were wrong. That your standards are high does not mean that there is an alternative. Sometimes the only alternative is to keep searching.

## Myths around high intelligence

There are many pre-conceived opinions about highly intelligent people. Many of them are reinforced by culture and media, especially by movies, and many supposed traits of highly intelligent people have become tropes or clichés long ago. With a better understanding of what intelligence is, let us examine a few of them.

### **Highly intelligent people are good at mathematics, chess, logic puzzles, etc.**

This is probably one of Hollywood's favorite clichés. Whenever a character is needed that is able to solve complex mathematical or logical problems, that character will be announced as a high-IQ person, and he/she will inevitably be awkward and clumsy (see also next myth). Solving logical things and otherwise being unsympathetic and “nerdy” is their only function in the story.

This assumption has made it so far into our culture, that this is now pretty much the agreed-upon definition of high intelligence. Of course, such people do exist, but the traits of being able to solve specific kinds of problems and/or being awkward are mostly independent of very high intelligence. They are not correlated much if at all.

An IQ of  $2\sigma$ , some talent, and a dedicated interest in mathematics is enough to win the math olympics. This combination will make a person appear to be very intelligent, *because* we assume that intelligence equals being good at mathematics. Any serious amount of training will make a person appear to be smart, because they are good at one thing. It is the same thing with math olympics or world-class chess. One chess world-champion (I forget which) had their IQ tested and came up with a score of

around 135 ( $2.3\sigma$ ). This is sufficient to be the best chess player in the world, *if that is what you train for*.

Highly intelligent people are often good at things *without* training much. Things just appear obvious to them, like the figures in the puzzle on page ???. This does not mean that they will be very good in a field, though. Being very good requires training. A well-trained  $2\sigma$  chess player will perform better than a  $5\sigma$  player who does not care much.

And this is why not all highly intelligent people are good at mathematics, logic puzzles, etc. They may just not care about such things.

### **Highly intelligent people are clumsy and awkward.**

This is the other favorite cliché that is rehashed over and over again in the media. You can spot the highly intelligent character in popular movies just by recognizing how confident and well-integrated they are socially. If they are neither, you have found them. In this cliché, there may even be a grain of truth — but really no more than a tiny grain.

Many highly intelligent people have interests about which they care very much, and they can focus on these things to a degree that makes them seem oblivious to things that people on the center of the bell curve would consider to be important. To most average people the most important thing is how they are perceived by others. Therefore, people who do not place top priority on their outer appearance are perceived as “awkward” or “clumsy” by them.

Words like “awkward” and “clumsy” are very judgemental terms, and by amplifying these traits in the depiction of highly intelligent



people the media create a false image. What are “awkwardness” and “clumsiness” anyway? Both refer to behaviors that are not “smooth”, i.e. that are not pragmatic, do not fit in the flow of our society, and are perceived as slightly disruptive and annoying. Awkwardness typically refers to social skills while clumsiness is used to indicate a perceived lack of control over the motor functions of the body. Both can be caused by focusing on something that is not part of the present situation, something that is commonly called “absentmindedness”.

When you are used to thinking a lot, you will notice that thinking causes momentum. The more you think the more momentum you will build and the more you will think. Everybody who has written a book or an essay will know this. You start to think about your work everywhere, not just when sitting at your desk. The converse is also true: if you are not thinking a lot, no momentum will build, and you will not be preoccupied with your work while navigating the rest of your life.

So “absentmindedness” — or, rather, a focus on something else — and its symptoms *may* be more frequent in highly intelligent people, but this is a weak correlate at best. There are “dreamers” that have no above average intelligence, and there are high-IQ people who do not care much about abstract things and hence do not appear to have these traits.

### **Highly intelligent people do well in school.**

If they really are on the other side of the gap, they will more probably be bored out of their minds. School is the mind killer (with apologies to Frank Herbert). “Bore-out” — a condition similar to “burn-out”, but caused by boredom — exists, and many highly intelligent children suffer from it in school. The subjects taught

there are trivial to them and the way in which they are taught is dehumanizing (and not only to highly intelligent children).

Some people think that perceiving a subject to be trivial will make a student perform very well, or at least slightly above average, but what is more probable is that the student will lose interest in education completely and either “space out” and daydream during lessons, or display aggressive, disruptive behaviour, such as talking, making jokes, teasing other students, or they will just silently concentrate on something that really interests them. In all of these cases, they will miss the subject of the lesson, though, and subsequently fail the examinations.

As a consequence, they often receive “help” that assumes that they are not very intelligent or have a learning disability. They may even be sent to a doctor and be prescribed medication. All this only aggravates the problem, and a downward spiral develops. The educational system not only offers no support for highly intelligent students, it blatantly denies their existence and fights the student instead of the problem.

### **Highly intelligent people are gifted or talented.**

Being “talented” is the ability to perform one thing much better than the average person, like painting, playing an instrument, writing, solving logic puzzles, understanding complex systems, or explaining complicated subject matters. Being “gifted” literally means to have received a gift, but most often refers to having a talent or high intelligence. The “or” in the previous sentence is what makes this term useless in the discussion of this point, because it would pose the question “are highly intelligent people highly intelligent (or talented). So let us stick to the question of “talent” alone.

A person can be talented in one or multiple areas, and the same person can or can not have an IQ that is substantially above the average. In other words, if there is a correlation, it is — in my experience — weak.

There are many factors at play here.

Highly intelligent people may have so many interests that they do not care to develop one ability in particular.

Highly intelligent people may not be recognized as being talented, due to the reasons outlined in the previous subsection, and hence not receive any support for developing their talents.

If highly intelligent people do develop one particular talent *and* receive the necessary support, they may turn out to be extremely talented.

On the other hand, highly intelligent people may notice the downsides of being recognized as a talented person, such as increased publicity and pressure to perform, and decide to not pursue that path. After all, intelligence also helps to see through the common narratives, and the equation “success equals wellbeing” is probably one of the most bogus narratives of all.

**Highly intelligent people are unemotional, logical, and distant.**

The “head versus heart” dichotomy is a false one, no matter how intelligent a person is.

**Highly intelligent people are witty and quick on the comeback.**

It is probably uncorrelated.

**Highly intelligent people are loners.**

Many are, but most of them would not, if they had a choice.

**Highly intelligent people reject social norms and common sense.**

Only if they are worth being rejected.

## Cognitive Differences

The main difference between the two sides of the gap are openness, honesty, and playfulness on the highly intelligent end. Of course everybody claims to be open, honest and, to some degree, playful. This reflects the problem beautifully: everybody *wants* to have desirable characteristics, and the easiest way to “have” them is simply to claim to have them. On the average end of the gap, it is all about display and very little about content. If you are a good Christian, nobody will care unless you go to church and display it. When you are doing all the work for your employer, then you will just do more work, while those who *display* bustling activity (maybe without actually doing much) get a raise and a promotion.

Terms like openness and honesty are pretty loaded terms in today's environment. If you tell someone that they are not honest, they will be offended, although the entire culture in which we live is built upon some degree of deceit. But when we describe someone as “honest”, we often mean “rude”. So how are we supposed to even talk about honesty?

To many highly intelligent persons, honesty is about accepting and working with facts, where a “fact” is something that they have examined with detachment and to their best understanding, without attaching any agendas to it. This is a process that is natural to them, just as it is natural to many people to display themselves in the best light. It is a subconscious process and works fully automatically. You could say that this way of processing information is “their nature”.

This is a point where two world-views often collide. In a company in which I used to work two people applied for a job. One was

honest in the above sense, the other was more compatible to the mainstream. In one interview the interviewer asked the honest one how much of their energy they would invest in the job. Of course this is a totally nonsensical question, but such is the process of hiring. The honest person said something along the lines of “well, I sleep eight hours a day and I would work here eight hours a day and I travel two hours to and from work, so that makes roughly 5/12 of my day, excluding weekends, so about 40%.” This is a pretty honest and very accurate answer, but the interviewer was not very impressed. In the second interview the other guy blurted out that “he would of course invest 200%! At least!” Guess who got the job... And guess who underperformed from day one and still did not get fired, because the question was just a ritual to begin with. The first guy only proved that he did not fit in, although he would probably have been the better man for the job.

Some people who have heard this story are quick to comment that the “honest” person must have had some form of “autism”. I can assure you that he was a very agreeable and empathetic person and had no problems getting along socially. He just had little experience with interviews and gave the best, most honest answer he had.

In the context of the gap, honesty is the process of approaching problems with a clear mind and attempting to work with them in such a way that the the best possible solution is found. In order to work with a problem the first necessary step is to identify the problem and accept that it exists. Many high-IQ people are incredibly good at this. More mainstream “solutions” include

- denying that the problem exists in the first place
- blaming the messenger

- blaming someone else
- intimidating the messenger
- discrediting the messenger
- solving an easier problem instead and claiming success

Many high-IQ people have been on the receiving end of some of the more mainstream strategies. Of course, everybody loses in this case: the high-IQ person feels miserable, and the problem still does not get solved. You cannot argue with facts and you cannot intimidate them.

In a different company, a high-IQ person had somehow managed to sneak past the hiring consultants, most probably because their expertise was so rare, that there was no alternative to hiring them. The company had quite grandiose plans with some piece of software. After careful analysis the high-IQ person came to the conclusion that the project could not be realized in the intended way. They were a rather capable speaker with good social skills, so in the next meeting they tried to make some careful changes to the roadmap of the project. The managers were not pleased and things escalated quickly. When pressed, the high-IQ person said that the project cannot be realized in the current way because that would break the limits of computation theory. This was part of their field and the reason why they had been hired in the first place, so they assumed that their analysis would have some weight.

Management responded that they did not care about theoretical problems. They would deal with them as they came up along the way. The employee tried to clarify that a theoretical limit cannot be “worked around”, because no solution exists and cannot exist. He outlined the exact point at which the project would fail. He was then called a pessimist and the project proceeded as planned. It

failed exactly at the predicted point. The high-IQ person was blamed for “not being sufficiently assertive” in the meeting. The project was dumped, the high-IQ person left, and a few months later the company switched to a completely different business model.

You cannot argue with facts. You can argue with a highly intelligent person, but using denial, blame, and intimidation will not solve the problem. It will solve a different problem: “winning” the discussion. And this is how the two world-views collide.

## **Openness**

Openness is an equally loaded term as honesty. Of course everybody wants to be “open”, and narrow-mindedness is seen as a trait that is not desirable. Openness is widely associated with sophistication and being a cosmopolitan. While there is some truth to this assessment, it also fails to capture the true nature of the trait of openness as it is discussed here. Openness in the common sense can be obtained by learning. You travel and learn about other cultures and subsequently become a “cosmopolitan”. You understand that cultures foreign to your own just do things in different ways, and therefore the amount of things that you are willing to accept increases. This is exactly the effect of training versus intelligence (see page ??). By widening your horizon by learning, you appear more open, but this openness is based upon static knowledge. Hearing about something that is still not part of your widened world-view will still meet resistance.

The openness of a highly intelligent person is the openness of a child. Whatever cannot be understood must be examined until it can be integrated into the world-view built so far. I have once seen a very intelligent person being insulted and they remained silent.



When later asked why they had not defended themselves, they replied, “I had to think about what he said first and figure out how much truth there is to it.” Even if what the other person said was offensive, the first priority of the highly intelligent person was to make sense of it. Examining statements, matching them against past experience, and integrating them into the model they have of how the world functions is a reflex action for many highly intelligent people, while people closer to the mean of the bell curve tend to defend their beliefs first and then *maybe* think about the new input later. More than often, they just get upset about information that do not fit in their world-view.

Defending your beliefs and convictions is a trait that is highly valued in our current culture. It is associated with being an adult, with taking things in your own hands and, most interestingly, with making the right decisions. Let that sink in: the less you think about something, the more people will assume that you know what you are talking about. This is because you *appear* certain, so people assume that you know your stuff. Quick answers are not assumed to be the knee-jerk reflexes that they are more than often, but a sign of competence and authority. This is the second ingredient of the gap.

The openness of highly intelligent people is often interpreted as insecurity, timidity or, ironically, even a *lack* of intelligence.

## **Playfulness**

Playfulness is less controversial. It is commonly considered to be a trait that is expected in children and unacceptable in grown-ups. It is the ability to “dance around” something mentally, take different perspectives, and be eager to learn about it without pursuing a specific purpose. In our goal-oriented world it is not valued,

because it does not seem to be an efficient way to perform a given task.

Playfulness is a very helpful trait, though, when solving problems that do not have any known solution. Many great inventions have been made by people who just “fooled around”. In fact I would like to argue that the *only* way to actually invent something that has not been there before is by aimless exploration. Every exploration that has a prescribed goal is merely the optimization of an existing process or object.

Take the smartphone for an example. It is an ubiquitous device in today's world, probably one of the most widely used and most rapidly developed ones. Most people think it has been invented by a specific company, but all they did was bring it into a shape that people desired: flat, lightweight, and fashionable. All the basic technology that is used in the smartphone has been there before: computer networking, graphical displays, and pointing devices. Most of this technology has been invented in one single location, the Xerox Palo Alto Research Center (PARC). The people in this research center were paid for exploring technologies that had not been there before. They did not only invent the above, but also the laser printer, the technology at the basis for modern computer devices (very large-scale integration, VLSI, semiconductors), and the predominant paradigm that is used for developing software to this day (object oriented programming, OOP).

All of the technologies invented by them were marketed by other companies, though. Some of the people working at PARC moved to the company that later invented the smartphone. The lesson that is commonly learned from PARC is that a business model matters more than technological exploration, but this point of view misses the point that without the exploration performed at

institutions like PARC, there would not be any business model that could use the fruit of their work.

I shall not go into the details of assessing the risk of such an operation, because this is not what this text is about. True innovation is invention. Creating a flatter smartphone with a better screen is not innovation, it is optimization. Optimization is pretty much risk-free, because it builds on the understanding that people already want the result of the process, and if they do not want it, the desire can be created by agitation (euphemistically known as advertising or marketing). Optimization will never create the “next big thing”, though.

So playfulness is a trait that is useful for finding solutions to problems that are not clearly defined. This should be an interesting ability in a world that is becoming increasingly complex. Optimization will not solve problems that have no known solutions already. With all the technological progress taking place at the moment, still the most pressing problems remain unsolved. Honesty is necessary to identify them, openness and playfulness are necessary to solve them. What is also required, though, is *cooperation*. The people that make up the bulk of the current culture and those on the far end of the Gap have to find a way to cooperate in order to address the issues we face today.

## **Adaptation**

The backside of openness and playfulness is *adaptation*. In order to solve a complex problem you have to adapt to the problem. Facts will not adapt to your desire. You cannot argue with facts, you cannot persuade them, threaten them, or intimidate them. Reality just is and cannot be changed by any amount of momentum, belief, or force.

Unfortunately, these are still the predominant means of “solving” problems in our current culture. This has worked in “conquering” nature and “settling” conflicts among sovereign parties. All the words in this paragraph are in quotes, because nothing is solved or settled or conquered. The apparent solutions and settlements are merely transitions from one fragile, ephemeral equilibrium to the next, and we are ourselves part of nature, so conquering nature actually means to conquer ourselves. But then humanity has a long history of afflicting unspeakable harm to itself.

A playful person does not want to “achieve” something, they want to explore and solve, and this can only be done by accepting that a problem exists, adapting to it, exploring it, and understanding it. An this is the greatest vulnerability of the highly intelligent person: they adapt not only to interesting abstract problems, but also to the world around them, while those who demand the world around them to adapt are in charge. Everybody is in the place where they seem to belong: those in charge demand adaptation and others adapt. The problem with this situation is that the only chance we have to solve the problems we face today is to let highly intelligent people adapt to these problems instead of adapting to an anti-intellectual world only focused on efficiency and making a quick profit.

*The wiser head gives in*

the saying goes. Most people take this to be an instruction or a virtue, but I would rather interpret it as a statement of fact, or maybe even as a warning. We cannot afford this state of affairs any longer. It is time to reconcile the Gap and start working together.

# Reconciliation

[To Do]

## Puzzle Solution

The second shape is a rotation of the first shape. The third shape is a mirror image of the first and second one. The fourth figure is a different shape entirely.

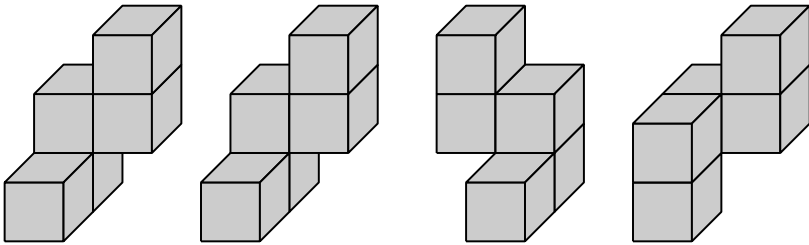


Fig.8 - Puzzle solution

Figure 8 shows the shapes of figure 6 (page ??) rotated in such a way that they are easier to identify.

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