

Midnight Oil:

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Midnight Oil: The Wheaton Undergraduate Review publishes outstanding student essays, chosen from essays nominated by members of the Wheaton College faculty. The review has been part of our tradition of recognizing undergraduate research since its founding in 1980. As has been our custom, other nominated essays are listed in the final pages of the issue.

The Editorial Board would like to thank the members of the Wheaton College Faculty who nominated their students' papers for this issue. We appreciate the opportunity to read some wonderful student work.

We extend our thanks to the dedicated staff of Wheaton College without whose support we could not have produced this issue, including Lynda Marcoccia and Nancy Milka.

As we approach the 30th anniversary of *Midnight Oil*, we return to using the original cover art, designed by Emily Bobbitt, Class of 1983.

Dedication

We dedicate this issue of *Midnight Oil* to the late Jeremiah L. Murphy, whose long career at Wheaton began in 1967. He was variously an Instructor, Assistant Professor, and Visiting Lecturer in Government from 1967-1970, 1978, and 1980-1985; Associate Professor of Political Science in 1985-86, and Adjunct Professor after 1986. He served as Associate Professor of Political Science and Director of Public Affairs from 2005 until his untimely death in 2008. Jerry supported *Midnight Oil* by enthusiastically nominating plays written by the students in his Writing Public Policy course.

Contents

The Danger of Perfection:
An Analysis of Eugenics and Genetic Enhancement Therapies
Abbe Bosk 6

Invention:
Imitation and Imagination
Gabrielle Kappes 16

Media Effects on Male Body Satisfaction
Tanya Kollar 21

Submissions 31

The Danger of Perfection: An Analysis of Eugenics and Genetic Enhancement Therapies

Abbe Bosk

Course: German 262. Forbidden Knowledge

Scientific advancements do not occur in a vacuum. Rather they often are deeply intertwined within the social and political culture of the time. The evolving nature of eugenics, from the practice of “societal” eugenics in the late 19th and early 20th century to the emerging practice of “free market” eugenics today are examples of this interplay between science, culture, and society. The late 1800s and early 1900s were characterized by the industrial revolution, when each individual was seen as a working machine and people were viewed and valued as either a benefit or cost to the state. The basic principles of societal eugenics were aligned with this mentality and were aimed at “bettering” society by ridding it of the “unfit” members and increasing the number of talented/beneficial members of society through selective breeding. In contrast, the economy of society today is characterized as technological, and informational, with less collective mentality and more focus on the individual and their talents (or weaknesses). Free-market eugenics echoes this and focuses on the enhancement of individuals through genetic manipulation. Both the new and the old eugenics lack humility and do not take seriously objections to their practices. Both groups see (saw) only the benefits of their practices but not the costs. This paper will examine societal eugenics and then look at the emerging practice of free-market eugenics. In so doing, the paper will address a critical question: Will the free-market eugenicists of today be able to set limits and boundaries that avoid the abuses that the state-supported societal eugenicists of the past committed?

Eugenics in its most basic form is the systematic use of genetic principles to guide breeding with the goal of producing better human offspring (Sandel, 2007: 12). The idea of eugenics was invented and popularized by Francis Galton, who applied statistical methods to the study of heredity in the late 1800s. In 1869, Galton published *Hereditary Genius*, in which he argued that genius and talent were hereditary traits in humans. From this proposition, he extrapolated that a highly gifted race could, and should be developed. The fact that similar practices were used to breed farm and domestic animals provided support for his claims. Since it was already possible through careful selection to obtain a permanent breed of horses with specific powers of running, or dogs with desirable traits, Galton argued it would be quite practical to produce a highly gifted race of human beings by judicious marriages over several consecutive generations (Appleyard, 1998: 53).

In addition to Galton’s work, the discovery of Mendelian genetics in the early 1900s described simple mechanisms for the transmission of hereditary characteristics (Appleyard, 1998: 59). This work provided the necessary material validation to society that certain traits were genetically inherited. This led scientists to conduct a number of studies that looked at the heritability of illnesses such as schizophrenia, bipolar disorder, and depression (Appleyard, 1998: 15). The results of these studies further validated Galton’s claim that these illnesses did indeed tend to run in families, and provided support for the eugenics movement.

Galton's ideas spread to America where it fueled a popular movement in the early 20th century. In 1910 biologist and eugenic crusader Charles Davenport opened a Eugenic Records Office. Davenport sent field workers into prisons, hospitals, and insane asylums across the country to investigate and collect data on the genetic backgrounds of people who were termed "genetic defects" (Sandel, 2007: 64). The goal of Davenport's research was to prevent the reproduction of the genetically unfit and advocate for legislation to prevent those with undesirable genes from reproducing. The Carnegie Institute, one of the most prominent foundations in American society at the time, funded Davenport's work, indicating that his ideas were supported by influential and powerful forces within American society.

In 1927, the United States Supreme Court upheld the constitutionality of forced sterilization laws in the notorious case of *Buck v. Bell*. This case addressed the question of whether or not seventeen-year old Carrie Buck, who was in a home for the feeble-minded could be forced to undergo sterilization. The court voted 8 to 1 in favor of forced sterilization. The essence of the eugenics movement can be seen in Justice Oliver Holmes' statement that, "It is better for all the world, if instead of waiting to execute degenerate offspring for crime, or let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind" (Sandel 2007: 66). This court ruling legitimized eugenic laws in the United States. By 1945 over 450,000 mentally ill individuals in the United States had been forcibly sterilized (Appleyard, 1998: 68). In 2002 and 2003, after journalistic investigations publicized past eugenic cruelties in the United States, the governors of many states that had carried out legal forced sterilization issued formal apologies to the victims (Appleyard, 1998: 68).

However, when one thinks back with horror on state-supported eugenics, it is not the extensive American experiments that come to mind. Rather, once knowledge of the mass exterminations carried out by the German government during World War II became widely known, the practice of this type of societal eugenics was called into question. The basis for Hitler's genocidal practices in Nazi Germany echoed the rationales used by American eugenicists earlier in the century. In the beginning of his career, Hitler voiced his support for eugenic practices in his book, *Mein Kampf* :

"The demand that defective people be prevented from propagating equally defective offspring is a demand of the clearest reason and, if systematically executed represents the most humane act of mankind. It will spare millions of unfortunate undeserved sufferings and consequently will lead to a rising improvement of health as whole" (Sandel, 2007: 67).

The practice of societal eugenics culminated in the Nazi Holocaust, the mass extermination of "life unworthy of life," a state-sponsored policy in which all members of Nazi Germany participated, even physicians who had taken the Hippocratic Oath pledging to "do no harm."

In reaction to the Nazi abuses, eugenics was almost universally condemned in many of the nations where it had once been popular. The Holocaust shattered public and scientific confidence in the practice of eugenics. The holocaust and forced sterilization make it clear that once people decide that an individual or a group of people are lesser creatures, there appears to be no limit to the cruelties inflicted upon those who are viewed as less than fully human. The people who believe themselves to be superior will justify their actions by stating that the inferior

beings are dangerous because they threaten the life and health of the entire human race. Thus, the propagators of societal eugenics programs had no humility. This lack of humility is seen in multiple ways: the possible bias in the judgments of superior or inferior was not considered, theological reasoning that humans are all equal in the eyes of God was dismissed as invalid when weighed against science, as was the impact of their actions on their own humanity.

The second half of the 20th century brought about an increased understanding of genetics and molecular biology, and their applications to human life. Numerous advances in this field of research led to the current desire to manipulate the genetic traits of human offspring. In the following section these advances will be briefly explained, showing how they have led to renewed enthusiasm for eugenics programs when carried out under the banner of individual choice and free market principles. Watson and Crick's discovery of the molecular structure of deoxyribonucleic acid — DNA — in 1953 marked the start of the explosion of interest and knowledge in genetic and molecular biology. Many have argued that this scientific discovery is the most important in human history because it so radically changed our view of ourselves (Appleyard, 1998: 2).

The discovery of DNA opened the doors for numerous breakthroughs in the field of genetics. Scientists began to understand devastating single gene disorders such as cystic fibrosis, sickle cell anemia, and muscular dystrophy. These diseases had serious and dramatic consequences for the individuals suffering from them and were easily trackable by basic Mendelian methods to specific locations within the human genome (Appleyard, 1998: 75). As these diseases were linked to specific genes, there began the invention and widespread use of procedures to test the fetuses of pregnant woman, to detect whether or not they were carrying a child with a known genetic disease, thus presenting the option of aborting the “defective” fetus, and leaving parents, not the government, to decide whether the child would be “life unworthy of life.”

In the 1960s scientists began experimenting with technologies to detect genetic abnormalities in fetuses. By the early 1980s amniocentesis became a popular and widely used technology. An amniocentesis is a medical procedure in which a small amount of amniotic fluid, which contains fetal tissue, is extracted from the amniotic sac surrounding the developing fetus. The extracted DNA is then examined for genetic abnormalities. Amniocenteses are commonly used to screen for diseases such as Down's Syndrome (trisomy 21), trisomy 13, and spina bifida (Sandel, 2007: 21). This procedure, while beneficial in detecting genetic abnormalities, presents the risk of spontaneous miscarriage, and thus is performed only on women above the age of 35 (when the risk of having a child with Down's Syndrome is greater than the risk of spontaneous abortion from amniocentesis) and/or if there is familial history of a certain genetic disease.

In the 1980s the medical breakthrough of pre-implantation genetic diagnosis, pioneered at the Hammersmith Hospital in London for families at risk of cystic fibrosis, furthered the ability to screen embryos for genetic diseases (Appleyard, 1998: 17). In this procedure, unlike in an amniocentesis, the embryo is screened before it is implanted in the woman; thus decisions around abortion do not need to be made. The procedure works as follows: several eggs are fertilized in a Petri dish and allowed to grow to the eight-cell stage (for about three days). At this point one cell is removed from each embryo and tested for the presence of genetic abnormalities. Only embryos without genetic defects are transferred to the woman one or two days later (Sandel, 2007: 20). Currently, there are only a handful of genetic diseases that can be screened

using pre-implantation diagnoses. Many of the diseases that can be detected are the same as the ones that can be identified using amniocentesis, such as cystic fibrosis, Down's Syndrome, and Tay-Sachs Disorder. However, the completion of the human genome project gives us reason to believe that soon pre-implantation diagnosis will be able to be made for many other diseases as well as for physical traits.

The human genome project, begun in 1990 and completed in 2003, was a worldwide research effort that analyzed the structure of human DNA and determined the location of thousands of human genes. This knowledge presents unique scientific opportunities, namely the study of natural genetic variation in humans, as well as an understanding of the relationship between genetic variation and disease risks. The project presents the attainable goal of the prevention and treatment of illnesses. It is believed that this project could lead to a new understanding of genetic contributions to human disease, and the development of rational strategies for minimizing or preventing disease phenotypes altogether (Collins, et al, 1998). It is believed that this knowledge will dramatically accelerate the development of new strategies for the diagnosis, prevention, and treatment of diseases, not just for single-gene disorders but for a host of more common and complex diseases such as heart disease, diabetes, and cancer (Collins, et al, 1998). In addition to identifying genes related to diseases, scientists and society are very interested in identifying "physical" traits that are thought to be genetically inherited such as intelligence, beauty, height, eye color, or sexual orientation of the child.

Today's breakthroughs in genetics and molecular biology present us with both promise and predicament. There is the promise to treat and prevent a host of debilitating diseases, and there is also fear about how this new found genetic knowledge may allow for the manipulation of our own nature. For example, scientists predict that, in the near future, we will be able to enhance our memories, moods, and muscles, choose the sex, height, and other genetic traits of our children (Sandel, 2007: 68).

The argument that once we have the capacity to make these choices, individuals should be allowed to do so, is the argument of free market eugenics (Sandel, 2007: 68). Those advocating individual choice raise societal questions about what is a necessary treatment and what is an optional enhancement. Supporters of free-market eugenics have also caused many people to think about what this will mean for individuals and how these practices will alter society, as is clearly seen in the following statement:

The prospect is that in the next few years humanity will understand—and be able to control at least in part—the fabulously intricate mechanism through which each species of living organism transmits its essential properties to the next generation. The danger exists that the scientists will make some of these God-like powers available to us in the next few years, well before society is likely to be even remotely prepared for the ethical and other dilemmas with which we shall be faced (Appleyard, 1998: 28).

The extermination camps in Nazi Germany began as an experiment in genetics. Today our attempts to enhance humans through the manipulation of certain traits and through the screening for the presence of genetic abnormalities are also an experiment in genetics. How different are the practices of the old versus the new eugenics? Through enhancement therapies are we trying

to create the “perfect race” just as Hitler tried to create the “perfect race” through the elimination of all people in German society who deviated from the norm of the typical Aryan?

After the atrocities of the holocaust and widespread use of forced sterilization in the United States, the world at large condemned practices of eugenics. The idea of trying to improve the human race by means of coercion was seen as inhumane, and it was thought that scientists or the government would never again involve themselves in such activities. However, the scientific advancements outlined above have changed the stance of many in society on eugenics. Free-market eugenics is viewed as being very different than societal eugenics. This new practice of eugenics is seen as acceptable because (1) the government is not involved and individuals are making choices of their own free will, and (2) the focus of this practice is not on elimination but rather on the prevention of disease or on the enhancement of individuals. While proponents of the new eugenics movement believe that the old and the new practices are worlds apart, there are still many who worry about the ethical practices of this new eugenics and the ways in which these practices will alter society. Genetic enhancement employs medical means for non-medical ends. Genetic engineering, which began as an attempt to treat a disease or prevent a genetic disorder, is now morphing into a tool of improvement and consumer choice (Kamm, 2005). Many people want to impose limits regarding how much enhancement therapy should be used and how to separate enhancement therapy from disease treatment. We are unsure about how or where to mark the boundaries of these new practices and that is part of what makes them so dangerous (Kamm, 2005).

The following section will outline how this practice of “free-market” eugenics began, and then look at the many far reaching consequences this practice may have on individuals, the relationships between individuals such as parent and child, and society as a whole. This section will outline the lack of humility of the proponents of these practices and the dangerous consequences that may come from not thinking seriously about the objections and limitations of these practices.

Diseases and the desire to eliminate them were the crucial factors that reintroduced eugenic thinking to the respectable world. The suffering caused by disease is the moral justification for interventions that either verged on being, or were explicitly, eugenic. It is difficult to condemn anyone for using techniques in genetics or molecular biology to treat a disease. For example, the use of growth hormones to treat a child who has an identifiable genetic condition that prevents normal growth is a practice that is accepted by the majority of society. However, the use of growth hormones is more questionable when we use this therapy to satisfy the desire to enhance one’s natural physical or cognitive capacities rather than to remedy an identifiable defect (Sandel, 2007: 10). For example, some parents have begun asking doctors for growth hormones to make their children a few inches taller — not to treat children with organic diseases that cause delayed growth but rather so that instead of being 5’7, the child could be 5’9”. Growth hormone therapy is expensive, not always successful, and the average gain in height is 2” (Sandel, 2007: 18). This leads us to the basic question of what does it mean to live in a society where parents feel compelled to spend a fortune to make perfectly healthy kids a few inches taller?

In the same vein, scientists believe that genetic enhancement will soon be available for the brain. In the mid 1990s scientists managed to manipulate a memory-linked gene in fruit flies, creating flies with photographic memories (Weiss, 1999: A1). More recently researchers

produced smart mice by inserting extra copies of a memory-related gene into mouse embryos. The altered mice learn more quickly and remember things longer than normal mice. For example, the genetically engineered mice are better able to recognize objects they have seen before, and to remember that a certain sound leads to an electric shock. The gene that scientist tweaked in mice is present in humans as well, and becomes less active as people get older. The extra copies installed in mice were programmed to remain active even in old age and were passed down to their offspring (Weiss, 1999: A1). Human brains are more complex than their mouse counterparts; however, scientists are now working on manipulating the same gene in humans to improve memory in similar ways (Weiss, 1999: A1).

Like all genetic therapies, this one is a double-edged sword. This therapy could treat people who suffer from degenerating and debilitating memory diseases such as Alzheimer's. But it is certain that people with no disease will want to use this treatment to enhance their memories. Many believe there would be a huge market for this treatment. Examples of consumers who may want to benefit from this therapy include college students trying to cram for exams and lawyers trying to memorize facts before a large trial. Like the growth hormone scenario posed above, one may wonder what our world would be like if access to enhancements that produce "mega brains" is unlimited. In addition, both of these examples illustrate how the distinction between therapy and enhancement blurs at the edges and gives us reason to think about the practices for which so many advocate.

Thinking about who is likely to benefit from these mega brain and growth enhancement therapies leads to another ethical issue in free-market of eugenics. How "free" is this system of eugenics? Enhancement therapies and pre-implantation testing cost thousands of dollars, meaning only the wealthiest members of society are likely to have access to these procedures (Sandel, 2007: 18). In addition, the possibility of attributing any human condition to genetics immediately transforms that condition into the medical realm, making it unlikely that genetics will reduce the overall costs of healthcare. Rather, if genetics increases the number of human attributes classified as illness or simply "treatable disadvantages," then medical spending will continue to rise (Appleyard, 1998: 16). High cost combined with unequal access gives us every reason to believe that free-market eugenics will deepen already existing disparities in society. There is the danger of creating two classes of human beings—those with access to the enhancement technologies and those unable to afford enhancements available in the marketplace. Furthermore, if, as in the mice model, enhancement can be passed down to one's offspring, the two classes may eventually become subspecies of human beings—the enhanced and the merely natural (Sandel, 2007: 15). It can be argued that free-market eugenics is immoral because the enormous inequalities in our already unequal society will inevitably become even greater. The *Declaration of Independence* commits American society to providing for its citizens "life, liberty, and the pursuit of happiness." Genetic testing and enhancement therapies available only to the most privileged members of society call into question the values that are at the core of our society. The advocates of these therapies are so driven to make them work that they are blinded both to the inequities that they would potentially create and also to how these inequalities contradict the core values of our society.

In addition to the inequalities that would be created, enhancement therapies and, more specifically, the ability of parents to select the specific traits of their children, will change many fundamental aspects of society. It has long been known that children's traits, talents,

personalities, and achievements are a combination of their genes and their environment. For example, a child might be born to parents who have no athletic ability, but the child may want to play sports. Therefore, the child who may not be a naturally gifted athlete could practice specific skills and over time become a good athlete. However, genetic enhancement makes this scenario less likely. If parents were to choose to engineer a child to be an exceptional musician, it is unlikely that those parents will allow their child to spend hours practicing soccer instead of the violin. Many critics of genetic enhancement state that the problem is not the technology of the practice (such as pre-implantation diagnosis) but rather the drive to mastery that genetic enhancement embodies. Proponents of genetic enhancement have the daunting goal of being able to control all aspects of life, eliminating the environmental components from child-rearing (Sandel, 2007: 85).

However, this drive to mastery misses and destroys an appreciation of the unpredictable nature of human powers and achievements (Sandel, 2007: 82). Whether or not proponents of genetic engineering intend to see children as commodities, the precise nature of the commodity is a product of parental ambition. These proponents seem to lack the understanding that children are the product of the unpredictable interplay between nature and nurture. Turning children into commodities removes from both children and their parents the joy in the human achievement of discovering for oneself where one's gifts and talents lie. There is a deep problem in the hubris of the designing parents: in their drive to master their children's fates, they risk removing mystery from life (Sandel, 2007).

Another aspect of genetic engineering and enhancement that warrants caution is the undeniable fact that we are unwilling to acknowledge how little we know about how genes work and even the degree that genes contribute to certain traits. Some scientists argue that genetics has distorted the entire discipline of biology, and that by concentrating so much on the gene we may have ignored the dynamics of the whole organism (Appleyard, 1998: 9). The advocates of genetic engineering lack humility because a genuine humility requires the ability to admit what one does not know.

So far biologists have made many gains in understanding single-gene disorders such as Huntington's Disease or muscular dystrophy. These conditions are the least complex genetic disorders. If an individual has the single dominant gene for Huntington's or two recessive genes for muscular dystrophy, then the individual will develop the disease (Appleyard, 1998: 12). This makes tracking genes for single-gene disease relatively easy—they follow clear Mendelian patterns of inheritance with no significant ambiguity about the role of the genes as opposed to the environment (Appleyard, 1998: 12).

However, even when we can identify specific genes with specific diseases, this does not mean that we necessarily know all the effects of the gene. Therefore, tampering with even these apparently clear-cut cases of genetic disorders may not be as simple as it first appears (Appleyard, 1998: 12). There are many traits that are polytrophic, meaning one gene is responsible for the expression of many different traits. For example, people who are carriers (possess only one defective gene) for sickle-cell anemia have increased protection against malaria, a disease that is common in regions of the world such as parts of Africa and South America. Had we eliminated the gene for sickle cell anemia, we unknowingly would have exposed many more people to the risk of death from malaria. Therefore, to describe a gene as "bad" is risky because it may be the case that it is "good" in ways that are not yet known

(Appleyard, 1998: 12). This shows that we need to understand all the properties and effects of genes before we start haphazardly picking and choosing which genes to tamper with. We need to understand all of the consequences of our actions before we begin altering our genetic makeup. Making changes in the human gene pool may have consequences that we cannot possibly predict.

In addition, only a few diseases are caused by single-gene defects; many serious diseases such as cancer and heart disease are caused by both multiple genetic defects and interactions with the environment. These multi-gene disorders are much more complex than single-gene disorders. For instance, even if just two genes are involved in the development of a disease such as lung cancer, the difficulty of tracking which genes are responsible increases dramatically. There are three billion chemical bases and about 10,000 genes, all different shapes and sizes, thus making it a *very* difficult process to accurately assess the precise contribution of genes involved in multi-gene disorders (Appleyard, 1998: 12). Thus, scientists make a lofty claim when they say that on the basis of the information made available by the human genome, we will soon be able to cure and prevent a host of multi-gene disorders. These claims are further examples of the lack of humility possessed by the proponents of this new eugenics movement.

Advocates of genetic engineering seem to forget that diseases (and talents) are not only caused by one's genetic makeup but are affected by one's environment. Almost all polygenic disorders are likely to involve some degree of interaction with the environment (Appleyard, 1998: 13). For example, it is known that the BRAC1 gene is linked to breast cancer, meaning that individuals who possess a copy of this gene have an increased risk for developing the disease. However, an increased risk is only a probability—it does not mean that an individual will definitely get the disease. There are women with the BRAC1 gene who never develop breast cancer (Swensen, et al, 1994). At the same time, the majority of women who develop breast cancer do not possess a copy of the gene. Thus, screening embryos for the BRAC1 gene does not necessarily ensure that the child will not eventually have breast cancer. Other environmental factors such as exposure to estrogen, the amount of fat in the diet, exercise, and stress are factors that affect whether or not one develops the disease (Swensen, et al, 1994).

Scientists are obsessed with trying to find the gene that causes obesity. Yet the rates of obesity have grown in epidemic proportions over the past twenty years in America; Americans have a much higher rate of obesity than other countries (Mokdad et al, 2003). These two facts are strong indicators that many aspects of obesity are environmental and not genetic. Today, Americans eat a more high-fat, calorie-dense diet than ever before, eat larger portions than ever before, and exercise less than in previous eras (Mokdad, et al, 2003). All of these environmental factors should be given as much, if not more, weight than genetic factors in looking at both the causes of and solutions to the obesity epidemic that threatens the lives of millions of people. In many ways, looking for the sole genetic cause of a disorder, disease, or unwanted physical or psychological attribute holds people less responsible for their own actions and, often, destructive behavior. A disease that has a genetic cause eliminates the possibility that a person's behavior(s) such as eating a high-fat diet and leading a sedentary lifestyle could attribute to the onset of a disease.

Through genetic enhancement, members of society will attribute individual characteristics less to chance and more to choice. Parents become responsible for choosing or failing to choose the "right" traits for their children. A domain once governed by fate will now

become an arena of choice. Genetic enhancement can be seen as creating a form of bionic, rather than human, society.

At first glance the threats from free-market genetic enhancement, such as creating even greater disparities between the wealthy and the poor, failing to appreciate the importance of environment in the development of a person, failing to see all the effects of a gene before insertion or deletion, and making children into commodities rather than human beings, may seem less disastrous than the genocidal practices of the Holocaust, or the forced sterilizations that were a hallmark of the old eugenic practices in America. Some may not see the drawbacks of free-market eugenics as problems, and may view them as beneficial outcomes. However, it must be appreciated that the practice of genetic enhancement changes the very nature of human society. When parents choose their children's traits, individual freedom and the choices of the child are constricted. It must also be understood that the treatment of a disease is extremely different than an enhancement therapy. Even if enhancement therapies are condemned, it does not mean that we should not prevent or treat serious diseases. Scientific technologies should be used to aid those in need, not to help the already privileged.

In conclusion, as we look at the new eugenic practices in comparison to the old, and assess the problems of each, we should take the following into account. All planned social change has consequences, some predictable and intended, others surprising and unintended. Failing to think about those unintended consequences is the absence of humility. In the German case, the unintended consequence was the effect of mass extermination of fellow human beings on the humanity of the exterminators. In the American case, the unintended consequences of championing policies that allowed mass sterilization was the destruction of the Constitutional guarantees that permit free persons the autonomy to pursue life, liberty and happiness. Surely trying, in a "free-market" model, to determine the traits of one's offspring fails to consider the unintended consequences to the parent-child relationship, the family, and the access to equal opportunity on a level playing field.

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Invention: Imitation and Imagination

Gabrielle Kappes

Course: *English 313. Early Modern English Poetry*

In “The Making of a Delectable Poem” George Gascoigne argues that a pleasing poem should be grounded in “some fine invention” with “*aliquid salis* I mean some good and fine device showing the quick capacity of a writer” (Gascoigne: 60). The subject of Sir Philip Sidney’s *Sonnet 1* of *Astrophil and Stella* is the literary concept of invention. Sidney follows Gascoigne’s guidance, producing a poem containing the complexity of invention as both imagination and artistic fabrication (see Appendix A, p. 20). In *Sonnet 1*, the speaker, Astrophil, wallows in a dreadful case of writer’s block claiming he lacks the artistic creativity to write Stella a persuasive love poem. However, *Sonnet 1* is proof of Sidney’s literary achievements, hence proving his writer’s block a conceit to demonstrate that he is a master of verse and poetic device. This artifice does not depict Astrophil as a liar, but a poet of wit and sensibilities. Therefore, his chosen terms have multiple dimensions that illustrate a sense of irony as “a reality different from appearance” (Harmon: 282). In his *An Apology for Poetry*, Sidney identifies invention as the fundamental aspect of poetry when he defines it as “an art of imitation, for so Aristotle termeth it is his word *mimesis*, that is to say, a representing, counterfeiting, or figuring forth—to speak metaphorically, a speaking picture—with this end, to teach and delight” (Sidney: 101). Even in this definition, Sidney stresses the rhetorically persuasive elements of invention. This essay will explore Elizabethan cultural influences on poetic creativity as well as the complexities that arise when invention is viewed as imagination and artistic fabrication.

The invention of meter and form in *Sonnet 1* depicts the conscious effort on behalf of the speaker to convey the perception of a frustrated writer. The form is an alexandrine sonnet, written in hexameter: lines of twelve feet. These lengthy lines are not written in uniform iambs, but lines 1, 3, 5, 13, and 14 begin with a trochee. To start a line of verse with a trochee is quite irregular even in comparison to the majority of sonnets in *Astrophil and Stella*, which are usually composed of iambs. From line one, the poet has literally begun writing the sonnet on the wrong foot, producing an extraneous meter that contradicts the uniform iambic pentameter of many Italian sonnets. The rhyme scheme is also peculiar as the beginning octet alternates between the two rhymes of ab ab ab ab and the sestet follows with ca ca dd. The dominant “a” rhyme punctuates the entire poem, ending with a rhyming couplet typical of an English sonnet. The rhyme scheme signals Astrophil’s difficulties of inventing a traditional sonnet. Yet this abnormality is just a façade to mask Astrophil’s literary mastery. The dominant “a” rhyme of the long “o” vowel as in “show” (1.1), “know” (3), “woe” (5) etc., marks the phonetic sound similar to the vocalization of a moan, imitating the speaker’s pain. However, the final rhyming couplet marks a return to convention, signaling the turning point of the sonnet and affirming poetic success.

In the opening octet, Astrophil exemplifies his distressed state of writer’s block that prevents him from writing a love poem to Stella. The underlying meaning of terms dictates a reality that is not as it appears. Astrophil narrates his current state of emotion as “[l]oving in truth, and fain in verse” (1). Although the terms “loving” (1) and “fain” (1) radiate a sense of devoted affection, an underlying tension appears in “fain” (1), glossed as eager, yet also on a pun

of feign. In this context, the line illustrates the speaker's irony in claiming to be something he is not. This element of doubt suggests that the speaker's words should not be judged as absolutely sincere. Astrophil claims eagerness in the act of creating poetic lines, but his poetic cunning appears in the verb formation of "verse" (1), "to overthrow, or overturn" ("Verse," def. 2). Compared to the noun definition of poetic "verse," this meaning sheds light on the ulterior motives of the speaker: he feigns writer's block in order to boost his own identity as a master of poetic device.

Elizabethan culture influences the speaker's artistic imagination. In a progression of cause and effect, the speaker ascends the chain of being, beginning with the "instinctive sensuous perception of beasts" and climbing to the "instinctive intellectual perception of angels" (Tillyard 74). The speaker hops from "pain" (2) to "[p]leasure" (3) to "reading" (3) to "knowledge" (4) to "pity" (4) to "grace" (4). The succession depicts Astrophil's hope that Stella will ultimately fall under the "divine influence" ("Grace," def.11b) of "grace" (4), a quality that will "impart beauty" ("Grace," def. 2b) upon tragic Astrophil. However, the element that begins this logic is "pain" (2), the ache of Astrophil's unrequited love and frustration of writer's block. The sadistic imagery of pleasure through pain will never complement celestial grace, illustrating "the battle between Reason and Passion.... [which] was particularly vehement in the age of Elizabeth" (Tillyard: 69). The strict boundaries between these realms will never be breached; hence perpetuating Astrophil's permanent loss of Stella. Whether the speaker was fully conscious of the links in the chain of being or not, Elizabethan culture seems to influence the metaphors and images of the speaker's inventive imagination.

Elizabethan cultural assumptions also seem to formulate the speaker's perception of invention as artistic fabrication. The speaker searches for "fit words" (5), indicating the proper terms suited for his poem, in order to paint an image of his melancholia. As Renaissance artists painted fair, beautiful women, Astrophil claims he would depict the opposite and paint "the blackest face of woe" (5). Although the term "blackest" (5) represents the speaker's dark depression, it also indicates the color black as opposed to "whiteness [as] an ubiquitous albeit little noted facet of early modern lyric and beauty culture" (Hall: 65). This phrase signals black as the "other," an irregularity among the fair-faced portraits. The image of "the blackest face" (5) connotes ideas of deception and artifice. The speaker possesses the skill of depicting words as representations, "counterfeiting" (Sidney: 101) his emotions in order to illuminate the heights of his imagination.

Astrophil embarks on a farce-like search to overcome his writer's block. He studies poetic rhetoric to impress Stella with wittiness and reads other poets' verse for inspiration. The trochee, "[s]tudying,"(6) places a stress upon the speaker's educationally enhanced career. Astrophil thoroughly examines "inventions" (6), connoting "a device, contrivance, design, plan, scheme" ("Invention," def. 6). The following adjective, "fine" (6) evokes a sense of "superior quality" ("Fine," def. 1) and "excellence" ("Fine," def. 4a). The inventions in this instance are qualities such as metaphor and other poetic devices that Astrophil wishes to employ for the delight of Stella's intellect, her "wits" (6). By flipping through "others' leaves" (7), or pages of poetry, Astrophil seeks an idea to spark the creation of his poem. A flicker of an idea seems to occur in his vibrant imagery of flowing creativity, highlighted through the use of enjambment in lines 7 into 8 to produce the metaphor of "fresh and fruitful showers" (8) spilling on his "sunburned brain" (8). The concrete imagery is a refreshing end to the octet, as it seems to be a

colorful product of the speaker's poetic pains. The staleness of "others' leaves" (7) contrasts sharply with a summer rain that fertilizes such dry, arid grounds, as though the speaker's brain is now ready to sprout his own literary leaves. Astrophil has defined invention through a metaphor, yet the conditional "if" (7) projects a cloud of uncertainty that has been floating throughout the octet in the verb "might" (3, 4, 5). Astrophil is still unable to quench his thirsty mind, yet he does sprout vivid imagery. Therefore, the metaphors employed are solely imitations and pretenses of emotion.

The sestet signals a change in emotional tone. Beginning with the conjunction "[b]ut" (9), Astrophil sorely reaffirms his writer's block with abrupt judgment. However, the word order of the line delineates juxtaposition between invention as imagination and artistic fabrication. The phrase "halting forth" (9) acts as an oxymoron; it signals an abrupt stop as well as a rushing forward. The confusion produced by this arrangement exemplifies the very irony of the speaker's voice as he claims he lacks invention, yet *Sonnet 1* clearly stands as an example of his poetic creation. The tone of the phrase hints at Astrophil's jovial nature, as though he proudly flaunts his inventive rhetoric. The speaker capitalizes the second appearance of "invention" in line 9 to signify a personification of the term as well as to demonstrate the progression that has occurred from the octet to the sestet. The third appearance of "Invention" (10) is now personified as the metaphor of "Nature's child" (10), reminiscent of invention as "fresh and fruitful showers" (8) as it connotes a mother's nurturing. "Nature" (10) can be associated with human nature, an indication that the human intellect is the source of the imagination and artistic fabrication.

The conceit climaxes as it portrays invention as a child fleeing from his stepmother Study's wrath and running amongst strangers' feet. This metaphor has the quality of a child's nightmare. As a young child, the speaker would have learned poetic devices through an extensive education. The "blows" (10) of the stepmother relate to the repetitions and exercises that to a child seem tedious and boring. This studying is the "purifying of wit, this enriching of memory, enabling of judgment, and enlarging of conceit, which commonly we call learning" (Sidney 104). Sidney identifies learning as a critical component of a poet's success, as it allows him to eloquently express the creative juices. Similarly, in Elizabethan culture, man was marked by "his capacity for learning: both his 'erected wit' in perceiving perfection and his aptitude for 'nurture' or education in his raising himself toward it. Hence it was that the learning of a Sidney, a Donne, or a Milton was an ethical religious matter" (Tillyard: 65). Education marked by rigorous studying and learning was critical to the identity of an upper estate man in Elizabethan society. The speaker assumes this knowledge, thus making the image of the child fleeing even more disastrous. The conceit continues as the child Invention makes his way through the throngs of unfamiliar feet, a pun on metrical feet in poetry. The term "others'" (11) had been used in line 7 in relation to examining other poets' craft for inspiration, but now those metrical feet haunt him, blocking his creative energies. The verb "seemed" (11) suggests a false appearance, adding to the nightmarish mood of the image as well as predicting an unrealized state, indicative of the overwhelming flood of poetic texts. The personal pronoun "my" (11) associates the speaker with invention and helps to transition to the next line, which begins with "[t]hus" (12), signaling the conclusion of the conceit. The metaphor projects the speaker as pregnant with invention and vulnerable to labor pains. The term "throes" (12), associated with the pains of childbirth, also conveys the metaphysical agony of writer's block. This imagery reinforces the notion of the human intellect as the mother of invention.

In the final rhyming couplet Astrophil transfers the stresses of the childbirth imagery to a psychological inner tension. He physically gnaws his pen in anticipation of artistic creation. The term “truant” (13), connoting “idle, lazy, loitering, esp. of a child, staying from school without leave; hence, wandering, straying,” (“Truant,” def. 2a) perpetuates the conceit of a child (the speaker) as unwilling to learn. The term also conveys the action of the mind straying from the subject matter at hand; a wandering imagination. In this sense there is an emphasis on devious contrivance. Perhaps the speaker makes this distinction in order to proclaim that “it is not rhyming and versing that maketh a poet...[b]ut it is that feigning notable images of virtues, vices, or what else, with that delightful teaching, which must be the right describing note to know a poet by” (Sidney: 103). The speaker prides himself on his ability to see the fine distinctive elements of invention and combines all aspects of the device. Astrophil describes his self-inflicted pain as “beating myself for spite” (13), referencing the painful stress referred to in “my pain” (2). The desire for “spite” (11) justifies the final line as Astrophil’s muse reprimands him as a “[f]ool” (14) and commands him to write from the “heart” (14). However, Astrophil, seemingly out of spite, does not write from his heart, but from the extensive knowledge he has of literary device and poetic creation. Sidney has created the speaker Astrophil in order to delight through the proud display of rich imagery adorning the façade of writer’s block.

As the first in the series of *Astrophil and Stella*, *Sonnet 1* is a celebration of poetry’s inventive devices, especially concerning that of imagination and artistic fabrication. Through the influence of Elizabeth culture as expressed in florid metaphors, the speaker is able to construct a sonnet in which he performs the conceit of a lovesick poet suffering from writer’s block in order to reveal his success as a master of poetic device.

Appendix A

Sir Philip Sidney

From *Astrophil and Stella*

1

Loving in truth, and fain in verse my love to show,
That she dear she might take some pleasure of my pain,
Pleasure might cause her read, reading might make her know,
Knowledge might pity win, and pity grace obtain,
5 I sought fit words to paint the blackest face of woe;
Studying inventions fine, her wits to entertain,
Oft turning others' leaves to see if thence would flow
Some fresh and fruitful showers upon my sun-burned brain.
But words came halting forth, wanting invention's stay;
10 Invention, Nature's child, fled stepdame Study's blows;
And others' feet still seemed but strangers in my way.
Thus, great with child to speak, and helpless in my throes,
Biting my truant pen, beating myself for spite;
"Fool," said my muse to me, "look in thy heart, and write."

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Media Effects On Male Body Satisfaction

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Course: Sociology 175. Media and Society

Introduction: What's the problem?

It is well known that body dissatisfaction, as well as disordered eating and body image disturbances, are prevalent among Western females, but recent research suggests that males are beginning to experience these afflictions as well. Over the past 30 years, male dissatisfaction with overall physical appearance has risen from 15% in 1972 to 43% in 1997 (Garner in Farquhar & Wasylkiw, 2007). Today's males are participating in such appearance-focused behaviors as body hair removal, tanning, and even plastic surgery to better align their looks with what they believe to be the ideal male appearance.

Although enhancing one's appearance is, in itself, a relatively benign endeavor, some individuals may become so obsessed with altering the body that they resort to such potentially dangerous activities as steroid use, obsessive dieting, binge eating, over-exercising, and smoking to attain their goal. At its extreme, this obsession may manifest itself in the form of Body Dysmorphic Disorder, or BDD. For males in particular, an alternate form of BDD called "muscle dysmorphia" may develop. This disorder is characterized by a preoccupation with one's muscularity, resulting in significant devotion of time and energy to enhancing one's muscle mass. The activities and thoughts related to this disorder are so consuming that they often interfere with normal social and occupational functioning (Pope et al., 1998). As compared to extreme female preoccupation with thinness, muscle dysmorphia may be considered a greater affliction because males are often concerned not just with leanness but also with muscularity.

Where did this disorder come from? Muscles used to signify strength and ability, but as Morrison notes, "there is little necessity for men in contemporary Western society to possess large muscles, [thus] men's striving for the muscular mesomorphic ideal suggests that their attitudes toward the body have undergone a profound shift" (Morrison et al., 2003). Many believe that this shift is due to an increasing emphasis on the mesomorphic physique in mass media. Indeed, Cash's cognitive-behavioral model of body image lists cultural socialization as one of four dimensions that dictate how one's body image forms (Arbour & Ginis, 2006). If this is true, then the fact that from 1958 to 1998 the proportion of undressed male models in advertisements rose from 3% to as much as 35% (as opposed to the relatively stable proportion of undressed females) could help explain the problem (Yang et al., 2005). If images of males in the mass media are taken to indicate cultural ideals, and they depict undressed males that are more muscular than the average Western male, men may be using these images as comparison models for self-evaluation and subsequently developing varying levels of body dissatisfaction.

Two social theories of body image, socio-cultural theory and social comparison theory, have been proposed to help explain the role of outside influences on body image. Socio-cultural theory has three tenets: 1) mass media influence perceptions of what constitutes an ideal body, 2) the emphasis mass media place on bodily perfection encourages individuals to view their bodies as a collection of parts only valuable for their aesthetic appeal (body-as-object), and 3) people equate deviation from the idealized body type with unattractiveness. Leon Festinger's social

comparison theory says that individuals evaluate themselves based on social comparison such that comparing oneself to those worse off (downward) better self-perception and comparing oneself to those better off (upward) worsens self-perception (Morrison et al., 2003). Taken together, these theories seem to suggest that mass media may indeed be the prime culprit in the increasing incidence of body dissatisfaction among Western men.

In addition to the potentially harmful behaviors used to achieve the perceived male ideal of a lean, muscular physique, mental afflictions such as low self-esteem and depression may develop as a result of this ongoing endeavor. Males may see themselves as never good enough, and their quests as hopeless undertakings aimed at an all-consuming goal. The first step in addressing this problem is to verify that the cultural ideal conveyed to Western men is indeed that of a lean, muscular male body. The following two studies have aimed to do just that.

Toys and Eye Candy: The evolution of males bodies as they are portrayed in the media

To support the idea that portrayals of male bodies in the media have become increasingly muscular over the past thirty years, two studies have investigated, respectively, the evolution of action toys and *Playgirl* centerfolds. The first study (Pope, Olivardia, Gruber, and Borowiecki, 1998) gathered examples of popular American action toys from the past thirty years for analysis of their body measurements. The researchers consulted *Playthings* magazine and chose human male toys that had been among the 10 best-selling toys in several years over the two decades prior to the study. Only two action toys met this criterion: the GI Joe figurine and the Star Wars figures. Samples of both kinds of toy over the past thirty years were acquired and measured for waist, chest, and bicep circumferences. These measurements were scaled for comparison to an average male body.

The figures investigated were found to have become increasingly muscular over time, some to a level only attainable by a bodybuilder taking steroids. This result suggests that boys are exposed to male physiques in the media that shift in accordance with the male cultural ideal of the time. Just as the current cultural ideal far exceeds its historical counterparts in terms of muscularity, a physique once considered indicative of a strong, powerful action figure now pales in comparison to recent representations of such figures.

This study had the limitation that only two types of male action figures were investigated, but this should not undermine the legitimacy of the trend observed. If socio-cultural theory is correct, these figures may be sending the message to young boys that muscularity is desirable or even necessary. Overall this study supports casual observations that males in the media have become increasingly lean and muscular, sometimes to the point of being unattainable without the aid of steroids.

In a second study, Leit, Pope, and Gray (1999) investigated 115 male *Playgirl* centerfolds from 1973 to 1997. Height and weight (as stated in the magazine), as well as visual estimates of body fat were used to calculate body mass index (BMI) and fat-free mass index (FFMI) for each model. Body fat was estimated by a blind rater with experience in this task. The FFMI calculates lean (fat-free) BMI and corrects for height, providing a better measure of muscularity than the BMI.

The results showed that BMI of models was positively correlated with date, indicating that the centerfold models became denser over time. Body fat, however, was negatively correlated with date, indicating that the models grew leaner over time. When these results were combined using the FFMI, they showed that *Playgirl* centerfolds have become increasingly muscular over the past thirty years. The researchers attribute this evolution to the discovery of anabolic steroids, and possibly to an increasing lack of distinction between male and female roles, leaving only physical appearance as a mode of displaying masculinity.

The limitations of this study were few and insignificant. Although body fat was only estimated rather than measured, the rater performing this analysis was tested for reliability and found to make estimates that correlated highly with actual body fat measures. This investigation serves to further support the claim that media portrayals of the male body have grown increasingly muscular over the past thirty years. Although this particular magazine might not have a direct effect on male self-perceptions (with the exception of gay males), it provides an example of what Western society considers to be the ideal male physique. If women view exceedingly muscular men in a sexual context, the desire for a similarly built male partner will likely follow. This may lead to unrealistic expectations from women, serving to intensify any pre-existing muscularity concerns the men in their lives may hold and to perpetuate the cultural ideal of a lean and muscular male body.

Print Ads, Televised Ads, and Self Reports: Basic studies on the effect of media on male body dissatisfaction

The above studies confirm the existence of a Western male body ideal (one that is lean and muscular), but does viewing this ideal in mass media have any effect on the body dissatisfaction of Western males? The studies in this section use a variety of approaches to address this question, lending reliability to the findings as a whole. Before going any further, I would like to point out that references to the ideal male body in this review reflect only the *Western* ideal, although this distinction may not always be made clear.

Leit, Gray, and Pope (2001) investigated whether viewing print advertisements from popular magazines that feature muscular males would have an effect on males' body dissatisfaction. Eighty-two undergraduate men with a mean age of 19.8 years participated. Subjects in the experimental condition were presented with 20 slides of advertisements featuring muscular male bodies and 10 neutral slides. Muscular advertisements were chosen by a group of 10 college-aged men evaluating images gathered by the researchers on muscularity, attractiveness, and sexual provocation. Advertisements found to be high on measures of muscularity and attractiveness were used for the experimental group while images rated as highly sexually provocative were eliminated from the study. Subjects in the control group were presented exclusively with those advertisements that had the lowest muscularity and attractiveness scores and were judged by three raters to be non-body focused. After viewing these slides, subjects were asked to use the Somatomorphic Matrix (a computer program that allows subjects to adjust both the muscularity and fatness of a male figure) to select the body shape that they think represents their current appearance, their ideal body shape, the average body shape of males their age, and the body shape they believe women find most desirable.

The results showed that men in the experimental condition reported a greater discrepancy than the control group between their current and ideal levels of muscularity. No association was

found between viewing the experimental images and satisfaction with one's body fat (measured by discrepancy between fat level of current and ideal body shape), or between viewing experimental images and perception of what body shape women find most attractive (as compared to perception of control group). The researchers believe that this finding may be due to the absence of women in the advertisements presented to the experimental group, which may have distracted them from thoughts about what kind of body shape women find desirable and caused them to focus more on their own ideals.

This study seems to confirm that viewing muscular male images contributes to decreased satisfaction with one's muscularity. There were, however, a few limitations to the research, including that only college-aged men were used as subjects. This suggests that further research should be performed in which either the sample varies in age or a number of individual studies investigate samples of different age ranges. It was also problematic that the researchers based their measure of subjects' current body shape on the Somatomorphic Matrix rather than an objective measure such as BMI (body mass index) or FFMI (Fat-free mass index). This could complicate the research if individuals in the study had a distorted perception of their body shape resulting from body dysmorphic disorder or a comparable body image disturbance.

Agliata and Tantleff-Dunn (2004) investigated the effects of television commercials featuring ideal male images on men's mood and body image satisfaction. They also looked at the moderating role of pre-existing negative body-related cognitions and socio-cultural attitudes toward appearance on post-experimental mood and body image satisfaction. 158 male undergraduates with a mean age of 21.3 participated, 66% of whom were Caucasian, 14% were Hispanic, 10.2% were African American, and 5.1% were Asian. Subjects were randomly assigned to either an experimental group in which four appearance-focused television commercials were viewed during breaks in an episode of *Family Feud*, or a control group in which four non-appearance focused commercials were viewed. 30 male students rated 40 hours worth of commercials on the ideal attractiveness of male actors depicted therein as well as the overall appeal of the commercial itself. Those commercials judged to feature ideal male images were used in the experimental condition, and those with similar ratings of appeal as the experimental commercials that were not judged to depict the male ideal were used with the control group. A week prior to viewing the stimulus videotapes, subjects completed a visual analogue scale that provided several ratings of mood and body image, as well as a second scale that assessed subjects' level of dissatisfaction with specific body sites. Subjects also completed measures of attitudes toward their own appearance, awareness of cultural ideals of attractiveness, and irrational beliefs about appearance, all prior to viewing the videotape stimuli. After viewing the stimuli subjects completed the visual analogue scales for a second time to assess the impact of the experimental manipulation.

The results showed that viewing commercials featuring images of the ideal male body significantly increased muscle dissatisfaction as well as depression in the experimental subjects. In contrast, the body dissatisfaction of control subjects was not affected and their depression scores actually decreased significantly after exposure to the videotape stimulus. These findings support the hypothesis that exposure to the male body ideal can lead not only to body dissatisfaction but also to mood and body image disturbances. Pre-existing negative body-related cognitions and socio-cultural attitudes toward appearance were not found to moderate the effects of viewing ideal male images, possibly because the scales used were intended for use with

females. This was the only apparent limitation to the study other than the use of an exclusively undergraduate sample.

A correlational study by Morrison, Hopkins, and Morrison (2003) investigated men's drive for muscularity as it relates to their self-reported exposure to idealized media images of the male body and self-reported tendency for social comparison. Drive for muscularity is defined as a desire to achieve an idealized, muscular body type. 310 male college students with a mean age of 23.2 years completed the Drive for Muscularity Attitudes Questionnaire, a magazine checklist including 19 male-oriented exercise magazines in which subjects divulged the frequency with which they read each magazine, and the Universalistic Social Comparison Scale.

Self-reported exposure to media images of ideal males and self-reported comparisons to ideal males were both found to be positively correlated with intensity of drive for muscularity. Due to the correlational nature of this study, no causal roles could be determined. It is possible that men who already desire to be more muscular may read the types of magazines in this study to learn how to achieve their muscle-building goals. Another limitation to this study was that, as in the previous two studies in this section, the sample used consisted exclusively of college students.

All three of the studies in this section provide examples of simple experimental investigations of the impact of viewing ideal male images in the media. Each utilized a different procedure, but all three arrived at the conclusion that such media images do indeed have an adverse effect on male body satisfaction. It is worth noting that all three studies recommend further research using a longitudinal design to assess the long-term effects of media exposure to the ideal male physique. This suggestion reflects the fact that the average person views nearly 25 appearance-related commercials each day, and raises questions about how long the effects of media-induced body dissatisfaction last (Agliata & Tantleff-Dunn, 2004). Overall these studies give a basic understanding of the potential effects of ideal male images in the media, and provide a basis for the more complex studies discussed in the next section.

Hypermuscularity, Body Conceptualization, Gym Use, and Culture: Possible moderators of the effect of ideal male media images on body dissatisfaction

The studies discussed thus far have shown that there is a significant relationship between media exposure to the ideal male body and body dissatisfaction in males. The following studies experimentally test the effects of a number of possible moderators of this relationship. Such research highlights that the relationship in question is a complex one that must be investigated from a number of different angles in order to provide us with a complete understanding of its dynamics.

A study by Arbour & Ginis (2006) was conducted to explore the effects of viewing muscular versus hypermuscular media images on men's body images. This study also investigated the moderating role of baseline (i.e. pre-existing) body dissatisfaction (BD) and muscularity dissatisfaction (MD). The researchers hypothesized that (1) viewing hypermuscular images would have a greater effect on body image than muscular images, (2) both men with high baseline MD and men with high baseline BD would have higher post-experimental body and muscularity dissatisfaction than men initially low on these measures, and (3) baseline measures would moderate the effect hypothesized in (1) such that subjects with the highest baseline

measures in the hypermuscular condition would have the highest post-experimental BD and MD. 63 male college students between the ages of 18 and 35 completed measures of body dissatisfaction, muscularity dissatisfaction, and a demographics questionnaire prior to stimulus exposure. Subjects chose one of two seminar dates to attend, after which the muscular and hypermuscular conditions were randomly assigned to a date. During the seminar, subjects were exposed to a PowerPoint presentation featuring 24 photographs of either muscular or hypermuscular men. Photographs were obtained from either body-building magazines (hypermuscular condition) or health and fitness magazines (muscular condition), and rated by a group of 12 male college students on a 10-point scale for muscularity. The 48 photographs with the highest and lowest mean ratings were used in the seminars. Following the 30-minute seminars, subjects completed the body and muscularity satisfaction measures once again.

Results of this study confirmed hypothesis (2) that high baseline body and muscularity dissatisfaction led to higher post-seminar body and muscularity dissatisfaction. However, contrary to the researchers' hypothesis (1), results of this study showed that muscular images had a greater adverse effect than hypermuscular images on men's body images. Also contrary to the researchers' hypothesis (3) was the finding that post-seminar BD of men with high baseline MD was more affected by the muscular than the hypermuscular images. Another unanticipated finding was that baseline BD did not moderate the effects of the exposure conditions (hypothesis 3). The researchers speculated that these unexpected results were due to men finding the muscular images more ideal and attractive than the hypermuscular images. The hypermuscular images may have appeared to the men as poor comparison models because of their excessive, nearly unattainable muscularity.

Although this study addressed an interesting distinction between the effects of viewing hypermuscular and muscular male bodies, it had one major error: extremely confusing hypotheses. It is not made clear whether hypothesis 2 refers to how much levels of BD and MD *increased* from pre- to post-seminar, or to a comparison of the two groups' (low versus high baseline) post-seminar levels. If the latter alternative is the case, this study does not show anything at all about the effects baseline BD and MD on viewing media images. In addition, the use of words like "greater" and "higher" are used throughout the discussion of this study's results without mentioning what exactly these measures are greater or higher *than*. This study would have been far more clear and effective if the researchers had simply created three groups: a control group viewing neutral stimuli, and two experimental groups viewing, respectively, muscular and hypermuscular images. They could have assessed the MD and BD of subjects prior to and after the seminars and determined which group had the largest increase in these levels. Despite this study's flaws, it had the redeeming feature of presenting subjects with the experimental stimuli through a much more realistic scenario than studies that simply flash muscular photos at subjects. Overall this study dealt with an intriguing topic, but was not very well executed and should thus be replicated with the recommended extensions.

Farquhar & Wasylikiw (2007) investigated trends in media portrayals of the male body over the past 30 years, and then tested the effect of different portrayals on male self-evaluations. 107 students from grades 6 through 9 with a mean age of 12.51 years participated, 88.79% of whom were Caucasian. Full-page advertisements featuring ideal male bodies (defined as lean and muscular) from a convenience sample of 23 issues of *Sports Illustrated* magazine spanning 30 years (1975-2005) were coded on seven measures indicating the type of male body

conceptualization depicted. The two basic types of body conceptualization referred to in this study were “body-as-process,” or the male body as an instrumental entity, and “body-as-object,” or the male body as a purely aesthetic entity. The seven measures used to rate the photos were level of activity, level of pose, use of advertised item, nudity, fragmentation (displaying only a portion of the body without the head), eye-gaze, and object representation (the body takes the form of the advertised product).

It was found that, on four of the seven measures, there was a distinct trend over the 30-year period toward body-as-object conceptualizations. Use of ad item, nudity, and undetermined eye-gaze all followed this trend closely, and fragmentation peaked in recent years. These measures relate to body conceptualization in that: the extent to which the model used the advertised item reflects how much he is displaying his abilities (body-as-process), the amount of nudity reflects how available the model is for appearance-related evaluations (body-as-object), undetermined eye-gaze (as opposed to looking directly at the camera) takes away from the model’s subjectivity (leading to body-as-object), and fragmentation portrays the male body as a collection of parts (body-as-object) rather than a cohesive unit.

In the second portion of this study, participants were randomly assigned to one of three conditions: those who viewed photos of ideal male bodies-as-process, those who viewed photos of ideal male bodies-as-object, and those who viewed photos of electronic equipment. Participants were given 15 slogans that varied slightly depending on their particular condition. Next they were presented with 10 photos that had been rated by 32 undergraduate students for type of body conceptualization using the seven measures mentioned above. Participants were then asked to assign each photo a slogan from their list. After this task, subjects were asked to complete a variety of assessments to measure the effect of their exposure to the male media ideals on: self-esteem, level of depression, body image ideals, and choice when offered magazines related to body-as-object and body-as-process conceptualizations.

It was found that both performance and appearance self-esteem of participants in the body-as-object condition were negatively affected, but the social and appearance self-esteem of those in the body-as-process condition were actually positively affected. Those in the body-as-process condition also had lower levels of depression than those in the other two conditions.

Farquhar and Wasylikiw (2007) concluded that the media has increasingly portrayed male bodies as objects over the past 30 years. They also concluded that the type of body conceptualization (as object vs. as process), and not just the body type (muscular, lean) of males portrayed in the media, plays a role in how males see themselves and their bodies. They hypothesized that those in the positively affected body-as-process condition may have been distracted from comparing themselves to the males in the advertisements by the action being performed in the ad. However, when images of male bodies-as-objects are presented there is no activity to distract the viewer, and a negatively affective social comparison is more likely to occur. This study is particularly significant because it complicates the basic hypothesis that ideal male body images in the media lead to male body dissatisfaction by introducing the issue of body conceptualization. It has long been said that women are depicted as objects in the media, leading to feelings of inferiority, but investigating the effects of body-as-object images on men makes this a novel study.

The first limitation of this study is that the sample used was quite young (mean age of 12.51 years), raising questions about whether these results may be generalized. Future research with subjects varying in age should be performed to correct for this issue. Second, magazines in the first portion of this study did not encompass equal time periods or include an equal number of issues per time period. The final limitation is that images rated as body-as-object were also judged to be more muscular and less fat than the body-as-process images. This may have introduced an obstacle to a strict investigation of body conceptualization rather than body type. Further research might correct this problem by creating advertisements using the same model for each pair of images.

Halliwell, Dittmar, and Orsborn (2007) investigated the moderating role of gym use on the effect of exposure to ideal male media images, as well as the moderating role of exercise motivation among gym users. 58 men were recruited from a gym for the gym-use condition if they reported exercising at least once a week, and 58 men were recruited from a train station for the non-exerciser condition if they did not exercise on a weekly basis. Mean age of participants was 28.62 years. Subjects first completed a demographics questionnaire, a measure of exercise frequency, and, for the gym-users, an exercise motivation questionnaire. Subjects from each exercise condition were then randomly assigned to either an experimental or control condition. Images for the experimental condition were gathered from advertisements featuring muscular male models and rated by ten undergraduate men on how closely the model matched the muscular male ideal. Images of the two highest rated models were made into aftershave advertisements and presented to both experimental groups. Control images contained the same aftershave bottles and slogans as the experimental images but with a landscape background and no male model. After viewing the advertisements subjects completed the Physical Appearance State and Trait Anxiety Scale (PASTAS), which assesses anxiety associated with various body sites.

In accordance with their hypothesis, Halliwell et al. found (after controlling for BMI) that body-focused negative affect was higher for non-exercisers after the experimental than the control condition, but lower for gym-users after the experimental than the control condition. A second hypothesis was also confirmed, namely that those gym-users motivated by a desire to increase strength and muscularity were found to have a greater difference in body-focused negative affect between experimental and control conditions than other gym-users. Taken together, these results suggest that men who are actively engaged in working toward the ideal body will compare themselves to images of the ideal male body to satisfy self-improvement motives while non-exercisers will compare themselves to such images to satisfy self-evaluation motives. Non-exercisers make upward social comparisons, leading to higher body dissatisfaction, while gym-users are inspired to work toward the goal depicted and thus experience positive body attitudes. The positive effect of the experimental condition on gym-users approached statistical significance, but reached that level only when strength and muscularity-increasing motivation was taken into account. This suggests that men who exercise specifically to attain the ideal body (rather than for other motivations such as flexibility or endurance) are more likely to use media images of the ideal body as motivation for self-improvement rather than self-evaluation.

The present study is significant because it provides evidence that viewing media images of the ideal male body can actually *improve* attitudes toward the body in some populations.

Further investigations should be performed to determine the cognitions of such populations, which can then be used for education about how to avoid developing body dissatisfaction.

Yang, Gray, and Pope (2005) hypothesized that Western men have unrealistic body ideals and that Western media places increasing value on the male body. To explore these ideas they performed two experiments, the first of which evaluated 55 male Taiwanese undergraduates on body ideals using the Somatomorphic Matrix. The second study investigated the proportion of undressed males in two American magazines and two comparable Taiwanese magazines, as well as the difference between the proportion of undressed American versus Taiwanese models in the Taiwanese magazines.

The results of the first study showed that for Taiwanese men there was no difference between mean self-perceived level of body fat and the other three mean body fat evaluations (ideal self, average, and female-preferred). There was, however, a difference between the mean self-perceived level of muscularity and both mean ideal muscularity (2.0 kg/m^2) and mean muscularity preferred by women (1.2 kg/m^2). These results were compared to a prior investigation of Western subjects done by the authors, and it was found that Westerners reported double the discrepancy between self-perceived and female-preferred muscularity (2.35 kg/m^2). Westerners also perceived a greater difference between (what they consider to be) average and female-preferred levels of muscularity than the Taiwanese men (2.46 kg/m^2 vs. 0.6 kg/m^2). Translated into real-life muscularity differences, Taiwanese men think women prefer men who are 5 lbs. more muscular than the perceived average man while American men think women prefer men who are 20 lbs. more muscular than the perceived average man. These results support the hypothesis that Western males have more unrealistic body ideals than men from some non-Western cultures.

In the second study, the Taiwanese magazines were actually found to show more undressed *Western* males than Western magazines, but only 5% of Asian men depicted in Taiwanese magazines were undressed compared to 43% of Western men in the same magazines. This striking finding supports the hypothesis that Western society highly values the male body, and may reflect a cultural difference in qualities considered to be indicative of masculinity. It may also help explain the results of the first study by showing that media images of muscular Western male models, the social comparison models for the average Western man, are more prevalent than images of muscular Taiwanese males. Thus the average Western male engages in more upward social comparisons, leading to increased body dissatisfaction.

The first study was limited in that the Somatomorphic Matrix was designed using Caucasian models, introducing a possible error when used with the Taiwanese subjects. The second study was limited by the fact that only women's magazine were investigated, but the results still likely reflect how much value the respective cultures place on the male body. Despite these limitations, this study was successful in that it explored the role of culture-specific media in moderating how men from two different cultures perceive their bodies. This is an important finding because it highlights the increasing value placed on the male body in Western society, and may account for the authors' observation that "anabolic steroid abuse appears to be extremely rare in non-Western societies."

Conclusions: What does it all mean?

Although the studies discussed here appeal to different ways of assessing body dissatisfaction, they all confirm the hypothesis that media images of the idealized male body contribute to increased body dissatisfaction in men. As stated in the introduction, this relationship has serious implications for the mental and physical health of males and should continue to be investigated. The more information that is gathered on this relationship and its moderators, the better educated we will become on how to counteract its deleterious effects. Western society has already begun to address the appearance-related issues of women by raising awareness and offering services to help these women cope with their problems, but the appearance of afflictions like muscle dysmorphia should elicit the same type of response for males. In the end, one question still remains and may never be answered: Is the media to be blamed for perpetuating an ideal that makes us body-dissatisfied, or are they just showing us what we want to see?

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