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Preface

This edited volume is the fourth in the series. The papers in this book sit at the crossroads of art and science. Applying a Darwinian reading to works of fiction, they attempt to reveal aspects of the human condition. These writings span a wide range of academic disciplines, including evolutionary biology, psychiatry, social and developmental psychology, and anthropology. What binds them is a shared commitment to understanding behavior from an evolutionary perspective. Following ethologist Niko Tinbergen, these essays attempt four kinds of explanations: at the proximate level, we are after the mechanisms underlying a behavior; at the ontogenetic level, we ask how a behavior gets to be the way it is over the course of development; at the functional level, we learn why natural selection favored a particular behavior; and, finally, at the phylogenetic level, we study the distribution of behaviors across a range of species.

I’ve organized these essays by topic. In part one, “Beauty and the body”, we learn how and why the evolutionary process endowed us with an eye for beauty, and what might motivate Lisbeth Salander from The Girl with the Dragon Tattoo to adorn her body with art.

In part two, “Taking risks to get what we want”, we find out why men are more likely to take risks that women looking at both Meredith Gray from Grey’s Anatomy and Captain Ahab from Melville’s Moby Dick, and why people, including Olivia Pope from the TV show Scandal, sometimes test the bonds of marriage by poaching an already married partner.

In part three, “Knowing the difference between right and wrong”, we learn why Katniss Everdeen from The Hunger Games is willing to sacrifice her life for her sister’s; how society may have shaped the notions of right and wrong in Rodya Raskolnikov of Crime and Punishment; what motivates Maximus Decimus Meridius from the film Gladiator to seek vengeance; and, finally, what the difference is between shame and guilt.
In part four, “Family and friends”, we find out how peers may have shaped Jim Starks’s decisions in the film Rebel Without A Cause; how The Brothers Karamazov may have influenced each other’s development; and what Worf’s adoption from Star Trek: The Next Generation can teach us about adoptions among modern and traditional societies.

And in part five, “Psychology”, we learn what drives Javert’s obsession to hunt down Jean Valjean in Victor Hugo’s Les Misérables; what the daydreaming of Stephen Dedalus from James Joyce’s A Portrait of the Artist as a Young Man says about him; what may have put South Park’s Eric Cartman on the path to becoming a psychopath; and whether the depiction of Hannibal Lecter from Silence of the Lambs as hyper-intelligent is characteristic of most psychopaths.

The quality of these articles is purely the reflection of the students’ efforts. These essays did not follow from the course material. Each student picked her own topic and conducted the necessary research.

I’d like to thank Monika Fischer, Nancy West, and the Honors College for making this course a possibility; the Anthropology Department for giving me the opportunity to teach this class; and Rachel Brekhus and the Ellis Library for showing my students how to research their papers.

The most important acknowledgment, of course, goes to my students, the writers of this book: Nassim Benchaabane, Claire Cole, Nick Dotson, Alexandra Gnibus, Kamilah Jones, Matthew Monos, Hannah Noker, Emily Pawlak, Dylan Peterson, Amanda Richerson, Marcel Rodriguez, Elisabeth Rollings, Ted Schmitt, Katie Schnell, Dainec Stefan, Sheely Taylor, and Aaron Warning. Thanks for making this semester so fun and rewarding. Any insights you glean reflect their intellects and efforts; any errors in reasoning or errors in fact reflect my poor teaching and editing.

Karthik Panchanathan
Columbia, MO
December 2013
Part I

Beauty and the body
Someone once said that beauty is in the eye of the beholder. What they didn’t say is that beauty wouldn’t be beauty without the beast.

That beast is none other than our own human species, Homo sapiens. And beauty? Well, according to the Merriam-Webster dictionary, beauty is defined as “the quality or aggregate of qualities in a person or thing that gives pleasure to the senses or pleasurably exalts the mind or spirit.” So without a mind or spirit to sense beauty, beauty wouldn’t exist. Which means without us humans, beauty wouldn’t exist. It’s like that saying, “If a tree fell in the forest and no one was around to hear it, would it make a sound?” If humans—or some animals—weren’t around to sense beauty, then beauty wouldn’t be beauty.

So why does beauty exist? It’s no secret that we humans are aesthetically attracted to certain things. Humans have a concept of what is considered “beautiful.” But why do we perceive things as beautiful, and what causes us to perceive them that way?

Many other human behaviors and perceptions—such as the consumption of food and sexual reproduction—exist because they are adaptive. If we don’t eat food, we don’t survive. If we don’t have sex, we don’t reproduce. I hypothesized that aesthetic appreciation is similar to these behaviors in that aesthetic appreciation has an adaptive function of some kind; our perception of beauty
must have an evolutionary background, and therefore must be a result of adaptations.

After doing research, I have come to the conclusion that there is a lot of evidence to support the hypothesis that aesthetic appreciation is adaptive. **While some of our standards of beauty may be socially constructed, there is indeed strong research that suggests humans have a sense of aesthetics derived from biological adaptations.**

Because an understanding of the theory of evolution and natural selection is necessary to understand my paper, I will first define these terms. Evolution is the change in inherited characteristics of biological populations over successive generations. This change, according to Charles Darwin’s theory of evolution, is made through the natural selection of traits. This process is inferred from three facts: 1) There are more offspring produced by a population than can survive, 2) There is variance of traits, meaning different individuals have different traits and therefore different rates of survival and reproduction, and 3) These differences in traits are heritable. Those with the “fittest” traits survive, and those traits are selected. In doing my research, my goal was to discover whether humans’ sense of aesthetics has been acquired through natural selection. If so, our aesthetic preferences would be adaptive.

For the purposes of this paper, I will use the definition of aesthetics as provided in one of the sources I’ve used: “The study of those mental processes that underlie disinterested evaluative experiences that are anchored at the positive end by feelings that would accompany verbal expressions such as “Oh wow! That’s wonderful! I love it!” and at the negative end by “Oh yuck! That’s awful! I hate it!” (Palmer, Schloss, and Sammartino, 2012). Aesthetic experience is a dimension of human experience that elicits certain reactions and behaviors, similarly to the way we would say “Ouch!” in response to the experience of pain.

There are two different explanations that researchers have put forward to explain our aesthetic preferences. One is the *evolutionary advantage view*, which is the explanation I am particularly interested in. As its name suggests, the evolutionary advantage view proposes that our aesthetic preferences are a result of adaptations that were selected because they had an evolutionary advantage. There is a whole scientific discipline dedicated to researching the biological and evolutionary background of aesthetic appreciation called *neuroaesthetics*. It is widely held by experts in this field that our visual sense of aesthetics is a trait that we acquired through evolution; research shows that, like other innate traits, a human’s aesthetic appreciation comes from adaptations. But it isn’t the only perspective on aesthetics. The other one, the *perceptual bias view*, maintains that we have certain aesthetic preferences because our visual systems process certain visual stimuli more easily than other stimuli. While
there is some evidence for this view, after doing more research I found that the evolutionary advantage view has much more scientific support.

To understand the basics of how aesthetic principles can be adaptive, I first examined the research for the principles of aesthetic preferences in non-human animals. We do know that birds are attracted to regular patterns, and chimpanzees can draw rhythmic designs; research suggests that both species have a sense of visual symmetry and balance (Flannery 1993). Even seagulls have some sense of aesthetics. Seagull chicks beg for food by pecking at its mother’s beak. The chick recognizes the beak by its characteristic red dot. It was discovered that a seagull chick will peck at a beak even when the beak is not attached to a body, and furthermore, it will peck at a yellow stick with a red dot. It increases its pecking as the red dot increases in size, responding most intensely to a yellow stick with three red stripes on it (Velando, Kim, and Noguera, 2013). This demonstrates the peak shift effect, a phenomenon in which animals respond most intensely to something that resembles a prototype (the best representation of something). In other words, the seagull’s prototype of their mother’s beak is a red dot. They will respond with increasing intensity to anything depending on how much it resembles their prototype of the red dot. For the seagulls, their aesthetic sense of the beak prototype is adaptive because they use it to get food. This aesthetic principle also applies in mate selection: A giraffe selecting a mate will not choose the one with the precise neck length that has been “successful” in the past, but the one with the longest neck (Sousa, 2004). For the seagulls, their aesthetic sense of the beak prototype is adaptive because they use it to get food. For giraffes, their aesthetic sense of the neck prototype assists them in mate selection. In both species, the aesthetic principle of the peak shift effect is advantageous in survival and reproduction.

Now that we’ve examined how aesthetic principles can have an adaptive function in animals, we can look at how aesthetic principles similarly apply to humans. Humans have aesthetic preferences for adaptive reasons in the same way that animals do. The difference is that humans have more numerous, complex, and varied principles of aesthetic appreciation.

For starters, our brains automatically put objects into visual groups, a phenomenon known as perceptual grouping (Sousa, 2004). The brain’s limbic system—our brain’s reward center—positively reinforces our perceptual grouping. It is intrinsically pleasing when we find unity in diversity (think of that “aha!” moment you experience when you see a random cloud in the sky that appears to be a familiar shape), because it is advantageous for the mind to do so. Because our attention is limited, it makes sense that our brain tells us, “Hey, look for things that come together to make objects!” to make our automatic processing of visual stimuli easier.
Humans also have an aesthetic preference toward certain colors. Findings suggest that our color vision system is adapted to better perform on evolutionarily important tasks such as finding ripe food (Hurlbert and Ling, 2007). Another proposition is that there are color signals that naturally occur in nature, such as the colors of a flower that send an “approach” signal to pollinating insects or the colors of a poisonous toad that send an “avoid” signal to predators, thus influencing our color preferences. Palmer and Schloss (2010) completed a study that gives support to the theory that humans prefer colors associated with things we like (the example given is the blues of clear skies) and dislike colors associated with things we dislike (brown is the color of feces, therefore we are less attracted to brown).

Aesthetic principles can come down to something as simple as our preference in landscapes. Yes, landscapes. Have you ever wondered why we like to decorate our homes with paintings of gorgeous green landscapes? It’s because our lives once depended on appreciating those green landscapes. Back in the days of our early ancestors, the average survival for humans who had a predisposition toward green and water in landscapes would have been “evolutionarily decisive” (Dutton 2009), meaning humans who were drawn to green landscapes would have been naturally selected over those who weren’t. Therefore, we are more attracted to lush green landscapes than barren, dry landscapes.

We don’t just perceive beauty in objects, however. We also have a conception of how our fellow humans are beautiful, from facial features to body shape. When selecting a mate, there was a lot we had to think about back in the days of our ancestors. For one, the life expectancy of our ancestors was not long. Data suggests that early hunter-gatherers had a 60% chance of surviving to age 15 (Kaplan, 2000). So they had to find mates, and find them fast, if they wanted any chance of reproducing. As a result, the preference for younger mates was probably naturally selected. What does this mean for aesthetic preferences? Well, since we have a preference for youth, we have a preference for features that suggest youth, such as large eyes and full lips. Another thing we take into account is health. From an evolutionary standpoint, an individual should choose a mate that is healthy so that they can reproduce and their mate will survive to help raise the offspring. So the research suggests that humans have evolved to “view certain features as attractive because they were displayed in healthy individuals.” (Fink and Penton-Voak, 2002)

For example, asymmetry in a face suggests that the individual underwent some kind of environmental or genetic stress. Indeed, an asymmetrical face can be an indication of parasite infection. It makes sense, then, that humans would avoid asymmetry. According to a study done by Little and Jones (2003), humans do prefer symmetrical faces to asymmetrical faces. Individuals were shown either two inverted faces (one symmetrical and one asym-
metrical) or two normal faces (again, one symmetrical and one asymmetrical). In both cases—inverted and normal—individuals preferred the symmetrical faces. However, the researchers found that in both men and women there is a greater preference for symmetry in upright opposite-sex faces than there is in inverted faces, which means that our preference for symmetry has less to do with facilitated visual processing and more to do with evolution.

In addition to symmetry, another characteristic of aesthetically pleasing faces is how average they are. Ironically, the faces that people perceive to be the most beautiful are actually the most average. In one study, researchers digitized samples of male and female faces, then created computer-generated faces that were the averages of all the faces. Adults judged the composite images to be more attractive than the individual faces that made up the composites (Langlois and Roggman, 1990). But what is the evolutionary advantage of being attracted to average faces? As it turns out, the study also found that the composite faces became more attractive as more faces were added into the mix. This means that evolution pressures us to favor faces that are consistent with the mean of the population we’re in. Another proposed theory is that we are more attracted to faces that represent the prototype of what a human face should look like. In other words, we respond most to faces that look most, well, face-like (Langlois and Roggman, 1990). Remember the study about the seagulls that responded most to the prototype of what a beak should look like? A human’s perception of facial attractiveness is similar in that we are most drawn to faces that most resemble the prototype of what a face should look like.

Humans are also evolutionarily motivated to perceive women with certain body features as more aesthetically pleasing. Estrogens, the primary female sex hormones, promote breast development and wider hips. Higher estrogen levels mean higher fertility, and an hourglass figure (wider hips and bust) means higher estrogen levels. Males are incentivized to go for women that are more fertile so that they can reproduce, so when selecting a mate, they prefer women with physical signs of fertility—like bigger breasts and the hourglass figure. Moreover, the peak shift effect that we observed earlier also plays a role in our assessments of body image. A characteristic of a female human is having breasts, so the peak shift effect explains why men respond more to larger breasts. A characteristic of men is physical strength, so when a guy has bulging muscles, women find it more attractive. It seems that, in this way at least, we are much like the giraffe that chooses a mate with the longest neck.

Beauty itself is difficult to define. The ancient Greeks had a field day trying to figure it out; they even came up with a mathematical ratio, called the “golden ratio”, for beauty. To them, beauty was as simple and tangible to discover as a mathematical law. I used to dismiss this idea, thinking that beauty couldn’t
The Biology Behind Aesthetic Appreciation

Alexandra Gnibus

possibly be a tangible concept explainable by science. But after doing my research, I was proven wrong in some ways. “Beauty,” if used interchangeably with “aesthetically pleasing,” does seem to have scientific principles behind it. In this paper, I didn’t try to define what beauty is, but rather discover research that would help define where our concept of beauty comes from and why it exists. After all my research, I have arrived at the conclusion that there is strong support for my hypothesis that our perception of beauty is adaptive. Many of the things we perceive as aesthetically pleasing have an evolutionary function, from green landscapes to symmetrical faces. Beauty, it seems, has a purpose. The fascinating thing is that studies suggest that purpose was our survival and reproduction. Although some concepts of beauty may be culturally and socially constructed, there is definitely evidence that beauty can also be a universal principle shared by humans through evolution.

Next time you hear someone say “Beauty is in the eye of the beholder”, remember that beauty is perhaps nothing but an invention of the beholder.

Alexandra Gnibus, 18, is currently a freshman at the University of Missouri. Alex hails from San Diego, California, and consequently has a bad habit of speaking Spanglish and complaining about losing a tan that she never really had in the first place. She has questioned her decision to come to Mizzou on certain occasions when she has checked the weather forecast and seen negative numbers, but other than that she would never, ever trade her experience here for anything. Except maybe In-N-Out Burger. At Mizzou, she is currently involved in Greek life, the Department of Student Activities, Alternative Breaks, and the dessert bar at all of the dining halls due to her weakness for sugar cookies. Her favorite hobbies include Netflix, food, concerts, tap dancing, spending too much money in the Mizzou Store, procrastinating on doing laundry, making lists on Post-it notes, and writing in the third person. She is majoring in journalism and hopes to minor in art history and English, so she is not entirely sure what on earth she was doing writing a scientific research paper on the science of beauty. But, well, what can you do. Here it is and here we are. Enjoy!

References


The Biology Behind Aesthetic Appreciation  
Alexandra Gnibus


To Tat or Not to Tat?

ELISABETH ROLLINGS

At first glance, Lisbeth Salander frightens the eye. Her menacing dragon tattoo encompasses the entirety of her back, while a hornet is perched delicately on her neck. Her face covered in piercings, ranging from her lips to her eyebrows, could make a person cringe in fright. Just the look of Lisbeth could cause someone to cross to the other side of the street or change directions when faced with her head on. These tattoos and piercings signal something to other people; whether that be a good sign or a bad sign, she is signaling none the less. According to evolution, these body ornamentations may just be what attracts people to her or what makes her that much more physically fit and attractive to the opposite sex. If asked, Lisbeth may say the motivation behind getting these piercings and tattoos was as an expression of self. Explanations for body ornamenting have shifted over time: from evolution, rites of passages and initiation in the past, to personal identity and aestheticism in current day society. Although body ornamentation can be explained in many ways, the best way to explain it is dependent on three factors: time period, culture, and individual meaning.

The earliest signs of body modification appeared 5,300 year ago when an iceman named Ötzi was uncovered in Europe (Carmen et al. 2012). Markings along Ötzi’s spine resembled tattoos. However, the placement of these markings suggests that they had medicinal purposes similar to that of Chinese acupuncture. The next example of body ornamentation was found one thousand years after Ötzi’s time. The markings on the mummy showed animal depictions and the placement was similar to that of modern day positions, in places more visible than those on Ötzi. These tattoos are some of the earliest depictions of tribal art and tattoos with societal meanings. In 1864, archaeologists found representations of decorated phalluses from the Paleolithic period (Angulo et al 2010). They are thought to represent the first time in history
that genitalia were ornamented in permanent ways. Angulo and his fellow researchers analyzed morphological changes in phallic forms which pointed to body ornamenting. They then compared their findings to other body designs as found in cave markings and current day body ornamenting. The researchers found that 71% of these genital markings were dissimilar to other markings from the same time period, suggesting that they were strictly ornamental as opposed to markings of medicinal purposes. At first the phalluses were thought to be strictly art but the probability that they were actual representations of cultural rites has increased with further research. In the Ga’anda society of Nigeria, similar forms of body modification (as seen on the phalluses) were used to signify a girl’s availability to be married. Because Ga’anda culture is geographically close to where the phalluses were recovered, researchers inferred that these depictions of body ornamentation must have been depictions of societal rites. In studying other cultures such as the Maori of New Zealand and several Polynesian tribes, researchers found that body ornamenting held a spiritual significance. Several societies believed that marking the body could thwart evil spirits. These findings showed that body ornamenting was not just cosmetic.

In the primitive world, evolution could easily explain body ornamenting. The evolutionary perspective explains the desire for body modification by relating it to our ability to survive and reproduce (Carmen et al. 2012). In animals such as the peacock, the ability to care for their large tail feather (or the equivalent of this in other species) signals to the opposite sex that they are biologically fit to take care of such an ostentatious plume. This theory is called costly signaling because the animal suffers a cost in order to show others that it is a good mate. In humans, the signaling of fitness is called conspicuous consumption. Humans strive to show their economic stability by ostentatiously displaying their wealth through attaining pricy material goods. This showcasing of pricy items signals to others their ability to care for another person and cue that they are a good mate. In the ancient world, body ornamentation acted in this way. Ancient practices of body manipulation raised the likelihood that a person would contract a disease or infection because modern means of sterilization were not present. If a person were to survive a piercing or tattoo without showing signs of infection, then they were more sexually favorable to the opposite sex because this exhibited that they had a strong immune system and would increase the viability of future offspring.

Despite the animalistic need to produce successful offspring and be fitter than the rest, the evolutionary perspective may not fully describe the human’s need to ornament their bodies. In the past, body ornamenting would have been explained best by evolution because the risks of getting a tattoo or piercing were much higher. However, the likelihood of someone dying today of a botched tattoo or piercing is not as common as it would have been before modern
medication. Back then if the healing process was successful, then the individual was genetically blessed and therefore more pleasing. Today, if a person survives the procedure, then it does not automatically mean they have good genes but rather a good tattoo artist or piercer. So as the risks of tattooing and piercing reduced, other explanations began to be more predominant.

In some cultures, body ornamentation expressed a desire to become closer to religion. Societies like the Mandan, a Native American tribe from North Dakota, and the Lakota, an indigenous people to the Great Plains, hung themselves from their piercings in order to reach a religious euphoria (Carmen et al. 2012). Mayan culture believed in piercing their genitalia as a religious ritual. Similar societies used other methods of body manipulating such as neck ornamentation, penile rings and binding of limbs to express similar religious beliefs. For these cultures, ornamentation showed religious affiliation or made them feel closer to the group because they bonded through religion. Along with religious connotations, body ornamenting represented life. Maori society used body ornamenting as an expression of self: symbolizing their life and honor. Maori even believed that these piercings and tattoos trapped a cosmic energy (Angulo et al. 2010). Similar to Maori society, current day body modifiers use them as a way to express their individuality or to permanently commemorate a loved one. Today, some of the most popular tattoos now mimic tribal symbols.

Many early societies also used tattooing and piercing and other methods of body modification to express certain standards and important life events of the in-group. Typically, youth did not become fully initiated into the group until they received a tattoo or piercing which had significance in that society. This rite of passage required the young person to withstand the painful process of piercing and tattooing before being fully inducted. This showed a person’s commitment to the group and their willingness to withstand pain for the group. Ancient Mesoamerican societies used sex-specific ornamenting, each having their own meaningful body art. Other cultures also show this same gender specific body manipulations. In African culture, scarring marked the beginning of puberty in females and in males marked their first kill in battle. In Roro culture, a man does not become part of the group until he has been tattooed, marking his new social identity (Carmen et al. 2012). Because the youth and others go through initiation, they now symbolize the beliefs and standards of the whole group as well as signaling their membership to people of the out-group.

Similarly to indicating group membership, tattooing became a way to mark a sub-culture in current culture. People showed that they were united under one cause but still separate from the majority. People are encouraged to rebel against the norm and express themselves through tattoos and piercings. With
major movements in history, like feminism or gay rights and even wars, tattoos and piercings have become more popular and has become an integral part of group membership. For these people, body ornamenting became their outlet for expressing their sense of liberation or their sense of a group identity.

However, culture does not always motivate a person to acquire a tattoo or piercing. Today, motivation for body ornamenting is much easier explained by individuality or aesthetics or memorabilia. In several studies, motivations for tattoos and piercing have been studied. Many people have admitted to acting on whim and not putting thought into the actual act of manipulating the body, while others have used it as a means of paying homage to a loved one’s life. Other current motivations include standing up against a norm, rebelling against authority, creating a strong personal identity, and increasing one’s aesthetics. A study conducted in 2009 by Antoszewska, Sitek, Fijalkowska, Kasiełska and Kruk-Jeromin separated participants into two groups: people with tattoos and people with piercings. The data states that 26% of the people in the tattoo group and 35.8% of the people in the body piercing group claimed that their body ornamenting verified their self-determination and showed their courage. They did not claim their ornamentation as an attention grabber or as a way to increase self-esteem. The study also concluded that body ornamenting did not correlate with psychopathology and was merely working to increase aesthetics by fashion as well as working to increase the likability by one’s peers.

As our society has developed, culture has become more commercialized and less tradition based. Because of this, body modification does not always signify belongingness to a group or tribe. Due to the highly commercialized way of life, tattooing and piercing have become another way of improving one’s aesthetics. Piercings have become fashion statements worn by people of all statuses and social groups. Whereas tattoos are seen as art and expression of self; tattoos are less likely to symbolize belonging to a group. In a study by Wohlrab, Stahl and Kappeler in 2007, researchers looked at the motivations behind a person’s tattoos. They read many studies about motivation of tattooing and found significant information for motivations including group membership, individuality, personal narratives and a few others. One study mentioned the expression of individuality and beautification as a particularly important motivator. They found that tattoos and piercing were used to enhance beauty and individuality and that this was consistent despite age and social class. Another explanation for tattooing that Wohlrab, Stahl and Kappeler found was tattooing as healing. Frequently, people receive a tattoo to cover up scars or to release emotions by permanently displaying past pain. The calming effect of modifying one’s body, or catharsis, could be explained by the release of endorphins which boosts mood and simultaneously causes a numbing effect (Wohlrab et al. 2007). However, sometimes a person’s com-
mitment to tattoos still conveys their desire for group belongingness and commitment to something concrete. As explained by Tiggemann and Hopkins in 2011, people strive to be distinctive but also to be similar to those surrounding them. The desire to balance self-distinctiveness and similarity drives a person to stay away from the extremities. Balance can be achieved through tattooing because it fulfills the need of self-distinctiveness without alienating themselves and becoming extremely dissimilar.

Motivations for acquiring a tattoo or piercing vary greatly depending on time. Evolution explains the earliest forms of modification while current day tattooing is best explained by individuality. When deciding why a person wanted to get tattooed, it is best to look at the time period, the culture, and possible meanings of such body ornamenting.

References


Part II

Taking risks to get what we want
Gender Differences in Risk-Taking

CLAIRE COLE

The popular show *Grey's Anatomy* on ABC follows the lives Meredith Grey and the other doctors of Seattle Grace Hospital. Over the years, Grey and her colleagues find themselves in various dangerous situations that endanger not only the lives of their patients, but their own as well. Grey, in particular, shows very little regard for her own life.

For example, one day the husband of a deceased patient enters the hospital and goes on a shooting rampage looking for the doctor he holds responsible for ending his wife’s life: Grey’s husband, Derek Shepard. The shooter shoots Shepard in the chest, but Grey and another doctor rush him into surgery to try to save his life. The shooter tries to stop their efforts, and Grey immediately offers her own life in order to spare her husband’s. She doesn’t care that her husband would want her to live or that she’s currently carrying his child. She purposefully and forcefully puts herself in harm’s way.

This carelessness comes up at other moments throughout the show, such as when a patient is brought into the hospital with an undetonated explosive lodged in his chest. An inexperienced EMT shoved her hand into his chest to stop the bleeding and keep him alive. She didn’t know there was a bomb inside right near her hand. The EMT eventually panics and pulls her hand out. Everyone in the room immediately ducks for cover, expecting the bomb to explode. Grey, however, seamlessly replaces her hand where the EMT’s was, still keeping the man alive. Yet again, Grey has put herself in an extremely life-threatening situation. She displays a penchant for taking extreme risks that have serious consequences if the outcome doesn’t go her way.
There is an abundance of research on how men and women differ when it comes to risky behavior. The overwhelming consensus among many researchers, as well as the general public, is that women take on far less risk than men. The aversion to risk can be applied to many different areas of a person’s life, such as education goals, choices in occupation, investment decisions, and other things that involve a sizable amount of uncertainty. This paper looks to examine the various evolutionary, biological, and social factors that can lead to women being more risk-averse than men.

It is important to first look at risk aversion from an evolutionary standpoint. Based on Charles Darwin’s ideas, an organism’s main goal or purpose is to produce viable offspring that will carry on its genetic material to future generations. Then, it is important to realize the different amounts of effort and investment men and women put into reproduction. For many species, including humans, women carry much of the parental investment burden, and therefore have lower reproduction rates than men (Daly et al, 1983). This is often referred to as being the “limiting sex,” (Fessler et al, 2004). Women need to be more selective and careful when choosing to mate because once a woman is pregnant, she is stuck with offspring for at least nine months. That’s a great deal of time to spend on something that could potentially not be viable if she didn’t choose a good mate.

It should be noted, however, that men face more competition when trying to find a mate in the first place. Robert Trivers explains in his 1972 paper, Parental Investment and Sexual Selection, that this fundamental difference between the sexes dictates parental investment theory, saying, “Individuals of the sex investing less will compete among themselves to breed with members of the sex investing more, since an individual of the former can increase its reproductive success by investing successively in the offspring of several members of the limiting.”

To put it bluntly, men can mate as much as they wish with little investment or consequences past the initial point of conception, whereas women take on the bulk of the responsibility for the offspring once she becomes pregnant. Women have more to lose, so it is obvious why they would be more averse to risk. Applying this to the opening situation, Grey would be expected to not take as many risks, especially when she is aware that she is pregnant and now has to care for her child.

A study using the Social Balloon Analogue Risk Task, (a variation on the original Balloon Analogue Risk Task developed in earlier research), demonstrates the differences in the degree of risk-taking between men and women in social settings. The study is based on the evolutionary principles already discussed.
In the experiment, undergraduate college students were put in front of a computer displaying a balloon pump. Each participant was instructed to pump the balloon, earning points that went into a “temporary bank” for each successful pump. They could pump the balloon until one of two things happened: they stopped pumping the balloon to transfer their points to a “permanent bank” or the balloon popped. If the balloon popped before transferring the points, the participant got no points at all for that balloon (Fischer & Hills, 2012).

The social aspect of the experiment consisted of participants being shown pictures of men, women, or babies during the trials. Each participant was told to think of the person pictured as a “hypothetical ‘imaginary’ partner” who he or she would share his or her earnings (points) with (Fischer & Hills, 2012).

Results of the study showed that men took more risks than women over all conditions. The effects that social setting had on participants were more interesting, though. Consistent with the predictions of the researchers, men took more risks when shown pictures of other men, while women took fewer risks when shown pictures of babies (Fischer & Hills, 2012). The men in this study offer a clear presentation of young male syndrome. Young male syndrome is the idea that men will be most competitive with each other when their reproductive prospects are greatest, which is usually when they are young (Fischer & Hills, 2012).

This would suggest that fundamental evolutionary principles are at work. In other words, risk-taking is an adaptation that was advantageous to humans long ago. Although the propensity to take risks may not be as relevant or necessary in the present, it can still be expressed (Greitemeyer et al, 2012). In the article, Romantic Motives and Risk-Taking: An Evolutionary Approach, the authors assert that, “...humans spent most of their evolutionary history as hunter-gatherers so our primal instincts still exert a powerful influence over our behavior today, and current forms of risk-taking behavior, such as bungee jumping, taking psychoactive drugs, engaging in unprotected sex, or reckless driving, may be a modern way how our genetic heritage is expressed” (Greitemeyer et al, 2012). While taking risks may not be the evolutionary asset it once was, it still can be exhibited in the present day. Therefore, while women may not necessarily need to be as conscious of risk as their ancestors once were, they still can present that same kind of behavior. The same can be said for males.

This study clearly follows the hypotheses put forth that men and women differ in their risk-aversion due to evolutionary principles. Men compete with other men to attain more mates, while women avoid risk in order to protect themselves and their potential offspring from harm.
A study by Tobias Greitemeyer, Andreas Kastenmüller, and Peter Fischer builds on the evolutionary principle of sexual selection. As mentioned earlier, risk-taking can be an adaptive behavior that evolved long ago to distinguish a good mate. Their study looks to find out whether introducing romantic motives and factors into a situation will have any effect on the risk-taking behaviors of men and women. The authors suggest, “…that individuals may engage in risky behaviors that are potentially costly as a way of signaling to others that they possess desirable characteristics that could passed onto offspring” (Greitemeyer et al, 2012).

To test their hypothesis, four different experiments were run. Each was designed to see how the introduction of a mating prime affects a certain situation. A mating prime is a cue that a person could potentially find a mate depending on his or her actions. The first two experiments used a 2 x 2 design. This means that there were two different sexes with two different control and experimental groups. The final two used a 2 x 3 design, meaning an extra third variable was in place (Greitemeyer et al, 2012).

The first experiment looked at sexual risk-taking. Students at the Ludwig-Maximilians University in Munich, Germany, were shown, or “primed,” with three pictures of attractive individuals of the opposite sex. From the three pictures, each participant selected the one they found most appealing. Then, he or she was given three minutes to write about the perfect first date they would have with the person in the picture. Finally, they were asked how likely they would be to practice risky sexual behavior. An example of the questions asked is, “If a person asserts to me to have no sexual disease, I would not feel worried to have sexual intercourse with this person,” or, “If I find someone attractive, I would agree to sexual intercourse even if it is unprotected,” (Greitemeyer et al, 2012). Each was answered on a scale from 1 to 10, one meaning “strongly disagree” and 10 meaning “strongly agree.”

Results showed that men are more likely to take risks with sexual behavior than women. However, it is more important to look at the interaction with the mating prime. Men who received the mating prime (the pictures of attractive women) were significantly more likely to take sexual risks. Women who received the mating prime were no more likely to engage in risky behavior than women in the control group (Greitemeyer et al, 2012).

The second experiment in the study was similar to the first in both design and results, but instead focused on gambling. The mating prime once again increased men’s risk-taking. However, the mating prime for females actually decreased the amount of risk they took (Greitemeyer et al, 2012).

The third experiment looked at the effect of the mating prime on reckless driving. Again, it was extremely similar to the preceding experiments. This
time, however, a third variable was added. The researchers looked at if there were differences in risk when considering long versus short-term relationships. Again, men took more risks when they received the mating prime, and the risk-taking of the women was unaffected by the prime. Mood was examined as a possible outside affect on the data, but nothing significant was found (Greitemeyer et al, 2012).

Finally, the fourth experiment was done to see if the mating prime effect on risk-taking differences between men and women could be generalized to the overall risk-taking tendencies of both sexes. Participants took a modified version of the Domain-Specific Risk-Taking scale developed in another study by Blais and Weber (2006). It covered ethical, financial, health/safety, social, and recreational risk domains. Men were more likely to take risks if they received the mating prime. Women did not differ in their propensity to take risks whether they received the prime or not (Greitemeyer et al, 2012).

While all the experiments essentially support the same idea that mating primes can increase risk in men and are ineffective on women, there could be some potential problems with the results. The major issue is that all of the experiments were conducted with young, college-aged men and women. Therefore, it makes it difficult to generalize the results. It may be true that for this specific age bracket men do take more risks than women when a mating prime is present. However, this could just be evidence of the young male syndrome discussed earlier. The findings could be drastically different for older men and women.

While many researchers and studies point to an evolutionary basis for the gender differences in risk-taking, there are others who believe the difference can also be based in cognition and perception. In a study done at the University of California-San Diego, undergraduate psychology students completed surveys on four risk domains: gambling, health, recreational, and social decisions. There were four scenarios of risky behavior for each domain on the survey (Harris et al, 2006).

For each scenario the participants were asked how likely they were to engage in that behavior, the probability of that behavior resulting in negative consequences, how severe the potential consequences could be, and how much enjoyment they would get out of the activity if there weren’t any negative outcomes (Harris et al, 2006).

Two additional social scenarios were also included on the survey to take a closer look at the social domain. Previous research has found that there tends to be little to no difference in the amount of risk men and women will take in this domain, and if there is a difference, it is women who engage in more risk-taking behavior (Harris et al, 2006).
Gender Differences in Risk-Taking

As with other risk aversion studies, the men were more likely to partake in the risky behaviors presented in the gambling, health, and recreational domains. This is not new information. However, the answers to the other three questions are what make the study extremely interesting. Women perceived that the negative consequences of the risky behaviors presented as being more likely to occur and the consequences as being very severe. Men did not. Furthermore, men responded as getting more enjoyment out of the risky activities than women did. Consistent with previous studies, the social domain showed very little difference between men and women when it comes to taking risks (Harris et al., 2006).

Although this study doesn’t directly point to what causes gender differences in risk-taking, the researchers put forth an interesting idea referred to as the “offspring risk hypothesis.” The hypothesis states that the difference in risk could have little to do with mate selection at all. The focus, rather, is on the amount of risk each sex perceives. This would be advantageous for women and justify their greater aversion to risk. If they are able to perceive or anticipate risks in the environment, they can be better prepared to protect themselves and their offspring from those risks (Harris et al., 2006).

It’s important, however, to notice the same problem with this study as the ones discussed previously. While this study had a large sample size, it consisted solely of undergraduates in one particular college major. Therefore, its results can’t be generalized to all men or all women.

When it comes to risk-taking, there is a tremendous amount of research that supports the idea that women, overall, are less willing to take risks than men. The factors behind this, however, are more unclear. Evolutionary principles such as sexual selection and parental investment theory appear to play a large role in gender differences in risk-taking. There’s also some evidence, though, that the different ways in which men and women view the world could affect risk aversion. Whatever the case may be, the differences cannot be attributed simply to the fact that women are the “fairer sex” or that they are weaker than men. There are more components to a person’s risk aversion than common stereotypes.
References


Herman Melville’s famous tale of the maniacal Captain Ahab and his single-minded pursuit of the white whale in *Moby Dick* reveals the internal conflict of a man who is both a victim and an aggressor, wounded mentally and physically yet maintaining the illusion that he is a kind of God among his crew. Ahab’s blatant display of hubris and narcissism is a central theme to the novel, and recalls the archetypical “pride before the fall” motif of such figures as Odysseus and Faust. Ahab falls into a pattern of beloved, but faulty and conflicted, male heroes. His perceived pride, aggression, and affinity for risky behavior are typical of an alpha male, or in his case, a ship captain, and seemingly render him exceptionally well suited to assume rank above the other men on the ship. From a broader perspective, though, Ahab and his men represent a culmination of evolutionary processes. As the all male crew embarks on a whaling expedition, one of the most dangerous professions of their time, I explore their motives for taking this kind of risk, and why it makes sense that men are taking this kind of risk rather than women.

I. Boys Will Be Boys

Our attraction to bad boys could be more than just the premise for interesting plot twists and positive reviews. The history of evolutionary psychology suggests that members of sexes with equal variance of reproductive outcomes should not have a bias toward risk taking. However, in species like humans, where males experience more variance in reproductive outcome because of
Varieties of Spiritual Motivation

Sheely Taylor

factors like gamete size and unbalanced parental investment in the offspring, they have been conditioned to display competitive, risky, and violent behavior as a means to achieve reproductive success. In the case of most animal species, one single mating can typically fertilize all of a female’s available eggs, deeming her reproductive potential maximized. A male, however, could further enhance his contribution to the reproductive success of the species by fertilizing the eggs of other females. While females go through lengthy stages of gestation, lactation, and an almost universally more demanding period of investment in the offspring, males are free to continue procreating. Males often have to compete for sexual interest from more and more females, which inspires a kind of showing off—tail feathers in peacocks, wrestling matches in elephant seals and most apes—displays of dominance. Another effect of the greater variation of reproductive success in males is that females become the choosier sex, considering who will be the highest quality mate based on displays of physical competence.

Ronay and Von Hippel conducted an experiment with men on skateboards that demonstrates the increase of physical risk taking in the presence of attractive women. By having the participants perform tricks on a skateboard, they were able to simulate the kind of instant decision making that males competing for mates have developed throughout evolutionary history. On a skateboard, the decision to execute some trick or skill benefits the male by demonstrating his physical prowess and mastery, but carries the risk that he might not execute it properly and embarrass himself or potentially injure himself, both with negative implications for his reproductive achievement. The presence of women resulted in an increase of attempted tricks, supporting Wilson and Daly’s conclusion that “attractive women have the power to shift men’s time perspective”, influencing them to make their decisions based less on long term consequences and more on immediate effects.

All competition among males, specifically in humans, including simple displays of brawn and physical prowess, is inherently risky. Although competition for mates drives males to exhibit this kind of behavior in the presence of attractive women, groups of males also encourage the establishment of some kind of dominance. In his The Trouble with Testosterone, Robert Sapolsky discusses the example of a group of five monkeys. Initially, the monkeys will sort of evaluate each other, interacting without much violence or aggression, but they will quickly establish a kind of political hierarchy, even without the presence of a female. The top ranking monkeys will then impose their authority on the lower ranking monkeys, implying that there is more than just showing off for females involved in male behavior. Gambling, for example, reveals increased riskiness in group social settings. Blackjack players will bet more and more with less certainty of probable results when there are more players at the table (Blascorich, Ginsburg, and Howe, 1976), which implies
the importance of the recognition of a boast or display. A simple tendency to make bold decisions or outlandish exertions of strength is futile without an audience. Similarly to the skateboard experiment, however, when shown pictures of women, betting increased. Despite the correlation of more males and higher betting, the presence of females increases the betting even further.

Males thrive off of this kind of competition and risk. Males are “more willing (than females) to persevere in a rather dull, laboratory, skill-testing task” (Weinberg & Reagan 1980) as a reflection of their prominence in elements like body size, armament, pugnacity, and even the age of reaching puberty, rate of senescence, and life expectancy. Specifically at the age of the whalers on board the Pequod, males are at the peak of their reproductive life span, and therefore, at their highest propensity for risky behavior. For example, men are 2.5 times more likely to die in car accidents than women, and that statistic jumps to 3 times more likely in ages 15-29. That’s because during this period of adolescence, the transition from childhood to adulthood, humans start to explore social environments and develop peer relations. This natural sense of exploration leads to a tendency to take risks, which leads to learning and discovery, but can sometimes also lead to risky and dangerous behavior.

One study that explores the differences in risk taking between males and females across age groups is the Balloon Analogue Risk Task (or BART), which relates general pubertal development and testosterone levels. Conducted in the community surrounding Leiden University in The Netherlands, participants were selected from childhood to adulthood and asked to inflate a computerized balloon by clicking on it until it popped. The more it inflated, the more money they saved up; but when it popped, all the money saved would be lost. There were more explosions in boys than girls, and explosions increased with advancing puberty levels. This is mostly attributed to the high levels of testosterone in pubescent boys, as they had more explosions while girls earned more money. Therefore, in boys, higher testosterone may lead to more sensation seeking (the thrill of pumping the balloon further), while in girls, higher testosterone may lead to more long term advantageous risk taking.

Further gender differences emerge in the kind of risks males and females engage in. To assert dominance, males are inherently more likely to display aggression directly, while females are more indirect or passive-aggressive. Wilson and Daly argue that because men take more risks when gender differences occur, males’ risky behavior is just part of their masculine psychology. They cite the great spread of reward between winners and losers in primate societies as a great incentive toward risk taking, which is reflected by variance and inequality in modern society. For example, homicide rates across communities, cultures, and economic groups include far more males than
females, as both the aggressor and the victim, especially where the gap in distribution is greatest between the wealthy and the poor. Wilson and Daly’s cross national research on income inequality and homicide rates reveals that it is competitive killings among unrelated males that make up most of reported homicides. Further, when resource distribution is extremely unequal (like the winner/loser gap in ancient primates), violent and risky behavior as a means of competition becomes more appealing to those at the bottom of the distribution chain because they seemingly have less to lose.

II. Chemicals and the Brain

Testosterone is an integral component to risk taking. Males have higher testosterone levels, so they are chemically more aggressive than females, and thus, more likely to engage in potentially life threatening encounters. A short term increase in testosterone help high testosterone males achieve dominance by reducing fear while increasing assertiveness, violence, and competitiveness (Ronay and Von Hippel 2010). However, evidence suggests that testosterone doesn’t influence behavior and aggression, but rather that behavior influences testosterone levels, which in turn enhances aggression that already exists (Sapolsky). This “permissive effect” applies to other chemical processes in the body as well, including links between serotonin secretion and depression. Testosterone is an androgen produced in the male testes, which initiates a reaction between the amygdala, stria terminalis, and hypothalamus during secretion. The most interesting property of testosterone secretion is that as it is increased or decreased, there is not a linear correlation with displayed aggression. Castrated individuals with no testosterone exhibit very little aggression, but when injected with only a fifth of the normal testosterone level, they exhibit the same degree of aggressive behavior as those injected with twice the normal level. Thus, the graph displaying this correlation would plateau, increasing from none to a fifth, flattening out, and then increasing again as levels surpass twice the natural level. Referring back to the Journal of Cognitive Neuroscience’s BART experiment, they further examined the relationship of testosterone and risk taking to the development of the orbitofrontal cortex, or OFC. By performing brain scans before and after participants pumped their balloons, they hoped to find if there was more to the gender gap than testosterone, and whether there could be a neurological difference as well. They found that higher testosterone levels (evaluated from urine samples) were associated with smaller OFC grey matter volume, and that the smaller volume was in turn associated with greater risk taking. From a developmental perspective, the OFC test considers risk taking as an adaptive adolescent behavior. While higher testosterone levels lead to risk taking and explorative behavior,
an immature OFC suppresses this adaptive behavior. Therefore, (according to
the researchers at Leiden) it might be argued that in boys, a relatively imma-
ture OFC is advantageous because it would lead to suppressed testosterone
bursts (i.e. less balloon explosions); but in girls, a less mature OFC would be
disadvantageous as suggested by earning less money in the BART experiment.

III. Development/Environment

According to evolutionary history, competition arises when there is an un-
equal distribution or insufficient availability of resources. Competition for re-
sources thus inspires violent and risky behavior, whether males are competing
for status, food, or mates. Returning to the elephant seal, to sustain the popu-
lation at a constant rate, every female would need to birth two offspring in her
reproductive lifetime. So, for males looking for a mate, competing for rela-
tively few opportunities considering the reproductive possibilities of the male
population, (males successfully contribute to procreation without the nagging
responsibility of gestation, lactation, maternal investmentâ€”) elephant seals
have to be pretty aggressive to earn mating privileges. Some elephant seals,
the large, strong, aggressive ones, have significantly more offspring than the
ideal two, while some, less physically intimidating males, have none. Aggres-
sion and dominance are rewarded by the privilege of procreation. The same
goes for humans. Competition breeds inequality, which rewards aggression
and violence. In environments with bigger differences in wealth, not with
lower overall income, crime, violence, and imprisonment are more prevalent.

According to the “Development Psychopathology Model” of viewing risk tak-
ing in adolescents, risky behavior is regarded as maladaptive. Adolescents
engaging in activities like aggression, crime, promiscuity, reckless driving,
and drug use are considered to be harmful to themselves and other mem-
bers of the species around them. Looking towards development, the model
deems adaptive behavior the effect of growing up under normal or benefi-
cial circumstances (plentiful resources, parental investment, competent social
engagement), and maladaptive risk taking behavior the effect of growing up
under stressful or abnormal conditions (poverty, missing one or both parents).
However, according to evolutionary history, we know that risk, having mul-
tiple possible outcomes where one or more is not beneficial or even harmful,
can sometimes be the best option for an individual, and in fact very adap-
tive. Whereas these “bad” outcomes are often considered inherently unwar-
ranted and costly, they could just be the best choice under the circumstances.
From an evolutionary perspective, environments aren’t classified so much by
the material wealth available or the level of parenting present, as “good” or
“bad”, but by the level to which positive and negative influences on behavior
are present. Positive environments disproportionately afford resources and support that enhance fitness, while negative environments disproportionately embody stressors that would undermine fitness.

Luckily, both beneficial and stressful environments have been a part of human history, which has allowed natural selection to shape our neurobiological processes to aptly distinguish between possible costs and benefits. Although environment and development definitely influence risky behavior and competition, they have to be considered along with the evolutionary adaptations that human adolescents have acquired over time.

**Conclusion**

The captain and crew of the Pequod and the fact that they are all males, mostly adolescents or young adults, represent a culmination of evolutionary factors and selective pressures. Because of increased variance in reproductive outcomes, males have experienced more competition in choosing mates. This competition then has fostered the development of immediacy in decision making, which triggers testosterone secretion and thereby increases the likeliness that a male would engage in risky (possibly harmful) behavior.

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References


Mate Poaching

Kamilah Jones

Home wrecking, adultery, and cheating are all acts that are frowned upon in our society. Those acts are not only being committed on a daily basis but are being viewed in our homes as entertainment. On the television drama *Scandal*, viewers are enthralled by the ongoing sexual affair between the character of Fitz Grant who plays the President of the United States and his former aid Olivia Pope. This plot may sound like an echo to the real life scandals of the Clinton administration, which if you remember correctly, Americans also tuned into.

Why do these types of relationships enthral the eyes and hearts of its viewers? Is it because these relationships are so far out of the scope of what we consider to be naturally occurring phenomena? Societal norms tell us that marriage is a sacred bond that should be respected in all directions. Just as partners are expected to resist any urges to stray outside of the relationship, outsiders are expected to find deterrence in the symbol of a marriage, such as a ring. Even though Fitz is a married man, it is clear that Olivia Pope wants him for herself. She invests large amounts of time and energy both into building a relationship with him and into distancing herself from his wife. The audience watches in awe as the relationship between Olivia and Fitz grows but their interest may be misguided. The act of attracting someone who is already in a committed relationship is a common evolutionary response to the roadblocks humans encounter when trying to find a mate.

The relationship between pair bonds and mate poaching is one of dependency. Without the commitment and close interaction that comes with pair bond, mate poaching is unnecessary and indistinct. This link greatly limits the number of species mate poaching can be observed in. In other species, finding a mate is only necessary during the designated breeding times. This
Mate Poaching

Kamilah Jones

does not create a situation in which taking someone else’s mate is clear because commitment is short lived and mates are subject to changing every year. In species with more hierarchical based social organizations, you either have all of the possible mates or none of them. Although this does create a situation in which mates can be taken, there is no attraction feature. The mates are not being lured away, their keeper is being challenged and if he looses there will be a new keeper. On account of this limited applicability, we will focus our attention on monogamous, pair bonded species.

Augustin Fuentes went through many different designs of a monogamous social organization and although they were varied, each definition had the key components of commitment and duration. Monogamy involves two pair-bonded adults who are exclusively committed to one another for a lengthy amount of time. (1998) Although it is complex to operationally define pair bonds, in practice, they are easy to recognize. Pair bonds can be seen as the western ideal of mother, father and child who live together and work extensively to meet each other’s needs. In our minds they look nothing like the awkward office fling or the alcohol-induced one night stand. The difference between these relationships is very important to understanding the impact of mate poaching. I do not want you to think of it as stealing your cousin’s date to the party, instead, think of it as breaking apart the sacred bond of a marriage.

When people create a pair bond they essentially remove themselves from the mating pool. This can cause a shortage of mates and heightened competition for people who are still unpaired. Consider a hypothetical population in which there are 47 males and 53 females. If all of the males form pair bonds, 6 females are left without a mate. Even when all viable candidates for mating are taken, unpaired females will still be in competition for mates. The logical adaptation is to develop tactics for attracting males away from their existing partners in the hopes of developing a new pair bond.

Another problem that mate poaching attempts to overcome is competition for desirable mates. If we take the same scenario above, it is safe to assume that of the 47 of males, all of them are not desirable candidates for mating. This further dwindles the pool of possible partners down and increases the strength of competition. With this in mind, we may gain insight into why mate poaching emerges by thinking about Jules Dupuit’s cost benefit analysis. The costs of not finding a mate are evolutionarily detrimental because without a means of creating offspring, that organism’s genes cannot be passed on. These costs are also psychologically harmful because humans are social in nature and are not mentally equipped for a lifetime of solitude. With these costs in mind we can begin to see the benefits to mate poaching quite clearly.
In 1991 Pederson hypothesized that an imbalance of men and women in a population causes higher levels of competition for mates among the more populous sex. David Schmidt tested this hypothesis when he conducted a study to determine the relationship between an unequal distribution of men and women in the population and mate poaching. He found that when there were more women than men in the population, attempts made by women to mate poach went up significantly. On the other hand, when there was a surplus of men in the population, men’s attempts to mate poaching did not undergo a significant change. (2004)

At first glance, I found these results puzzling. My initial assumption would be that when there are more women in the population, competition for men would increase and in turn attempts to mate poach would go up. I did not understand why the same phenomena would not apply for men until I thought about the differing mating goals of men and women. Women tend to have long term mating goals influencing their attempts to mate poach while males tend to pursue short-term goals. (2004) These findings suggest that with a shortage of males, women will have to work much harder to get a long-term mate because the paired males will be off the market for a prolonged amount of time. When men are primarily pursuing short-term goals women are not being taken off the market for long periods of time and therefore competition does not need to be raised a significant amount. Another possible explanation for why men may not be experiencing major changes is because they are poaching at a much higher rate than women and may have already been close the maximum amount of attempts that are possible.

Presumably, natural selection has designed our mating strategies to include the use of mate poaching. Since selection acts on behaviors that maximize reproductive success, organisms that were not paired up and did not try to mate poach would have been outcompeted by those who did not try to mate poach. Many of us are familiar with Darwin’s theory of natural selection, which is often summarized as a concept of survival of the fittest. As we are often attuned to thinking of fitness in terms of strength, it may seem odd to apply it to romance but the art of attracting a mate has as much variation as any other skill. Those who are “romantically inclined” have greater mating success and, ideally, pass those traits down to their offspring.

Attractiveness seems to be a very important factor in determining the success of mate poaching. Schmitt and Buss did a study that looked at characteristics that seemed to improve the success of mate poaching attempts. They discovered that people who were rated as more attractive had higher rates of success at mate poaching. Although attractiveness increases the odds of success, they found that the desire to mate poach has to present for it to have an influence. Other adulterous characteristics are necessary to even lead to an attempt. As
if in a vicious cycle, less willing individuals whom actually resist mate poaching must be lured with a higher level of appeal than what would otherwise be necessary.

In hindsight, it seems like it is not enough to be attractive. Ideally you would want to be more attractive than the competition. Instead of just viewing natural selection as maximizing reproductive success, we can think of it as having the ability to survive better than the competition. In our previous scenario, if an individual is resistant to attempts of mate poaching they may already be with a viable mate. The only way to then prove yourself worthy of the costs associated with starting a new pair bond is to be better than the mate they are already paired with. If their current mate is attractive and has a moderate amount of resources, the best possibility of success would be to be more attractive and have an even larger supply of resources your disposal.

Surprisingly enough, the fact that someone is in a pair bond sometimes proves to be a desirable trait. This is especially true when we look at the desires of single women who are searching for a mate. Parker and Burkley found an interesting relationship between single women and attached males. In the study they found that although men were more interested in pursuing relationships overall, women were much more likely to pursue pair bonded males than they were to pursue single males. (2009) The most interesting aspect of this desire for single women to want pair bonded males is that this act seems to be unconscious. A poll was taken and women avidly report that they are not more attracted to men who are taken. Research shows otherwise.

If it’s true that this attraction is unconscious, what drives it? An often-overlooked benefit to mate poaching is that it allows a person to know the quality of a potential mate before creating a pair bond with them. Parker described it as a pre-screening process that was conveniently done by the other woman. (2009) When a man is already in a pair bond, the woman knows that he is more likely to have desired resources such as enough money to provide for her and any potential children. It is also a signal to her that he is interesting in pursuing a long-term relationship. This could be extremely beneficial to know because men are usually seeking short-term goals which could are likely to leave the woman single again before long. With this in mind it is easy to see how women might be unconsciously maximizing their likelihood for success by pursuing pair bonded males. It allows them to find mates who are likely to be willing to invest their time and resources.

Research by Bressen and Stranieri takes this phenomenon a step further. They wanted to see if conception risk had an influence on whether women preferred a single or partnered man. They measured conception risk with fertility based on the woman’s menstrual cycle. In their results they found evidence that it is not just single women who prefer man that are already in a relationship. Even
women who were in a relationship of their own showed greater preference towards men who were already partnered. This pattern proved consistent until they looked at the difference between women who are in fertile stages of their menstrual cycle and women who were not. When fertility rates were low women still preferred partnered men but when the women were in a fertile stage of their cycle, the opposite effect emerged. They had a much stronger preference towards single men. (2008)

It seems unlikely that women are purposely adjusting their level of attraction to single or attached men to correspond with their fertility levels. From an evolutionary standpoint, this unintentional shift in preference proves to be a very useful tactic. As discussed earlier, men who are in a relationship are much more likely to possess the qualities women tend to desire in a long-term mate. This makes them a good choice when women are not at a high risk of conceiving. If a woman is at risk for conceiving, a man who is already in a relationship could be a detrimental choice because a man in a pair bond is more likely to invest his resources into the woman he is committed to. She could ultimately be left to her own devices when attempting to raise a child. A single man will be less likely to have any other commitments and so the woman can potentially get the full extent of his resources and his investment into her offspring. Therefore the woman’s risk of conceiving is an important factor for her to consider when making the choice to mate with either an attached or single male.

Throughout my research, I found that men and women have consistent differences not only differ on the types of relationships they are most likely to poach, but they also on the lengths of relationships they are attempting to establish by mate poaching. I also noticed that there are big differences between the males and females regarding their motivation and risks to mate poach. This made me curious to see why men and women have these characteristics that contradict across genders. There was a study done on the desire men and women have to mate poach on short-term relationships as opposed to long-term relationships. When asked about their likelihood to mate poach given various reasons, the study found that men were more likely to report benefits in short term mate poaching. This finding is probably not overly shocking because it follows popular belief that men have a greater benefit in having multiple short-term mates that do women.

What sets this study apart is the separation of specific costs and benefits. The study looked at reasoning behind benefits like gaining an ego boost to costs such as suffering from shame and gaining a bad reputation. Applying these costs and benefits to long-term and short-term relationships gives our previous findings much more credibility. Men reported a greater interest in mate poaching for the sake of undertaking a challenge for short-term relationships
than women. They however did not find the incentive of undertaking a challenge as a viable reason for mate poaching for long-term relationships.

Women ratings tended to peak on the costs side of the spectrum. Women reported a much higher concern with gaining bad reputations if they were to mate poach intending a short-term relationship. This effect was greatly lessened when the same cost was applied to the intent of a long-term relationship. Unlike men, women did not report an ego boost from mate poaching for short-term partners. The results of this report showed that men perceived a greater number of benefits to mate poaching than women did. On the other hand women found the costs of mate poaching particularly deterring when they are deciding for or against it. (Davies, Shackelford, & Hass, 2010). These finding are very enlightening because they show why men make so many more attempts to mate poach than women. They have a greater number of incentives that make the benefits outweigh the costs on most occasions. Women participate in much less mate poaching because they find the costs quite high. Even though the costs are deterring, when a long-term relationship seems possible the costs are quickly overcome by the seemingly ultimate benefit of gaining a pair bonded mate.

Based on the above studies and research I have come to the conclusion that mate poaching is an evolutionary adaptation to normal factors that may otherwise hinder the success of mating. I further conclude that this adaption is complex and has many different levels to accommodate the wide range of scenarios that occur when looking for a mate. There may not be an even distribution in the population for mate pairs but most importantly, all of the potential mates a person will encounter may not be available. The costs and benefits of mate poaching vary between men and women because their differing physiology gives them very different goals and perceived risks in the overall mating process. Despite these variations in outlook, the choice to mate poach still comes down to a cost-benefit analysis that suggests, when the odds are not in your favor, home wrecking, adultery and cheating are all fair game.

Kamilah Jones, the author of “Mate Poaching”, has chosen the majors of political science and psychology at the University of Missouri to be the foundation for her path to becoming a successful lawyer. Although academics are important to her, excelling as a student comes second to her love for her family. She strives to be the role model that her younger sisters deserve as well as the motivated adult that her parents raised her to be. Her personal achievements are vast and commendable, but she will be the first to tell you that she is no genius. She believes that anyone with a goal who is willing to work harder than the people around them and keeps a circle of positive support can be successful in their endeavors.
References


Part III

Knowing the Difference between Right and wrong
Imagine seeing your only sister, just a little girl, sentenced to a brutal death. Aren’t you the one that is supposed to be protecting her? It might as well be you up there as your heart is being ripped out of your chest. But what if it really could be you instead? Would you make that life-altering sacrifice? In Suzanne Collins’ thrilling novel, *The Hunger Games*, Katniss Everdeen answers these questions first hand after her younger sister, Prim, is chosen as tribute for the games. She views her decision to take her sister’s spot and fight until the death with twenty three other kids as the only option. This idea of altruism has been seen in many different species and throughout many different cultures around the world for centuries. Evolutionary theory offers some explanations as to why one may make such a great sacrifice for a sibling and what defines the barrier in making this same choice for a stranger. Looking at this behavior over time with an ultimate and dynamic evolutionary point of view, altruistic habits in species other than humans can give some reasoning to our human decisions. From more of a present day or functional standpoint, uncovering how animals determine who their siblings are can reflect the source of such altruism as well.

Altruism is defined as any action that an organism takes that “benefits other organisms at a cost to itself” (Okasha). These costs can be measured in fitness and whether or not an individual’s genes will be passed on as a result of the action. In regards to this notion of fitness, there are two types: direct and indirect. Direct fitness is gained with the production of offspring. Indirect fitness is aiding in the reproduction of a nondescendant relative. According to Hamilton’s Rule, an altruistic action is more likely if the indirect fitness benefit is greater than the direct fitness cost. Hamilton, a British geneticist, also took into account a “coefficient of relatedness” between the organism making the sacrifice and its recipient ("William Donald Hamilton"). Because
of this genetic measure, altruism in siblings or other relatives is much more common, both in humans and other species. With all organisms seeking the best reproductive fitness in order to pass along their genes the most frequently, an altruistic act could ensure that. Siblings share half of the same genes, so more or less saving one’s sibling could make for the potential saving of one’s genes in the process.

In his essay, “Conflict: Altruism’s midwife,” Samuel Bowles discusses this idea of parochial altruism, making a sacrifice that favors members of an ethnic, racial, or other type of exclusive group. He analyzes how in primitive societies individuals would choose to give benefits to members of his or her own group although it resulted in less favorable trade or political relationships with outside groups. Using two groups in the Western Highlands of Papua New Guinea, an experiment was conducted to test parochial altruism. An individual was asked to divide a sum of money between himself and another person, either from his own group or the opposing group. If the he was splitting the pot with a member of his own group, the individual always gave more money away and kept less for himself. However, when asked to divide the money with an outsider, the individual would keep more for himself and give less to the other person (Bowles 326-327). This favoring of group members creates benefits within the society that must outweigh the costs of damaged outside relations.

The altruists do not make the sacrifices for the betterment of themselves but rather for the benefit of their species as a whole. For example, in Vervet monkey populations, a monkey will give an alarm call to warn the group if a predator is near. While this action increases the individual’s chance of being attacked, it decreases this likelihood for the group as a whole. As a result, monkey populations with a higher proportion of alarm callers are favored in selection over those with fewer callers, thus having a greater group fitness. This idea helps to answer Darwin’s questions about the evolution of such altruism. As populations with more selfish individuals are selected against over time, groups with more altruists appear to have a survival advantage. Therefore, this alarm-calling habit evolves to favor between-group fitness over time (Okasha).

These altruistic behaviors can actually be found almost anywhere in nature. In many social insect species such as ants, bees, and termites, the queen lays all the eggs for the population and the rest of the colony’s workers are sterile. These workers spend their lives taking care of their brothers and sister because it is the only chance they have of passing on their own genes. Even microorganisms such as slime molds exhibit altruism from time to time. Normally during a reproductive cycle, the molds simply disperse spores from their own cells. However, if conditions are not ideal, the slime molds will
work together to ensure reproduction. Instead of each cell producing spores to be distributed, some of the cells with grow into stalks to raise up others so that their spores may disperse. While sacrificing their own opportunity to reproduce, these stalk cells ensure the continuation of their species by still allowing some spores to disperse, even though they are not their own necessarily (West R482-R483).

But how is someone supposed to act altruistically toward siblings if he or she does not know who they are? The definition and identity of a sibling in an organism’s mind can depend on two main things: location and phenotype resemblance (Park 217-219). If an organism is brought up with the same group, they may identify them as siblings in their actions, even if they are not actually genetically related. These actions could be sharing resources, making sacrifices, or not finding them sexually attractive. For example, in the kibbutzim culture of Israel, children of both genders are raised together in groups from shortly after they are born to the time of adolescence. When the time came, these children were allowed to marry anyone they wanted, no matter what group they were from. However, these individuals almost always married outside of their group and even growing up there was hardly any instances of sexual relations within the groups, although none of the children were genetically related (Brown 182-183). This behavior of not choosing close kin as a mate stems from the evolutionary history of incest and its common result in children with developmental issues (Park 215).

Spatial proximity during young ages plays a key role in the development of kin recognition. For example, goslings imprint on whatever they see after they are born and recognize it as a relative for their lifetime. While most of the time these goslings are surrounded by their siblings upon their birth and thus relate to them, sometimes this habit goes wrong and the goslings imprint on other objects. In one instance, a zoologist was studying this situation and one of the young geese ended up following him around because it had labeled him as kin. Further along the evolutionary timeline and closer to human genes, many primate species exhibit similar actions toward their siblings as humans would. Those that they show these tendencies towards are not always biologically related to the primates but because they have grown up in close proximity to one another, they treat them as such. The primates avoid mating with others from their group, just as humans find incestuous actions not acceptable in society. Humans that live together or that have grown up together are less likely to find one another sexually attractive, too (Park 217-218).

In regards to phenotypic identification of relatives, organisms do not always compare their looks to those of others in order to label them as kin. But rather, many perform “other-other” comparisons with the other organisms around them, combining both these phenomena of spatial location and physical re-
semblance. This situation is mainly seen in animals that reproduce in litters, nests, or other multiples. Humans typically exhibit “self-other” comparisons when designating siblings, especially regarding facial features. In an experiment conducted by DeBruine, researchers modified the faces of strangers to resemble an individual then asked that person to choose whether or not to help the stranger in need. The results showed that people were much more willing to help the strangers that looked like them and not those that had no resemblance to their own appearance (Park 219).

To further illustrate and tie all these theories together, a University of Michigan social research team conducted a survey to test the correlation between a person’s willingness to save someone in a life or death situation and that recipient relationship to the person. They asked a random sampling of undergraduates how they would respond if a house containing three of their loved ones was rapidly burning down and there was only enough time and resources to save one. The victims inside the house ranged from one year to seventy-five years of age and could either be a sibling, parent, cousin, grandparent, or acquaintance to the person taking the survey. This value of relatedness in terms of actual genetics was translated into percentages for data purposes. While age also had an effect, with younger relatives most likely to be rescued, the results overwhelmingly showed a direct relationship between how related the people were and how likely it was that they would be saved. Siblings and parents were most likely to be saved, especially younger siblings. In nonlife-threatening situations, the data showed the same relationship between relatedness and willingness to help with a more gradual change (Burnstein). A similar experiment was conducted at Central Michigan University where 216 students were given the choice to help either a sibling, cousin, or best friend in both a violent and nonviolent situation. Just as the other survey revealed, the vast majority chose to help the sibling in either situation, whether it was a violent attack such as being mugged or a nonviolent issue like a kidney transplant (Fitzgerald).

While these valiant acts of altruism seem to be based in a moral sacrifice of putting another before oneself, altruists biologically are programmed to do what is best for their genes. In their heart and in their minds, altruists may feel that they are making a grave sacrifice for a sibling, but theories of evolution tell a different tale. With reproductive fitness at the forefront, organisms simply choose what is best for their gene pool so that when it comes to natural selection, the odds may be ever in their favor.
An avid sock collector and dog lover, **Katie Schnell** is a freshman Journalism major at the University of Missouri. She is from Memphis, Tennessee, and enjoys baking, spending time with family and friends, and doing anything active. With faith as her foundation, Katie hopes to one day be an international journalist, empowering others through education.

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The ordinary man is to live in submission and obey the laws as they are constituted. An extraordinary man has a right to commit crime and transgress the law for no other reason than the fact that they are extraordinary. That is, at least, the thinking of Fyodor Dostoevsky’s classic character, Rodya Raskolnikov. This hypothesis may seem a bit radical, but it allows one to question how society and culture may affect an individual’s view of right and wrong.

In *Crime and Punishment*, Raskolnikov goes about testing his hypothesis by planning the murder of an old woman. A pawnbroker by profession, Raskolnikov views the old woman as a corrupt individual who would be of better benefit to society if she ceased to exist. Having justified a reason for her death, Raskolnikov sets out to test if he is truly an extraordinary man. It should be noted, that the extraordinary man does not have an official right to transgress the law, and may, for that reason, choose not to fulfill his complete potential. His ability to be extraordinary is then determined within his own conscience when he allows himself to overstep certain obstacles so that he may fulfill his ideology. This is why he feels he has no other choice but to kill the old woman.
Raskolnikov goes about creating an elaborate scheme to rid society of the louse. While crafting his plan, Raskolnikov is able to obtain a degree of trust from the old woman and therefore lessen the suspicion from himself. While enacting his plan, the old woman’s sister unfortunately returns home; forcing Raskolnikov to kill the sister as well. Having planned the murder so precisely, Raskolnikov is able to leave the scene and destroy evidence without being caught or suspected by the police. This suggests that Raskolnikov has proved himself to be an extraordinary man. However, he begins to fall ill rather frequently, become constantly tired, and all together not himself. This physical distress and degradation raises suspicion in those around him and eventually leads him to turn himself in.

What is peculiar about Raskolnikov is that he is able to justify a reason for murder. Murder, in general, is a violent act which is viewed as unacceptable by the vast majority of people. However, there are many components which could cause a person to view different forms of aggression (such as murder) as acceptable. The greatest factors on an individual are the society and culture in which they are raised.

In an attempt to understand how different populations view and accept aggression, J. Martin Ramirez has helped perform several cross-societal and cross-cultural analyses that delve into what people view as acceptable forms of aggression. To understand the societal differences, one must look in the areas where the cultures are relatively similar, such as four different regions in Spain. In one of Ramirez’s studies, he examined 352 undergraduate students from Castile, Andalusia, Catalonia and the Basque Country (Ramirez, 1993). In each of these regions an equal number of female and male participants were evaluated. Each participant was provided with a questionnaire, which were all similar versions of the Social Attitude Inventory (SAI). The SAI was originally created by Kristi M. Lagerspetz and Martin Westman in Finnish, and consisted of three parts: norms, feelings, and moral reasoning (Lagerspetz, 1980). For this study, the SAI was translated and modified to measure a wider variety of interpersonal actions, adapted for research, and verified by Ramirez for the Spanish. The questionnaire itself divided aggressive behavior into eight categories: being ironic, shouting in anger, having a fit of rage, hitting, threatening, hindering another person from doing something, torturing, and killing. Each of these were then accompanied by six situations in which the aggressive behavior may be justified. These situations consisted of: self-defense, protecting another person, consequence of emotional agitation, defense of one’s property, a punishment, or a way of overcoming communication difficulties. Some of the acts were given specific circumstances as well as the six situations named (e.g. obtaining important information, jealousy, drunkenness, etc.) providing a total of 60 different interactions (although only the six possible justifications that were used in all of the categories were
Participants were then asked to rate the acceptability of the given aggressive behavior under the specified circumstances using a two-point scale: admissible or inadmissible. Behaviors that were placed under “admissible” reflect a high degree of acceptance and were therefore evaluated. What Ramirez found was that there was no significant differences between the four Spanish regions. “Hindering,” “being ironic,” and “shouting” were the most acceptable while “torturing” and “killing” scored the lowest in all the samples.

Taking the results from that study, Ramirez compared them to earlier findings in Finland and Poland. In Poland, 64 subjects of similar age to the Spaniards were evaluated; in Finland 83 subjects were evaluated who were, on average, a few years older than both the Polish and the Spaniards. Once again they were provided with similar versions of the SAI (in their respective languages. The Polish version was prepared by Frazcek) (Ramirez, 1993).

The results compared across countries were all very similar. There were small peculiarities, such as the Finns being less tolerant of irony and the Spaniards being less accepting of threats, but overall there were no dramatic differences. The Poles distinguishably showed a higher approval of “torturing” than for “killing,” a pattern not found in the Spaniards or Finns. The Spaniards had the distinctiveness of having higher acceptances of “rage,” particularly for “shouting.”

Poland, Finland, and Spain all have differing but relatively similar cultures. Their societies are also very comparable. However, in light of a different country whose society is still comparable but culture is highly differentiated, it appears that society is not as impactful as the culture itself may be. Specifically in cultures where honor crimes have had a historically high rate of acceptance, it becomes more apparent that culture plays a great part in the view of what is right and wrong.

Honor crimes are most often distinguished as violent acts against female family members who are believed to have brought shame (dishonor) to their family (Eisner, 2013). These are often perpetuated by men, but women may also be involved. A dishonorable act may include premarital sex, pregnancy out of wedlock, adultery, or (depending on the culture) contact with an unrelated man. The honor crimes that may follow such acts are often physical assaults such as rape, acid attacks, marring and/or disfigurement of organs, and murder (Eisner, 2013). In history, honor crimes were widely accepted and even encouraged, a trend that has not completely diminished (Archer, 2006). In the 21st century honor killings still persist. Most are reported from the Middle East, Western Asia, and Central Asia, although there are also a high number of occurrences in countries with strong minorities from those regions. In the
year 2000, the United Nations estimated that there were approximately 5,000 honor killings worldwide per year; the greatest numbers reported were derived from Pakistan and India (each country having around 1,000 cases per year). As mentioned before, most of these victims were women, although there have been a rising number of male victims (the alleged “lovers”) reported in some countries (Eisner, 2013).

With these views in mind, Manuel Eisner and Lana Ghuneim set out to better understand how, in a culture that practices and accepts honor crimes, an individual may find justification for murder (these justifications are very similar to Ramirez’s justifications for aggressive behavior). In order to do this, Eisner and Ghuneim set-up a test which they called the honor killings attitudes (HKA) scale. Using this scale participants were asked to respond to a questionnaire on whether they “agree or disagree that it is OK for a man to kill his sister, his daughter, or his wife in the name of honor, and whether they believe that killing for honor is OK. The items were administered as part of a set of 13 items that [reflected] different [situations] where it may be justified to kill a person” (Eisner, 2013). The justified items were similar to the six situations that accompanied the aggressive behavior in Ramirez’s study, with a few minor additions and alterations. Evaluates were then asked to respond based on a four-point Likert scale ranging from “strongly disagree” to “strongly agree.”

The participants in question were 856 ninth graders from fourteen secondary schools in Amman, Jordan. The schools, selected from the capital city of Jordan, were specifically chosen so that there was a more equal representation of perceptions and experiences of the population through the differing students. Distinguishing factors included gender, socioeconomic status, religion, and upbringing. All but two of the schools were gender-separated and just over half of the participants came from private schools, which mostly cater to middle-class adolescents. Thus creating a possible overrepresentation of children with middle class backgrounds. The age range was 14-16 and a fairly even split between male and female, with girls being slightly more represented than the boys. The majority of participants declared themselves as Muslim, with less than 10% being Christian and less than 1% being Druze and/or unaffiliated with any religious faith. These percentages follow the religious affiliation of Jordanians, where the majority are Muslim, closer to 5% declare themselves as Christian, and 2% are affiliated with other religions (Eisner, 2013).

To further their understanding, Eisner and Ghuneim created five variables that were to represent socio-demographic background characteristics of the respondents and five mechanisms that could potentially be associated with HKA. For background characteristics they used gender, parental education, family size, breadwinner family, and religion. Proximal mechanisms were
Perceptions of Right and Wrong

Hannah Noker

religiosity, female chastity, moral neutralization, and harsh parental discipline.

From the differing background components, strong differences were found. Boys were more than twice as likely to support honor killings as girls (supporting an honor killing requires that they chose to “agree” or “strongly agree” on at least two of the four items on the honor killing scale). Adolescents who did not come from a high educational background were almost three times more likely to support HKA than those who had at least one family member with a university degree. Those who grew up in a traditional breadwinner family were slightly more accepting of honor killings than those who had grown up with an employed mother.

Eisner and Ghuneim were then able to analyze their research in three stages. The first stage distinguishes the characteristics that have some sort of effect on an individual supporting honor killings. The second stage adds the proximal variables that were able to predict variation in HKA (political traditionalism, female chastity expectations, moral neutralization, experience of harsh discipline by the father and the mother, and religiosity). The third stage separately explores the models for boys and girls.

The first stage is able to show that the socio-demographic characteristics have a significant association with HKA. The most outstanding predictors of HKA being in gender and in the educational levels of the parents. Boys with low education backgrounds are far more likely to be in favor of honor killings than a girl with a high educational background. This suggests that there may be a cultural difference in the acceptance of violence. Those who have been exposed to a wider view of the world, through a family member having gained a higher education, may have a deeper understanding of why an honor killing may be unjustifiable. Adolescents of the Muslim faith, those with the traditional breadwinner family, and those with large numbers of siblings are also more likely to embrace supportive views of honor killings. Suggesting that having a more orthodox upbringing may imprint the traditional views of the society on the adolescents mind, creating a HKA.

The second stage shows that when proximal measures were brought into the equation, the effects of socio-demographic variables are reduced. No longer are family size or breadwinner families’ proper predictors of HKA. Although it should be noted that individuals who received harsh discipline from the father were more likely to be supportive of honor killings. This trend, however, does not correlate with discipline that originates from the mother. Likewise, gender, social class, and religion have far lesser effects on predicting HKA. An adolescent with strong traditional beliefs on politics and female chastity are much more likely to support honor killings. These “traditional beliefs” on female chastity go as far as viewing one-on-one private interactions between same-age boys and girls as morally wrong. This same group of individuals
are far more likely to view defending the family’s honor through killing a female relative as acceptable and justifiable. Those who have this sort of moral neutralization towards violence and are more concerned about Western culture show the same trend towards HKA. These results suggest that HKA are far less affected by a traditional upbringing, and more so by the individual’s belief system; with culture being the main affecter of their personal beliefs.

The third stage, which views gender as the only distinguishing factor, found moral neutralization to be the main mediator of HKA. In general, boys are more likely to neutralize violent behavior, thus boys are more likely than girls to support honor killings. Having traditional political worldviews, most often endorsed by the boys, was also found to have a direct correlation with HKA (Eisner, 2013). These variations are significant because the societal role of the female and male are different. The differences therefore represent how society may alter an individual’s perspective on aggressive behavior.

Through the differences in cultures and societies every person’s perception of right and wrong is uniquely and individually formed. The way in which one is raised has a great impact because at a young age one’s mind is most open to the influences of one’s society and culture. However, that does not disclaim the possibility that an adult may have a change of perspective due to a shift in their culture or society. It is perhaps a shift in Raskolnikov’s society and/or culture, or his perspective of his society and culture, which stimulated his most radical alteration of his view of the world. Perhaps it is all within the mindset; the extraordinary man is simply the one to form an opinion on right and wrong regardless of society or culture.

Hannah Noker, an enthusiastic party planner, enjoys spending time with friends and studying anything related to Russia. Although originally from Omaha, NE, Hannah is enjoying her freshman year at the University of Missouri and hopes to one day save the world from alien invaders. Other interests include going adventuring, getting hopelessly lost, collecting postcards, cooking ethnic food, and making music.
References


Feelings of Vengeance

NICK DOTSON

Vengeance has long been a tool of mankind. It is used to exact justice and repay one for wrongs transgressed. Alexander Pope once wrote, “On wrongs swift vengeance awaits.” With the advancement of psychology in the modern era, the need for vengeance has been analyzed and quantified many times. This statistical data, though, is sometimes best for answering the questions a layman may ponder.

In the 2000 film Gladiator, Russell Crowe is cast as the premiere Roman general, Maximus Decimus Meridius, under Emperor Marcus Aurelius. Shortly after achieving a victory that brought piece to The Empire, Marcus Aurelius is assassinated by his son Commodus. Viewing Maximus as a threat to his newly-acquired power, Emperor Commodus orders Maximus’ execution, along with that of his family. Though he escapes his death, Maximus finds himself captured as a slave, sold to fight as a gladiator. With his family dead, he no longer has any spirit to live, fighting pointless battles for the enjoyment of the crowds. His demeanor changes, though, when he is given the opportunity to compete in Rome itself—in front of not only the Roman crowd but Commodus as well. Upon receiving this news, Maximus is revitalized and forms a plan to exact revenge against the Emperor. Before this topic can be opened, though, some boundaries must be set.

For the purpose of this paper, certain terms must be defined in order to allay confusion and allow the piece to flow more smoothly. Revenge and vengeance will take on the same meaning, which is, as provided by Merriam-Webster, “punishment inflicted in retaliation for an injury or offense.” Obviously, it is a tool used by one person against another. He who is seeking revenge will typically, at least by himself, be seen as wronged or oppressed by something or someone. Though this definition may be simple, the act itself has many facets.
At the most basic level, an urge for vengeance has a cause. For Maximus, it was the treacheries of Commodus, murdering his wife and son. That is an extreme case, though, both for the cause and the response. For most cases, the cause may be significantly more mild, which equates to a proportionately mild retaliation. A man may feel spurned if his decisions are criticized, or if he is belittled by another. He responds by committing an act that, in his mind, is equal punishment for the harm done to him. This idea of equal punishment, though, is only relative to the one seeking vengeance, which would reasonably cause skew between different people’s interpretation of what is equal. Regardless of the circumstance and response, the desire to seek vengeance requires a motivator.

Adding to the components of the vengeance situation, each needs a target. In this paper, though there are other variations of the set of conditions, it shall be assumed that the object of the revenge is he or she who created the situation. Maximus’ mark is the emperor Commodus, as the emperor issued the order to assassinate the esteemed general and slaughter his family. Clearly Commodus is the one who wronged Maximus, and therefore Maximus attempts to wreak equal havoc on the life of Commodus. Aside from those who are misguided or simply indiscriminate, this template holds true. A man wronged will retaliate against he who wronged him.

The concept becomes interesting when the wronged man has no way of achieving retribution. As in the case of Maximus, when he is still fighting as a slave in the outskirts of the Roman Empire, he either ignores or suppresses his inclination towards revenge, as he merely fights the battles he’s told to and nothing more. This does not hold true, though, when he is given an opportunity.

After making a name for himself, Maximus has the opportunity to travel into Rome itself to fight in front of the Emperor. Obviously, the ability to exact revenge that Maximus is granted is a large contributing factor to the actual execution of his vengeance. The question arises, then, about what factors set a person up to be vengeful. In the paper *Vengeance*, Naci Mocan wrote that “the degree to which people want retaliation depends on both personal attributes and a number of country characteristics” (Mocan). These traits are further explored.

*Vengeance* has a strong focus on statistical data. The first section shows differences between countries. The project quantifies vengeful feelings by giving those surveyed options on how to punish a criminal. In the scenario, a repeat offender has been convicted of stealing a color television as his second offense, and people have options as to what his penalty will be. Between different countries, there was significant variation among results. For example, “less than 2% of the respondents in Switzerland, Austria, Finland, France, and Denmark” felt what were determined to be vengeful feelings, while “27%
in the United States, 38% in Argentina, 47% in Romania, 59% in Zimbabwe, and 71% in China” felt vengeful towards the burglar (Macon). Interestingly, though the overall tendencies towards vengeance vary by country, the trend in the data between a 2 year, a 4 year, or a 6 year sentence remains constant across borders. A person may be more inclined towards vengeance because of his geographic location, but the level of vengeance will stay relatively proportional regardless of location. Judging by that, other aspects must have a strong influence as well.

Aside from national differences, personal attributes remain. From a paper by Scott Phillips, “the following characteristics of a conflict increase the chance of vengeance: relational distance, functional independence, equality, immobility, and cultural distance” (Black, 1976). Mocan adds that economic standing can augment vengeance as well, as “whose personal incomes are at the bottom 50% of their country’s income distribution . . . victimization triggers vengeful feelings” (Mocan). Though these trends relate back to the differences in levels of vengeful feelings between countries, they are limited to a personal basis.

Relational distance is fairly simple. How well does the victim know the aggressor? If they are immediate family, the levels of vengeance will remain lower. As you move through close friends to acquaintances to total strangers, not forgetting everything in-between, the levels of vengeance grow. As Scott Phillips puts it, “Strangers represent maximum relational distance; intimates represent maximum relational closeness” (Phillips). As a general trend, the greater the relational distance, the greater the need for vengeance or the greater the act. In two identical instances, one involving a stranger and the other an intimate relative, the stranger would receive the harsher punishment.

The question emerges: would a transgression from a close relative not breed a feeling of betrayal not found when considering the aggressor to be a stranger that would lead to a stronger tendency towards vengeance, because the betrayal enhances the perceived wrongdoing by the aggressor? Though this is possible, it does not result in harsher punishments, though they may be elongated instead. A study by Southhall quantifies this. In Uganda, homicides are split roughly 50/50 between intimates and strangers (Southhall). That said, “intimates interact more and have more conflicts” (Phillips). Adding those statistics together, it becomes clear that “intimate homicide in Uganda is less than expected relative to intimate conflict . . . and stranger homicide in Uganda is more than expected relative to stranger conflict” (Phillips). This aversion to violence between intimates can be accredited to a combination of respect for the aggressor and the existence of a personal relationship, which would cause mercy and hesitation. Unfortunately, relational distance is likely the easiest factor to quantify.
Functional independence is a notably more difficult to quantify. Black defines it as “disputants’ relative ability to survive and prosper without one another” (Black, 1990). In any case but the most extreme, functional independence only tempers vengeful actions. If the target of a person’s vengeance in some way supports to aggressor, be it as a trade partner, a physical protector, a clan member, the aggressor has incentive to avoid killing the target. Because the death of the target would be negative for the aggressor over time, logic implies that he would be less inclined to commit to such an action or, at least, one where the benefits of vengeance are outweighed by the risk of loss.

On the other end of the spectrum, and only in extreme cases, functional independence may cause vengeance instead of deterring it. If neither party involved relies on the other for anything, there is little, besides the extinction of either side, to dissuade those involved from continuing the feud.

Functional independence becomes even more difficult to quantify when considering the impact an action has on a group. Boehm wrote, “Montenegrins discourage feuds among members of the same clan because divisions threaten the group’s prowess” (Boehm). Not only must a tribesman weigh the value of exacting revenge against his personal functional independence from the target, but he must also consider its impact within the tribe, and then decide whether or not he should follow through. Vengeance within the tribe is discouraged, Boehm writes, because “a clan has to be prepared to mount an attack or defend against aggression,” and disputes within the tribe, or even fewer members, if the revenge was a homicide, could be detrimental to the survival of the group as a whole. In contrast to how functional independence generally deters vengeance, equality encourages it based upon honor.

Between the parties involved in a situation of vengeance, equality is important. This refers to both social equality and economic equality. Mocan writes that, “of people who live in poorer countries, where per capita income is less than or equal to $12,000 and whose personal incomes are at the bottom 50% of their country’s income distribution … Victimization triggers vengeful feelings” (Macon). The paper goes on to say that for “poor people (those at the bottom 50% of their country’s income distribution) who live in richer countries,” vengeance is not triggered by victimization (Macon). This indicates that poor people in a poor country will have a tendency towards vengeance, as they are closer to economic equality with those around them, while poor people in richer countries are less inclined towards vengeance, as they are less likely to be of equal economic standing with their target. This trend carries over to social standing. Phillips writes that “a conflict between status equals is more apt to produce vengeance than a conflict between disputants of different social statuses” (Phillips). Furthering this point, Pitt-Rivers declares that “a man is answerable for his honor only to his social equals,” indicating that
honor, and, thereby, vengeance, does not cross lines of social status along with economic status (Pitt-Rivers). On both accounts, social and economic, the status of the aggressor and the target of vengeance must be of equal standing, lest the aggressor be deterred by the dishonor of acting against a non-equal.

After a transgression, vengeance could be avoided by simply not being near the victim, who would want revenge. Immobility is a measure of this ability. “Immobility refers to the disputants’ degree of confinement in physical space” (Black, 1990). If disputants are able to remove themselves from each other, it is more likely that they will move on with their lives. If, though, they are forced to be in close contact with each other, the chances that vengeance will be exacted increase. Additionally, close proximity will amplify ongoing disputes, making it “difficult to forgive and forget” (Phillips). This applies to hunter and gatherer tribes and agricultural tribes, as hunter-gatherers can move to a different area to avoid another, while farmers are rooted in one particular location, as farms don’t travel well. This also applies in modern situations, though. If a university student has the ability to take an alternate path to a class to avoid contact with someone he or she has a dispute with, it is more likely that the dispute will be resolved or, at least, not create any further conflicts. While physical distance detracts from vengeance, cultural distance magnifies it.

Cultural distance, similar to relational distance, calculates the proximity of the disputants relative to “cultural differences, including racial, ethnic, and religious contrasts” (Phillips). Phillips goes on to say that “vengeance is more probable against ‘one of them’ than ‘one of us,’” implying that vengeance increases in severity across cultures (Phillips). Because the subject is difficult to measure and rather seldom in occurrence, there is little research on cultural distance in relation to vengeance. Despite the lack of numerical data, Phillips cites multiple events, such as “Catholics and Protestants in Northern Ireland, Israelis and Palestinians in the Middle East, Indians and Pakistanis in Kashmir” and others, that confirm that vengeful feelings lead to conflict between different cultures, which enhances the argument that cultural separation amplifies tendencies toward violence and vengeance (Phillips). The controversy with this point is that the majority of violent acts are committed within a cultural group, which Phillips quantifies by citing The National Crime Victimization Survey, which shows that “about 80% of assaults on African-Americans came at the hands of African-Americans, and about 75% of assaults on whites came at the hands of whites” (Phillips). Though there is minimal statistical documentation of this aspect, long standing conflicts, such as those that Phillips mentioned, are evidence enough.
All acts of vengeance have similar causes. They all require an initial wrongdoing, along with the opportunity for the wronged to become the aggressor and exact revenge. The extent of that revenge then depends on a multitude of factors. The country of the aggressor, along with personal attributes, contributes a majority to the severity. The further the relational distance of the disputants, the more likely or more harsh the vengeance. If an aggressor lacks functional independence from the target, he will be deterred from his vengeance. The disputants must be relatively equal, both in economic and social status, in order for a conflict to arise, as it is otherwise considered dishonorable. If an aggressor and target can avoid each other there is potential for the conflict to pass without fruition, but if they cannot avoid contact, the conflict may be extrapolated further. Additionally, differences in culture may lead to more serious acts of vengeance. All of these factors combine to create mankind’s oldest tool of justice, the act of exacting one’s vengeance.

References


Shame and Guilt as Two Distinct Emotions with Distinct Purposes

Aaron Warning

Many of us believe we know just what we are trying to say when we use the terms “guilt” and “shame.” Often people do tend to use the basic concepts correctly, but when prompted to explain their differentiation between the two, unclear borders become more obvious. The most common explanation people give for what makes the two terms different is related to a sense of public vs. private emotion. From my research I have come to the conclusion that a more specific set of differentiating factors can be used to understand when you feel each emotion; even further, these factors can be used to try to understand why each emotion might have evolved.

A few similarities of guilt and shame are what cause us to sometimes confuse which emotion we are feeling. Guilt and shame are both considered by psychologists as “self-conscious” emotions. This is due to the fact that these emotions do not appear until later in development, once theory of mind has been established. It is accepted that each emotion requires two things of the individual: they must recognize the self as being separate from others and then be able evaluate themselves by societal standards.

The common distinction people provide when prompted to describe what makes the two emotions different is based on how public or private the feelings are. People would describe guilt as a feeling that isn’t obvious to others, where shame is somewhat known to all of those involved. A study delving into this private/public concept surveyed adults about their guilt and shame
experiences. They were asked to describe the setting, their feelings, and who was involved during each instance. The findings showed that whether an event was private or public did not correlate directly with either guilt or shame. Although I still feel that the private vs. public concept is partially accurate, this study made me feel that better guidelines could certainly be useful for considering the implications of each in evolutionary psychology.

Collecting the data of many studies has led to a more precise set of differentiating factors for guilt and shame. The first of these factors is where the individual’s attention is centered when the strength of the emotion is most intense. When considering this factor for shame, it is characteristic for an individual to focus on their entire self and who they are as a person. With guilt, the center of focus is on the behavior in question and the implications of that behavior. For example say someone overslept and missed an important meeting. A guilt-prone individual would be thinking about how sorry they are and how it will affect the person they were supposed to meet with. A shame-prone individual would be focused on how that action represents their character as a whole in the eyes others.

This direction of attention is the main factor that helps to understand the other characteristics of each emotion. The second key difference is how the individual directs their negative feelings. A guilt-prone individual would have a feeling of discomfort that causes them to direct their sorrow toward thinking about what can be done to try to take back their action. A shame-prone individual would direct the discomfort toward themselves overall. This can lead shame-prone individuals to a depressed state, where the implications of their actions reflect upon the rest of their current roles in life.

The above explanations lead to a few other defining characteristics that can be useful in gaining a full understanding of the differences. The easiest way for me to make these connections is by thinking of two perspectives on the question, “How could I have done that?” A shameful event would lead an individual to ask themselves, “How could I have done that?” As opposed to a guilty event which would lead an individual to ask, “How could I have done that?” This simple change in emphasis is important in understanding the boundaries and limitations of the two emotions.

Of the two emotions, shame can be seen as the more painful. The sense an individual gets when feeling shame is much more overwhelming because of the tendency to reflect those feelings onto other parts of their life.

Now that more precise definitions of the two emotions have been established it is easy to understand why the common public vs. private distinction is given. Guilt is seen as a more private emotion because of the focus the individual has on the implications of their action on someone else and what they can do to
help that person. Shame is seen as being public because the individuals focus lies on what others are thinking of their action and how they are applying those thoughts to shifting their perception of their character.

Both guilt and shame have distinct purposes that can be analyzed through an evolutionary psychology perspective. It is these differences in proximate function over time that I believe has led to the ultimate implications in our lives today. A probable purpose at first thought of either of these emotions is to cause empathy. Empathy for the purposes of this research can be defined as, when someone sees an individual in distress, the feeling that causes you to call on your own past experiences and ultimately push you to help the distressed individual altruistically. The reason I point out this desire to act altruistically is because of the assumption that if this altruistic behavior would be selected for, it would then lead to more overall cooperation within a species ultimately better fitness for the group as a whole.

A study considering the question of whether empathy is caused by either guilt or shame directly or at all was conducted and its results tie in well with the differentiating factors that have already been defined. The study found that guilty individuals often talk about how another individual feels and how they believe that individual will feel in the future. The study also found that shameful individuals never thought about others feelings, present or future, in any way other than considering their feelings directed towards the shameful individual’s character. This pointed toward a direct correlation between guilt and empathetic thoughts, but this was not the case for shame.

The question of whether guilt or shame serves a preventative function was analyzed by another study. Here I use the word preventative in sense of deterring future moral regression. The study showed that when looking at an individual’s proneness to shame and how many regressions they performed over time there was no correlation. When looking at guilt-prone individuals and analyzing their regressions over time there was a strong correlation pointing toward the idea that guilt-prone individuals overall led more “moral” life styles.

These conclusions led me to be very interested in what proximate function shame has served and how that has led to a better fitness. My research came to find that the implications of shame aren’t as obvious and direct as the implications of guilt. Shame can be seen as an emotion that leads to cause an increase in group fitness as a whole. How this can be understood is shame being used as a social punishment which over time would like the shamed individual less likely to regress and more likely to follow social norms that eventually lead to better group fitness.
What seems to be a secondary effect of shame in individuals is an anger/aggression response. A study was done that found a correlation between shame-prone individuals and feelings of hostility toward others. This effect makes sense from a proximate function perspective in that these individuals could use it to either attempt to put blame on others or as simply a defense mechanism to evade the feeling of shame itself.

These proximate functions help to explain these emotions ultimate implications and allow the differentiation of the two to be much more commonsensical. The findings of this research is not a “breakthrough” by any means, but I do feel that it does create a more organized thought process for a jumping off point for other research topics related to guilt and/or shame. I believe that this research could successfully show individuals where they mix up the two emotions and possibly give them new perspectives on each, sparking better questions for future research.

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Part IV

Family and friends
In the movie Rebel Without A Cause, directed by Nicolas Ray, the main character Jim Stark (played by the iconic James Dean) is an adolescent who has moved to a new town. Throughout the movie he faces a variety of conflicts with his parents, peers, and authority. All three of the main characters in the movie have parental conflicts (specifically with their fathers), and have trouble with their peers. This is evident because the three main characters first meet at a police station.

Obviously there are a lot of factors that go into influencing a person at any age even when not considering outside environmental influences. It is also difficult to compare since parents tend to stay in a child’s life for an extended period of time and peers may come and go. Then the question arises if one is more influential if there is a greater total influence or if there is more influence per time unit (for example a year). Since there is no unit measure of influence there is really no way to tell. Overall it seems like parents have the most influence, but a peer has more concentrated influence given the shorter amount of time. This complex issue may never reach a conclusion, but being able to understand the different ways people interact may in fact be more useful than simply knowing which one has more influence on behavior.

In the iconic ‘Chickie Run’ (a car race in which you drive toward a cliff and jump out at the last minute) Jim Stark and Buzz Gunderson (his rival in the race) decide to race against each other just for the benefit of impressing the others watching. To study some of the factors at play here the peer to peer relationships were studied specific to the influences that lead them to smoke. The study analyzed social networks to measure peer relations and three-level
growth models to examine how each time-varying peer contributed to smoking from age 11 to 17. The study was taken at five different points in time and used 6,579 students to find that individuals were more susceptible to smoking if it was more prevalent throughout the their school, their friends, or if the adolescent was centralized in peer groups (connecting various peer groups together through not linked through other friends) (Ennett 2008). This data collectively depicts peer groups as a great influence during this period of autonomy. The common assumption seems to be that peers play a more important role than their parents in adolescence specifically in the form of peer pressure, but this behavior can actually be explained by a relationship strategy in which certain behaviors and actions are exchanged for personal and social power. This strategy is commonly misinterpreted as peer pressure which implies that actions are done more forcefully (Ungar 2000). This sheds some light on how peers influence each other, but doesn't touch on the parent to adolescent relationship in comparison.

In a study taken at four different intervals on how teenagers view their relationship with their parent looked at how teens described parental support, conflict with parents, and parental power. 1,341 adolescents (with an approximately even male-female ratio) with an age range of 12 to 15 for early/middle adolescence and from 16 to 19 years for late adolescence were studied to see their perspective on the relationships. The teenagers were asked to describe their overall relationship with their parents. Whenever a teen would describe their parents as supportive they often believed their parents were authoritative and vice versa (as in the two qualities were often perceived together). Conflict with parents was often associated with but not caused by shifts toward more equal parent child relationships (essentially the power struggle was noticed with most parent child conflicts). Adolescents thought parental support declined for both males and females during early/middle adolescence, and temporarily thought it increased a bit later in early/middle adolescence. Females in late adolescence thought their support from parents increased while males in late adolescence thought their relationships stabilized (Goede 2009). The power struggle is likely to affect the way adolescents behave around their peers since they might be likely to go along with their peers in their collective search for autonomy. Looking further into the topic of autonomy v. connection in order to analyze intergenerational communication negotiations (conflict resolution with parents) helped in the understanding of the parental role. This article talked about the relationships teens had with their parents in terms the various results of different parenting styles (such as tension, power struggles, etc.). The conclusion of the article showed that parents who gave their teens more freedom generally had less conflict and could communicate more efficiently as equals. (Williams 2003)
Another interesting way to think about peer and parent relationships is in terms of fitness (defining fitness as reproductive success). Peers are in the position to be potential mates or to help with changing and generational conflicts. Parents have already been successful by this measure and can help their children by passing successful traits (genetic or learned) on to their kids (Daly 1983). While it is established that both groups are important to the development of a child or adolescent it is also interesting that the parents may indirectly give other skills to their child through conflict, such as negotiation skill, communication, and critical thinking. The kind of friend groups chosen by children and individual behaviors are typically influenced by the parents while their peers provide behavior models and social rewards (Gazzaniga 2011). One must also consider that since a parent and offspring are not genetically identical some conflict may arise. It may not always be in the best interest of a parent to put all of their investment into one offspring (Daly 1983). The distribution of resources (such as time, attention, et. cetera) might leave an offspring to search for resources elsewhere. A peer might allow an adolescent to feel cared for while searching for independence from parents. Given that parents have influence over peer choices it could be said that parents have a greater influence over their children even if it not conscious. An example of this is evident in the film when Jim Stark discusses his family’s problems with a police officer and is later drawn to friends who have similar family issues.

Looking at the variety of things that can influence behavior from another person allows to consider the complexity of human behavior. There is no conclusive way to determine if one is more influential than the other. Since Parents have some influence on peer choice one might say that they are more influential. A peer is shown to set more of an behavioral example for other adolescents so there is some more direct influence there. Even though there might not be a way to exactly determine the amount of affect a peer or parent has, an understanding of the differences may be more beneficial than knowing which one is more influential.
References


I am an only child. While that is not a remarkably stunning observation in itself, it did make one of my favorite books, *The Brothers Karamazov* by Fyodor Dostoevsky much harder to understand because I could not relate to any of the main characters. The plot of the book is straight-forward. A morally repugnant father had three sons over the course of two marriages, with rumors of a fourth fostered out of an illegitimate relationship. The father had absolutely no interest in any of his sons and spent most of his time trying to make money and purchase prostitutes, creating the tension that is the major plot arc of the novel. None of the children received much parental investment from their mothers died when the children were at a young age. Instead, they were sent to be raised by various family members and only returned to their father when older. One of the sons then murders his father for an insignificant sum of money. It then became the duty of the remaining brothers to determine who was the murderer in the family. The mastery of Dostoevsky lies in the way that he uses human relationships and behavior to tell the story. For *The Brothers Karamazov* Dostoevsky used the personality traits of the brothers, leaving me perplexed about why the characters made the choices that they did. Each one of the brothers had a particular set of personality traits that were typical of their birth order. All of their interactions were based around what behaviors a first born, middle born, and last born typically exhibit. The eldest
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was very similar to his father, the middle child struggled with self-esteem issues, and the youngest was the one who broke out of the family mold. Being an only child, I found it bizarre because some of the choices seemed irrational and with the addition of the fourth illegitimate brother in the family structure there was a lot of tension about familial roles. However, it also made me wonder: what impact does birth order actually have on personality? To put it more provocatively, are we doomed to a certain personality at birth?

Browsing through virtually any website or magazine catered to parenting will reveal certain character profiles, or “wives tales”, that are typical of children in a specific birth order. First borns tend to be reliable, controlling, and high achievers, all of which are attributed to the fact that the eldest receives the most parental investment and is generally the ‘leader of the pack’ for their younger siblings (parenting.com). In addition, first borns seem to be the children most similar ideologically to their parents, presumably for the same reason of parental investment. They also tend to be realistic, conventional, and enterprising as well as curious and conservative. First borns generally to value economic or political achievement over scientific, social, and artistic achievement and tend to gravitate towards occupations that require leadership or persuasive skills, as well as mechanical or technical skills, however this particular study was only conducted on a captive population of American college students (Lynch and Lynch 1980). First borns were found to have many negative character traits as well. They can be characterized as pessimists, defeatists, domineering, aggressive and jealous. Only children are similar to the profile to eldest children which is attributed to a monopoly on parental resources. However, “onlies” have been characterized as uncooperative and intolerant and tend to have a problem with being selfish and not sharing (Bayer 1966).

Middle children tend to be peacemakers, which could be caused by a sense of feeling left out and having the least amount of parental investment. There is evidence that middle born self-esteem is much lower compared to first borns and last borns. Self-esteem also decreases as the number of siblings increases. Gender also has an impact. Self-esteem is lower when all of the siblings are the same gender, as opposed to a mixed-gender family. The lowest self-esteem is attributed to a male surrounded by younger and older sisters (Kidwell 1982). Later borns tend to gravitate towards occupations that have a high degree of interpersonal and human relations activities. They excel at occupations that promote artistic, musical, dramatic, and literary interests. They tend to value scientific, social, and artistic achievement over political and economic achievement (Lynch and Lynch 1980). The last born tends to be outgoing, self-centered, and rebellious; the free-spirit of the family because of the trend of ‘laissez-faire’ parenting (parenting.com).
An important issue to address, though, is that children that deviate from the expected character traits. Kidwell (1980) studied what effects birth spacing, the amount of time between each child, has on personality traits. He found that personality traits are based on environmental factors rather than heredity, meaning, parenting practices and family structure has a large impact on how children develop. This means that character traits can deviate from what is expected if there are external factors or if there are differences in the way that the parents parent. Parental styles vary based on the size of the family, the age of the children, and the personality and the needs of each child. For example, a child with a mental illness might demand more parental investment and resources that would normally go to the eldest child or attention that would normally be paid attention to the youngest child would be directed elsewhere. There is also an issue of how many years are between children. If the second child is born when the first child is in school, both children will have the advantage of a larger share of parental time and resources. Children that have closer birth spacing will face demands of feeding, scheduling, sleeping, and illness which will lead to an unequal distribution of resources. The threshold for this study is four years. On average, any child born within four years of another sibling have fewer resources available and have lower parental satisfaction than children born more than four years apart from another sibling.

There are two schools of thought about why birth order and personality have such a high correlation. The first is that parental investment matters most. This seems to be the more intuitive argument and the one that is the most widely studied. For example, the theory behind why middle children tend to have the lowest amount of self-esteem is because the parents had to move on to raising the next child, shifting the focus away from the middle child in place of another. Similarly, eldest children tend to have the highest levels of achievement because they had the most one-on-one time with their parents. One of the most prominent examples in birth order literature is the correlation between the overrepresentation of first borns in political leadership positions. The literature on the subject suggests a number of things about birth order and political leadership and the characteristics associated with each child. World leaders tend to be the first born or the second born. This is the trend across nations where leaders are democratically elected and where leaders are in their position due to some sort of hierarchy based on family lines. The last born is generally considered an unlikely leader especially in situations where leaders are elected. Interestingly, an only child is also less likely to be a world leader. At first glance this bothered me, perhaps because I am an only child interested in politics, but most of the literature on character traits found that the only child and the eldest child are similar. However, it could be because only children tend to be more selfish, meaning that their leadership style would be more authoritarian and thus less electable. Newman and Taylor (1994) found that last borns in leadership positions occurred in about the same frequency.
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as equal to chance, meaning that there is not significant relationship between last borns being more likely to be in leadership positions. Yet, why is that so? Hudson (1990) found that the amount of child responsibility in the family structure can explain why leaders are more likely to be first born. The last born and only children generally do not have the same amount of responsibility within the family and as such they would not seek a leadership position as a profession. Now that we know the “what” and “why”, it is important to learn what the impacts of first borns and leadership is.

Hudson suggests that the style of leadership will vary based on birth order. The explanation provided is a weak one because there have not been studies that have been able to measure this theory, but it is hypothesized that since the eldest child has to rely on their individual strengths and power to achieve their ends in the family setting they will be a leader with authority and confidence and are perceived as more electable than a wishy-washy or rebellious last born. Hudson also highlights that political beliefs tend to be vertically transmitted and the transmission is strongest between the parent and the first or only child, meaning the eldest will be more traditional in their values and the assumption is that the traditional values are more electable. It is suggested that first borns will be more direct and confrontational with power. Hudson concluded that last born of the family tended to have the most “severe” characteristics. They ranked highest on the need for affiliation. In a political setting that means that the youngest will be either very right-leaning or very left-leaning rather than being moderates. In a democratic system that makes it harder to be elected because much of the voting population is isolated with such a strict ideological system. Youngest children also have a strong distrust of others. Nationalism and the need for power were characteristics that were associated with firstborns. This means that the eldest child tends to be more patriotic which is a characteristic that is necessary to be elected and they are power-seeking implying that they are also more likely to consider a career as a world leader than their younger counterparts. While there were no discernible differences between first borns and middle borns as a group they tended to have a higher level of confidence than the last born, which does fit the personality profile. Adneweg and Van Den Berg (2003) suggests that as the family expands each of the children’s share of the resources diminishes with the first born receiving the greatest share and the last born receiving the smallest share. Meaning, first borns could be overrepresented in political office or academic achievement simply because they have more opportunities to excel than their younger counterparts. However, as important as parental investment is, family structure also has an impact on personality as well.

The second school of thought about birth order and personality is that personality develops due to sibling competition. On the study of world leaders, some scholars attribute the frequency in which first borns appear in political
professions because the oldest child tends to fill the role of a “tutor” for the younger siblings (Adneweg and Van Den Berg 2003). This means that as the family expands, the parents tend to rely on the eldest child for help in raising their younger siblings and in doing so develop the characteristics of a teacher and a leader and then they use those characteristics. This theory is argued most fervently by Frank Sulloway in his book *Born to Rebel*, in his words a sort of “Darwinian competition”, for a place in the family niche. From this theory scholars study this from the angle of the eldest child and achievement and the rebelliousness factor found at a high degree in youngest children. Sulloway argues that first borns are high achievers because they try to please their parents with success in school and responsible behavior. Then, as other children are born and the family structure changes, their personality shifts to embody the characteristics of someone who is conscientious and conservative. As the eldest child has a monopoly on getting parental attention through success, the later born children try to draw attention to themselves by acting out in other ways. In short, Sulloway says that they look for behaviors that will make them unique from their other siblings. One of the ways that they can do so is to adopt a political belief system that is more egalitarian and authoritarian, both of which lead to more rebellious activity (Paulhus, Trapnell, and Chen 1999). Sulloway’s most provocative argument was that much of the political upheaval that we have experienced in the nineteenth and twentieth centuries revolves around the personality traits of a few key individuals, personality traits that were developed by sibling competition. For example, he argued that based on personality “Martin Luther had a 67% probability of becoming a Protestant, John Calvin had an 80% chance of joining the Reformation, Voltaire had an 88% chance of becoming a radical, Charles Darwin had a 94% chance of supporting evolutionary theory, and Jean-Paul Marat had a 98% chance of voting to execute Louis XVI.” In addition he argues that “sibling strife, no class conflict, lay at the heart of the Terror” and the Darwinian Revolution “only became a historical reality because later borns outnumbered first borns 2.6 to 1 in the general population (Townsend 2000).” However, many scholars find this argument easy to dissect because there are only a few ways to measure rebelliousness.

The most prominent two measures of rebelliousness are participation in rebellious acts and having rebellious personality traits. When pressed, these measures tend to be more attributable to other factors. For example Richard Zwigenhaft did a study on two types of rebellious activities: political activism and involvement with marijuana. There was not any statistically significant correlation between birth order and political activism. In fact, political activism could be explained when comparing the level of father’s education, with a directly proportional relationship, and gender, with males being more likely to participate than females. There was some data that showed that last borns tend to engage in marijuana use at a higher level, but the study was
conducted on a captive population of college students, where marijuana use is generally elevated, and there was not a large enough sample to make the data statistically significant (2002). Frederic Townsend attempted to recreate Sulloway’s experiment, yet the results were different than what Sulloway found. For example, Townsend asserts that if rebelliousness is a predominantly last born characteristic then first borns should be underrepresented in rebellious groups. This is a similar study as the one on political activism, but with a historical focus. One of the groups that he studied, the Maximilien Robespierre and the Committee of Public Safety, was involved in some of the major actions in the French Revolution. This is important because Sulloway argued that the French Revolution was proliferated by a high level of youngest children in leadership positions. Townsend found that most of the members were actually firstborns. Yet, political activism in this study as well can be attributed to outside sources such as whether or not one had enough money or land to be a member of the Aristocracy (2000).

Both the theory of parental involvement and of sibling competition present probable causes to why there are different personality traits associated with each birth position. However, what is most concerning is if hard work determines success of if there really is a correlation between birth order and achievement. An important aspect to this area of study is called “family configuration.” It refers to birth spacing and sex differences within the siblings. It was hypothesized that siblings with a close birth-spacing would face outside effects similar to the environments twins are in, and thus the effects of birth order will be mitigated. Again, this study was done on a captive population of junior level high school students that applied for the MERIT scholarship. While it was not found that close-birth spacing had an effect, it was discovered that twins scored low on achievement tests. Perhaps this is due to a dividing of parental resources between two children, and this produces the same effects as large households have on individual children. The study explained the “isolation hypothesis” which states that children isolated from other children during development have the advantage when measured for achievement. Twins who had the other sibling die at a young age had results similar to non-twins in achievement. However, the study found that only children tended to score lower than first borns, which is evidence against the effects of the “isolation hypothesis.” The researchers suggest that first borns have higher achievement is the role that they take with younger siblings, a more of a teacher and a middle man between parents and later borns. That provides a breeding ground for development in verbal and communication skills. They also found no relationship between parental achievement, such as father and mother’s education, suggesting that achievement comes in part from birth order rather than socioeconomic status (Breland 1974). There was a study conducted on adults enrolled in non-traditional instruction. Again, it was found that first borns were overrepresented in the population. The
researchers suggested that first borns have higher achievement, even when they are adults, because they tend to be “more conforming, more achievement motivated, and more approval motivated (Farley, Smart, and Brittian 1974).” Another study built on previous research used findings relating to birth order and achievement and used them to see if he could build a model that predicted the grade point averages of college students. The theory is that first born children are going to be overrepresented in college populations and will have a higher GPA than later borns. There were significant differences found. The researcher also looked at personality. For example, first borns from upper income families are more likely to choose to read a book in their free time when presented with the options of reading, watching TV, or spending time with a friend. Later borns were more likely to choose the option that involved talking to the friend. When presented with the options of watching a movie, going to a football game, or going to a party, first borns tended to choose going to a movie and later borns tended to choose going to a party. However, the results did not that there are differences between the sexes and income and that had an effect on achievement. Higher socioeconomic statues and being male tended, on average, to produce higher achievement levels (McClure 1971).

Aida Tomeh conducted two very interesting studies on birth order specifically with a population of women in the Middle East. When it comes to achievement Tomeh suggested that the explanatory variable for achievement is kinship affiliation. Specifically, Tomeh asserts that the eldest child is more closely related to the parents in values compared to being related with other siblings or when compared to later borns siblings being related to the parents. This means that first borns will have more traditional values, behave in a more traditional manner, tend to be the most religious, and agree with the parents more often. However, the data were inconclusive and instead argued that the impacts of birth order disappear after the children leave the household structure. Tomeh makes note that Middle Eastern children as a whole are more family oriented rather than children with a western background (1969). The other study that Tomeh conducted was on birth order and friendship associations. The hypothesis is that because first borns are likely to associate more with kin and have stronger familial bonds, last borns are then freed them up for relationships with peers. This does not mean that first borns do not have friends, it just means that relationships with friends are more important for last borns than relationships within the family. The results of the study revealed more about the effects on birth order rather than the effects of birth order on friendship. The researcher found that the relationship between first borns and family is heightened in a Muslim family and is lesser so than in a Christian family. There was also a correlation between the size of the hometown and the number and strength of friendships. The smaller the town was, the more last borns affiliated with peers (1970).
The research on birth order and personality is not without flaws. Typically, the method that researchers employ to study this issue is survey research. The problem with survey research, one of the main methods for study on the effects of birth order, is that surveys are typically conducted on a captive population. For example, a group of college students who have to participate in research for a grade in a psychology class is a captive population because they are readily available for study. What is particularly troubling is that results from college students are not generalizable across the whole population. This population will generally have the highest achievement, so it will not be able to explain what the causes were for individuals at a low level of achievement. Students in college typically have a similar socioeconomic status. Attending a college or university is a large financial burden so only individuals with a relatively high socioeconomic status can afford to attend. This also means that half of the world’s population is ignored, such as Sub-Saharan Africa or Northern China where people do not have access to higher education. This means that first, the researcher cannot control the phenomenon for study, as second, socioeconomic status could cause the effects that we are looking for. Meaning, is wealth the variable that causes high achievement or does high achievement cause wealth? Many of the articles that were used in this paper explicitly stated that the population for study was from a college and generally these colleges were found in western industrialized countries, barring the study by Tomeh that measured in the Middle East. There was also a bias that I noticed in survey response. Generally females were more apt to respond to surveys or be studies of research, especially in the case of Tomah’s study, and so it is possible that the effects that were found specifically for males were not statistically significant enough.

Still, it seems that the wives tales about birth order still do apply. Personality profiles on parenting websites are not for naught, so, perhaps siblings do have more control over our lives than we want to believe.
References


Worf: On the Development of and Developmental Problems in Adoption

Matthew Monos

Few fictional universes have resonated as deeply or as broadly as Gene Roddenberry’s Star Trek universe. The “broad” appeal of Star Trek cannot be overstated, due primarily to the complex and intelligent characters that populate the stories such as the Klingon Worf. Worf’s story begins in earnest at age six, when his home on a colony was attacked, resulting in the deaths of nearly all of the 4,000 Klingon colonists, including Worf’s parents. A human member of the rescue mission, Sergey Rozhenko, found Worf buried beneath the rubble and took him home to be raised alongside Sergey’s own son, Nikolai. Worf was therefore the only Klingon on a small human colony planet, a distinction Worf would find difficult to cope with and adapt to.

While accepting of his adoptive culture, Worf also studied the culture and ways of his people throughout his youth, and as an adult he would consider himself a Klingon in his heart of hearts. This would cause Worf serious inner strife throughout his adult life, as Worf would find himself caught between two conflicting cultures that each held legitimate claims on him, a struggle evident by the traditional Klingon baldrics\(^1\) Worf wears over his Starfleet (human) uniform. Worf’s inner conflict stemmed from his adoption

\(^1\) A belt worn over one shoulder, reaching around the opposite hip, in the Star Trek universe, it carries the symbol of a “House,” delineating the patrilineage of the wearer.
by non-Klingons, which rendered him a part of and apart from each culture. While Worf wanted to be “Klingon” he saw a difference between the preaching and practice of Klingons, which put him at odds with his free-spirited, alcohol-loving, boisterous birth-people who preached a culture of honor. Thus, throughout Worf’s service in Starfleet he would find himself frequently struggling time and time again with situations that forced him to choose between his birth culture and adopted culture.

On TV and in movies, one of the common tropes is the adopted child who sets out to find his or her parents, comes to the conclusion that his or her “true parents” are his or her adopted parents and returns home to heartwarming, Kodak moments. Worf’s character goes against the popular trope that adoptions are happy affairs for all involved, and that adoptees are well adjusted. He is characterized by a laconic tongue, and a disposition towards antisocial behavior. Worf’s attitudes on following Klingon customs oftentimes borders on the obsessive. This raises serious questions about adoption that are particularly relevant in the context of modern adoption patterns. What is the evolutionary basis for adoption, and similarly what is a “normal” pattern of adoption? Furthermore, are modern transracial, inter-country adoptions therefore “abnormal” and if so, why? Is Worf’s maladjustment common? The answer to all these questions lie within an array of research which suggests that traditional adoption practices spring from kin selection, rather than altruism, and that there are serious problems caused by modern adoption practices.

I. Adoption in Traditional Cultures: Practice and rationales

Adoption among traditional societies differs greatly from “modern” practices in Western societies. When speaking of a “traditional society” in reference to adoption, it should be understood to be defined as small-scale, non-industrialized, hunter-gatherer or subsistence farmers. Within these traditional societies adoption falls primarily along kin lines. This means that direct or extended families adopt children for a variety of reasons (fertility, labor, social conventions, etc). According to the principles of natural selection, organisms that are better adapted to their environment (through physical, mental or social adaptations) produce more offspring. One aspect of the process of natural selection is kin selection, which refers to natural selection in favor

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2It is important to note that this analysis presumes that a Klingon-Human adoption is comparable to a modern transracial adoption. Klingon society is interestingly analogous to Feudal Japan, as well as any society that is predicated on the ideals of “honor” (the American South, for example has remnants of this), a useful parallel that supports analysis via such an assumption.
of organisms that show altruistic behavior\(^3\), even if that behavior decreases their chance of survival, so long as the behavior increases the prospect of their kin’s survival. In other words, if an organism decreases its own survival rate in favor of its kin, since that kin shares a proportion of their genes, to a proportional degree of relatedness, the organism still gains in the propagation of its genes to the next generation. Therefore, according to the theory of kin selection, one would expect that adoption transactions would occur between kin, since taking responsibility for another child is a burden that decreases the number of children the adopter can themselves have, but still increases their fitness\(^4\) because of their genetic relation. Among traditional societies in Oceania and the Arctic, this is exactly what is found.

Oceania is composed of thousands of islands, each home to small populations that are generally numbered in the hundreds, and rarely more than a few thousand. These islands fit the earlier stated definition of a “traditional society,” because they are pre-industrial locales with most natives’ lives devoted to a hunting and gathering lifestyle composed of horticulture and fishing. In Oceania\(^5\), kinship is not simply one of a number of important factors in adoption, it is the defining qualification for a prospective adoptive parent, and thus adoption occurs almost exclusively among close relatives (Silk 1980). In a study of the Caroline Islands, David Dumas (1983), found that 75% of the 223 documented adoptions on the Pingelap atoll occurred between kin. Among other Caroline Islands, the rate of pre-adoption kinship was actually even higher, with two examples being Namoluk with 97% kinship and Romonum with 91% kinship.

Not only are the rates of kinship-based adoption high, but overall participation in adoption itself is extremely high, with the prevalence ranging from 12% in Tonga to 83% in some communities within the Ellice Islands\(^6\) (Silk 1980). In Polynesia as a whole, it is estimated that one in four of all children are adopted, and in some areas that number can rise to as many as one in three children (1980 Silk).

Another relevant example in the study of adoption patterns among traditional societies is the Inuit. The term “Inuit” refers to the indigenous people found within the Arctic regions of Northern Canada, Greenland and Alaska. Similar to the native peoples found within Oceania, the Inuit live within small-scale pre-industrial societies that rely heavily on hunting. Due to the unique geographical, historical and cultural situation of Oceania, one might be quick to dismiss the prevalence of kinship-based adoption and adoption in general as

\(^3\)Behavior that decreases the organism’s fitness in favor of another organism’s fitness
\(^4\)Defined as the individual’s ability to propagate its genes.
\(^5\)The exact definitions of what constitutes “Oceania” is mixed, but for the purposes of this paper, Oceania is defined as constituted of three subregions, Melanesia, Micronesia, and Polynesia.
\(^6\)Tonga and the Ellice Islands are both nations within the Polynesian region.
an abnormality. However, in Joan Silk’s study of adoption among the Inuit, a people with their own distinctive culture, history, and geographical setting, she found similar rates of adoption among kin, as well as general prevalence of adoption. The pervasiveness of adoption by kin is similar to Oceania with the numbers ranging from 55% of adopted children being raised by kin in Pond Inlet to 90% in Sugluk (northern Quebec). Data tracking the spread of adoption as a whole from three communities throughout Nunavut, Pond Inlet, Belcher Island and Coral Harbor (Silk 1987) parallels the numbers found within Oceania. In Pond Inlet, between 1892 and 1927, three out of ten of all children were adopted, while on Belcher Island that number was four out of ten and in Coral Harbor, that number rose to seven out of ten.

Given the commonplace nature of adoption practices in these societies, questions arise about the rationale for the widespread nature of the practice and its possible significance. The proximate causes of the adoption practices seem to be to create kinship circles and to increase the adoptive family’s utility, while the ultimate cause seems to be kin selection: raising the children of kin increases the success of shared genes. In Inuit societies, Silk (1987) believes that adoption is viewed as a preferred option to infanticide when the family cannot provide for the child. Therefore, adoption is used as a way to modify extreme family sizes, those on both sides of extremity, small and large. Larger families are able to have their child be adopted by a smaller family, which might be smaller for a variety of reasons such as, age, infertility, etc. In her survey of Oceania, Silk (1980) notes that among the natives, the most common reason adopters gave for adopting was childlessness. Childlessness need not only refer to infertility however. It can also refer to grandparents who wish to remain useful to the community (by the continued raising of children) and therefore adopt as a form of insurance against their own loss of mobility and presumed loss in ability to gather food. Rationally, if a couple cannot bear children, due to age or infertility, they can increase their own inclusive fitness by adopting a child related to them. Inclusive fitness refers to the ability of an individual organism to pass on its genes to the next generation, so when a child is adopted, both the adopters and givers benefit. The adopters (assuming they are kin) benefit by ensuring that part of their genes, however diluted, are passed on through the adopted children. The givers, those people who allow their child to be adopted, also benefit because their child is given the possibility to live to maturity. In such a scenario, their inclusive fitness is increased at essentially no personal cost to themselves, other than childbirth itself. There is also an argument that adoption may have arisen as a cultural phenomenon in response to environmental stresses. In this view, adoption among kin creates overlapping circles of kin, creating interdependence and peace, a reality necessary for subsistence cultures living in resource-limited areas.
II. Adoption in Western Culture: Practice and issues

Lieutenant Worf: I was rescued from Khitomer - by Humans. Raised and loved by Human parents. I spent most of my life around Humans, fought beside them. But I was born a Klingon. My heart is of that world. I...do hear the cry of the warrior. I belong with my people.

Captain Jean-Luc Picard: Being the only Klingon ever to serve in Starfleet gave you a singular distinction. But... I felt that what was unique about you was your humanity: compassion, generosity, fairness. You took the best qualities of humanity and made them part of you. The result was a man who I was proud to call one of my officers.


If the Oceanic and Arctic models are to be considered examples of evolved adoption patterns, what is to be made of adoption patterns prevalent within the Western world? Whereas adoption among tribal groups and subsistence farming cultures reflects the logic of kin selection and inclusive fitness, adoption among Western nations seems to stem from a different evolved tendency: morality and religion. Since adoption in the West is primarily between strangers, it is rather unexpected from both an evolutionary and anthropological standpoint. In such adoptions, the birth parents are released from all obligation to care for their child, and therefore the adoptive parents assume that rejected obligation. Such an adoption practice seems to benefit neither the adoptive parent’s inclusive fitness nor their economic opportunity in any way (Silk 1987). In this respect, modern adoption seems truly “altruistic,” meaning that the action comes at the expense of the adopter’s own fitness, as the loss of having their own child is not mitigated by raising an un-genetically related child. It is “altruistic” because there is no precedent for it beyond the bounds of moralizing and religion. Where the rate of adoption in the traditional societies discussed is generally anywhere from 30-90%, the percent of non-related adopted children in the USA is roughly 2-3%. This is a matter of concern to adoption advocates who wonder why people do not adopt more. However, the low percentage of adopted children also suggests something else: that because Western adoption carries no fitness benefit for the adopters, the adoption rate is low. Since the Westernized system of adoption provides no inherent benefit to the adopters, one ought not be surprised that the adoption rate remains very low in the USA while they remain high rates in

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Interestingly enough, in Oceania, adoptive parents do not lose their “right” or obligation to their child. In Oceania, parents retain the right to ask for their child back for a variety of reasons ranging from abuse to being now able to provide for the child (Silk 1980).
kinship adoption oriented locales like Oceania. While it might be interesting to consider other systems of modern adoption, Hispanic, eastern European, African and Asian countries typically send adoptees to the Western nations and receive little to none, rendering analysis of those regions nigh impossible.

Western countries like the USA have lower rates of adoption among kin than tiny islands in the Pacific or nomads in frozen wastelands. One would naturally ask, does this matter? In light of the character of Worf, who was somewhat disturbed mentally by adoptive life, there does seem to be issues related to the Western pattern of adoption. One worrisome telltale sign of those issues is the number of adopted children within the mental health care system. David M. Brodzinsky (1993) notes that while 2-3% of children within the United States who are under 18 are non-related adoptees, those children make up 5% of all children referred to outpatient mental health clinics and 10-15% of the children within inpatient psychiatric settings or residential care facilities. Obviously, as with any statistic of this type, it is worth noting that correlation does not equal causation. Brodzinsky notes that there may simply be more adopted children within mental health care because adopted parents have a greater sensitivity to and awareness of the mental state of an adoptee. However, the face value of those statistics seems to indicate that Western adoptees are over-represented within the mental health system, arguably because of the adoption process itself. Furthermore, Brodinsky also notes that adopted children in some clinical studies have been shown to be more likely than the average non-adopted child of “acting out,” which includes engaging in behavior such as aggression, defiant behaviors, stealing, lying, running away, and other antisocial behaviors. These are behaviors that characterize Worf, who after arriving at his new home bloodied the noses of five teenage boys (as a seven-year old), because he thought they were “disrespectful.” Later in his life, even though he worked on a space station, he would spend many hours onboard a locked starship, alone, listening to Klingon operas while he worked. Arguably, it could be said that Worf was just a “loner,” but Worf’s proclivity towards solitude seems to indicate a deeper rift, a feeling of not belonging on the human space station. This is a feeling many adoptees share, at least early in their adoptive lives, and most especially within transracial adoptions, such as the alienation a Chinese adoptee might feel while living in heavily white Norway.

If we accept the premise that adopted children suffer various forms of maladjustment to their new situation, the next logical question is one of causation. Terrel and Model (1994) note that in transracial and international adoptions the child has no say in the matter, and therefore they are cut off from family, ethnic roots, cultural heritage, and homeland. In such cases, the adoptee is severed from every essential component that forms a human’s personal identity. When Worf turned fifteen, he set out on the customary Klingon coming
of age journey, traveling back to his homeworld intent on becoming a warrior. He tried to stay with extended family on the planet, but had to retreat to sleep in the hills because his own family rejected his human “taint.” This is the heart of being “a part and apart” of two cultures. Thus, expanding on the example of a Chinese child living in Norway, the child might be made fun of by the white children for sticking out, and rejected by the Chinese children for being “too white.” An adoptee lives in duality, and is thus never completely whole. This alone could be sufficient cause for mental duress in many adoptees.

Betty Jean Lifton (2001) created a list of nine identity issues that are caused as a result of being part of two cultures: 1) the ghosts of what might have been, 2) the adoption journey, 3) cumulative adoption trauma, 4) a broken narrative of their lives 5) a sense of abandonment, 6) the burden to feel grateful, 7) a predisposition to fantasy, 8) the challenge of adolescence 9) a need to form an authentic self. The basic idea behind this list is that adoptees live a life full of many “what ifs” and “why me” questions. The ideas behind these issues are interesting to consider in the context of how these adoptee issues might stem from Westernized adoption practices. If the adoptee lives in a small community (like the ones described in Oceania or Canada), there is no predisposition to fantasy. In such cases, a child will know everything there is to know about their family: their “world” is too small for the causes and reasons for their adoption to be concealed. It is almost impossible to wonder what your family was like when you live in your grandparent’s hut right next to them. As Terrel and Model (1994) point out, in international or transracial adoption the child is cut off from their ethnic roots and cultural heritage. When a family adopts a related child, this does not happen, since the adoptee does not have to struggle to form an “authentic self” in the midst of a foreign culture and in turn is spared from substantial trauma. When a society has such a predisposition towards adoption, the child may feel grateful, but will not feel pressured, as the adoption is more or less a cultural obligation, not a true choice. In the West, being labeled as “adopted” causes most people to associate you with a variety of ideas, mostly negative: your parents died, they didn’t want you, you have a disease, you were conceived out of wedlock, your family was poor, you are from a poor country, etc. If a child lives in an area like Oceania where adoption is common, they will not be singled out with the baggage that being “adopted” comes with in the West.
III. Problems and Conclusion

Q: *Would you have preferred to be adopted by a Korean family?*

A: I hate to say it, but probably. At least I could come home and be with someone that looked like me. Instead, I came home to blond-haired, blue-eyed people.  

*(Terry Boesch, 43-year-old female, Korean adoptee)*

A: *Definitely not. I have enjoyed the privileges afforded to the white community, and I don’t think I would have wanted to grow up in an Asian family. Asian culture can be very patriarchal, and Korean parents are supposedly very strict. My parents feel as “natural” as any biological parents could feel.*  

*(Kate, 23-year-old female, Korean adoptee)*

— *Intercountry Adoptees Tell Their Stories* (page 58, 104)

A significant issue when dealing with the evolutionary history of adoption is the lack of historical records. The best insight into non-modern adoption is through the case studies of tribal and/or isolated populations, which though useful information, is far from an encompassing and statistically significant sample size. Even in the case of the isolated populations, actual recorded data before the 18th century is rare to non-existent, which coupled with the lack of worldwide data makes trend analysis near impossible beyond the hypothetical. Furthermore, there is not only a lack of raw data concerning the adoption transactions themselves, but of the psychological profiles of adoptees. Experimental psychology, the birthplace of psychological profiles, was not pioneered until Wilhelm Wundt began tinkering in Germany around 1879. Obviously, psychological profiles dating from before the pre-19th century will be rare to non-existent, but even when reviewing modern adoptee psychology profiles, the data is lacking and when it exists conflicting data abounds (see quote).

Another issue is the Western centered focus of adoption studies, as most data sets have a focus on determining the country of origin of adopter and adoptee, the relationship and any rise and fall in the nationwide adoption rates. Many data sets therefore will show adoption trends for entire countries, which is interesting, but again, somewhat useless. It may be interesting to know that the USA only has an adopted population of 2%, but considering the different subregions of the country, that might not be useful information. It is possible for example, that people in New England adopt heavily, while those in the Pacific Northwest do not adopt at all, but there is no survey data such trends. Similarly, there is a paucity of data on adoption trends within countries like China, Russia, Brazil, India, Mexico and South Africa (better off countries in poorer regions). Most, if not all data shows how many children the countries
send out for adoption, but not on what the adoption patterns are among poor farmers in a place like rural China.

For every study that says adoptees do not adapt well, there is a study that says they do. There are a variety of other problems with current surveys of adopted children’s well-being. For example, Betty Jean Lifton (2001) notes that adopted children have a burden to feel grateful. Could this possibly have a significant effect on surveys where adoptees are asked about their satisfaction? All of this is hypothetical, but it certainly is possible, which if anything leads to more questions and fewer answers.

It is worth noting now that the purpose of this research is not to discredit adoption or to attack adoptive parents. The generosity these people show is extremely commendable. Rather, the purpose of this research is to raise awareness around a neglected topic. It is evident that intercountry adoption is becoming less popular, as more and more countries such as Russia and Korea begin to close their doors to Americans and other Westerners. These countries may have their children’s best interests at heart (or might simply be trying to aggravate the West), but a one-size fits all blanket policy might not and is likely not the best solution to an important problem. There is no proof, because there is no research about it, that living in an institution in one’s birth country is preferable to living in a home in a foreign country. Ultimately, the research shown here does not lead to a conclusive opinion on what adoption policy and practice should be, but rather that both policy and practice need more study and more awareness. This is a subject that needs serious psychological, biological and anthropological research, not for the purpose of ending adoption, but rather for the purpose of improving the process for all involved; adoptee, adopter and birth parents.

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References


Part V

Psychology
Obsessive Behavior,
Perfectionism, and Suicide

Emily Pawlak

Few books compare to Victor Hugo’s novel *Les Misérables* in its depictions of 19th century French society, history, and humanity. The plot, characters, and themes in Hugo’s novel portray aspects of all societies and cultures, and they still resonate with readers today. One of the main plots involves the character of police inspector Javert pursuing a convict who broke parole by stealing from a boy. The novel takes place over many years—from 1815 until 1832. For this entire time, Javert was chasing the convict, Jean Valjean. Valjean had originally been imprisoned for stealing bread to feed his sister’s children. Even though Jean Valjean had attempted to start a new life, reform himself, and become a better man, Javert continued to hunt Valjean because he broke his parole. In 1832, Valjean has an opportunity to kill Javert but instead lets him go free. Later, Javert has a chance to arrest Valjean but instead allows him to go free in order to save a young man’s life. Javert then commits suicide by jumping into the Seine.

Why would Javert become so obsessed with catching one man for stealing a small amount of money from a boy? He had this overwhelming obsession with arresting Jean Valjean because he could not conceive of a world where breaking the law could be forgiven. He lived his life by the book and could not conceive of any circumstances where breaking the law could be acceptable. He therefore could not accept it when Valjean broke the law even though he eventually reformed himself and became an upright citizen. Why did Javert’s obsession and his inability to give up his devotion to the idea that breaking the law was unforgivable eventually lead him to commit suicide? He was so rigid in his belief that you must follow the law that he could not cope with the idea that following the law and arresting Valjean would have been an immoral
action. He could not reconcile the idea that he had allowed Valjean to go free even though it was the moral course of action. The actions of inspector Javert in Hugo’s novel could be explained by exploring obsessive-compulsive personality disorder and perfectionism. Also, the relationship between these psychological issues and depression or suicide is an interesting one that can be explored.

In *Les Misérables*, Javert exhibits many of the traits that are included in the definition of obsessive-compulsive personality disorder, or OCPD. According to the Diagnostic and Statistical Manual of Mental Disorders fourth edition, or DSM IV-TR, OCPD is “a pervasive pattern of preoccupation with orderliness, perfectionism, and mental and interpersonal control, at the expense of flexibility, openness, and efficiency, beginning by early adulthood and present in a variety of contexts.” The DSM IV-TR also lists contexts that indicate OCPD such as excessive devotion to work, preoccupation with details, rules, order, etc., and reluctance to delegate tasks to others. Interpersonal relationships can suffer as a result of OCPD. People with OCPD, such as Javert, are often inflexible and controlling. The development of OCPD is often attributed to early life experiences. For example, flawed parenting has been said to be a major factor in the development of personality disorders. In the case of Javert, he was born in jail and his father was a convict and his mother was a fortuneteller.

The findings of a study by Douglas B. Samuel and Thomas A. Widiger support the view that OCPD does represent a maladaptive version of normal-range conscientiousness. Like the character Javert, people with OCPD are not just people who fall within normal behavior and conscientiousness. Instead of just working hard or following rules, they exhibit behavior such as being excessively devoted to working hard and preoccupied with following rules. People with OCPD exhibit maladaptive behavior. In this sense, maladaptive means that their behaviors lead to them not having the ability to appropriately adjust to their environment or to specific situations. Their perception of their own and others’ actions and beliefs tend to be polarized with little or no margin between right and wrong. In his article, “Job Involvement, Obsessive-Compulsive Personality Traits, and Workaholic Behavioral Tendencies” Peter E. Mudrack said that when high job involvement coincides with certain obsessive-compulsive personality dimensions, some people prone to workaholism can be identified.

Mudrack’s article examines how high job involvement and OCPD can lead to workaholism. Two hundred seventy-eight employed people participated in the study. They were evaluated on various OCPD traits: obstinacy, orderliness, parsimony, perseverance, rigidity, and superego. Workaholism was evaluated by seeing if the participants engaged in non-required work and intruded on others’ work. There was some support that high job involvement would be
related to OCPD. Workaholism can be an example of maladaptive behavior because it can lead to issues other than OCPD or perfectionism. Anxiety, excessive amounts of stress, and strained relationships can all be effects caused by high job involvement.

Obsessive-compulsive personality disorder and obsessive-compulsive disorder can be easily confused due to the fact that the names are very alike. Although the two disorders are very similar, there are some aspects that set each apart and can be used to differentiate between the two. According to the International OCD Foundation, OCPD usually interferes with interpersonal relationships, but makes work functioning more efficient. Another difference is that people with OCPD people with OCPD don’t believe they require treatment. OCPD can cause maladaptive behaviors that the person does not even recognize as maladaptive.

Besides his obsessive-compulsive behaviors, Javert also showed signs of perfectionism. Many people may be labeled as perfectionists, and it may seem like a good thing, but in the case of Javert, it could be seen as maladaptive perfectionism. Perfectionism can be defined as a person striving for flawlessness and setting impossibly high and unattainable standards. In Hugo's novel, Javert offers to resign from his job as a police inspector simply because he made a mistake. This is an example of maladaptive perfectionism because Javert was willing to quit his job because he did not live up to his unattainably high standards he set for himself.

The Gale Encyclopedia of Psychology explains how perfectionists engage in dichotomous thinking. Dichotomous thinking is believing that there is only one right outcome and one way to achieve that outcome. Dichotomous thinking means that a person with perfectionism will think that once they make a decision, it will be either entirely right or entirely wrong, with no room for interpretation. This is very similar to the polarization of thinking in individuals who have OCPD.

Psychologist Don Hamachek identified two types of perfectionists: normal and neurotic. Normal perfectionists maintain their self-esteem when they pursue perfection. Neurotic perfectionists strive for unrealistic goals and therefore consistently feel dissatisfied. Those perfectionists who would be identified as neurotic would suffer more of the maladaptive consequences. Like individuals with OCPD, people who are neurotic perfectionists will have high expectations that are ultimately unattainable. Because these expectations are so high, the individuals will constantly be unable to achieve what they desire—perfection.

The study “The Multidimensional Perfectionism Scale: Reliability, Validity, and Psychometric Properties in Psychiatric Samples” explores how perfection-
Obsessive behavior plays a role in mental disorders such as obsessive-compulsive personality disorder. Perfectionism is a risk factor for OCPD. People with OCPD are, in a way, perfectionists who need to feel as if they are always in control. People with OCPD tend to have rigid expectations of both themselves and of others and are intolerant of shortcomings. Because the two definitions are so similar, OCPD and perfectionism are closely related and often occur simultaneously. So, perfectionism and OCPD go hand in hand.

Perfectionism and obsessive behavior are core features of eating disorders. In the study titled “The Relation among Perfectionism, Obsessive-Compulsive Personality Disorder and Obsessive-Compulsive Disorder in Individuals with Eating Disorders,” the authors stated, “studies on the relation between perfectionism and obsessive-compulsive traits reveal a significant correlation between some perfectionism subscales and obsessive-compulsive traits.” Six hundred and seven people with anorexia and bulimia nervosa from the International Price Foundation Genetic Study were assessed for perfectionism, obsessive-compulsive personality disorder, and obsessive-compulsive disorder in the study. Perfectionism scores were highest in those individuals who had OCPD and those who had it and OCD.

The frequencies of OCD, OCPD, and both OCD and OCPD in the total sample were 20 percent, 13 percent, and 16 percent, respectively. Perfectionism was measured by the Multidimensional Perfectionism Scale, which includes six subscales: Concern over Mistakes, Doubts about Actions, Personal Standards, Parental Criticism, Parental Expectations, and Organization. The individuals who participated in the study were scored on how much they were concerned with these subscales. The group of individuals in the study who had both OCD and OCPD exhibited the highest scores on these perfectionism subscales. This data further demonstrates how OCPD and perfectionism are connected. In examining the subscales used in this study, it is fairly obvious why the perfectionism and OCPD are closely related. Being concerned about mistakes, having personal standards, and organization are perfection subscales that could also be applied to a person who has OCPD.

Perfectionism is related to a wide variety of other problems. It can be related to anxiety, depression, eating disorders, and personality disorders. The study “The Multidimensional Perfectionism Scale: Reliability, Validity, and Psychometric Properties in Psychiatric Samples” examines this relationship. The research was used to develop the Multidimensional Perfectionism Scale. The scale assesses self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism. Other-oriented perfectionism is associated with personality disorders.

Many people are fascinated with discovering the reasons why individuals commit suicide. It is common to wonder what could possibly lead certain
people to commit such maladaptive behavior. While there are many different causes of depression and suicide, there is a logical connection between OCPD, perfectionism, and depression. So, not only is there a relationship between OCPD and perfectionism, but there is also a link between individuals with these issues and the occurrence of depression. The maladaptive actions and beliefs that are the result of OCPD and perfectionism can lead to depression. It is a short step from needing everything to be perfect, or to be exactly how you think it should to being disappointed. This disappointment is unavoidable if a person expects perfection, so they are more likely to experience a great amount of disappointment, more often than the average person. The presence of OCPD can make stressful life events more serious to individuals. This added stress could more frequently lead to suicide than if a person without OCPD was faced with the same event. It could be difficult for some people to cope with the constant disappointment that would be the result of OCPD and perfectionism.

While his actions may have been too sudden of a development to say that perfectionism or obsessive-compulsive personality disorder—or both—caused Javert to be depressed, it could be said that his act of committing suicide may have been a result. People with OCPD often tend to have underlying forms of depression. The association of mood disorders with personality disorders is frequent according to the study, “The Impact Of Obsessive-Compulsive Personality Disorder on the Suicidal Risk of Patients With Mood Disorders.” Mood disorders, as the name suggests, are disorders where a disturbance in the person’s mood is the main underlying issue. Mood disorders can include depressive disorders, bipolar disorders, and substance induced mood disorders. Personality disorders are characterized by maladaptive patterns of behavior and cognition. Obsessive-compulsive personality disorder is obviously included in this category of disorder.

Since people with obsessive-compulsive personality disorder exhibit maladaptive behaviors, it is not unlikely that a person with OCPD, like Javert, would commit suicide. Suicide could be a result of being overwhelmed by the realization that the person’s wishes for order, or other behaviors could not be fulfilled. Perfectionism can also be linked to depression and even suicide. When they do not reach goals, perfectionists might fall into depression. In fact, the study “Functional Impairment in Patients With Schizotypal, Borderline, Avoidant, or Obsessive-Compulsive Personality Disorder” suggests that personality disorders are a significant source of psychiatric morbidity and can cause impairment in functioning. The study looked at 668 patients with at least one of four personality disorders or with major depression and no personality disorder. The groups were: schizotypal personality disorder, borderline personality disorder, avoidant personality disorder, obsessive-compulsive personality disorder, and major depressive disorder. Individuals with schizo-
typical personality disorder and borderline personality disorder were found to have more impairment at work, in social relationships, and at leisure than those with obsessive-compulsive personality disorder or major depressive disorder. OCPD was associated with the least overall functional impairment among the personality disorders. However, those with OCPD had moderate or worse impairment or poor or worse functioning in at least one area, so there was impairment in individual areas. Impairment was measured through interview-related impairment and self-reported impairment.

The study “Personality Pathology In Recurrent Depression: Nature, Prevalence, And Relationship To Treatment Response” included assessments of 119 patients with depression. It revealed that about half—48 percent—of the patients showed some personality disturbance. Out of those, 18.6 percent have obsessive-compulsive personality disorder. This study links depression and personality disorders. It cannot be said whether these occur simultaneously or if one causes the other. It can be assumed that depression is a likely result of OCPD and perfectionism because of the constant desire for correctness and perfection, but the research only really indicates a relationship but not necessarily causation.

It is impossible to be perfect, and not everyone will follow the rules a person with OCPD would expect them to. These unreasonably high expectations lead to constant disappointment. Problems such as depression and suicide are a result. The character of Javert is a perfect example of this. He was so set in his ways that he could not imagine a world where the law is fallible. His world and belief system came crashing down around his ears because his expectations were too high. Javert became overwhelmed by the fact that the world is not black and white and that he did not have complete control. This inflexibility present in individuals with obsessive-compulsive personality disorder or perfectionism is what makes depression and suicide common.

Many people haphazardly say someone is a perfectionist or that they are obsessed, but these words can carry more weight behind them. Every person has opinions about how they think things should be. Anyone can get caught up in his or her work or a project. The issue with those individuals who have OCPD or are perfectionists is that they cannot accept being wrong. They are inflexible to the point of obsession. An increased likelihood of depression or suicide is the result. The character of Javert provides an excellent character study. He was so obsessed with catching Jean Valjean that he chased him for years. The second he experienced a moral dilemma that leads him to act in a way contradicting his black and white set of beliefs, he commits suicide. Anyone who expects perfection or can only see the world in black and white is setting themselves up for disappointment over and over again.
References


A Wandering Mind is a Human Mind: An Exploration of Why We Daydream

NASSIM BENCHAABANE

Once upon a time and a very good time it was there was a moo-cow coming down along the road and this moo-cow that was coming down along the road met a nice n little boy named baby tuckoo. His father told him that story: his father looked at him through a glass: he had a hairy face.

He was a baby tuckoo. The moo-cow came down the road where Betty Byrne lived: she sold lemon platt.

O, the wild rose blossoms
On the little green place...

This wandering prose and interrupted narrative begins the first page of Irish novelist James Joyce’s *A Portrait of the Artist as a Young Man*. Through a mosaic of fragmented glimpses, the novel offers a complete story of the protagonist’s transformation from a traditional Irish-Catholic schoolboy to an artist who leaves his home to escape its social conventions.

It’s no small coincidence that Stephen Dedalus, the fictional protagonist of *A Portrait of the Artist as a Young Man*, and literary alter ego of the book’s author, James Joyce, is a daydreamer. As indicated by the excerpt, Joyce frequently used stream-of-consciousness as a literary technique in his works, letting his mind wander as he scribbled quickly to keep up. His style captures the impression of a wandering mind—reflective and imaginative—are
attributes easily identifiable in Dedalus who frequently daydreams throughout his childhood and adolescence.

In the middle of a soccer scrimmage, Dedalus’s mind wanders to earlier memories. The goalposts of the soccer field seem “far away” and the cries of peers “distant” as his mind pictures his parents as he saw them from inside the train that took him from his home to Clongowes, a boarding school for young boys.

As a young teenager, Dedalus walks the roads of the town of Blackrock at night and “broods” on the image of Mercedes, the beautiful fiancé of Edmond Dantès in “The Count of Monte Cristo.” Dedalus sees himself in Dantès’s place, a sad proud hero who returns to Mercedes after she slighted his love so many years before.

Later in the novel, an older Dedalus sits in the Catholic seminary, as a priest’s sermon grows quieter until Dedalus hears lines from the works of French novelist Victor Hugo and English poet Lord Byron.

At the end of “A Portrait of the Artist as a Young Man,” Dedalus sits on the beach watching a young girl play in the water. He reflects on the image, delving further and further into his frustration with religion and his traditional upbringing, eventually realizing he loves aesthetic beauty more than he does God. The daydreaming culminates in his decision to leave Ireland in self-exile to pursue artistic endeavors.

The last episode of daydreaming in the novel is pivotal to Dedalus’s narrative. Were all his prior daydreams as important to his personal development? Are his daydreams emblematic of his creative intellect and reflective spirit, or do they merely serve as pleasurable distraction from his disagreeableness with his surroundings? Is Dedalus as strange an individual for daydreaming as he is for going against the societal grain?

Science can’t quite yet help us answer these questions definitively, but it can give us good reason to guess at them.

**Preface: Problems Facing Daydream Research**

The lack of definition begins with scientific terminology. In “Ode to Positive Constructive Daydreaming,” a review of research into daydreaming, Rebecca McMillan, Scott Kaufman and Jerome Singer count the different ways in which scientists have grouped daydreaming and similar cognitive behavior. The list includes “task unrelated thought, internally generated thoughts, self-generated thought, absent mindedness, thought intrusions, task irrele-
vant thoughts” and “spontaneous cognition.” These terms refer to a number of different cognitive processes that all relate to the colloquial concept of daydreaming but may differ in the details.

This proliferation of terminology reflects the varying conceptual approach researchers have taken to studying daydreaming, leading to varying methods. Research of the past has often been predicated on whether the researchers adopted social attitudes toward daydreaming (McMillan, Kaufman and Singer 2013). These attitudes varied in their conceptualization of daydreaming, from an indication of psychopathic behavior, a procrastination tool for lazy individuals, to a practical tool used by creative types. Questionnaires were therefore geared toward studying daydreaming under certain pretenses. Different conceptualizations of attributes presumed to be associated with daydreaming like “creativity” and “self-reflection” led to different methods of measuring those attributes.

As a behavior, daydreams are difficult to grasp concretely because they are a very personal phenomenon. The best way to study daydreaming is by questioning subjects on their daydreaming experiences, which makes most research reliant on self-reporting and questionnaires (McMillan, Kaufman and Singer 2013). It’s difficult to gauge for honest answers when subjects are self-reporting.

Sample sizes for these studies were often limited in size and other factors. Most studies consist of college educated, moderate-income subjects from industrialized, Western nations. The subjects of each study often number less than five hundred.

The personal nature of daydreams, furthermore, makes daydreaming a highly subjective activity, varying in content and manner. While research shows some consistent correlations with daydreaming, the predictors of daydreams, the frequency and subject matter of daydreams, and the effects of daydreams vary widely from individual to individual. The effects of daydreaming on task performance, for example, depend on the type of task being performed, and the effects of daydreaming on mood depend on the subject’s previous psychological state.

This subjective nature coupled with the inaccuracy of self-reporting creates a “meta” process in studying daydreaming, where the subject’s subjective interpretation and reaction to daydream experiences plays a role in determining the effects. A person who reports that she is more creative when daydreaming, for example, may only feel that way because she interprets her daydreams positively, not because daydreaming actually makes her more creative.
General Findings

These problems make scientific evidence regarding daydreaming is correlative rather causative, but the correlations provide insight into who daydreams and why they daydream.

Evidence suggests daydreaming is a natural activity among human brains, with the frequency and content of daydreams varying among individuals. The activity individuals are engaged in when they daydream has little effect on the content of their daydreams, thought their psychological moods may have an effect. Daydreaming does represent a lack of cognitive control, but during unimportant tasks, does not affect task performance. Daydreamers are more likely to identify with their mothers and more likely to be creative or self-reflective individuals. Otherwise, no other factors such as gender, income, race, etc. differentiate daydreamers - though as daydreamers age the content of their daydreams may change slightly. While the purpose behind daydreaming remains a mystery, daydreaming can help individuals manage their process emotions and manage future goals.

A Daydreaming Mind is a Human Mind

In 2010 researchers devised a web application for iPhones to help solve the problem of small sample sizes in daydream research by enabling them to sample more than 5,000 people ranging in age from 18 to 88 years old and representing 83 different countries and 86 types of occupations. The application electronically contacted subjects at random points during waking hours to record their answers to questions about what they were doing and what they were thinking about. The study found that daydreaming occurred in about 47 percent of the sampled subjects (Killingsworth and Gilbert 2010).

Daydreaming occurred for at least 30 percent of the subjects questioned regardless of activities, except when making love (Killingsworth and Gilbert 2010). The evidence points to TUT as being the brain’s default mode of operation and daydreaming a natural behavior.

Predictors of Daydreaming

Despite assumptions about daydreaming being a cause of boredom or frustration, daydreaming isn’t necessarily predicated by whatever activity the individual is engaged in at that moment. The nature of activity had only
modest impact on the pleasantness of topics that subjects daydreamed about (Killingsworth and Gilbert 2010).

A sample of 124 U.S. undergraduate students showed that daydreaming was a common experience and people daydreamed when they were tired or stressed, in stimulating-to-chaotic environments, and when they were involved in boring or unpleasant activities (Kane et. Al 2007). The subjects’ minds wandered slightly less when they were involved in enjoyable activities, and slightly more when they were bored, stressed, failing at their current activity or disliked their activity, but there was no significant predictor for daydreaming in the importance, novelty or challenge of the activities.

A Daydreaming Mind may be an Unhappy Mind

While these subjects daydreamed, they described themselves as being less happy than when they weren’t daydreaming, and this was true despite activity. People’s minds were more likely to wander to pleasant topics than unpleasant topics that where unpleasant or neutral in pleasantness. Forty-three percent of subjects’ minds wandered to pleasant topics as opposed to 27 percent for unpleasant topics or 31 percent for neutral topics. (Killingsworth and Gilbert 2010).

A study of 100 native French-speaking individuals from Belgium found that the relationship between daydreaming frequency and psychological distress was a positive correlation (Stawarczyk et. Al 2012). This doesn’t prove that daydreaming per se is responsible for psychological distress, rather, but it shows daydreamers have a tendency to be less aware and attentive to the present moment. Daydreamers thus may persevere in misinterpreting the reality of their situations, which may contribute to the positive correlation by hindering them from responding to positive stimuli.

It’s important to keep in mind, however, that the subjects’ personal interpretations and reactions to their daydreaming experiences can affect their reporting of psychological mood.

A Daydreaming Mind is not a Poorly Performing Mind

When subjects, who were either very prone to frequent daydreaming or rarely ever daydreamed, were placed in cubicles and asked to respond to stimuli,
no major statistical difference in the quality of their performance of the task appeared. Frequent daydreamers only produced 83.3 incorrect responses out of 1,500—a number not to far from the 40.4 incorrect responses for low daydreamers (Antrobus, Coleman and Singer 1967).

The novelty of the task, however, did affect performance. As the subjects were asked to repeat the task, the frequent daydreamers began to lose attentiveness and daydream more (Antrobus, Coleman and Singer 1967). The decrease in performance was not necessarily a result of daydreaming though it could have been a result of boredom.

A Daydreaming Mind is a Creative Mind

There is a positive correlation between individuals who may be identified as “creative” and individuals who daydream, but this doesn’t necessarily mean daydreaming makes individuals more creative. In “Inspired by Distraction: Mind Wandering Facilitates Creative Incubation” 154 subjects, 110 of whom were female and all ranging in age from 19 to 32 years old, were asked to find unusual solutions to assigned demanding and undemanding tasks. Those in undemanding tasks reported greater daydreaming and greater success in finding unusual solutions (Baird et al 2012).

Greater performance was achieved as the tasks were repeated, which suggests that the type of task being performed has more of an effect on creative success than daydreaming does. The types of tasks that induce daydreaming also induce creative thought. This doesn’t prove that daydreaming increases creativity, but the positive correlation between greater daydreaming frequency and the uniqueness of unusual tasks suggests individuals who mind-wander more frequently in their daily lives may be more creative in general.

Daydreaming on Mars and Daydreaming on Venus

As individuals age, men and women don’t differ when it comes to how often they daydream, but they do differ when it comes to what they daydream about. A study of 1,200 educated middle class whites aged from 17 to 92 years old showed that men, again, are more likely than women to have daydreams of a sexual nature (Giambra 1980). Females, meanwhile, had more daydreams of a problem-solving nature, though females also reported higher levels of daydreaming frequency. These achievement-oriented daydreams were more important to them than they were to males, especially after females turned 40.
Females also reported stronger emotional reactions to daydreaming, though they experienced lower levels of sexual, bizarre or improbable daydreams (Giambra 1980). This may be because females were more interested in interpersonal curiosity than males, who were more curious about objects.

Again, the qualitative difference in emotional response that women reported may be dependant upon their interpretation of their daydreams. For example, women may have no problem accepting their daydreams and admitting them, whereas men may be more reluctant.

**Daydreaming in Adulthood**

For both genders, daydreaming does not increase with age; rather it decreases slightly, though frequency still varies widely for individuals (Giambra 1978). The contents of daydreams also change slightly as individuals get older with older males daydreaming less and less about the past (Giambra 1978.)

Youthful individuals are more likely to daydream about sex, with younger men aged 17 to 29 years old the most likely to have daydreams of a sexual nature (Giambra 1980).

Females daydream about sex as well; they just daydream about it less, especially as they age. A survey of 117 women aged from 26 to 78 years old found that women daydream less about sex as they age. Increasing age is associated with less sexual daydreaming, less sexual drive, less sexual activity and more negative sexual attitudes (Purifoy, Grodsky and Giambra 1992).

**Daydreaming as a processor**

Research suggests daydreams have a role in processing memories and emotions, even if the processing occurs indirectly.

Reaffirming that the brain’s natural offline-mode is active, magnetic resonance imaging shows that the human brain is highly active even when it is not engaged in specific tasks (Wang et. Al 2009). This activity includes offline memory reprocessing, during which the brain consolidates and revises memory. More research is needed to connect this process to daydreaming, but the type of non-task-specific brain activity associated with memory reprocessing is similar to daydreaming, implying that daydreaming about the past may
help process those memories. The information used in offline memory reprocessing may also play an important role in generating predictions about the future (Wang et al. 2009), which suggests a daydreaming role in planning.

The same brain regions that light up during offline-mode or daydreaming activity also light up when the brain is put to a task that involves introspective, socio-emotional and self-referential processing. MRI scanning showed that the regions lit up when subjects felt compassion for a young mother with cancer or imagined how life would be if they woke up as a member of the opposite sex (Yang, Christodoulou and Singh 2012). These brain regions include the inferior-posterior sector of the posteromedial cortices, which is related to self-awareness, memory retrieval, moral judgment and processing of emotions.

Daydreaming may also play a role in emotional processing. A study of 6 to 15 year-old Palestinian children, the majority of whom lived in a violent environment, showed that the children’s daydreams and nightly dreams helped them cope with their feelings. The dreams may have absorbed and integrated trauma as part of healthy personality development by providing metaphorical images of shocking and traumatic experiences through which feelings could be expressed and, gradually, reduced (Punamaki 1998). Similar to imaginative play, children use daydreams to actively repeat what they may have passively suffered in an attempt to bring it under control.

Another study showed that elementary school children who were taught to take a “meta-moment” had bolstered emotional well-being, self-confidence and academic achievement later (Yang, Christodoulou and Singh 2012). The “meta-moment” allowed for the children to set up a psychological and neurological circumstances that were optimal for extracting emotional meaning of situations, connecting it to personal memories and imagining a better future course of action.

**Daydreaming as goal management**

High school aged children also experienced better academic performance and less anxiety when encouraged to take similar “meta-moments.” High school students encouraged before a test to write in a journal about the anticipated implications of their test performance envisioned advantageous possibilities, connected those possibilities to current behavioral choices and improved academic motivation (Yang, Christodoulou and Singh 2012). These effects did, however, depend on the students’ subjective interpretation of what they wrote in their journals.

In general, under appropriate conditions, daydreaming may help in consid-
eration of pertinent personal goals. A community sample of 94 right-handed Germans, ranging in age from 19 to 38 years old and about evenly divided in gender, were asked to perform two tasks during which their daydreaming was measured. While performing these tasks, the subjects could choose a small but immediate reward of 10 Euros, or wait for a larger reward that would be delivered later. When the participant performed tasks requiring minimal attention, the greater amount of time they spent in daydreaming, the longer they were prepared to wait for economic reward (Smallwood, Ruby and Singer 2013). Under the non-demanding conditions during which more daydreaming occurred, the subjects were more willing to wait for the larger reward. The results suggest that under the right conditions, daydreaming can have long-term rewards by helping individuals delay gratification and keep future goals in mind.

Daydreaming doesn’t have to be thoughtful and reflective to help manage future goals. Even intrusive cognitions reflect the prospective nature of the brain. Participants in a meditation exercise requiring them to clear the mind of excess thought reported more intrusive thoughts about future tasks of the type that could benefit from forethought and planning (Morsella et. Al 2010). These thoughts occurred more frequently than when the subjects anticipated no future tasks or anticipated tasks they couldn’t plan ahead for. The frequency of these type of forethoughts suggests daydreaming serves a role pre-emptive problem-solving.

**Correlation not Causation**

Again, most scientific research on daydreaming is correlative not causative. Much of the evidence discussed is corroborated by “Correlates of Daydreaming: A Dimension Of Self-Awareness,” one of the first studies of daydreaming that sampled 44 women graduate-students in education - both white and black, married and single. The study consisted of a questionnaire that examined the functional role of daydreaming or fantasy behavior in organization of personality. The women answered detailed questions concerning patterns of daydreaming and frequency of occurrence of specific daydreams and were asked to produce spontaneous story telling. The women were then scored for creativity, need achievement, need affiliation and need self-aggrandizement.

No differences between high and low daydream groups emerged in age, years of education, marital status, ethnicity or socioeconomic background (Singer and Schonbar 1961), supporting the notion that daydreaming is a natural activity for human minds. It was found, however, that high-frequency daydreamers identified strongly with their mothers. Singer assumes this relation-
ship is a cause of mothers’ representation of inhibited impulses and introspective tendencies as opposed to fathers’ tendency for external action because, when asked to identify role models, low-frequency daydreamers responded with more traditionally masculine figures.

The women’s answers suggested fantasy or imagined means of dealing with delays to increase their awareness of interpersonal relationships and experiment with social behavior through imagined practice. High-frequency daydreamers also tended to have more conscious achievement aspiration than low-frequency daydreamers. The awareness of personal aspirations and interpersonal aspirations suggests that high-frequency daydreamers were more emotionally self-aware, supporting the positive correlations between daydreaming and self-confidence in children. On the other hand, daydreaming did result in greater inability to respond in the moment, supporting other evidence that daydreaming can negatively affect specific-task performance.

High-frequency daydreamers also showed greater creativity in spontaneous reports of daydreams or storytelling activity, supporting the positive correlation between creativity and daydreaming.

Again, this correlation does not indicate causation. The self-reporting in the study has potential consequences for the results - high-frequency daydreamers, for example, may be seem more self-aware because they merely accept daydreaming as a part of their life experience whereas low-frequency daydreamers do not.

Conclusion

Is Dedalus’s behavior abnormal? No. Are his daydreams signs of a creative mind? They could be. Did his daydreams play a role in his personal development? Perhaps.

The problems facing daydream research make scientific evidence in that realm correlative rather than causative. While this doesn’t break ground with definitive claims, it does offer insight into further avenues for research by offering suggestions as to who daydreams and why we do so.

Future research could be implemented with more specific focus that controls for the many factors involved. One study, for example, could examine daydreams that are specifically violent in nature, that occur only in children. Another study could examine the frequency of sexual daydreams among creative individuals. Another study could examine the specific regions of the brain involved in different types of daydreams.
Why we Daydream

Nassim Benchaabane

Meanwhile, as research on the subject continues to grow, the frequency of the correlations described in this study can strengthen our notions of daydreaming, its role in our lives and its effects. Though it’s difficult to make definitive statements regarding the behavior, it’s one worth exploring.

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References


Why we Daydream


Eric Cartman is a ten-year-old boy from the hit television series *South Park*. Without a father and with a neglectful, loose mother, Eric shows no concern for the feelings of others and is viciously self-interested. Though he is fat, stupid, loudmouthed, and egotistical, he is entirely ignorant of his own shortcomings. As a result, even his friends hate him. In the episode “Scott Tenorman Must Die”, Eric is beguiled into purchasing pubic hair from his arch-nemesis Scott Tenorman, believing that the pubic hair will give him superiority over the other boys. Learning that pubic hair grows naturally and he has been “Jewed” out of his money, he begins plotting his demented revenge. He fails in several initial attempts to retrieve the $10 he initially paid Scott, losing even more money in the process. Finally, he contrives a master plan. Eric has Scott’s parents murdered and he chops their bodies up and cooks them into a chili which he tricks Scott into eating. Scott’s favorite band Radiohead arrives on the scene just in time to see Scott weeping over this tragedy. The band members write Scott off as a “cry-baby” and deride him harshly. Scott’s tears wet the table and his face and Eric joyfully laps them up, triumphant in his revenge.

Eric Cartman suffers from what is known as the *psychopathy syndrome*, which in both children and adults is comprised of both interpersonal impairments (including lack of empathy and guilt, shallow emotions, and superficial charm) and impulsive, irresponsible, antisocial behavior (Viding, Larsson 2010). In general, psychopaths have a reduced capacity for empathy and a greater propensity for antisocial (often criminal) behavior. Empathy allows humans to understand the happiness or suffering of others on a personal level. Sometimes this experience can be so powerful that the empathetic person will “feel”
the same pain or joy as the person they are witnessing. Anyone who has watched a YouTube video in which some hapless amateur is attempting parkour knows what this feeling is like. When the video subject makes a futile attempt at a jump and lands straddling a railing, viewers may groan, yell, and involuntarily lean into the fetal position. The viewers’ understanding of this person’s pain is so deep that they can almost feel their private parts being smashed. Effective acting in movies stirs similar empathetic feelings in viewers, and in any given film when the protagonist’s problem is finally resolved, many in the audience may cry with joy. The psychopath has a reduced (or sometimes nonexistent) capacity for these sorts of empathetic feelings. A deficiency in these sorts of feelings can lead to the perpetration of various antisocial acts ranging from the negligible to the heinous. Famous serial killers like Albert Fish, Jeffery Dahmer, and Ted Bundy were all psychopaths with sadistic tendencies. Milder cases of psychopathy don’t generally lead to murder, but they may be manifested in lesser criminal convictions or pernicious patterns of negative behavior. When one is unable to understand and experience the emotions of other people, they are less likely to take these emotions into account when making decisions that affect other people. Eric Cartman is a character who is entirely unaware of others emotions.

How does one come to be a psychopath? There exist both genetic and environmental explanations for the syndrome. Most researchers tend to agree that genetic and environmental factors work in tandem to predict psychopathy. Environmental factors are of great importance to researchers studying child psychopathy because unlike genetics, environmental conditions can be modified. (Farrington, Ullrich & Salekin, 2010). Efforts to determine the primary causal factors of psychopathy have focused on twin studies (Viding, Larsson 2010). These studies are based on the premise that there are genetic influences, nonshared environmental influences, and shared environmental influences on behavior. If identical twins who share 100% of their genetic material appear more similar on some particular trait than fraternal twins who share 50% of their genetic material, it can be assumed that there are genetic influences on that trait (Viding, Larsson 2010). If genes are the only influence on some trait, then we should expect identical twins to be twice as similar in that trait as compared to fraternal twins. Therefore, if fraternal twin similarity in a trait is more than half of the identical twin similarity (whereas if genes alone were responsible we would expect nothing more than 50% similarity), then we say that trait is primarily developed by shared environmental influences (Viding & Larsson 2010). Finally, if identical twins are not 100% similar in a trait, non-shared environmental influences are assumed to be responsible for the trait (Viding, Larsson 2010).

Using these standards of measurement, one study has found that about 41% of variance in antisocial behavior between twins is due to genetic factors,
about 16% can be attributed to shared environmental factors, and 43% is due
to nonshared environmental factors (Rhee & Waldman, 2002). However, the
weight given to shared environmental factors in this study is exceptional and
most other twin studies on psychopathy haven’t detected any influence of
shared environmental factors on psychopathy. In 13 twin studies of these
types, the results indicated that genetic factors account for 40%-60% of vari-
ance in psychopathic behaviors and the remaining variance is accounted for
by nonshared environmental influences (Viding & Larsson, 2010). This doesn’t
at all mean that environmental factors play a limited role, but it does indicate
that these environmental factors take effect in child-specific ways or through
gene-environment interaction (Viding & Larsson, 2010).

Given that around half of the variance found in the above twin studies was
due to nonshared environmental factors, prevention and treatment of psycho-
pathic behavior in children can be analyzed through a developmental per-
spective, which is what the rest of this research will focus on. Those re-
searching the environmental factors contributing to psychopathy have opera-
tionally defined psychopathy through three types of personality traits. These
traits are arrogant and deceitful interpersonal style (ADI), deficient affective
experience (DAE), and impulsive and irresponsible behavior (IIB). These per-
sonality factors contribute to criminal and antisocial behavior (ANT) (Cooke,
Michie, Hart, & Clark, 2004). In studies, ADI and DAE have been subsumed
as the interpersonal-affective factors creating psychopathy (also referred to
as psychopathic trait) and have been together defined as Factor 1. IIB and
ANT (the actual “acting out” of psychopathic traits) have been subsumed
as irresponsible-antisocial lifestyle components (also referred to as social de-
viance) and have been defined as Factor 2. Longitudinal studies are the best
method for determining whether a social factor predicts later psychopathy
(Farrington, Ullrich, & Salekin, 2010). Longitudinal studies obtain and test
their subjects at an initial point in time and then retest subjects in periodic
intervals over months or years. Two primary longitudinal studies inform re-
searchers on almost everything they know concerning the development of
psychopathy. The Cambridge Study evaluated 411 8-10-year old London boys
periodically using the Structured Clinical Interview (SCID-II) and Psychopa-
thy Checklist: Screening Version (PCL:SV) until the age of 48, at which point
the study still comprised of 365 of the original subjects (Farrington, 2003; Far-
rington et al., 2006). The Pittsburgh Study used similar methods but tested
with the Childhood Psychopathy Scale for tests with the children and used
PCL:SV in adulthood.

These studies indicate that there is a significant parental influence on psycho-
pathic personality and antisocial behavior. Of the top 25 factors influencing
psychopathy, parental influence dominates the list. Poor supervision, harsh
discipline, physical neglect, large family size, convicted father or mother, and
parental disagreement were all significant predictors of both Factor 1 (F1) psychopathic traits and Factor 2 (F2) criminal convictions (Farrington et al., 2006). As indicated by these studies, the primary environmental determinants for psychopathy are poor child-rearing practices (child abuse, neglect, lack of supervision, unloving parent-child relationships) and bad family health (parental discord, parental history of crime).

**Childrearing Practices**

The development of psychopathy in childhood can be significantly affected by poor childrearing practices. Primary among these are harsh or inconsistent discipline, child abuse and neglect, and lack of parental supervision and involvement. Parental affection and love can overcome a wide array of other parental failings.

Harsh discipline has a significant influence on both F1 and F2 psychopathy. In the Cambridge Study, 16% of those who were victims of harsh discipline as children were positively tested for psychopathic personality traits and 16% later demonstrated antisocial behaviors, to include convictions for crimes (Farrington et al., 2006). In another study children who were given physical punishment given at the ages of 7 and 11 predicted later criminal convictions (Newson & Newson, 1989). The researchers discovered that 40% of the criminal offenders were physically punished (hit or beat) at age 11, whereas just 14% of nonoffenders had been punished in the same way (Newson & Newson, 1989). Similarly, inconsistent or erratic punishment has been linked to additional future convictions as well. This inconsistent discipline is most often the result of lenient discipline on the part of one parent and harsh discipline from the other or inconsistency from one parent in disciplining particular behaviors, sometimes punishing them harshly and sometimes ignoring the behavior.

While the above studies demonstrated that harsh discipline is often predictive of F1 and F2 psychopathy, another study has shown that warmth in parental nurturing is powerful enough that while physical punishment can lead to higher unsocial behavior, parental warmth can act as a buffer against the negative effects of harsh discipline (McCord, 1997). The study classified behavior as passively affectionate, passively rejecting, actively affectionate, or actively rejecting (McCord, 1997). McCord found that unsurprisingly, use of corporal punishment and maternal warmth were correlated, with only 35% of 108 punitive mothers being classified “warm” while 60% of nonpunitive mothers were given the same classification (McCord, 1997). Similar correlations hold true for fathers and paternal relationships as well (McCord, 1997). On the whole, the results indicated that maternal warmth had a positive effect on
reducing future criminality regardless of whether the mother used physical punishments. According to the study, 51% of boys with emotionally distant and cold, physically punishing mothers were convicted in her study while only 21% of boys with warm, physically punishing mothers were convicted (McCord, 1997). Paternal warmth had a similar buffering effect on the negative effects of physical punishment. However, even when combined with parental warmth, corporal punishment by both fathers and mothers increases the likelihood of future violence (McCord, 1997). In general, parents who use corporal punishment are demonstrating to their children that violence is a legitimate way of achieving desired ends (McCord, 1997). Given the negative effects of physical discipline on childhood development and its effect on F1 and F2 measures of psychopathy, children will be best served by consistent, non-physical discipline by warm, affectionate parents.

Continued investigation into the effects of childrearing practices on psychopathic tendencies brings us to the effect of parental involvement. Physical neglect, paternal abandonment, and poor supervision are all significant factors in predicting F1 and F2 psychopathic tendencies. Physical abuse or parental neglect plays a large role in predicting psychopathy tendencies. In one study, 900 midwestern children who were victims of abuse or neglect by age 11 were compared to a control group. The results indicated that abused or neglected children were far more likely to be arrested as juveniles or adults (Widom, 1989). Around 22% of children who were abused or neglected as children were arrested before the age of 18, as compared to only 13% of children who weren’t victims of these parental failings (Maxfield & Widom, 1996). Victims of abuse were also more likely to get arrested at a younger age, with criminal offenses beginning at an average age of 18 for victims of child abuse or neglect as compared to 19 for the control group (Maxfield & Widom, 1996). In addition, victims of childhood sex abuse were also more likely to be arrested for sexual crimes as adults (Widom & Ames, 1994). These studies and others demonstrate child abuse and neglect to be significant predictors of future convictions.

Lack of paternal involvement is also a predictor of F1 and F2 psychopathic traits and behaviors. In the Cambridge Study, 20% of test subjects with uninvolved fathers demonstrated psychopathic traits consistent with F1 standards. A lack of paternal involvement also predicted future antisocial behavior and criminal convictions, with 17% of test subjects with uninvolved fathers engaging in F2 psychopathic behaviors.

Poor parental supervision is also of significant effect on childhood psychopathy and later convictions. In the Cambridge Study, 14.5% of children who were under poor supervision demonstrated psychopathic traits consistent with F1 standards. In addition, 23.6% of those who later demonstrated F2 psycho-
pathic behaviors were poorly supervised as children, while only 8% of those with effective parental supervision acted out with F2 behaviors.

**Poor Family Health**

Outside of childrearing practices parents employ, familial health has a significant effect on the development of childhood psychopathy and its effect on antisocial behaviors later in life. Disrupted families, convictions of parents,

It has long been argued that united parents create healthy parents and children. As early as 50 years ago it was proposed that a warm, affectionate relationship with a mother was vital for the first 5 years of a child’s life (Bowlby, 1951). This assertion continues to be supported today, with the Cambridge Study showing that 15.4% of children from disrupted families displayed F1 psychopathic traits, and 24.6% from disrupted families would go on to engage in F2 psychopathic behaviors, incurring criminal convictions (Farrington et al., 2006). Most research shows that children who are separated from a biological parent are more likely to offend than children from families with united parents (Farrington, Ullrich, & Salekin, 2010). In one study, it was found that boys who experienced a divorce or separation of their parents before they were 5-years-old had a twofold risk (53%) of being convicted up to the age of 32 (Kolvin, Miller, Fleeting, & Kolvin, 1988). Another study found that 61% of boys from homes which had been significantly changed by the loss of a father were convicted for crimes if their mothers weren’t affectionate (McCord, 1982). However, once again maternal affection has a buffering effect, with only 22% of those from divorced homes with affectionate mothers receiving convictions.

Given the above data, it would seem that strong families with united parents seem effective at repressing the development of psychopathy in children. In the case of a broken home, it is very important that guardian parents maintain warm, affectionate relationships with their children, as this will radically reduce risk of future psychopathic behavior.

In addition to demonstrating the negative effects of disrupted family life, the Cambridge Study demonstrated that having a mother, father, sister, or brother convicted predicted related boys’ convictions. According to the study, 22.2% of those with convicted fathers demonstrated F1 psychopathy traits and 22.2% engaged in antisocial psychopathic behavior (Farrington et al., 2006). The effect on children with convicted mothers was even stronger, with 23.3% of those with convicted mothers displaying F1 characteristics and 30% later engaging in antisocial psychopathic behavior. 25% of those with delinquent
siblings displayed F1 traits, and 28.1% engaged in F2 behaviors (Farrington et. al., 2006). Same-sex relationships were stronger than opposite sex (i.e. a son was more likely to be convicted if their father or brother was convicted as compared to their mother or sister) and older siblings served stronger predictions than younger siblings (Farrington, Ullrich, & Salekin, 2010). According to a 1977 study, just 6% of families account for half of all the convictions of all family members (McCord, 1977). The Pittsburgh Study achieved a similar result, indicating that only 8% of families accounted for 43% of convicted family members (Farrington, Jolliffe, Loeber, Stouthamer-Loeber, & Kalb, 2001). According to the Pittsburgh Youth Study, parental substance use/abuse is a predictor of future antisocial behavior in children. In the same vein, maternal smoking during pregnancy has been shown to double the risk of future violent offenses by male offspring (Rasanen et al., 1999).

Antisocial behavior on the part of parents can be seen to have a truly debilitating effect on the development of children, placing them in greater risk for the development of psychopathic traits and performance of antisocial acts. Responsible parents who avoid antisocial behavior themselves are going to help prevent future antisocial acts on the part of their children.

Conclusion

There are some controversies over the way in which research on the environmental factors affecting psychopathic behavior has been conducted. For instance, there is debate over the legitimacy of measuring adult convictions as a measure of psychopathy, since not all convictions may be motivated by psychopathic personality traits. However, this is simply the best available means of measuring psychopathy beyond tests like the PCL:SV. Given the research we have, it is obvious that developmental psychopathy and the way it is manifested in adult life can depend upon the childrearing practices of parents, family relationships, and parental lifestyles. Since there are currently no genetic solutions for repairing psychopathy, the best way for averting the development of psychopathy in children is to provide healthy family environments for them when they are at home. While there are no guarantees, a child raised by two warm, loving parents who discipline appropriately, supervise effectively, and avoid antisocial behavior isn’t statistically likely to become an Eric Cartman. On the whole, the above research demonstrates that genetic causes of psychopathy aside, a lot can be done to attempt to avert psychopathic behaviors in children.
Dainec Stefan is a 20-year-old senior from the heart of the Ozarks. Despite coming from a town of just 359 residents, he missed acquiring the accent and culture of his rural upbringing through the agency of his California-bred parents. Dainec’s passion is for philosophy and politics, and he spends much of his leisure time researching one or the other. While receiving his BA in Political Science in May, Dainec will also be commissioned as an officer in the US Air Force. He will either receive an educational delay to attend law school and track to be a JAG Officer, or he will be sent to Goodfellow AFB, Texas to be trained as an Intelligence Officer.

References


Brilliant, manipulative, and fond of human flesh, Dr. Hannibal Lecter would be the last shrink you would want to see for help. The lead villain of *The Silence of the Lambs* is popular fiction’s prime example of a highly intelligent, manipulative, and deceptive psychopath. He was an elite forensic psychiatrist for many years until the FBI finally caught wind of his serial cannibalism. Even after his capture and institutionalization, Dr. Lecter served as an invaluable resource for FBI investigations. While the portrayal of Dr. Lecter is not a legitimate clinical profile, his intellect as well as manipulative and deceptive behaviors represent a high-functioning form of psychopathy that often defines the general public’s view of psychopathy. There is, however, no conclusive evidence for or against the existence of a link between psychopathy and the traits of intelligence, manipulation, or deception.

Psychiatrist Hervey Cleckley provided a definition of psychopathy sixty years ago in his classic and seminal book *The Mask of Sanity*. According to Cleckley, psychopaths are intelligent, egocentric, superficially charming, verbally facile, and manipulative (Salekin et al., 2010). With regard to emotion, psychopaths exhibit short-lived emotions and lack empathy and remorse (Salekin et al., 2010). Additionally, Cleckley believed that psychopaths seek out irresponsible, impulsive, and antisocial behaviors (Salekin et al., 2010). These
interpersonal, affective (i.e., emotional), and behavioral characteristics represent a broad conceptualization of psychopathy that Cleckley developed from numerous patient case studies. Psychopathy is very heterogeneous and multifaceted with specific subsets of psychopathy yielding different characteristics (Porter et al., 2011). For example, Cleckley divided psychopaths into either primary or secondary psychopaths. Primary psychopaths generally show low levels of anxiety, empathy, and emotion whereas secondary psychopaths show more impulsiveness, anxiety, empathy, and guilt (Coyne and Thomas, 2008). Cleckley’s profile of psychopaths as intelligent, manipulative, and deceptive has been subject to much criticism.

Recent research testing Cleckley’s conclusion of psychopaths as intelligent has yielded contradicting results which demand further investigation. DeLisi et al. measured the verbal IQ of subjects using the vocabulary subtest of the Wechsler Adult Intelligence Scale-Revised and measured the psychopathy of subjects using the Psychopathy Checklist-Screening Version. They found that verbal IQ was significantly and negatively associated with psychopathy (DeLisi et al., 2010). Furthermore, these researchers found that verbal intelligence was not significantly related to superficial charm, grandiosity, or manipulative behavior—the very characteristics used to describe primary psychopaths (DeLisi et al., 2010). Interestingly, other research has found the exact opposite correlation. Salekin et al. found a positive correlation between the superficial and deceitful interpersonal style of psychopathy and verbal intelligence as well as nontraditional intelligence as measured by the Sternberg Triarchic Abilities Test (Salekin et al., 2010).

DeLisi et al. used data from the MacArthur Violence Risk Assessment Study. The study created an actuarial violence risk assessment tool for mental health clinicians to use by studying the prevalence of violence in patients discharged from acute psychiatric inpatient facilities (Torrey et al., 2008). In sampling from this study, researchers tested subjects that already possessed a psychopathology (mental illness) of some form. In contrast, Salekin et al. sampled from youth detention facilities. It is possible that the prior mental histories of subjects could influence the intelligence-psychopathy relationship. Sampling from the MacArthur study also predisposes the selection of subjects who exhibit direct aggression, such as assault with a deadly weapon. While all psychopaths are capable of violent acts, research has found that secondary psychopaths are more likely to exhibit direct aggression while primary psychopaths are more likely to use indirect aggression (Coyne and Thomas, 2008). Sampling from the MacArthur study may yield findings that are more applicable to secondary psychopaths than primary psychopaths. The research of Salekin et al. mirrors the established clinical theory on psychopathy and lacks the selection biases present in opposing research. While contradictions do exist, the idea of an intelligent psychopath still has merit.
A particular subset of psychopathy seems to be characterized by high intelligence (Salekin et al., 2010). This partially supports clinical theory outlined by Cleckley; however, these correlations could result from the natural variability of psychopathy and not from a link between intelligence and psychopathy. As with other grouped constructs, psychopathy entails a range of intelligences. Within a group of psychopaths, some would exhibit high intelligence while others would exhibit average or low intelligence. Salekin et al. did not claim that intelligent psychopaths exist in greater quantities, but rather that the superficial and deceitful interpersonal style of psychopathy correlated with verbal and nontraditional intelligence.

Research suggests that high-functioning psychopaths display significant skills in manipulation and deception. One study illustrated this by asking subjects to either exhibit a genuine emotional expression or a deceptive emotional expression when shown emotion-stimulating images. Researchers found that interpersonal-affective psychopathic traits (i.e., traits responsible for emotion and interaction with others) were associated with an increased proficiency at masking genuine emotion (Porter et al., 2011). However, the opposite correlation was found in individuals who scored high on impulsivity measures of psychopathy (Porter et al., 2011). This reinforces the importance of addressing specific sub-facets of psychopathy when conducting research. The findings from emotional deception research have noticeable and far-reaching implications. A psychopath’s ability to conceal true emotions may facilitate manipulation of victims and legal decision makers. This may explain why psychopaths are 2.5 times more likely than non-psychopaths to be released when they apply for parole despite longer criminal histories and poorer conditional release histories (Porter et al., 2011).

A psychopath’s proficiency at manipulation may also be exacerbated by careful friend selection. In The Silence of the Lambs, Dr. Lecter developed a fondness for special agent Clarice Starling. Using manipulation and persuasion, Lecter was able to obtain intimate details about Starling’s life including her life as an orphan after the early death of her father. Privy to her deepest personal issues, Dr. Lecter had Starling in a vulnerable position for exploitation and manipulation. In their research of the Dark Triad personality traits and friend selection, Jonason and Schmitt identified similar motives. The Dark Triad is a construct in personality psychology consisting of Machiavellianism (i.e., manipulative personality), Narcissism, and psychopathy (Paulhus and Williams, 2002). Jonason and Schmitt found that those high in Machiavellianism chose to surround themselves with kind friends who, according to the researchers, they could easily exploit (Jonason and Schmitt, 2012). This relationship, however, was not found in those scoring high in psychopathy (Jonason and Schmitt, 2012). Before receiving these results as fact, critical evaluation of the research is necessary. First off, the Dark Triad traits exhibit significant
overlap (Paulhus and Williams, 2002). Therefore, Machiavellian traits and psychopathic traits could both exhibit manipulative tendencies. Exploitation as reasoning for friend selection could be implemented by both Machiavellians and psychopaths. Jonason and Schmitt’s claims must be viewed as one of many possible theoretical explanations for the friend selection behavior observed. For example, Machiavellians may choose to surround themselves by nice people, not necessarily for exploitative purposes, but rather to enjoy their kindness. Furthermore, perhaps there exists a “moral” Machiavellian who, given the choice, would rather exploit an unkind individual as opposed to a kind individual. These propositions are not intended to discredit the research, but rather serve as a reminder that a statistically significant link neither equals practical significance nor identifies the specific causal mechanisms of the link.

Future research could attempt to identify a causal link between Dark Triad traits and manipulation of friends. For example, subjects scoring high in Machiavellianism could be asked to collaborate on an assignment with an age and gender-matched confederate (i.e., someone who knows the details of the study) who is either kind or neutral (exhibits neither positive nor negative behavior). The “assignment” within the experiment could have many opportunities for the subject to exploit the confederate in order to gain more personal benefit. Exploitation of the kind confederate versus the neutral confederate could then identify whether kindness creates a vulnerability to exploitation. This experiment could also be replicated with psychopaths to identify whether a kind person represents an easy victim.

Despite contradictory research, Cleckley’s profile of a psychopath as intelligent, manipulative, and deceptive is still largely accepted. With the nature of these high-functioning psychopaths explored, the only question that remains is how these traits developed. One possible explanation is that the manipulative and deceitful traits of psychopaths may be an evolutionarily adaptive life strategy. This serves as the basis for Book and Quinsey’s “Cheater-Hawk Hypothesis”, which claimed that psychopaths would pursue both social cheating and warrior hawk strategies in game theory iterations through manipulation and aggression respectively (Book and Quinsey, 2004). Further research has clarified the “Cheater-Hawk Hypothesis” with regard to the type of psychopathy and the type of aggression. Primary psychopathy was related to cheating behavior as well as direct and indirect aggression, while secondary psychopathy was only related to both types of aggression (Coyne and Thomas, 2008). Furthermore, indirect aggression was a better predictor of primary psychopathy than direct aggression while the converse was observed for secondary psychopathy (Coyne and Thomas, 2008). These findings offer a potential evolutionary explanation for manipulative and deceitful traits of high-functioning, primary psychopaths: cheating behaviors, manifested through deceitful interactions and manipulative, indirect aggression, allow psychopaths to gain a
distinct evolutionary advantage.

Psychiatrists and psychologists continue to toil over the definition of psychopathy. Whether viewed proximally as a mental illness or phylogenetically as an evolutionary strategy, psychopathy exhibits immense variety. Such variation within the construct demands careful attention when conducting research and making conclusions. When analyzing intelligence, manipulation, and deception in psychopaths, tremendous variability leads to contradictory conclusions. The profile of a brilliant, deceptive, and manipulative psychopathic mastermind has been ushered into literature and film through Dr. Hannibal Lecter. After analyzing existing research on intelligence, manipulation, deception within the psychopathic personality construct, it is clear that Dr. Lecter’s presentation characteristics do not generalize to all psychopaths. However, there is support for a subset of psychopaths who could be characterized as high-functioning. Natural variation in intelligence, manipulation, and deception in the psychopathic population could produce this subset or a link could be responsible. Current research provides no definitive conclusion on the existence of a link between psychopathy and intelligence, manipulation, and deception.

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