Diamonds: Cultural Representations and Transformations of a "Girl's Best Friend"

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ABSTRACT

The great success of the advertising industry in the 1950s created a diamond culture where diamonds are continuously associated with images of love and devotion. With all of the diamond's positive associations, no one could have imagined that such a precious jewel could have negative connotations. Yet in the 1990s, the label "blood diamond" emerged and became widely correlated with torture, rape, child labor, and environmental destruction. My three-manuscript dissertation covers the following topics: how diamond jewelry has become ingrained in American consumer culture, how lab-made diamond substitutes create new politics, and how diamonds created from ashes complicate consumers' relationship with diamond jewelry. These three manuscripts cover a series of interconnected ideas about symbolism and imagery of the diamond. In the first manuscript I present a history of how advertisements have influenced American consumer culture. The second manuscript elaborates on the themes established in the first manuscript by examining the political nature of lab-made diamonds in relation to American consumer culture. And finally, in the third manuscript the images presented in the first manuscript become even more complicated when the end product is literally made from ashes. Lab-made diamonds challenge traditional images of natural stones in a way that forces consumers to confront, and perhaps revise, the way they think about diamonds.

GENERAL AUDIENCE ABSTRACT

Are diamonds really a girl's best friend? Diamond jewelry became a booming industry in the United States after World War II. Many advertisements at the time emphasized themes of love and devotion that are only accurately expressed when you buy diamond jewelry for your significant other. These positive images of diamond jewelry changed drastically in the 1990s when the label "blood diamond" was introduced to describe both the environmental and humanitarian crises of the natural diamond industry, predominantly in Africa. Most diamond jewelry owners can name the store where they purchased their jewelry, but it is very rare that a consumer can name precisely where their diamonds were sourced. This dissertation discusses the emergence of diamond jewelry in the United States, the ways in which the lab-made diamond industry is a technological solution for blood diamonds, and how diamonds made from ashes complicate the average consumers' traditional vision of diamond jewelry. Ultimately this dissertation shows that there is still a plethora of natural diamonds in the earth, but lab-made diamonds eliminate the environmental and humanitarian issues associated with natural diamonds. There are consumers that will prefer purchasing natural diamonds, but a new generation of consumers, mainly Millenials, are looking for alternative sources for diamond jewelry. This dissertation is useful for anyone that is interested in diamonds, diamond jewelry, technology, and the environment.

DEDICATION

To all of my friends, family, and loved ones that have inspired me throughout this journey. Especially Ann and Gordon Whiteley for being the most amazing and supportive parents a daughter could ever ask for.

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INTRODUCTION

One man who believed that art is an everyday experience was Dr. Albert Coombs Barnes. Although Barnes made his success through the development of Argyrol, an antiseptic silver compound used in the prevention of infant blindness, he had a passion for art. Over the course of many years, Barnes acquired fine paintings by world-renowned artists such as Matisse, Van Gogh, and Picasso. One of the most striking features of his collection is the way in which these paintings were arranged. Instead of using a traditional organization method by date, Barnes used his own aesthetic to create an artistic experience. He established a small museum at his home near Philadelphia, Pennsylvania, where he invited everyday people to view his collection. He purposefully did not invite art critics to view his museum because he believed that everyone should have access to art. In other words, he believed that art should not be limited to the elite.[1] Barnes transformed the typical role of an art critic and made art a universal experience. In a similar fashion, diamond jewelry has also been transformed from an item that only the bourgeoisie could own to a collective symbol of love and devotion. Barnes believed that art is not separate from everyday life. Diamond jewelry, a form of art, is intimately connected to American culture.

Diamonds are mesmerizing stones because of their astounding reflective properties. Although it is uncertain when diamonds were first used for adornment, countless generations have written about the alluring power of the stone. The Greeks named the diamond *adamas*, meaning unconquerable, because of the extreme hardness of the stone.[2] Pliny the Elder, a Roman

[1] The story of the Barnes collection is accurately presented in the documentary *The Art of the Steal*. For more information on Dr. Barnes and the Barnes Foundation visit http://www.barnesfoundation.org/

essayist, wrote, "The diamond, known for a long time only to kings and then to very few of them, has greater value than any other human possession, and not merely than any other gemstone."[3] The compressed carbon of a diamond forms a crystalline lattice structure, allowing the diamond to present physical properties of hardness and reflection. Given the power ascribed to these stones, for the better part of human history only the privileged and royalty could afford such a luxury. For example, French royals accumulated a significant collection of jewelry. During the time of Louis XIV, a distinct style of diamond jewelry developed, designed in various motifs such as bows, ribbons, and flowers. This trend continued through the nineteenth century. As jewelry scholars Penny Proddow and Marion Fasel write, "The auction of the Diamonds of the Crown of France in 1887 marked a turning point in the history of diamond jewelry--the beginning of the modern age."[4] Tiffany & Co. purchased a significant portion of the French crown jewels, marking a shift for the clientele of precious jewels. Even so, diamond jewelry in the late nineteenth century was still only available to the elite classes of wealthy entrepreneurs and famous actors.

Diamond jewelry did not encompass Albert Barnes's vision for art as an everyday experience until the first half of the twentieth century. For his book *Art as Experience*, philosopher John Dewey consulted with Barnes. Dewey argued that art cannot be divorced from everyday life because art has deep connections with the normal processes and experiences of living. He writes, "Because objects of art are expressive, they are a language. Rather they are many languages. For each art has its own medium and that medium is especially fitted for one

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[2] Proddow, Penny and Merion Fasel. *Diamonds: A Century of Spectacular Jewels.* 1996. Harry N. Abrams, Inc., Publishers. New York. Page 7.

[3] Proddow, Penny and Merion Fasel. *Diamonds: A Century of Spectacular Jewels.* 1996. Harry N. Abrams, Inc., Publishers. New York. Page 7.

[4] Proddow, Penny and Merion Fasel. *Diamonds: A Century of Spectacular Jewels.* 1996. Harry N. Abrams, Inc., Publishers. New York. Page 8.

kind of communication. Each medium says something that cannot be uttered as well or as completely in any other tongue."[5] Diamond jewelry has become an integral part of American (and increasingly global) culture in a way that cannot be separated from everyday life, along the lines that Dewey suggests. When words do not express the fullness of love and devotion, a diamond ring, a visual representation of art, can communicate these images. The way that diamond jewelry has become such an important symbol in American culture has been affected through advertising. Through the use of advertisements, a wide variety of companies have endeavored to impart the importance of purchasing diamond jewelry to express or display love.

The turning point for diamond jewelry came in 1947, when Frances Gerety proposed the now classic phrase, "A Diamond is Forever."[6] Gerety's slogan emphasizes both eternity and sentiment: if you buy your loved one a diamond engagement ring, your love will never end. At the same time, this simple memorable slogan also implied a warning that without a diamond engagement ring, there would be no "forever." In 1951, eight out of ten American brides had diamond engagement rings, a statistic that has remained relatively consistent to this day.[7] Early advertisements from The De Beers Company aligned perfectly with Dewey's point that there are various forms of art that can communicate more effectively than any other form: for these advertisements were *actually* paintings.

What made these advertisements, and thus diamond jewelry, so popular was the acceptance of the American public. Clever advertising slogans, like "A Diamond is Forever," create the initial desire for diamond jewelry, but the physical integration of a commodity into

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[5] Dewey, John. *Art as Experience.* 1934. The Berkley Publishing Group. New York. Page 110.

[6] Proddow, Penny and Merion Fasel. *Diamonds: A Century of Spectacular Jewels.* 1996. Harry N. Abrams, Inc., Publishers. New York. Page 99.

[7] Sullivan, Courtney. "How Diamonds Became Forever". The New York Times. March 3, 2013. http://www.nytimes.com/2013/05/05/fashion/weddings/how-americans-learned-to-love-diamonds.html?_r=0

everyday life requires some kind of cultural shift. German sociologist and philosopher Jürgen Habermas, author of *The Structural Transformation of the Public Sphere,* explores the relationship between class capitalism and the public sphere. Habermas is critical of mass media because he believes that it attempts to create the illusion of a public where none exists, which in turn manufactures consensus. Thus he is most critical of the reason that mass media and advertising is so successful: diamond jewelry advertising creates a new public that presents a constructed set of desires and demands. The consensus arises when an advertisement is particularly effective, such as "A Diamond is Forever." Mass media created the "diamond public," a social body ready to receive and transform information into accepted cultural reality. The "diamond public" is a part of the consumer culture, encompassing a network of people from experts to consumers. The structure of these relationships has changed over time from royalty, to celebrities, to everyday consumers. However, what has stayed relatively constant is the role of the experts and how consumers adopt their messages. The experts have acted and reacted to consumer interest by utilizing various forms of media to boost the success of their products. This intertwining relationship expresses the composition of the "diamond public."

The three manuscripts of this dissertation discuss various desires, problems, and transformations surrounding the "diamond public" by addressing major topics: how diamond jewelry has become ingrained in American consumer culture; how the political nature of lab-made diamond substitutes was created; and how diamonds made from the physical remains of the departed complicate consumers' relationships with diamond jewelry, environmental concerns, and memorialization. While there is a plethora of literature on natural diamonds, there is a distinct lack of academic scholarship on lab-made substitutes. Most of the current material about lab-made diamond jewelry is in the form of blogs or short media clips. Additionally, the

majority of authors posting material about lab-made diamonds are public relations professionals. The combination of limited available material and the biased opinion of those writing about this topic makes my research valuable to the Science and Technology Studies community, not only for its originality, but also for its social and environmental contributions. The target audience for this research is a general academic audience, but the hope is that other people, including consumers, find these manuscripts valuable.

These three manuscripts are connected by common themes related to the symbolism and imagery of the diamond. In the first manuscript, I present a historical perspective of how advertisements have influenced and even contributed to forming American consumer culture. The great success of early diamond advertisements created a new class of consumers that adopted images depicting "love," "devotion," and "forever." In later years, advertisements produced images of diamonds as "rare," "pure," and "precious," again molding a new generation of diamond jewelry consumers. Such intimate and alluring images still dominate diamond jewelry advertisements today. The product that continues to be the stronghold of these themes is the diamond ring. When diamond jewelry became more affordable in the early 1900s, diamond rings were seen more than ever as an important status symbol intimately connected with the ritual of marriage. Rings are symbols of eternal love because they have no beginning or end. Added properties and beliefs about diamonds constructed ideas of diamond rings as universal symbols of commitment, love, and marriage. Early diamond advertisements emphasized these themes and created the social expectation that men in committed relationships were expected to buy diamond jewelry for their significant others. The power of this messaging is reflected in the fact that eighty percent of married women own diamonds gifted by their husbands.[8] Likewise,

[8] Hart, Matthew. *Diamond: A Journey to the Heart of an Obsession*. 2001. Walker & Company. New York. Page 139.

sixty-four percent of single women receive diamonds as gifts from their significant others.[9] The symbolic relationship between diamonds and marriage solidified the act of giving diamonds as an expression of devotion, commitment, and true and everlasting love.[10]

While diamonds are most commonly associated with these positive images, the publicity of another kind of diamond disturbed these themes in the 1990s. The term "blood diamond" was introduced because it accurately describes diamonds that are used to illicitly finance civil wars and other types of conflicts, chiefly in Africa. Journalist and author Matthew Hart writes, "Press coverage of the diamond wars has aimed a floodlight of scrutiny onto the diamond trade, illuminating what was secret…In 1996 and 1997, at the peak of the African diamond wars, some $1 billion in illicit goods came out of the continent every year. Behind the trade lay ruined cities, hundreds of thousands of dead, and a history that went back a quarter century."[11] The history of blood diamonds came to be public knowledge when widespread media coverage unearthed its dark history. The negative connotation of blood diamonds defiled the imagery for this once "pure" stone. A number of Hollywood films, produced after the high profile media exposure of blood diamonds in the 1990s, depicted diamonds not as symbols of love and devotion, but instead as symbols of power and greed.[12] By playing off of the natural properties of diamonds, Hollywood has transformed the cultural image of diamonds as both a powerful element and a

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[9] Hart, Matthew. *Diamond: A Journey to the Heart of an Obsession*. 2001. Walker & Company. New York. Page 139.

[10] Becker, Vivenne. "Vivienne Becker On the History of Engagement Rings". De Beers Group. March 3, 2011. http://www.debeers.com/culture/current-news-and-events/296a2364-44d3-4210-9a87-572ae13cc40f/vivienne-becker-on-the-history-of-engagement-rings

[11] Hart, Matthew. *Diamond: A Journey to the Heart of an Obsession*. 2001. Walker & Company. New York. Page 183.

[12] The most notable film is *Blood Diamond* where Leonardo DiCaprio is engulfed in the diamond conflict of Sierra Leone. One other example is *Schindler's List* where Liam Neeson presented a large parcel of diamonds to an SS officer in exchange for the lives of a trainload of Jews.

powerful commodity. While these themes generally do not sell diamond jewelry, they exemplify the cultural images ascribed to the stones. My first manuscript covers the juxtaposition of these images of diamonds by analyzing specific diamond advertisements and case studies.

The themes and images established in the first manuscript relate directly to the two manuscripts that follow. This foundation allows for a richer discussion about similarities and differences between natural diamonds and lab-made substitutes. The second manuscript extends the conversation about advertising images of natural diamonds and examines how these themes are carried over and presented in the lab-made diamond jewelry industry. To combat the negative associations of blood diamonds, some diamond companies now promote so-called "conflict free" diamonds from ethically mined sources.[13] However, arguably there is truly no such thing as a "conflict free" natural diamond. This marketing terminology is a public relations response to the consumer demand for diamonds untainted by humanitarian or environmental crises. More and more companies will have to compete for business with those that are using this "conflict free" advertising. One positive aspect of this marketing strategy is that this type of ethical branding is raising awareness for both companies and the broader public to become more educated about environmental and social issues. Consumers are searching for ethical alternatives because of media attention and increasingly available information about diamond issues. If there is a guarantee that no one was harmed and no significant environmental destruction occurred, more people will seek to abide by that guarantee.

"Conflict free" diamonds are not the only way to respond to issues of blood diamonds. Lab-made diamonds have the same physical appeal as natural stones without the unethical

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[13] I intentionally use quotations here because no natural diamond is without conflict. Even if there is not a humanitarian crisis, environmental issues are the source of conflict. Open-pit diamond mining is the most common mining practice, and is also the most environmentally damaging. There is not enough evidence and legislation supporting diamond mine remediation programs, therefore there is no real guarantee of a truly conflict free diamond.

connotations of blood diamonds. In examining the emergence of this industry, and its contention with the natural diamond industry and practice, the second manuscript focuses on issues of the politics of technology, expertise, and sustainability surrounding the social transformations of "real" versus "synthetic" diamonds. Since the 1950s, the United States has shaped and embraced the consumer culture surrounding diamond jewelry. Lab-made diamonds appear to bridge the gap between the demands of the consumer culture and increasingly important cultural awareness surrounding social and environmental justice.

Finally, in the third manuscript, the images of intimate connection and the symbolism of diamond jewelry take a new twist when the end product is made from cremated remains (ashes) in a process that creates a lab-made diamond. This manuscript asks how this emerging technology affects the relationship American consumers have established with diamonds. In this case, there are several meanings to the diamond. First, turning a body into a diamond plays off of the practice of gifting diamonds, including the symbolism of eternal love. Second, the end product of this technology is technically a lab-made diamond. The purpose of this manuscript is to navigate this conversation through the lens of technology and memorialization, comparing the paradigm shift associated with diamonds created from ashes with other forms of death technology such as embalming and cremation. The conversation about diamonds and death also raises various issues relating to the theme of purity. Purity is a concept often ascribed to natural diamonds as a selling feature: the greater the purity, the higher the cost of the diamond. However, in the case of diamonds made from ashes, purity is related both to the memory of the deceased, and to the final product.

Consumers exaggerate the original themes of love and devotion associated with diamond jewelry because there can be such an intense emotional and personal connection to the physical

object. The job of the people at LifeGem Diamonds, located just outside Chicago, is to provide assistance during the transition customers undergo when memorializing their lost loved ones. Brothers Dean and Rusty VandenBiesen enlisted their good friend Greg Herro and created LifeGem in 2002. There is a four-step process to create a LifeGem from cremation remains or hair. The first step is carbon capture, where the scientists at LifeGem use patented technology to capture the available carbon of the ashes using a high-nitrogen and low-oxygen atmosphere. The second step is purification, where the carbon is turned into graphite by exposure to high temperature under unique conditions. The third step is diamond creation, where the graphite is placed in a diamond press and exposed to high temperature and high pressure, turning it into a rough diamond crystal. In the fourth and final step, the Gemological Institute of America certifies the LifeGem diamond.

These LifeGem diamonds seek to resonate with the imagery of diamonds by evoking sentiments, such as true and everlasting love. Likewise, these stones encompass themes from other death technologies and memorialization practices. The combination of these two factors challenges the current paradigm about the consumer's relationship to the diamond. I explain this relationship using the term "technorenascentia," meaning "a technological re-birth." The process of creating a LifeGem diamond through the physical transformation of ashes into diamonds complicates the emotional relationship consumers already have with diamond jewelry. In *Precious Objects*, her memoir-driven exploration of the diamond industry, Alicia Oltuski writes, "If diamonds satisfy man's need to incarnate love, LifeGem satisfies his desire for immortality, or just about as close to it as we may get."[14] This topic incorporates diamond jewelry themes

[14] Oltuski, Alicia. *Precious Objects: A Story of Diamonds, Family, and a Way of Life*. 2011. Scribner. New York. Page 276.

from the first manuscript and tropes about lab-made substitutes from the second manuscript, bringing this project full circle.

Thus, the manuscripts comprising this dissertation examine both continuities and discontinuities in the "evolution" of the diamond from natural stones to stones synthesized and made from ashes. Lab-made diamonds are an example of how new technology can interface with an existing set of cultural norms and practices. Is the symbolic relationship between diamonds and themes of "love" and "devotion" altered in the case of man-made stones? The lab-made diamond industry argues that no, the imagery is not lost, because lab-made diamonds are still physical representations of the original object. However, technologies that allow ashes to be turned into diamonds might substantially alter the connections consumers make with diamond jewelry. These products are not bought and sold the same way that other types of diamond jewelry are distributed, but mourners are nonetheless consumers. For these types of keepsake items, the symbolism of the diamond changes and new images are born. Diamonds made from ashes continue to evoke the same representation of love, but also introduce themes of "life after death" and "technological re-birth." In many ways, these physical transformations, from natural diamonds, to lab-made diamonds, and to diamonds made from ashes, alter the politics of the stone.

A diamond itself is attractive, mesmerizingly reflecting light and sparkling in its display. Americans seem particularly drawn to these stones because of the variety of stories that they hold. Over the course of the twentieth century, Americans have become entranced by the evolving story of the diamond. The manuscripts that follow not only explore the evolution of the diamond, but also show that consumer items directly impact, and are also shaped by social, cultural, and environmental thought. Using the case study of lab-made diamonds in the jewelry

market to illustrate a broader trend toward philanthropic consumption, I argue that lab-made diamonds not only exemplify the widely varied interpretations of our relationship with the natural and created world, but are also a potential solution to the problems of overconsumption and exploitation.

Just as Dr. Barnes constructed his art museum as a unique experience, so too has the diamond jewelry industry created a universal object to be loved and cherished by all human beings. Like art, diamond jewelry has gone through several evolutions in fashion. Jewelry scholars Penny Proddow and Marion Fasel write,

> Art Deco rendered lacy platinum and diamond jewelry styles obsolete in the twenties; fifties all-diamond formalism replaced the gold styles of the forties; creative jewelry dislodged fifties formalism and then bowed to seventies minimalism. During the nineties, as the twentieth century draws to a close, almost all of the diamond jewelry styles of the last hundred years—and some that are even older—exist simultaneously, and not one is considered dated or dowdy.[15]

Diamond jewelry today often combines artistic themes from different decades. One artistic inspiration for jewelry designers was Art Nouveau, a French inspired theme that included many images of nature and fantasy. The jewelry produced as influenced by Art Nouveau included a variety of different materials and enamel, truly creating artistic expressions in the form of jewelry. The difference between the art that hangs in the Barnes collection and diamond jewelry is mobility. Diamond jewelry is portable art that fits in with the increasingly mobile society of modern America. Art is a universal experience, and because of the great success of the diamond industry, diamond jewelry shares this common theme.

[15] Proddow, Penny and Merion Fasel. *Diamonds: A Century of Spectacular Jewels.* 1996. Harry N. Abrams, Inc., Publishers. New York. Page 157.

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MANUSCRIPT 1

American Consumerism, Advertising,

and the Social Construction of the "Diamond"

Figure 1: Marilyn Monroe, "Diamonds are a Girl's Best Friend[16]

A kiss on the hand
May be quite continental,
But diamonds are a girl's best friend.

...

Men grow cold
As girls grow old,
And we all lose our charms in the end.

But square-cut or pear-shaped,
These rocks don't lose their shape.
Diamonds are a girl's best friend.

...

Diamonds! Diamonds!
I don't mean rhinestones!
But diamonds are a girl's best friend![17]

[16] Marilyn Monroe. "Diamonds are a Girl's Best Friend." http://www.vintageadbrowser.com/jewelry

[17] Lyrics to "Diamonds Are a Girl's Best Friend" Song originally written by Jule Styne and Leo Robin in the Broadway musical *Gentlemen Prefer Blondes* – 1949 (based on a novel by Anita Loos) Made famous by Marilyn Monroe in the 1953 film of *Gentlemen Prefer Blondes.*

Dressed in a pink, satin, floor-length gown with an exaggerated pink bow on the back, wearing matching pink gloves, and draped in diamonds as she elegantly crossed the screen, Marilyn Monroe put a face to the iconic saying "diamonds are a girl's best friend" in the 1953 movie *Gentlemen Prefer Blondes*. This iconic cinematic moment, as Marilyn crooned the title song and waltzed around, enticing the audience and flaunting her opulent diamonds, also became a quintessential moment in diamond advertising. The song uses several analogies to illustrate the lavishness of diamonds and their high monetary value, instilling the idea that diamonds are a symbol of love and devotion and ingraining the image that diamonds are forever. Beyond these main themes, this song also celebrates many diamond jewelry companies, citing businesses such as Harry Winston, Tiffany's, and Cartier, names familiar to jewelry enthusiasts even over sixty years later. How did these diamond companies become so recognizable and how did the gifting of diamond jewelry become such a normative modern day practice?

Diamond consumption has a complicated history. Take gifting a diamond engagement ring, for example. According to the American Gem Society, Archduke Maximilian of Austria gave the first diamond engagement ring to his betrothed, Mary of Burgundy, in 1477.[18] During the Renaissance, these rings were greatly decorated with enamel. Over the course of the seventeenth century, focus shifted to the gemstone itself. In the eighteenth century, called the "great age of the diamond," large diamond deposits were discovered all over the world. People have believed for centuries that rings are symbols of eternal love because they have no beginning or end. The addition of the diamond became a universal symbol of the commitment of love and marriage. When diamond rings became more affordable in the early 1900s, they also became, more than ever, an important status symbol intimately connected with the ritual of marriage.

[18] "The History of the Diamond as an Engagement Ring." American Gem Society. 2014. https://www.americangemsociety.org/the-history-of-the-diamond-as-an-engagement-ring

Consumers who aspired to upper class status symbols could now participate in the aristocratic ritual of the diamond ring exchange. The symbolic relationship between diamonds and marriage have solidified diamonds as expressions of devotion, commitment, and true and everlasting love in popular culture.[19]

A unique commodity, diamonds are simultaneously a luxury object and an object of mass consumption.[20] Diamonds carry elements of voluntary and idiosyncratic nature. On their own, diamonds have no use value. Take, for example, the Bentley. This luxury automobile retains relatively high prices, making this product out of reach for the average consumer. Unlike diamonds, the Bentley, while still being a luxury commodity, still has the use value of transportation. The American historical context of gifting diamond jewelry has created obligatory norms, making the diamond unlike any other commodity.[21] How is it that the majority of brides in the United States wear a diamond ring, but diamonds are not devalued as a result? Roland Barthes, author of *The Fashion System*, writes, "The production of meaning is subject to certain constraints; this does not mean that constraints limit meaning, but, on the contrary, constitute it; meaning cannot appear where freedom is absolute or nonexistent: the system of meaning is that of a supervised freedom."[22] The diamond jewelry industry provides such a supervised freedom for the consumer. Diamond jewelry companies, such as De Beers, control

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[19] Becker, Vivenne. "Vivienne Becker On the History of Engagement Rings." De Beers Group. March 3, 2011. http://www.debeers.com/culture/current-news-and-events/296a2364-44d3-4210-9a87-572ae13cc40f/vivienne-becker-on-the-history-of-engagement-rings

[20] Diamonds themselves are unique, but they also belong to a unique class of consumables that includes also furs and other such items. Diamonds are not the only commodity to be simultaneously a symbol of luxury, but also mass consumed.

[21] One other example of a consumer culture that changed is the introduction and acceptance of household appliances. For more information on this topic see *More Work For Mother: The Ironies of Household Technology from the Open Hearth to the Microwave* by Ruth Schwartz Cowan.

[22] Barthes, Roland. *The Fashion System*. 1983. University of California Press. Berkeley, California. Page 161.

the market to enhance the image of diamonds as rare objects. The industry presents the consumer with the illusion of an uncontrollable commodity. Diamond companies are always seeking new ways to create and manipulate the themes and images distilled into the minds of diamond consumers.

I argue that popular ideas about diamonds are ingrained through media systems, especially diamond advertisements. Diamonds have become central to popular culture as a whole through the effective use of mass media and advertising. Diamond jewelry consumption is rooted in the idea of culture as theorists such as Theodor Adorno and others understand it. The social roots of consumption in a capitalist economy constitute culture. For the purposes of this project, I understand "culture" to mean a socially-defined identity and hierarchy, encompassing the monetary and intrinsic relationship between consumers and products. Theodor Adorno, Pierre Bourdieu, Jean Baudrillard, and Thorstein Veblen have all written on this subject. Each author offers a unique interpretation of culture that enriches the discussion on diamonds and diamond jewelry. Through the analysis of trends of consumption across the twentieth and early twenty-first centuries, I reveal further explanations for patterns of consumer behavior. Just as other objects of cultural significance have entered the American home, so too have traditions in the expression of love and devotion. This manuscript addresses the major themes of American consumer choice in consumption of diamond jewelry based on advertising, translation of expertise to the public, and actions encouraged by consumer culture.

The Beginnings of Diamond Culture: A Brief History

In 1867, a young boy names Erasmus Jacobs found a stone near the Orange River in South Africa. After moving through several hands, a mineralogist finally declared this stone a

diamond, weighing in at twenty-one and one quarter carats.[23] Two short years later, in 1869, another diamond weighing in at eighty-three and a half carats, later called the Star of South Africa, came to light.[24] These two major diamond discoveries made South Africa a diamond destination. Initially, diamond diggers stayed close to riverbeds because it was believed that diamonds only existed near water. However, it was quickly discovered that diamond deposits occurred inland as well. One such deposit was located on the farmland of a family named De Beers. In 1871, the De Beers family sold their property and their farm became the site a significant diamond production facility, later named De Beers Mine. Cecil Rhodes established the De Beers Company in 1880. In 1929, Ernest Oppenheimer came to control De Beers and created a diamond dynasty.[25]

During the period from 1920-1940, from the end of the First World War through the Great Depression and the beginning of the Second World War, a very limited number of consumers were able to purchase diamond jewelry. The fluctuating economy of the 1920s and 1930s did not exactly stimulate the diamond jewelry market. However, significant connections were drawn between diamonds and culture during this period. The availability of diamonds increased, and more consumers were inclined to purchase diamond jewelry. When the height of the Great Depression lowered the sales of diamonds, aggressive marketing campaigns began with the aim of stimulating diamond consumption. The De Beers Company, the main owner and operator of the major African diamond mines, began to ramp up marketing strategies designed to

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[23] Oltuski, Alicia. *Precious Objects: A Story of Diamonds, Family, And A Way Of Life.* 2011. Scribner. New York, New York.

[24] For more information on the Star of South Africa, also known as the *Dudley Diamond* see Brian Roberts. *Kimberley: Turbulent City*. 1976. New Africa Books.

[25] Oltuski, Alicia. *Precious Objects: A Story of Diamonds, Family, And A Way Of Life.* 2011. Scribner. New York, New York.

increase the visibility of diamonds as a "luxury" commodity. As the American Gem Society reports, "Within three years, the sales of diamonds had increased by 50 percent."[26] Stimulated by images of celebrities, long before Marilyn Monroe appeared in her pink gown, consumer society began to aspire to owning luxurious diamond jewelry.

Jewelry as High Art: Lessons from Theodor Adorno's *The Culture Industry*

German sociologist and philosopher Theodor Adorno was a founder of the Frankfurt School of Critical Theory. In 1991, a seminal collection of Adorno's essays called *The Culture Industry* was published. These essays elaborate the perspective of immanent critique and showcase observations regarding cultural hierarchy. Adorno argues that the bourgeoisie produces high art because it has the luxury to do so. This high art is valuable because of the time and skill put into producing such pieces, which are high quality and rare as a result. Before diamond jewelry was readily accessible to the general public, physical jewelry was, as it still is in many cases, considered a form of high art. High art has not only monetary value, but also the intrinsic value of rarity and quality.[27]

Adorno criticizes the culture industry because the industry often manipulates consumers through commodities. He explains that the same products are made available to everyone because of the standardization of production. In the process, a great deal of individualization is lost. As he writes, "what parades as progress in the culture industry, as the incessantly new which it offers up, remains the disguise for an eternal sameness; everywhere the changes mask a skeleton which has changed just as little as the profit motive itself since the time it first gained its

[26] "The History of the Diamond as an Engagement Ring." American Gem Society. 2014. https://www.americangemsociety.org/the-history-of-the-diamond-as-an-engagement-ring

[27] Adorno, Theodor. *The Culture Industry.* 1991. Routledge. New York, New York.

predominance over culture."[28] Consumers buy into the illusion of individualization and thus continually return and purchase more items. The diamond jewelry market in particular designs the purchasing experience as an illusion of individualization. Yet unless you are directly purchasing from a personal jewelry designer, a sales clerk at a jewelry store can usually sell the exact same piece of jewelry to customer after customer. Because of the unique experience salesmen tailor to each consumer when purchasing a piece of jewelry, they are more inclined to become repeat customers.

According to Adorno, media systems translate ideas of culture and disseminate them to the consumer. Consumers are constantly bombarded and goaded into buying goods and services. In this sense, the culture industry conditions the population. Adorno makes the analogy that "real life is becoming indistinguishable from the movies. The sound film, far surpassing the theatre of illusion, leaves no room for imagination or reflection on the part of the audience, who are unable to respond within the structure of the film, yet deviate from its precise detail without losing the thread of the story; hence the film forces its victims to equate it directly with reality." [29] Media creates the illusion that life can be similar to an idealistic world—with the purchase of a certain product. Culture in this sense becomes idealized and elevated based on how it is represented in the media. This point brings us back to the song "Diamonds Are A Girl's Best Friend" popularized by Marilyn Monroe. Consumers are drawn into the idealized image that Monroe portrays, including the luxury of diamond jewelry. They become enthralled by the illusion that diamonds will grant them, too, some sort of magical, seductive power, feeding into Adorno's point that consumers cannot separate real life from the movies. This type of magic allows the

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[28] Adorno, *The Culture Industry*, 1991. Routledge. New York, New York. Page 100.

[29] Adorno, Theodor. *The Culture Industry.* 1991. Routledge. New York, New York.

diamond to take on meaning through cultural imagery. Because everyone is a consumer, social hierarchy does not play as much of a role in consumption. As consumers, we place value on the goods purchased. However, if you are on a higher social stratum, you have the ability to purchase some goods, such as diamond jewelry, at a higher frequency than other consumers. You might even have the purchasing power to buy custom jewelry. The transfer of idealistic lifestyles broadly viewed in movies and advertisements solidifies the integration of diamond jewelry into mainstream culture. But how did the consumer culture surrounding diamond jewelry arise? In the next section, I consider how Americans created this culture.

How Americans Created a Desire for Diamonds: Lessons from Pierre Bourdieu

French sociologist and philosopher Pierre Bourdieu published a book called *Distinction: A Social Critique of the Judgement of Taste* in 1984. Bourdieu posits that a person's social class determines their likes and dislikes. Although Bourdieu's book is largely based on specific empirical research, there are many connections to culture. Bourdieu divides culture and cultural ability based on the hierarchy of class. For example, Bourdieu talks about the "petite bourgeois" as the aspirational class because their consumption imitates what the upper class has obtained.[30] This theme of imitation has direct connections to the reinvigoration of diamond consumption after the Great Depression. Consumers considered part of the aspirational class were inundated with images of movie stars dripping with diamond jewelry. One actress who provided this image was Grace Kelly. In the 1955 film *To Catch a Thief*, her character tries to tempt a man she suspects is a jewel thief. Director Alfred Hitchcock lets a shadow cover Grace Kelly's face,

[30] Bourdieu, Pierre. *A Social Critique of the Judgement of Taste*. 1984. Harvard University Press. Cambridge, Massachusetts.

placing further emphasis on her dazzling diamond jewelry.[31] Although that particular scene depicts a greater desire of lust, the diamonds are still a central focus of power throughout the film. In order to imitate these images and feel the power of diamonds, the aspirational class had to purchase diamond jewelry.

Bourdieu argues that a hierarchy of culture creates a hierarchy of consumers. There are secrets that you can use to indicate class to other people. Taste is a marker of class, manners are a means of acquiring culture, and the education system provides cultural capital. Because of this social division, participants in society are not taking part in consumption on their own terms, but instead are consuming based on the limits of their social class. In this case, Bourdieu illustrates a scenario where the objects that one owns are valuable because of the cultural identity of where one fits into the social hierarchy. Diamonds fit into this part of Bourdieu's analysis through the four C's: cut, clarity, carat, and color.[32] According to the economic class they belong to, consumers are limited in the type of diamond they can purchase. A consumer making minimum wage cannot afford the same diamond as an executive. Vicky Paterson, author of *Diamonds*, notes, "Diamonds make the ultimate statement about wealth and status."[33] If you were fortunate enough to be able to afford diamond jewelry during or shortly after the Great Depression, the display of your jewelry meant you were of a higher social status. These themes were integrated into and affected diamond advertisements during the twentieth and early twenty-first centuries.

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[31] Hart, Matthew. *Diamond: A Journey to the Heart of an Obsession*. 2001. Walker & Company. New York. Page 143.

[32] For more information about the origin of the 4Cs visit http://www.4cs.gia.edu/en-us/the-diamond-4-cs.htm

[33] Paterson, Vicky. *Diamonds.* 2005. Firefly Books. London. Page 12.

1947: A Defining Year for Diamond Advertising

Any discussion about diamond advertisements must touch on the De Beers Company's most famous phrase, "A Diamond Is Forever." In 1938, a De Beers representative wrote to N.W. Ayer, an advertising agency in Philadelphia, asking for advice to boost diamond sales in the United States. The popularity of diamond jewelry was in decline due to the Great Depression. Courtney Sullivan, a journalist for the *New York Times*, writes, "N.W. Ayer conducted extensive surveys of consumer attitudes and found that most Americans thought diamonds were a luxury for the ultra-wealthy."[34] The advertising agency set out with the ambitious goal to create a culture where nearly every person feels that they have to purchase a diamond engagement ring in order to get married. Sullivan continues, "Because De Beers controlled the world supply of rough diamonds, antitrust laws prohibited the company from doing business in the United States. The ads could not promote De Beers, or even show pictures of jewelry, so the agency commissioned bold paintings by artists like Andre Derain and purchased pre-existing works by Dali and Picasso."[35] Instead of advertising solely for De Beers, N.W. Ayer instead went about creating a consumer culture by manipulating emotions connected with love and devotion in order to increase the sales of diamond jewelry. In one memo sent by N.W. Ayer to De Beers, the agency claims, "Sentiment is essential to your advertising, as it is to your product, for the emotional connotation of the diamond is one competitive advantage which no other product can claim or dispute."[36] In many ways these claims are true; buying a toaster does not stimulate the same emotional response as buying diamond jewelry. That is not to say there are not other

[34] Sullivan, Courtney. "How Diamonds Became Forever." The New York Times. March 3, 2013. http://www.nytimes.com/2013/05/05/fashion/weddings/how-americans-learned-to-love-diamonds.html?_r=0

[35] Sullivan, Courtney. "How Diamonds Became Forever." The New York Times. March 3, 2013. http://www.nytimes.com/2013/05/05/fashion/weddings/how-americans-learned-to-love-diamonds.html?_r=0

[36] Sullivan, Courtney. "How Diamonds Became Forever." The New York Times. March 3, 2013. http://www.nytimes.com/2013/05/05/fashion/weddings/how-americans-learned-to-love-diamonds.html?_r=0

products that carry deep and powerful emotional connotations. Purchasing a crib for a new baby evokes an emotional response from the consumer because they envision how their child will grow up with this crib, for example. What makes buying diamond jewelry different from purchasing a crib is that the crib is necessarily a temporary object, while the diamond is an heirloom. Diamond jewelry will not decay rapidly and can be passed down for generations, creating not only a temporary history with the ones that experience the diamond jewelry in the present, but also a vision for the future.

One of the advertising agency employees charged with creating this cultural shift was Frances Gerety. Ever since that eventful morning meeting in 1947 when Gerety proposed the slogan, "A Diamond Is Forever" has appeared in every De Beers engagement advertisement. Gerety's phrase emphasizes both eternity and sentiment. If you buy your loved one a diamond engagement ring, your love will never end. On the other hand, this simple slogan also insinuates a warning that if you do *not* give your betrothed a diamond engagement ring, there may not be a forever. In 1951, eight out of ten American brides had diamond engagement rings, a statistic that has stayed relatively consistent ever since.[37] *Advertising Age* even called Gerety's phrase the "slogan of the century" just before Gerety died at the age of 83 in 1999.[38]

This slogan emphasizes the imperative for consuming diamond jewelry. The phrase "A Diamond is Forever" feeds into Adorno's analysis on how consumers receive messages through the media, and Bordieu's point that the aspirational class tries to emulate celebrities. In fact, in the 1950s, N.W. Ayer began lending diamond jewelry to celebrities for various high-visibility

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[37] Sullivan, Courtney. "Why 'A Diamond Is Forever' Has Lasted So Long." The Washington Post. February 7, 2014. http://www.washingtonpost.com/opinions/why-a-diamond-is-forever-has-lasted-so-long/2014/02/07/f6adf3f4-8eae-11e3-84e1-27626c5ef5fb_story.html

[38] Sullivan, Courtney. "How Diamonds Became Forever." The New York Times. March 3, 2013. http://www.nytimes.com/2013/05/05/fashion/weddings/how-americans-learned-to-love-diamonds.html?_r=0

events, such as the Academy Awards and the Kentucky Derby.[39] Consumers already exposed to advertising images in magazines, newspapers, and on television were bombarded with images of celebrities as living advertisements. In its 1951 annual report, N.W. Ayer explained, "for a number of years we have found evidence that the diamond engagement ring tradition is consistently growing stronger. Jewelers now tell us 'a girl is not engaged unless she has a diamond engagement ring.'"[40] Diamond jewelry sales skyrocketed and the consumer culture accepted and perpetuated the necessity for diamond jewelry. In order to truly display your love to another, you had to purchase diamond jewelry. As one *National Geographic* article declares, "De Beers may be single-handedly responsible for prompting, in less than a century, American, European, Japanese, and, increasingly Chinese women to expect the 'traditional' gift of a diamond engagement ring as a matter of right."[41] The continued success of the "A Diamond is Forever" campaign exemplifies the De Beers Company's creation of a cultural norm and an expectation for diamond jewelry consumers.

"A Diamond is Forever" highlights sentiment about relationships, a now-familiar but then relatively new advertising tactic. Consumers no longer yearn for the status symbol of emulating celebrities by giving your betrothed a diamond engagement ring, but are more enticed by the fact that love will be eternal only if one gives and wears a diamond ring. This phrase set a future standard for diamond companies to expand on themes about marriage. According to *The Book of Common Prayer*, when a couple holds hands to exchange vows during a marriage ceremony, they usually say "I take you, N., to be my [wife/husband], to have and to hold from this day

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[39] Sullivan, Courtney. "How Diamonds Became Forever." The New York Times. March 3, 2013. http://www.nytimes.com/2013/05/05/fashion/weddings/how-americans-learned-to-love-diamonds.html?_r=0

[40] Sullivan, Courtney. "How Diamonds Became Forever." The New York Times. March 3, 2013. http://www.nytimes.com/2013/05/05/fashion/weddings/how-americans-learned-to-love-diamonds.html?_r=0

[41] Cockburn, Andrew. "Diamonds: The Real Story." *National Geographic. March 2002. Vol. 201. No. 3.*

forward, for better for worse, for richer, for poorer, in sickness and in health, to love and to cherish, until we are parted by death. This is my solemn vow."[42] Diamond advertisers shied away from themes of sickness and poverty as material for advertisements, but the other vows of marriage, including themes of love, devotion, dedication, and eternity, would appear in decades of advertisements. The following section offers an analysis of a few diamond advertisements that manipulate themes of marriage vows and applies them to diamond jewelry so as to infuse them with the identity of the diamond.

Figure 2: Keepsake Diamond Rings, "Darling, it's a Keepsake!"[43]

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[42] The Book of Common Prayer is used in many different churches. The one I use here is according to The Episcopal Church. Although the wording might vary slightly amongst different denominations, the same symbols and themes are present in the marriage vows. See *The Book of Common Prayer.* According to the use of The Episcopal Church. 1990. Oxford University Press. New York. Page 427.

[43] Keepsake Diamond Rings, "Darling, it's a Keepsake!" http://www.vintageadbrowser.com/jewelry-and-watches-ads-1940s/13

Figure 2 is a 1948 advertisement for Keepsake Diamond Rings. There are several important elements to highlight about this advertisement. Notice the distinct sections of the overall ad. There is the portrait of the happy couple, the trademark symbol of Keepsake Diamond Rings, the visual pictures of the merchandise, and finally the description of why Keepsake Diamond Rings are intrinsically valuable to the consumer. This particular company offers soothing words to create a trusting relationship with the consumer. "Darling, it's a Keepsake!" is another way of saying "I love you so much that I went to this trusted company to buy you something that will last our entire lives," therefore instilling images of long-lasting love and devotion into the physical commodity. The text beneath the happy couple reads,

> There are many ways to show your love in the things you do and the things you say. But none is more lasting, or brings more joy, than love's most measured symbol…a genuine registered Keepsake Diamond Ring. Only one diamond in hundreds meets the exacting standards of excellence in color, cut and clarity which distinguish every Keepsake Diamond Ring. Identify Keepsake by the name in the ring, and the words "guaranteed registered perfect gem" on the tag…as illustrated, let comparison prove that a Keepsake gives you higher quality and greater value than an ordinary ring of the same price. Better jewelers are Keepsake Jewelers. Prices from $100 to $5,000.[44]

This perpetuation of status directly links to Bourdieu's argument of emulating the rich and famous. In this case, the happy couple represent how everyday people can be like the rich and famous by purchasing diamond jewelry. However, the huge price range also makes it clear that distinction can be maintained according to social class.

[44] See Figure 2.

Figure 3: De Beers. 1952. "A Diamond is Forever."[45]

Figure 4: De Beers. 1955. "A Diamond is Forever."[46]

[45] De Beers. 1952. "A Diamond is Forever." http://fsommers.com/diamonds-may-be-forever-oppenheimers-arent/

The two De Beers ads above came out in 1952 and 1955, respectively. Both use the famous phrase "A Diamond Is Forever." Each white female character is formally dressed, wearing makeup, and has their hair neatly designed. Both ads have some depiction of nature in the background as well. The 1952 ad (Figure 3) illustrates clouds in the background while the 1955 ad (Figure 4) has an eclipse and mountains in the background. Two elements make these ads distinct: one illustrates night time while the other shows day time, and one woman is holding white lily flowers while the other is holding a red rose. Both types of flowers aim to symbolize the glamour and beauty of a diamond. Flowers, like diamonds, are a source of natural beauty. These ads conflate the traditional but transitory beauty of flowers with the perceived traditional and actual greater lifespan of diamonds. The use of nature in these images creates scenes that consumers cannot separate from real life, supporting Adorno's analysis.

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[46] De Beers. 1955. "A Diamond is Forever." http://www.gemnation.com/base?processor=getPage&pageName=forever_diamonds_2

Figure 5: Cartier diamond jewelry ad from 1956[47]

Figure 5, a 1956 diamond jewelry advertisement from Cartier, stands out for having no verbal description of the merchandise. The woman pictured is bedecked with diamond jewelry, wearing full makeup and highly-styled hair but not much else. Her pose not only highlights the glimmering jewelry, but also suggests something alluring and secretive. Towards the end of the 1950s, diamond advertisements shifted from written stories to visual photography of the merchandise. Eliminating text from advertisements further invites emulation of the rich and famous, an idea posed by Bourdieu. The idea here is that there is no need for text to evoke the emotional connection and response to the advertisement. The artistic interpretation lends itself to themes previously established about imitating the life of the celebrity.

[47] Cartier diamond jewelry ad from 1956. http://www.vintageadbrowser.com/clothes-ads-1950s/50

Jean Baudrillard: Sign Value

The advertisements presented thus far have shown a shift from descriptive detail to artistic symbolism to greater focus on the diamond jewelry itself. All of these images represent a connection to diamonds through words, juxtaposed images, or portraits of diamond jewelry. One theorist who describes these kinds of connections is French theorist Jean Baudrillard. In his 1972 book *For a Critique of the Political Economy of the Sign*, Baudrillard discusses the intricacies and differences between the act of consumerism and how products are consumed. While Baudrillard politically sympathized with Marxism, which focuses a great deal on production, Baudrillard emphasized consumption. He highlighted the implications of imbuing items with cultural value.

His book centers on the idea that objects and class are directly related in such a way that the visibility or display of commodities determines the perception of class. Baudrillard writes that "the fundamental conceptual hypothesis for a sociological analysis of 'consumption' is *not* use value, the relations to needs, but *symbolic exchange* value, the value of social presentation, of rivalry and, at the limit, of class discriminants."[48] Baudrillard introduces the term "sign value," which refers to meaning based on the rarity and prestige of one's displayed commodities. Baudrillard emphasizes that the higher one's social status, the greater the value in displaying expensive commodities. Sign value, however, depends on the quality and rarity of an item, thus making social prestige secondary to the object itself.

Sign value can be demonstrated through dimensions of diamond ratings. The sign value of a piece of diamond jewelry depends on the source of the materials and the four C's. For example, the higher number of carats in the stone, the rarer and more valuable that particular

[48] Baudrillard, Jean. *For a Critique of the Political Economy of the Sign.* 1972. Telos. New York, New York. Pages 30-31.

piece of jewelry is. Every diamond company presents a story to justify the quality and rarity of their products, feeding the consumer a story about sign value through advertisements. Once "A Diamond Is Forever" became part of mainstream American culture in the early 1950s, a great deal of sign value accompanied the display of a diamond engagement ring. This trend of displaying sign value in jewelry continues today. The following section demonstrates how diamond advertisements stopped using portraiture and began incorporating photography and other digital techniques in an effort to enhance the sign value of diamonds.

Figure 6: 1966 De Beers diamond jewelry advertisement[49]

[49] 1966 De Beers diamond jewelry advertisement. http://www.vintageadbrowser.com/jewelry-and-watches-ads-1960s/8

The 1966 De Beers diamond jewelry advertisement above (Figure 6) introduced a new perspective in terms of positioning and content. The photograph of the happy couple does not include any diamond jewelry. The jewelry is placed on its own in a different part of the page. Instead of depicting a story line in the text, there are words emphasizing diamonds as an expression of love. One last visual effect is the fact that all three of these elements are located in distinctly separate spaces. If one element fails to entice the consumer, there are two other areas that try to accomplish the same goal. The fact that the diamond jewelry now stands alone, as opposed to being pictured on the human body, demonstrates the emergence of sign value. It shows that by this time, these valuable items can be showcased on their own.

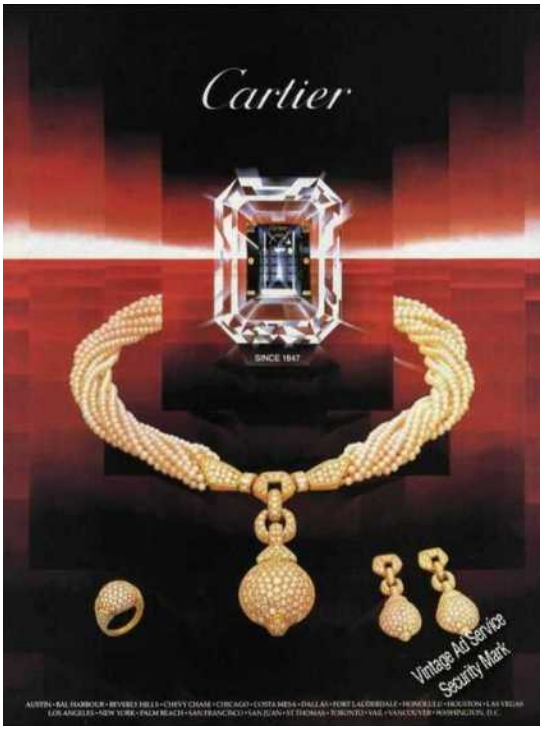

Figure 7: 1986 Cartier diamond jewelry advertisement.[50]

[50] 1986 Cartier diamond jewelry advertisement. http://www.vintagepaperads.com/error.asp?error=102&catalogid=39788&prdinc=1

This point is brought home in a 1986 diamond jewelry advertisement from Cartier (Figure 7) that places sole emphasis on the jewelry itself, completely separating the diamond from the jewelry and the jewelry from the wearer. Enhanced visual effects highlight the reflective properties of the diamond, which attract the consumer. Likewise, the color grading can be interpreted as either a sunrise or sunset. At any point in the day you could feel glamorous with these products of great sign value. The grading may also be a representation of fire, one of the purifying agents of diamonds. In order for diamonds to appear clear and earn one of the highest grades on the four C's scale, it must pass through the earth's crust at heightened levels of temperature and pressure. The coloring represents temperature while the figure of the grading symbolizes pressure. These properties greatly increase the sign value of the object and give the consumer the illusion that the product is unique, rare, and precious.

Conspicuous Consumption

Do consumers really need to purchase diamonds? Are diamonds intrinsically worthless? Baudrillard's theory of sign value does not fully explain why consumers purchase different commodities. However, Thorstein Veblen offered an analysis that deepened the investigation of why consumers purchase various commodities. Veblen was an American economist and sociologist. In 1899, he published a book called *The Theory of the Leisure Class* in which he described a class system based on economic success. The premise behind this division is based on the "barbarian ideal of conquest."[51] Once in control, conquerors displayed their powers of domination and exploitation and delegated labor-intensive positions to those ranked beneath them. These particular conquerors were the first leisure class. The leisure class has the luxury to dictate jobs to those below them. This division of labor creates a social hierarchy within culture.

[51] Veblen, Thorstein. *The Theory of the Leisure Class*. 2007. Oxford University Press. New York.

Veblen uses economics as a tool to determine what culture is, based on the evolution of the division of labor.[52]

Veblen coined the now famous term "conspicuous consumption."[53] To further display social hierarchy, the higher classes spend money to acquire expensive, rare, and socially visible goods, which increase their social status. Items thus become valuable to culture because they increase the level of social status. As an example, Veblen introduced the differences between flatware. Although all flatware ultimately equally gives the same outcome of providing tools to eat with, flatware made of silver increased one's position in the social hierarchy. Silver is a material ranked higher than other metals because of its cost and rarity, therefore limiting the ability of many people to have silver in the home.

Applying Veblen's description of conspicuous consumption to diamonds, it is clear that different materials used for jewelry increase the value placed on them. As social status increases, value in goods also increases. In terms of advertisements, consumers are drawn into the idea that they have to find something "rare" and "precious" in order to show everlasting love. The emphasis that diamond advertisements place on love and devotion in the form of diamond jewelry increases the drive toward conspicuous consumption. In reality, it is not the jewelry that says "I love you," but rather the gesture from the person giving the diamonds. The diamond is a way to display a couple's love to society. Early advertisements stressed this point. After over forty years of diamond jewelry advertisements emphasizing expressions of love and devotion, however, newer tactics had to be implemented to continue to make diamonds an important indicator of conspicuous consumption.

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[52] Veblen, Thorstein. *The Theory of the Leisure Class*. 2007. Oxford University Press. New York.

[53] Veblen, Thorstein. *The Theory of the Leisure Class*. 2007. Oxford University Press. New York.

Figure 8: 1992 diamond jewelry advertisement from De Beers.[54]

Technological Advertisements

Figure 8, a 1992 diamond jewelry advertisement from De Beers, shows a group of colored pencils wrapped in diamond jewelry beneath the simple phrase "draw her closer."[55] Instead of depicting a happy couple, a woman draped in diamond jewelry, or just the product itself, this particular ad demonstrates the power of words by using metaphors. Although the colored pencils physically draw on a page, the phrase "draw her closer" in this instance refers to bringing a loved one closer, which can be interpreted as either physical or emotional closeness, or both. Over the course of the 1990s and early 2000s, diamond advertisers used atypical

[54] 1992 diamond jewelry advertisement from De Beers. https://www.pinterest.com/source/vintageadbrowser.com

[55] See Figure 8.

catchphrases juxtaposed with familiar visual effects to convince the consumer that diamond jewelry was still the ultimate representation of everlasting love.

This advertisement is an example of conspicuous consumption because it suggests that the only outward sign of love and romance is diamond jewelry, influencing consumer behavior in favor of conspicuous diamond consumption. The last sentence of the advertisement reads, "This Christmas, give her the gift of love."[56] This phrase directs the act of purchasing diamond jewelry to men, even though women typically wear the diamond jewelry in ads. Both sexes contribute to the conspicuous consumption of diamonds. For men, to show your significant other that you love her, you need to buy diamonds. For women, if your significant other truly loves you, he will give you diamonds. For both sides, it is the conspicuous consumption and display of this commodity that proves their cultural capital. The consumers have been given these ideas through diamond advertisements. While the desirability of diamond jewelry as a luxury commodity and symbol of love was the focus of pre-1990s advertisements, other factors not included in such ads, such as humanitarian and environmental concerns about the product, began to take on more significance towards the end of the twentieth century.

Doctor Jekyll and Mr. Hyde: Diamond Jewelry and Blood Diamonds

Diamond advertisements, symbolism, and tradition depend on diamonds living up to the standards of being "rare," "pure," "precious," and "everlasting." These positive images contribute to the success of the commodity, as well as the reputation of the product. What was omitted in the early social construction of this product is how diamonds are sourced and traded, knowledge that has a relatively recent social history. In the early 1990s, a different side of this commodity was publicized for the first time. "Blood diamonds" are thus named because they

[56] See Figure 8.

illicitly finance civil wars. Blood diamonds typically originate in Africa. There are countless examples of blood diamond mines, one being the Marange site in eastern Zimbabwe. According to *The Economist*, ever since the Marange site was discovered in 2006, "reports of killings, torture, corruption, bribery, looting, smuggling and political skullduggery have been rife. The stakes are enormous."[57] Though these fields stopped production to prevent a humanitarian crisis, in 2011 production resumed in order to meet the consumer demand for diamonds.

The movie *Blood Diamond* (2006), starring Leonardo DiCaprio, is a visual account of blood diamonds in parts of Africa. This movie helped educate the public and garner attention about blood diamonds. An article from the *Washington Post* illustrates that just because diamonds can be used to illegally finance civil wars, that does not mean they will not also finance a different kind of diamond war. In Angola, money generated from the trade of blood diamonds financed a 27-year civil war that ended in 2002. However, in 2006, private security companies acting on behalf of large diamond corporations were "brutalizing local populations in the name of fighting illegal artisanal diamond mining, known as garimpo."[58] The article reads, "In the Lundas, the diamond-rich provinces of northeast Angola, even simple acts such as farming, fishing or bathing in a river can result in cruel punishment by the private security companies."[59] This is because the land has been redefined as "reserved" areas owned by the corporations. There are thousands of documented cases of human rights violations in these diamond "reserved" areas. This is just one more case demonstrating how demand for diamonds leads to social injustice.

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[57] Harare. "Forever Dirty." *The Economist. N.p., 30 June 2011. Web. 16 Apr. 2012. http://www.economist.com/node/18898238*

[58] Marques, Rafael. "A New Diamond War." *The Washington Post*. N.p., Nov. 2006. Web. 7 Apr. 2012.http://www.washingtonpost.com/wpdyn/content/article/2006/11/05/AR2006110500775.html

[59] Marques, Rafael. "A New Diamond War." *The Washington Post*. N.p., Nov. 2006. Web. 7 Apr. 2012.http://www.washingtonpost.com/wpdyn/content/article/2006/11/05/AR2006110500775.html

Angola is one of several major conflict diamond areas. Blaine Harden, a *New York Times* journalist and author of "Africa's Gems: Warfare's Best Friend," writes that "where governments are corrupt, rebels are pitiless and borders are porous, as in Angola, Congo or Sierra Leone, the glittering stones have become agents of slave labor, murder, dismemberment, mass homelessness and wholesale economic collapse."[60] Before blood diamonds, Angola experienced years of slave labor under Portuguese colonial rule. In fact, Angola was a major slave port. Jeremy Ball, author of the article "Colonial Labor in Twentieth-Century Angola," writes, "Labor has been central to Angolan history since at least the fifteenth century when Portuguese traders brought the first slaves from the King of Kongo. A century later the Portuguese founded the colony of Angola in order to trade slaves."[61] Slavery continued until the 1910 revolution that overthrew the Portuguese monarchy. Two key factors contributed to changes in slave policy after the revolution. The first was global influences about what constituted fair colonialism, and the second was a slave cocoa boycott. Ball writes, "The boycott began after William Cadbury, the owner of Cadbury Chocolate, concluded in 1909 that the cocoa plantation owners of the island and the Government of Portugal had not undertaken sufficient reforms to eradicate slavery in the islands."[62] Even after talks of reform in the early part of the twentieth century, it was not until the 1960s that the Portuguese finally reformed laws about forced labor.

In 1975, Angola obtained its independence from the Portuguese. As Harden writes, "several hundred thousand Portuguese residents, virtually the entire educated population,

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[60] Harden, Blaine. "Africa's Gems: Warfare's Best Friend." *The New York Times*. April 6, 2000. http://partners.nytimes.com/library/world/africa/040600africa-diamonds-article1.html

[61] Ball, Jeremy. "Colonial Labor in Twentieth-Century Angola." *History Compass*. 3 (2005) AF 168, Pg 1.

[62] Ball, Jeremy. "Colonial Labor in Twentieth-Century Angola." *History Compass*. 3 (2005) AF 168, Pg 3.

abandoned the country. Some took even their doorknobs with them. They left behind a place where almost no Angolans had any training in statecraft, business or agriculture."[63] This uneasy political situation created an environment where rebels ruled. One rebel group called Unita controlled various diamond mines under the leadership of Jonas Savimbi. Diamonds mined from these productive sites were used as a form of currency for guns and various other trades. The Catoca mine operated under the control of the Unita rebel group until the Angolan military seized control in 1996.[64] However, because Unita no longer controlled the mine, they began terrorizing the local area with hit-and-run guerilla raids. Eventually, the United Nations collected enough evidence against Savimbi to impose an embargo on Unita.[65]

Angola's long and complicated history with colonial slave labor created negative environments for diamond mining, exacerbating some of the major issues surrounding blood diamonds. These stones that carry so many images of love and devotion also hide a deep history of colonial torment. In many ways, Veblen's conspicuous consumption theory sheds light on why blood diamonds were not immediately politicized. Conspicuous consumption creates desire, rather than revolt against class systems. Through the visibility of diamond jewelry, conspicuous consumption supports domestic class structure. On the other hand, social erasure and the creation of importance for diamond jewelry erases colonial history, hiding the system of relationships between class structure and politics. While there was no cultural understanding of blood diamonds before they were publicized, diamonds have always been blood diamonds. The multiple facets of diamond history have created a complicated image for the consumer in the

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[63] Harden, Blaine. "Africa's Gems: Warfare's Best Friend." *The New York Times*. April 6, 2000. http://partners.nytimes.com/library/world/africa/040600africa-diamonds-article1.html

[64] Harden, Blaine. "Africa's Gems: Warfare's Best Friend." *The New York Times*. April 6, 2000. http://partners.nytimes.com/library/world/africa/040600africa-diamonds-article1.html

[65] Harden, Blaine. "Africa's Gems: Warfare's Best Friend." *The New York Times*. April 6, 2000. http://partners.nytimes.com/library/world/africa/040600africa-diamonds-article1.html

aftermath of the publicity that blood diamonds received in the 1990s. What most consumers do not realize is that blood diamonds, and issues around diamond mining, are not exclusive to Africa.

A Case Study of the Attawapiskat First Nation

Since there are a multitude of issues surrounding diamonds, it is important to realize that blood diamonds and "conflict free" diamonds do not come solely from Africa. A case study from Canada proves how multifaceted diamond conflicts can be. Canadian diamond deposits were not found until 1998. Most of the mines are located in the Northwest Territories.[66] However, one mine, called Victor Mine, was discovered in Ontario in 2006. The mine sits on native land roughly ninety kilometers from the current settlement of the Attawapiskat First Nation.[67] This land has been a gathering site for a variety of First Nations for centuries, mostly accessed during the spring and summer months for fishing. Attawapiskat entered into an official treaty with Canada and the Province of Ontario in 1930 under Treaty 9 adhesion, also known as the James Bay Treaty. This treaty covers economic development and property issues. In addition, the treaty also encompasses cultural, social, and governmental institutions for First Nations. Treaty 9 was originally signed in 1905, but did not include land protection for the geographical region of the

[66] Northan, Jackie. "Mining for Diamonds in the Canadian Rough." NPR. 11 Dec. 2008. Web. http://www.npr.org/templates/story/story.php?storyId=96564952

[67] The politics of this story are confusing and unsettled. There is an element of opaqueness to this situation that makes it difficult to follow. I have tried to highlight the different actors to the best of my ability. The purpose in this case study is to show an example of blood diamonds that do not originate in Africa. The reason for selecting this complicated case study is because it is in Canada, a bordering country to the United States.

Attawapiskat First Nation until 1930.[68] Local leadership consists of an elected chief, deputy chief, and twelve councilors who serve three-year terms.

De Beers purchased the native land for an undisclosed amount when diamonds were discovered at Victor Mine. Before production, De Beers negotiated impact benefit agreements (IBAs) with four local communities, including the Attawapiskat First Nation. While the details of the IBAs are confidential, De Beers has publicly stated that

> since the start of construction, over $360 million in contracts have been awarded to solely owned or joint venture companies run by Attawapiskat. In 2012, contracts awarded to the community were over $40 million. To build capacity within the community, two training facilities have been constructed in the community at a combined cost of almost $2 million. We currently employ over 60 full-time employees from the community, and over 100 from other First Nations.[69]

In addition to the employment opportunities, infrastructure, and money, De Beers operates a 250-kilometer ice road from the southern tip of the James Bay in a town called Moosonee all the way to Attawapiskat. This road provides car access to communities that are otherwise only accessible by planes. Without the ice road, there are no other means to deliver fuel and heavy equipment to Victor Mine. De Beers currently mines that land and deposits money to the tribe through a trust fund, which is not mandated by the Canadian law. The exact figures are not available to the public. The Attawapiskat First Nation does not receive royalties from projects on their native land. Victor Mine extracts over 600,000 carats of diamonds per year.[70]

Diamonds are extracted from Victor Mine via open pit diamond mining operations. Open pit diamond mining involves the exposure and extraction of Kimberlite pipes. Kimberlite pipes

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[68] Witt, Norbert W. 1998. "Opening the Healing Path: The Cultural Basis for a Solvent Abusers Treatment Program for the Attawapiskat First Nation" (PhD dissertation). Toronto: Ontario Institute for Studies in Education of the University of Toronto.

[69] Kay, Jonathan. "Attawapiskat protestors hurting First Nations with lawless blockade of De Beers mine." *National Post. 21. Feb. 2013. Web. http://news.nationalpost.com/full-comment/jonathan-kay-natives-hurting-themselves-with-lawless-blockade-of-de-beers-mine*

[70] Arsenault, Chris. "Canada mining boom leaves natives in the cold." *Aljazeera. N.p., 11 Feb. 2012. Web. 25 Mar. 2012. http://www.aljazeera.com/indepth/features/2012/02/201221017545565952.html*

are volcanic pipes that contain diamonds.[71] To expose these formations requires capital-intensive machinery that extract diamonds directly from the pipes. This method of diamond mining is by far the most environmentally damaging, because it creates large quantities of surplus waste that leaches into the subsoil. It also produces waste rock, sand, soil, and processed Kimberlite because the pipes are situated underneath the soil overburden. The machinery involved creates excessive carbon emissions, affecting the air quality for all human beings, wildlife, and vegetation and contributing to climate disruption.[72]

The environmental impacts of open pit diamond mining at Victor Mine have already affected an area more than four times the size of Toronto. Over 2.5 million tons of rock are processed each year. Over the life of the mine, 28.7 million tons of rock will be removed from the mine site. Victor Mine also sits on top of a nationally significant geological karst.[73] The waste rock has the potential to leach chemicals into the surrounding water. Approximately 40 Olympic-sized swimming pools of salty water are pumped out of the mine and into the largely fresh water Attawapiskat River every day. There is concern for the increasing salinity of the river because of the effect on fish populations, including sturgeon, brook trout, walleye, and whitefish that are sensitive to changes in water flow and water quality.[74] The water table affects up to 260,000 hectares surrounding the mine, changing the vegetation of the area and reducing the abundance of lichens, a food resource for caribou. Caribou are extremely sensitive to industrial

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[71] The first source of these Kimberlite pipes was in Kimberly, South Africa, which was the inspiration for the name "Kimberlite."

[72] "Diamond Mining and the Environment Fact Sheet." *World Diamond Council. N.p., 2012. Web. 16 Apr. 2012. http://www.diamondfacts.org/pdfs/media/media_resources/fact_sheets/ Diamond_Mining_Environment_Fact_Sheet.pdf*

[73] Wildlands League. "What is the Victor Diamond Project?." *Wildlands League.* 2013. http://www.wildlandsleague.org/display.aspx?pid=231&cid=233

[74] Wildlands League. "What is the Victor Diamond Project?." *Wildlands League.* 2013. http://www.wildlandsleague.org/display.aspx?pid=231&cid=233

activity. Caribou are also a threatened species. Approximately 60 trucks carrying supplies to and from the mine every day, combined with other industrial activity, negatively impact wildlife behavior.[75]

As of November 2011, the chief of the Attawapiskat tribe declared a state of emergency, demanding more money so that the tribe does not suffer from poverty-like conditions. Many people are looking to the mining companies that are reaping profit from their native land to financially support the tribe. The state of emergency is mainly due to a housing shortage. Over 90 residents (out of 1,800 people) have moved into two portable housing units that only contain two washrooms. Despite nineteenth century missionaries' efforts to "civilize" the Attawapiskat, the tribe only received water and sewage facilities in the 1990s. Canadian winters can get as cold as -40 degrees Celsius, and portable housing units simply cannot protect the residents from extreme weather.[76]

This conflict is rapidly turning into a heated debate, mainly between the Canadian government and the Attawapiskat. The tribe blames the government for chronic underfunding that would have provided housing years ago, and the government blames the tribe for poor financial management. The Attawapiskat community had been under co-management with Ottawa for over 10 years before the housing crisis was publically declared, raising greater concern about management of the area. If the community had been co-managed with the Canadian government, why did it take so long to "discover" this housing crisis? Stephen Harper, former Prime Minister of Canada, reported that the Attawapiskat has received over $90 million

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[75] Wildlands League. "What is the Victor Diamond Project?." *Wildlands League.* 2013. <http://www.wildlandsleague.org/display.aspx?pid=231&cid=233>

[76] Arsenault, Chris. "Canada mining boom leaves natives in the cold." *Aljazeera. N.p., 11 Feb. 2012. Web. 25 Mar. 2012. <http://www.aljazeera.com/indepth/features/2012/02/201221017545565952.html>.*

since 2006.[77] Though the situation between the Attawapiskat and the Canadian government is unsettled, the Aboriginal Affairs Minister, John Duncan, declared that the government is voting for third party management. Third party management would ensure that finances for the tribe are managed properly.[78] In 2012, the Federal Court reported in a judicial review that it was "unreasonable" for the Canadian government to appoint third party management of the Attawapiskat. Justice Michael Phelan wrote, "This judicial review confirms, if such confirmation were needed, that decisions made in the glare of publicity and amidst politically charged debate do not always lead to a reasonable resolution of the relevant issue."[79] Jacques Marion, the appointed third party manager for the Attawapiskat, was relieved of all duties on April 19, 2012. Duncan wrote, "in recognition of the accomplishments that have been achieved in substantially addressing the urgent health and safety needs of affected Attawapiskat residents through the third-party manager, we have notified the Attawapiskat First Nation of the department's intent to move the First Nation out of the third-party funding agreement management and back to co-management."[80] Since 2012, there has been no third party management of the Attawapiskat, and Clayton Kennedy co-manages the Attawapiskat finances.

How is De Beers involved with this debate? Conservatives blame poverty in indigenous communities on bad governance, rather than a royalties issue. Under the Indian Act of 1876, the Canadian government is responsible for providing services on native reserves, including that of

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[77] "Attawapiskat Crisis Sparks Political Blame Game." *CBC News. N.p., 2011. Web.* http://www.cbc.ca/news/canada/story/2011/12/01/attawapiskat-thursday.html

[78] "Attawapiskat Crisis Sparks Political Blame Game." *CBC News. N.p., 2011. Web.* http://www.cbc.ca/news/canada/story/2011/12/01/attawapiskat-thursday.html

[79] Fitzpatrick, Meagan. "Attawapiskat handed victory by federal court." *CBC News. 01 Aug. 2012. Web.* *http://www.cbc.ca/news/politics/attawapiskat-handed-victory-by-federal-court-1.1149282*

[80] CBC. "Attawapiskat's Third-Party Manager Withdrawn." *Huffington Post. 04 April 2012. Web.* *http://www.huffingtonpost.ca/2012/04/05/attawapiskat-third-party-managment_n_1407187.html*

the Attawapiskat tribe. Essentially, the Attawapiskat Nation is trying to secure access to royalties from De Beers to assist with the state of emergency. Although great progress was made with the short-lived third party manager, health and safety concerns still exist for the Attawapiskat. Other tribes, such as the James Bay Cree and Inuit of Northern Quebec, have secured access to royalties from hydroelectric projects on their native territories. Even though hydroelectric projects are entirely different from diamond mining, the premise is still the same: a natural resource is being used for profit from native land. Although De Beers has signed an IBA, this does not solve the issue of royalties, nor does it help with the housing crisis. The IBA provides for training and job opportunities. Though this sounds like a reasonable agreement, the money that the Attawapiskat would be making by working with De Beers still will not allow them to build their own houses—they cannot get a mortgage on a reserve because the land is supposed to be managed by the government. The only aid that has been provided to the Attawapiskat is through the Red Cross. [81]

In 2013, a group of locals from Attawapiskat began staging protests and blocking the vital ice road. Without proper access to this ice road, production at the mine could be delayed by a year. According to the Aboriginal Peoples Television Network, the Attawapiskat are upset with De Beers for "a number of grievances ranging from personal, past employment and pay issues with De Beers, to the lack of housing in the community, the need for compensation over the loss of traditional traplines and burial sites along with overarching environmental issues."[82] This protest raises issues about the IBA and the relationship between De Beers and the Attawapiskat.

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[81] Angus, Charles. "What if They Declared an Emergency and No One Came?" *Huffington Post*. N.p., Jan. 2012. Web. 6 Apr. 2012. http://www.huffingtonpost.ca/charlie-angus/attawapiskat-emergency_b_1104370.html#s487209

[82] Kay, Jonathan. "Attawapiskat protestors hurting First Nations with lawless blockade of De Beers mine." *National Post*. *21. Feb. 2013. Web. http://news.nationalpost.com/full-comment/jonathan-kay-natives-hurting-themselves-with-lawless-blockade-of-de-beers-mine*

Although admittedly there are a number of leadership and financial issues with the Attawapiskat First Nation, if De Beers is profiting from the native land, should they not have a greater civic duty to assist with more than just money and jobs? The Attawapiskat First Nation is relatively small, so there is plenty of opportunity for philanthropy, but that does not seem to be the motive for De Beers. Reporter for the *National Post* Jonathan Kay writes, "During my visit there in January [2013], it became obvious to me that the company's humanitarian mission in the community is open-ended."[83] It is easy to point the blame at the Attawapiskat for poor management prior to the development of Victor Mine, but there is no reason why this First Nation should not receive more support from the profits made on their land. Though this case study is more complicated than other blood diamond issues in Africa, it is another example of how an indigenous group is being exploited for diamonds. Just because these diamonds are mined from Canadian sources does not mean that they are without conflict.

Contemporary Trends: A Philanthropic Trend in Consumption?

Diamond jewelry presents a multifaceted story where positive images of love and devotion, as established through early advertisements, become complicated as greater environmental and humanitarian issues are exposed. With these conflicting themes associated with diamond jewelry, what will the future look like for this commodity? According to American sociologist Juliet Schor, Americans as a culture are experiencing longer hours and higher debt.[84] In essence, Americans have become habituated to the act of buying more items because of the

[83] Kay, Jonathan. "Attawapiskat protestors hurting First Nations with lawless blockade of De Beers mine." *National Post*. *21. Feb. 2013. Web.* *http://news.nationalpost.com/full-comment/jonathan-kay-natives-hurting-themselves-with-lawless-blockade-of-de-beers-mine*

[84] Schor, Juliet B.. "In Defense of Consumer Critique: Revisiting the Consumption Debates of the Twentieth Century". *The Annals of the American Academy of Political and Social Science* 611 (2007): 16–30.

value placed on labels. This theory aligns directly with the ideas presented by Veblen and Baudrillard. Similarly, the process of becoming habituated to this lifestyle is a topic that Adorno spends a great deal of time highlighting.[85]

In an article titled "In Defense of Consumer Critique: Revisiting the Consumption Debates of the Twentieth Century," Schor draws on the foundation established by both Veblen and Adorno as prominent thinkers on consumption. Although she admits that critics of these theorists have valid points, Schor supports their importance and their contributions to conversations about culture. One important distinction between Schor and other theorists is that Schor takes the connections between culture and value past the act of consumption, investigating issues that arise after products are purchased. Schor highlights the importance of ecology as a discipline and how consumption has an ecological impact. Specifically, Schor rejects the term "overconsumption" as vague, preferring the terms "unsustainable consumption" and "unjust consumption." The difference in terminology forces the consumer, an active participant in the creation of culture and value, to reconsider actions that could have a negative impact on the environment.[86]

There is no one set definition of culture, and no one single explanation of culture exists. What can be explained is that there is a direct relationship between culture and the consumption of diamond jewelry: culture in terms of consumers, social hierarchy, and prevalent ideas. What all of the theorists discussed above demonstrate are parallel connections between higher social strata and increasing levels of consumption. Since the phrase "A Diamond Is Forever" was

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[85] Adorno, Theodor. *The Culture Industry.* 1991. Routledge. New York, New York.

[86] Schor, Juliet B.. "In Defense of Consumer Critique: Revisiting the Consumption Debates of the Twentieth Century". *The Annals of the American Academy of Political and Social Science* 611 (2007): 16–30.

coined, the practice of gifting diamond jewelry has been ingrained in American consumer culture. It is unlikely that this trend will decline any time in the near future, but one trend that is on the rise is meeting the needs of "philanthropic consumption" by means of greater choice in the consumer diamond jewelry market. Some consumers may turn to conflict free or ethically mined diamonds, while others will turn to lab-created substitutes as an alternative to blood diamonds. Whatever the choice may be, diamond advertisements will continue to persuade consumers to purchase diamond jewelry using the themes and techniques established in the early 1950s. Sign value is changing and consumers can illustrate their distinct value systems by choosing different kinds of diamonds. This trend in philanthropic consumption has occurred in other commodities such as TOMS shoes, where consumers purchase a pair of shoes for themselves and the company then provides a pair of shoes to those in need, simultaneously fulfilling the desires of the consumer and educating the public.

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MANUSCRIPT 2

The Technological Invention of Lab-Made Diamonds:

A Social History of a Politically and Environmentally Correct Substitute

Before the popularization of diamond jewelry in the United States, many myths about these gems existed. In his book *The Diamond Makers*, Robert Hazen writes, "Some said diamonds were pieces of stars fallen to earth, or perhaps the remains of water frozen for too long, while others spoke of crystals grown at ocean depths or formed in the path of lightning bolts. Despite people's curiosity, the true origin of diamonds remained a mystery until early in this [the twentieth] century."[87] Accurate scientific knowledge about natural diamonds is relatively new. However, scientists have tried creating lab-made diamonds since the late 1800s. The field of chemistry was rapidly growing at that time, and scientists attempted to make diamonds to learn more about their composition.[88] Regardless of chemical curiosity, American fascination with diamonds has a deeply rooted history.

Americans fell in love with the stories of diamond jewelry when 1950s advertising campaigns painted images of luxury, love, devotion, and forever. Just as there are different eras in art, there are also different eras in jewelry design. Today, consumers are bringing to light more questions and complicating the original story of the diamond created by the advertising industry. Both jewelers and consumers are reconstructing the social understanding of the diamond. Their new vision does not necessarily include traditional earth-mined diamonds, but rather centers around lab-made stones. These lab-made stones bring the chemical fascination full circle for a new era of consumers. This manuscript details the politics around lab-made diamonds. Lab-made diamonds are a technological fix for the moral problem of blood diamonds, but lab-made diamonds carry their own set of politics. Likewise, lab-made diamonds present a type of media

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[87] Hazen, Robert M. *The Diamond Makers.* 1999. Cambridge University Press. UK. Page 1

[88] Note that the scientists were trying to learn about the chemistry of the diamond, rather than producing diamond crystals for jewelry consumption. In these early experiments it was more about doing something that no one had done before, rather than creating a new commodity. The emphasis was on the experiment, not the product.

transparency that natural diamonds have not been able to accomplish. Lab-made diamonds are the counter hegemony to issues in the natural diamond industry.[89] The changing social construction of the diamond presents a new challenge for consumers who are seeking to define their technological relationship with this commodity. To navigate the intricacies of this conversation, I examine several theories pertinent to the interface between humans and technology. I then define what a natural diamond is, followed by the definition of a lab-made diamond. Looking closely at the politics of diamonds and exploring themes in expert conversations, I explore the nuanced idea that lab-made diamonds are the same as natural diamonds, but are also different, by sharing data collected from a series of interviews with diamond experts.

After receiving Institutional Review Board Approval from Virginia Polytechnic Institute and State University, I conducted a series of interviews with diamond experts including two CEOs of lab-made diamond companies, two scientists, one jewelry appraiser, one jewelry designer, one sales director, and one diamond businessman.[90] I provided each interviewee with a consent form, prior to the scheduled interview, asking permission to record the conversation. All interviewees agreed to be recorded, and agreed to having their names used in this manuscript. Each telephone interview lasted for roughly one hour. I provided a tentative list of question to my interviewees several days before each interview. Some of the questions included, "How are lab-made diamonds political substitutes for natural diamonds?" "How do you market your

[89] The lab-made diamond industry is a controlled field because there are a limited number of actors. There are the scientists, the cutters, the jewelers, and the consumers. The natural diamond industry has the miners, the mine managers, the traders, the cutters, the distributors, De Beers (that controls the influx of diamonds to the market, the jewelers), and the consumers. The natural diamond industry is not controlled because there are many chains of command that make it impossible to provide a clear lineage of the stone from start to finish. Lab-made diamonds on the other hand can provide documentation and certification from source to sale.

[90] Institutional Review Board Protocol Number 13-215. See Appendix A for approval letter.

diamonds?" and "What trends are you seeing now, and what do you think the future of the diamond industry will look like?" Once the interview started I allowed the interviewees to direct the conversation. Some of the interviewees followed the list of questions I provided in an orderly fashion, but most of the interviews turned into a discussion where all of the topics introduced in the preliminary questions were covered through our conversations. Before I discuss information from these interviews, I consider the political nature of the diamond.

Politics and Diamonds

Part of the new story of the diamond is the political nature of this commodity. The story of how electricity has a politics is a great model to establish a baseline for the later example of lab-made diamonds. Author David Nye gives a detailed account of the emergence of electricity in America in his book *Electrifying America: Social Meanings of a New Technology*. Nye uses the case study of electricity in Muncie, Indiana, to explore the new meanings of emerging technologies. Electricity slowly crept into the everyday lifestyle in the United States during the late 1800s and early 1900s. Gas power previously ruled the market. However, byproducts from burning gas negatively affected the appearance of the home and created acidic fumes. More people became invested in electricity because this technology presented fewer hazardous threats. Industries began using electricity because of increased efficiency and reliability. Once the positive effects of electricity were proven by industry, electricity entered the American home.[91]

When the American home became "electrified," there was a great deal of improvement of the visual environment. Before the introduction of electricity, most homes were decorated in dark colors to hide the dirty byproducts of gas power. Electricity allowed homeowners the

[91] Nye, David E. *Electrifying America: Social Meanings of a New Technology.* 1992. MIT Press. Cambridge Massachusetts.

freedom to decorate without the worry of hiding a mess. The extra light that electricity provided also encouraged children to read. Nye writes, "At home, a young child who could not be trusted to regulate gas lighting could be left alone with electric light, increasing the child's control over the visual environment and encouraging reading in private."[92] As a result of the increase in amount of time allotted to reading, the local library loaned double the amount of books that it had in previous years.[93] Through this example alone, it is clear that electricity enabled a new generation of activity and freedom by eliminating the worry and management of gas power.

Diamond Jewelry followed a similar path to become part of an everyday lifestyle. Consumers were introduced to various forms of media that created a diamond culture. The emphasis on emulating celebrities engendered an innate urge to own diamond jewelry. Actresses such as Marilyn Monroe and Elizabeth Taylor further ingrained the desire for diamond jewelry. The fascination with the celebrity is a significant factor in determining fashionable or social trends. In 2015, Academy Award-winner Patricia Arquette wore lab-created diamond jewelry on the red carpet and provided the following comment: "This is a lab-created diamond, which means there is no blood involved in this diamond, which is why it is beautiful in its own right, but it is especially beautiful because no children died for this diamond. There was no slave wages paid to people for this diamond. There was actually a working wage paid to create this diamond. And that's about love."[94] Similarly, well-known artist Kevin Jonas commented, "Obviously you don't want to have people being hurt in any capacity, or being abused in any

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[92] Nye, David E. *Electrifying America: Social Meanings of a New Technology.* 1992. MIT Press. Cambridge Massachusetts. Page 17

[93] Nye, David E. *Electrifying America: Social Meanings of a New Technology.* 1992. MIT Press. Cambridge Massachusetts.

[94] Pure Grown Diamonds. "Patricia Arquette: About Love." *YouTube* video, 0:36. February 20, 2015. https://www.youtube.com/watch?v=UHyxCGXBqqk&feature=youtu.be

way, you just definitely want to make sure you're doing your part to be, even though they are beautiful, you don't want anyone's life to be in danger."[95] Commercials, movies, and other forms of media have entrenched images of love and devotion through diamond jewelry, encouraging consumers to purchase these items for their loved ones. Although lab-made diamond jewelry has yet to become as popular as natural stones, lab-made diamonds do carry politics.

The politics of lab-made diamond jewelry is present in recent advertisements. This change in marketing messaging emerged after publicity highlighting the process of mining diamonds. To combat the industry's detrimental stereotype of blood diamonds, many diamond jewelers are now marketing "conflict free" diamonds from "ethically mined" sources. For one company, however, selling any natural diamonds ceased to be an option. In order to stimulate a more philanthropic trend in consumption, a diamond jewelry company called Pure Grown Diamonds (formerly Gemesis) sells only lab-made stones.[96]

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[95] Pure Grown Diamonds. "Kevin and Danielle Jonas." *YouTube* video, 0:23. February 21, 2015. https://www.youtube.com/watch?v=v25JaqtFQN0

[96] Pure Grown Diamonds used to be called "Gemesis." In 2014 they re-branded themselves to be called Pure Grown Diamonds in order to "reinforce their commitment to disclosure and transparency." In this manuscript, some interview portions may refer to Gemesis. For further information on the re-branding of this company see https://www.puregrowndiamonds.com/blog/gemesis-inc-rebrands-pure-grown-diamonds/

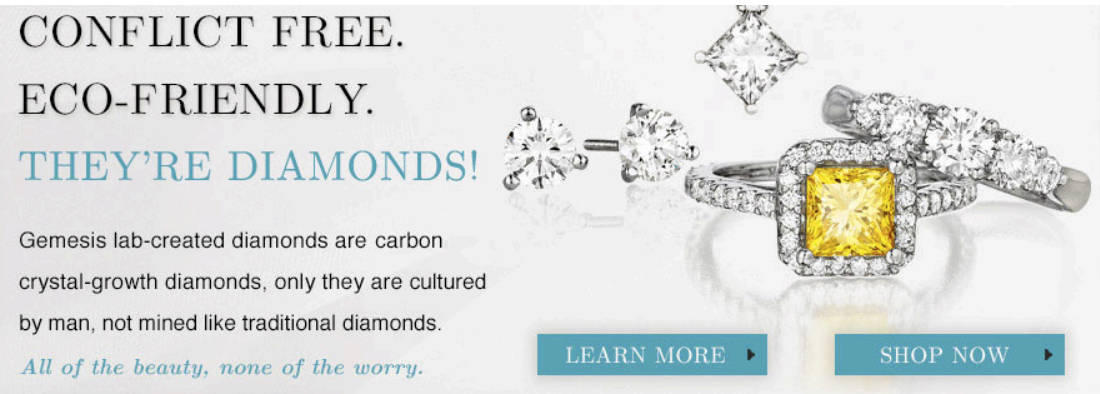

Figure 9: Gemesis jewelry advertisement.[97]

The advertisement in Figure 9 appeared on the Gemesis homepage. In line with traditional diamond advertisements, this advertisement displays an array of beautiful diamond jewelry. One goal for Pure Grown Diamonds is to educate the consumer and promote a new transparency ethic. They provide full disclosure on how they make their products to instill a sense of confidence for consumers who want to be sure that they are supporting something conflict free and ecologically friendly. This transparency is physically traced and recorded so the consumer has the knowledge and the confidence of the source of their purchase.

In an interview with Michael Chernick, former director of sales for Pure Grown Diamonds, I asked him if he faces any challenges in the diamond market:

> Although lab-grown diamonds are chemically, optically, and physically the same as diamonds mined from the ground, there are many traditionalists in the mined diamond business (wholesalers and retailers) who see lab-grown diamonds somehow as something other than diamonds. There will always be a segment of the industry that doesn't like any product which may grab a share of the market, but fortunately for Gemesis there are also many progressive-thinking business people who see lab-grown diamonds as an opportunity to offer their customers another option when considering a diamond purchase.[98]

[97] Gemesis lab-made jewelry advertisement. http://www.jckonline.com/blogs/cutting-remarks/2016/01/20/colorless-synthetic-diamonds-are-being-sold-internet-finally

[98] Michael Chernick, interview by Bryn Whiteley, February 9, 2016.

Chernick also indicated that Pure Grown Diamonds sees a growing trend of consumers who express concern over the sources of naturally mined diamonds, which is why these consumers seek out a viable alternative. The testimony from Patricia Arquette and Kevin Jonas echo the trends that Chernick describes. Consumers are actively seeking products that do not contribute to blood diamond issues. The only diamond product that can fully accommodate these concerns is lab-made diamonds because of the transparency in this controlled industry.

Technology and Diamonds

What is unique about our technological relationship with the diamond? German philosopher, Hans Jonas, is concerned with actions of human nature, and how these actions in turn affect technology.[99] In "Technology and Responsibility: Reflections on the New Task of Ethics," he writes,

> "it will be my contention that with certain developments of our powers the *nature of human action* has changed, and since ethics is concerned with action, it should follow that the changed nature of human action calls for a change in ethics as well: this is not merely in the sense that new objects of action have added to the case material on which received rules of conduct are to be applied, but in the more radical sense that the qualitatively novel nature of certain of our actions has opened up a whole new dimension of ethical relevance for which there is no precedent in the standards and canons of traditional ethics."[100]

He believes that humans have not been concerned for nature, that our chief priorities have been anthropocentric, and that humans should be responsible and in control of our actions. Jonas suggests that humans begin to think about the finite qualities of the earth's natural resources, and by extension stewardship. This new ethic should limit the anthropocentric viewpoint and encompass a new relationship with the earth. He argues that the knowledge about the depletion

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[99] Jonas, Hans. "Technology and Responsibility: Reflections on the New Task of Ethics." *Philosophical Essays*. 1974.

[100] Jonas, Hans. "Technology and Responsibility: Reflections on the New Task of Ethics." *Philosophical Essays*. 1974. Page 121-122.

of natural resources cannot be ignored, and therefore needs to be included in a new ethic. In a similar fashion, Jonas writes about the function of modern technology in "Toward a Philosophy of Technology."[101]He notes that progress and change are the distinctive factors between ancient forms of technology and modern technology. Ancient technology stayed relatively the same over time, limiting the rate of progress and change. On the other hand, modern technology is characterized by constant rates of innovation driven by progress. Modern technology promotes infinite advancement. Therefore, a new ethic needs to recognize the requirements and limits of the earth while encompassing the rate of modern technology.

Though there is no single correct ethic when it comes to diamonds or diamond jewelry, more consumers are beginning to define their own ethics because of the politicization of natural stones. Human actions often create problems and technology is often viewed as a solution. If society defines an ethic, then humans do not create as many problems or needs, thereby reducing dependency on technological solutions. The problem with diamonds lies in the natural mining process, which can drastically increase environmental destruction and cause or exacerbate humanitarian crises. Consumer culture has created a technological solution for these problems by introducing lab-made diamonds. While Jonas would agree that the issues raised by natural diamonds cause consumers to define a new ethic, it is unlikely that he would fully support the technological fix of lab-made diamonds because this new form of diamonds worsens the deeper problem of the constructed need for diamond jewelry in the first place. It is unrealistic to expect an entire consumer culture to adjust and develop a new ethic that eliminates the need for diamond jewelry. While lab-made diamonds are the technological quick fix, these relatively new products do challenge consumers to adopt a different, and hopefully stronger, ethic towards

[101] Jonas, Hans. "Toward a Philosophy of Technology." *Technology and Values: Essential Readings*. Edited by Craig Hanks. 2010. Wiley-Blackwell. Malden, Massachusetts.

diamonds as a technology. Next I consider technical differences between natural and lab-made diamonds and how these distinctions affect the politics of the stone.

What is a Natural Diamond?

Natural diamond deposits exist on every continent in the world, except for Antarctica. The process for creating natural diamonds can take millions of years. According to the Natural Resources of Canada,

> [Natural diamonds] were formed millions of years ago in molten rock within the earth at depths greater than 160 km. After their formation, diamonds were carried up to the surface of the earth in rising magma by strong volcanic activity. When the magma cooled, cone-shaped pipes of bluish rock called kimberlite were left behind. Over the years, wind, rain, snow and ice eroded the kimberlites and released diamonds and indicator minerals (small particles indicating the presence of diamonds).[102]

In addition to the great depth underneath the earth's surface, diamonds undergo immense pressure (50,000 times the normal atmosphere) and incredible temperatures up to 1,300 degrees Celsius.[103] This combination of temperature and pressure gives the diamond a crystalline lattice structure. Other exceptional properties of diamonds include hardness, great thermal conductivity, and a very low coefficient of thermal expansion. They are good electrical insulators, are transparent to visible and almost all infrared radiation, and are resistant to heat, acids, and radiation.[104]

There are many different ways of mining for diamonds, but there are negative environmental impacts with nearly every form. Typically, diamonds come from geologic rock formations called kimberlites, named after the geographical region where they were first

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[102] Natural Resources of Canada. Minerals and Metals Sector. *Formation of Diamonds*. 2011. http://www.nrcan.gc.ca/minerals-metals/business-market/diamond-industry/3764

[103] Natural Resources of Canada. Minerals and Metals Sector. *Formation of Diamonds*. 2011. http://www.nrcan.gc.ca/minerals-metals/business-market/diamond-industry/3764

[104] Shigley, James. *Gems & Gemology in Review: Lab-made Diamonds*. 2005. Gemological Institute of America. Worzalla Publishing Company. Stevens Point, Wisconsin.

sourced: Kimberly, South Africa. These rock formations containing diamonds are eroded over time by rivers and streams and can deposit diamonds in the sediment. Methods for diamond mining include alluvial diamond mining, open pit and underground mining, marine mining, and informal diamond digging. Alluvial diamond mining involves digging and sifting through mud, sand, and gravel using shovels, sieves, or bare hands. Though this may not sound particularly harmful to the environment, it does temporarily disturb the topsoil, which can harm the balance of the soil system and cause complications with vegetation growth and biodiversity.[105]

Unlike alluvial diamond mining, open pit and underground mining involve capital-intensive machinery used to expose kimberlite pipes and extract diamonds. This method is by far the most environmentally damaging, because it allows for large quantities of surplus waste that leaches into the subsoil. Waste rock, sand, soil and processed kimberlite are issues as well, since the pipes are underneath the soil overburden. The machinery involved creates excess carbon emissions, which negatively affect air quality. Marine mining is when diamonds are mined from beneath the seabed. This removes the seabed, thereby having a negative effect on biodiversity. Informal digging for diamonds is not regulated, and therefore poses legality issues, as well as potential environmental threats, since damage is not reported. In addition to land disturbances, other environmental challenges to diamond mining, mostly due to open pit mining, include energy use and emissions, waste and recycling, use of water, and its overall impact on biodiversity.[106]

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[105] "Alluvial Diamond Mining Project." *USGS – United States Geological Survey. 2006*. http://geology.er.usgs.gov/eespteam/diamondproject/alluvialmining.htm

[106] "Diamond Mining and the Environment Fact Sheet." *World Diamond Council. 2012*. http://www.diamondfacts.org/pdfs/media/media_resources/fact_sheets/Diamond_Mining_Environment_Fact_Sheet.pdf

Once diamonds are mined, jewelry experts purchase these stones in rough form. Diamond rough looks like small pieces of gravel. To the untrained eye, these stones could easily be mistaken for plain rocks. It is not until the diamond is cut, polished, and graded that it appears in the form consumers associate with most jewelry. The Gemological Institute of America (GIA) grades diamonds by what they define as the four C's: Carat Weight, Color Grade, Clarity Grade, and Cut Grade. Until the mid-twentieth century, there was no single standard for diamond classification and grading.[107] The GIA created the four C's to be a universal standard of diamond grading. D-Flawless is the highest grade of diamond, meaning there are no imperfections and the color is perfectly clear. The grading scale moves down the alphabet (E, F, G, etc.) to diamonds that have inclusions, deposits of dirt or other material within the stone, where the color appears as undesirable yellow or dirty brown. These characteristics are detailed in a formal grading report that is attached to any diamond sent to the GIA for authentication.

Also included in these GIA reports is any type of treatment the diamond may have undergone before it is sold to the consumer. One such treatment process is called High Pressure and High Temperature (HPHT). When a natural stone is extracted from the earth, it is likely that there will be variances in color and impurities. Gemologist Dusan Simic says, "A brown color is due to different conditions of moving from deep earth. The lattice is usually damaged, but HPHT tries to realign the damages in the lattice."[108] HPHT treatment can take a natural stone graded an L, M, or N and remove the discoloration and impurities to then grade the stone as an F or G. This upward movement in grading makes the stones more valuable at retail because they can now be categorized at better grades. This method is legitimate and recognized as long as it is disclosed to

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[107] For more information about the origin of the 4Cs visit http://www.4cs.gia.edu/en-us/the-diamond-4-cs.htm

[108] Dusan Simic, interview by Bryn Whiteley, March 12, 2013.

consumers. HPHT diamonds are still natural even though it mimics the process used to make lab-made diamonds. The main issue with natural diamonds is that there is no guaranteed source of origin or fair trade. The stone passes through too many hands to ensure that it is not a blood diamond.

What is a Lab-Made Diamond?

Lab-made diamonds share the same authentication process as natural diamonds, the only major difference being the stones' origin. A lab-made substitute is essentially anything that does not come from the earth. There are lab-made diamonds that are chemically identical in crystalline lattice structure to natural diamonds, but are not classified as natural because they were grown in a lab. A lab-made diamond is carbon that is compressed and exposed to high temperatures and high pressures through specialized machinery to recreate the conditions of the process natural diamonds experience moving through the earth's crust. Lab-made diamonds follow the same unique grading system as natural stones and are also authenticated by the GIA. Lab-made diamonds display the same chemical composition, optic capabilities, and physical qualities as natural diamonds. One of the major benefits, besides the lower cost, that attracts consumers to lab-made diamonds is the absence of the social stigma attached to natural diamonds in terms of humanitarian and environmental issues.

Long before lab-made diamonds, other diamond substitutes flooded the market. There is a common misconception about lab-made diamonds and diamond substitutes. Lab-made diamonds are real diamonds and share the same grading system as natural stones. On the other hand, diamond substitutes are "diamond-like" products that share similar characteristics, like reflective properties, but are not chemically identical to diamonds. The most popular diamond

substitute on the market is cubic zirconia. This diamond substitute was introduced in the 1980s, and the current cost is around $5 per carat.[109] This incredibly affordable option gave nearly all consumers the ability to participate in diamond culture. However, consumers have noticed that cubic zirconia does not sparkle like a diamond, becomes easily scratched, and loses its luster over time. Though cubic zirconia prevents further environmental degradation, it does not fully satisfy consumer demand.

Another type of diamond substitute available to consumers is moissanite. Ferdinand Frederick Henri Moissan began diamond synthesis research in the late 1800s by examining three very different samples of diamond-bearing material. He examined kimberlite from South Africa, Brazilian diamond-bearing gravel, and extracted two diamonds from the Canyon Diablo iron meteorite from Arizona. His samples showed that these different types of diamond-bearing material all shared a common element: iron. Thus, he thought that iron was the key to diamond synthesis. Hazen writes, "To find out, Moissan designed an extraordinary new oven capable of melting iron and most other metals. His electric arc furnace achieved record temperatures of 3000°C (about 5000°F) by passing a powerful electrical current through graphite, which glowed white with heat like the metal strips in a space heater."[110] In Moissan's early experiments, he used this furnace to melt iron and other metals in a crucible, dissolved carbon in the liquid metal, and then let this mixture cool. After this experiment cooled, Moissan used acids to dissolve away the metal and found ordinary black graphite to be the result. At this point, Moissan knew that he needed to expose this substance to both heat and pressure simultaneously.

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[109] "New Diamond Substitute." *ABC News. 8 Feb. 2012. Web* http://abcnews.go.com/2020/story?id=124135&page=1#.T4s3KBxbmuQ

[110] Hazen, Robert M. *The Diamond Makers*. 1999. Cambridge University Press. UK. Page 21.

Moissan's original furnace design did not incorporate the needed element of pressure. Instead of creating a new furnace, he tried rapidly cooling the same mixture from earlier experiments in cold water. By exposing the carbonized liquid iron to cold water, Moissan hoped that the sudden contraction would produce the amount of pressure needed to produce diamonds. The result of this revised experiment yielded microscopic carbon particles that appeared to share the distinctive properties of natural diamonds. Moissan died in 1907 believing that he created lab-made diamond crystals. After his death, many scientists recreated Moissan's diamond experiments and found that those crystals Moissan discovered were actually silicon carbide, which was given the name moissanite to honor the scientist that first created the abrasive substance.

Moissanite is the closest substitute to a natural diamond. For consumers that cannot afford a natural diamond, but desire something more than cubic zirconia, moissanite is an attractive alternative. The cost of moissanite is around $600 per carat, which is one-tenth of the current cost of a diamond.[111] Moissanite does not have the same crystalline lattice structure as a natural diamond, but it does have the same reflective properties. These reflective properties give the stone the same shine and sparkle as a natural diamond, which is why the majority of the general public cannot tell the difference between moissanite and a natural diamond.

Unlike cubic zirconia and moissanite, which produce individual crystals, other types of technology exist that create a unique form of diamond jewelry. In 1952, William Eversole revealed the homoepitaxial growth of diamond at low pressures from a carbon-containing gas.[112]

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[111] "New Diamond Substitute." *ABC News. 8 Feb. 2012. Web* http://abcnews.go.com/2020/story?id=124135&page=1#.T4s3KBxbmuQ

[112] Shigley, James. *Gems & Gemology in Review: Lab-made Diamonds*. 2005. Gemological Institute of America. Worzalla Publishing Company. Stevens Point, Wisconsin. Page 248.

This type of diamond growth is known as chemical vapor deposition (CVD). CVD technology creates sheets of diamond plates or diamond crystals in a tabular form. According to the GIA,

> CVD lab-made diamonds began appearing in the gem diamond market about a decade ago. The process involves introducing a gas, such as methane, into a vacuum chamber, then activating and breaking down the molecules of the gas with the microwaves. This causes the carbon atoms to accumulate on a substrate, similar to the way snowflakes accumulate in a snowfall.[113]

The type of growth that Dr. Eversole demonstrated is not the exact process of CVD technology today. Initial growth rates of CVD diamonds were extremely slow, and many were skeptical about how this process could be sped up to make it commercially viable. In the early 1980s, a group of scientists from the National Institute for Research in Inorganic Materials (NIRIM) reported increased CVD diamond growth rates.[114] This breakthrough allowed other companies, such as Element Six (the De Beers Industrial Diamond Division), to become leaders in the field.

Figure 10: Examples of diamonds that have been grown through CVD technology. Photo by M. Crowder.[115]

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[113] Shigley, James. *Gems & Gemology in Review: Lab-made Diamonds*. 2005. Gemological Institute of America. Worzalla Publishing Company. Stevens Point, Wisconsin.

[114] Shigley, James. *Gems & Gemology in Review: Lab-made Diamonds*. 2005. Gemological Institute of America. Worzalla Publishing Company. Stevens Point, Wisconsin. Page 248.

[115] Shigley, James. *Gems & Gemology in Review: Lab-made Diamonds*. 2005. Gemological Institute of America. Worzalla Publishing Company. Stevens Point, Wisconsin. Page 247.

Scientist Peter K. Bachmann, from Aachen, Germany, is an expert in CVD technology. In 1986, he joined Philips Research Laboratories to work on plasma chemical vapor deposition of single mode telecommunication fibers. He created a general concept for diamond CVD called the "Bachmann diagram diamond." In addition to this concept, he also developed a widely-used growth reactor jointly with the Boston-based company ASTex. Through his work and research, he created diamond plates to be set into jewelry, calling them the "Linz" diamonds after his wife, Ute Linz.

Figure 11: The first CVD diamond jewels featured in the journal "Gems & Gemology"
Gemological Institute of America, September 1997
"Linz" Diamonds named after Dr. Bachman's wife, Ute Linz[116]

These two examples show that CVD technology can produce diamonds in various forms. Diamond plate jewelry is not commonly distributed in the consumer market, mostly because the demand of diamonds is highest for singular crystals. Many years of continued research has allowed CVD technology to improve and emerge as an alternative source for diamonds in the jewelry industry. Which one of these lab-made diamonds is the best? The final decision is ultimately up to the consumer, but the one characteristic that all diamond companies share is the rhetoric of advertising. Without the creative story of the diamond, there would be no market

[116] The first CVD diamond jewels featured in the journal "Gems & Gemology." Photo by M. Crowder.

niche for the consumer. Lab-made diamond jewelry companies share the goal of presenting their products as the alternative to natural diamonds, creating a new story of the diamond and diamond jewelry.

Rhetoric and Diamonds

The way the media and the diamond industry create these stories is through the creative use of rhetoric. Diamond jewelry in the United States is no longer a simple symbol. It has its own cultural identity, mainly expressed through advertisements. Authors Davide Ravasi, Violina Rindova, and Ileana Stigliani write in *Valuing Products as Cultural Symbols: A Conceptual Framework and Empirical Illustration* that

> Research in cultural anthropology and sociology has provided converging observations that patterns of consumption convey and generate sociocultural meanings about owners' status and identities. Research in this tradition observes how products acquire intersubjective, sociocultural meanings because of their systematic inclusion in social practices and relationships.[117]

Rhetoric is a key element in talking about the story of diamond jewelry. Without rhetoric, there is no emotional connection, no elaboration, and no narrative to attract the consumer. Diamond jewelry companies and advertising agencies created lasting stories that attracted the consumer to their products ever since the diamond advertisements of the 1950s. Since then, every diamond company has used the essence of these narratives to boost their products. Edward P.J. Corbett offers a broad definition of rhetoric, writing, "Rhetoric is the art or the discipline that deals with the use of discourse, either spoken or written, to inform or persuade or move an audience, whether that audience is made up of a single person or a group of persons."[118] Though philosophers have offered narrower definitions of rhetoric, it is better to use the broader

[117] Beckert, Jens and Patrik Aspers. *The Worth of Goods: Valuation & Pricing in the Economy*. 2011. Oxford University Press. Page 299.

[118] Root, Robert L. *The Rhetorics of Popular Culture: Advertising, Advocacy, and Entertainment*. 1987. Greenwood Press. New York, New York. Page 13.

definition when discussing all of the elements that the diamond jewelry industry includes in their message.

Robert L. Root, author of *The Rhetorics of Popular Culture: Advertising, Advocacy, and Entertainment*, writes, "To better understand the nature of American popular culture we will need to examine some of its artifacts closely. The artifacts of any culture are related to three areas: entertainment, commerce, and information."[119] All three of these areas come to light when examining diamond jewelry. The use of rhetoric, especially in relation to diamond jewelry, is crucial to jewelry advertisements. Root outlines several different forms of rhetoric and the places they appear in advertising, writing,

> In advertising, for example, the attempts at persuasion may be uniform in purpose—the desire to sell a product or service—but the kinds of advertising are varied and their rhetorical devices increasingly complex and sophisticated as they move from such advertising as direct mail (a primary rhetorical situation, the verbal pitch), to print advertising (the visual pitch), to television commercials (the video pitch).[120]

All these rhetorical devices contribute to the success or failure of advertising. One of the key elements of jewelry advertising is the story behind the object, making the consumer want, need, and desire that commodity. This story comes to life through the use of language and the visual arts. Root continues, "It establishes an ethos for the product, the company, or the service; it appeals to the emotions of the consumer; and it "argues" for the purchase of the product or service in a variety of ways."[121] Diamond advertisements created a story that in turn created the need for diamond jewelry. Without this story, diamond jewelry is essentially a useless commodity. The rhetoric of diamond advertising is essential to the success of the product and to

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[119] Root, Robert L. *The Rhetorics of Popular Culture: Advertising, Advocacy, and Entertainment*. 1987. Greenwood Press. New York, New York. Page 11.

[120] Root, Robert L. *The Rhetorics of Popular Culture: Advertising, Advocacy, and Entertainment*. 1987. Greenwood Press. New York, New York. Page 12.

[121] Root, Robert L. *The Rhetorics of Popular Culture: Advertising, Advocacy, and Entertainment*. 1987. Greenwood Press. New York, New York. Page 39.

the consumer society. Root presents the images in a classic De Beers diamond advertisement as an example:

> In the De Beers series of ads the speaker is always a customer. In one ad, targeted for the older, more affluent, more middle-class readership of *Newsweek*, a man and a woman are embracing with their eyes closed; both have gray streaked hair although the woman is apparently somewhat younger than the man and her age is more indeterminate. The man holds a diamond ring and the woman's hand is touching his, as if he is about to slip it on her finger. In the middle of the picture, in stark white lettering very near the ring, are the words "I still do," an allusion to previous wedding vows. The couple are in effect repledging their nuptials.[122]

The description of this advertisement shows the weight of rhetoric and its emotional appeal to the consumer. The goal is to make the consumer identify with the couple in the advertisement through the use of tender feelings of love, devotion, and memories of a wedding day. In many ways, diamond advertisements, such as the one described above, feed on the need that consumers feel to prove their love to other members of society visually. The ethos established by diamond companies is clear, consistent, constant, and perceptible.

Lab-made diamond advertisements use the same ethos as natural diamonds, but lab-made diamonds have a difficult challenge: to present a kind of story about the stone itself, because it does not possess the same type of history as a natural diamond. The history of lab-made diamonds is not nearly as exotic as the story of the Hope Diamond, for instance. Lab-made diamonds do not take millions of years to produce, and the fact that these stones are not produced from the earth denies them the intrinsic value that is perceived to come from being "natural." What many lab-made diamond experts will assert is that they do not promote the use of the terminology "lab-made" diamonds. Former director of sales at Gemesis Michael Chernick says, "The term lab-made refers to the mixing of two or more substances to create something that

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[122] Root, Robert L. *The Rhetorics of Popular Culture: Advertising, Advocacy, and Entertainment*. 1987. Greenwood Press. New York, New York. Page 40.

imitates the natural or 'real' substance. With lab-made diamonds the end product is identical."[123] Traditionalists in the industry, however, do refer to lab-made diamonds as lab-made. For example, the GIA uses the term lab-made, as does the International Gemological Institute (IGI), another reputable jewelry certification institute. The Federal Trade Commission assesses that the use of the term "lab-made" could be misleading to consumers because they associate this term with something fake. Lab-made diamonds are diamonds. The following two examples of lab-made diamond jewelry companies show how this industry is re-writing the social construction of the diamond.

Chatham Laboratories

Carroll Chatham was one of five children and had an intense interest in chemistry. He used this talent to duplicate diamond experiments in 1920s San Francisco, California. One of the experiments that Chatham recreated was that of Henri Moissan. As stated earlier, Moissan's experiment did not actually result in diamonds, but rather a diamond substitute. Instead of dropping the heated carbon into water, Chatham's idea was to drop the molten mixture in liquid nitrogen, an experiment that resulted in such an explosion that it took out the neighbor's windows across the street. After this explosive experiment, Chatham turned his interest from diamonds to emeralds because he wanted to do something that no one had done before: make emeralds commercial. There was evidence of a laboratory experiment during the 1840's in Europe, but this process could not make emeralds commercially viable.[124]

[123] Michael Chernick, interview by Bryn Whiteley, February 9, 2016.

[124] Tom Chatham, interview by Bryn Whiteley, February 23, 2016.

Chatham attended the California Institute of Technology in Pasadena and majored in chemistry. When he visited his family in San Francisco, he would continue his experiments in an effort to create emeralds. He built a furnace electrically powered to create high temperature, and created a side circuit with a light bulb that would prevent failure. If something went wrong with the experiment, the light bulb would go off, a unique safety feature that he did not take into account during his earlier experiments. Chatham set up this experiment and went back to school, roughly 500 miles away. One day, his father saw the light bulb on and thought that his son was wasting electricity, so he turned the power off to the garage. When Chatham returned, he looked in this furnace and saw that emeralds had grown. It took him the next three years to figure out why they grew.[125]

Figure 12 shows the First Chatham-grown crystal[126]

[125] Tom Chatham, interview by Bryn Whiteley, February 23, 2016.

[126] Tom Chatham, interview by Bryn Whiteley, February 23, 2016.

In 1965, Tom Chatham, Carroll Chatham's son, joined his father in the laboratory. At that time, they were trying to figure out how to grow rubies. The process for growing rubies was also an accident. The Chathams performed this experiment by applying high temperature using a flux of a combination of certain elements. Occasionally, they would get a leak. The flux would leak out and touch the aluminum, creating aluminum oxide, the composition of a ruby. After rubies, Chatham laboratories grew sapphires. The scientists figured out the chemistry of sapphires by looking at natural stones. Soon colorless, black, and blue tipped sapphires began appearing in the lab. They grew sapphires in yellow, orange, green, and purple. Sapphires are a unique gemstone in that they appear in almost every color. The components that make sapphires blue are very unique titanium oxide and iron along with other elements. Alexandrite was the last stone Carroll Chatham worked on before his death. One of the elements in the stone is beryllium, a dangerous chemical that most likely contributed to the end of Carroll's life.[127]

When rough material is sold, there is no control over the pricing. Tom enlisted cutting factories in Germany and Korea, chasing the value of the dollar around the world and ending up in Hong Kong and China. Today, about 300 people cut Chatham stones. Tom discovered one of Chatham's advantages is to give the trade what they needed. The natural colored stone industry sacrificed a lot of beauty to make the stone heavy. In other words, they were focused on the size of the stone rather than the composition of the stone that would display the best properties and make the stone more attractive. When Chatham went to the big chains and asked them what they needed, many of these places said that they needed consistency. He took this idea of consistency and put it into practice, giving Chatham cutters calibration and consistency standards. For these reasons, Chatham is able to take orders for many stones and make a product that mass producers

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[127] Tom Chatham, interview by Bryn Whiteley, February 23, 2016.

can use. The natural colored stone industry is just now catching up to the fact that more precise cutting techniques is more important than how much the stone weighs.[128]

All crystals mechanically grow the same. They just need different environments and speeds of growth. If the right conditions are set up, the stones will be in the right structure. In a personal interview with Tom Chatham, he states, "If it wasn't for the natural stone, we wouldn't have anywhere to sell. We do not want to destroy the natural market. They create prices for a pretty useless commodity, and they create new markets."[129] Tom does not promote their product against the factors of blood diamonds or green products. At one point, Tom talked with De Beers and asked them bluntly what they are afraid of, to which De Beers answered that they do not want to see where the lab-grown market can go and are simply protecting the market they have created. When Chatham advertises their product, they focus on the science of the stone. They spend time focusing on how their stones are proportionally correct and ideally cut.[130]

In the natural industry, emerald, ruby, and sapphire are worth more today than they ever were. A very small percentage of jewelry is in colored stones, representing only about 8 percent of a jewelry store's sales. Diamonds represent roughly 60% of sales in jewelry stores.[131] Transparency is an issue in the diamond industry. Tom has experienced cases where he sells his lab-made stones to a dealer who then sells the same stone to the consumer as natural, at which point Chatham laboratories has to deal with the backlash.[132] The problem with the natural

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[128] Tom Chatham, interview by Bryn Whiteley, February 23, 2016.

[129] Tom Chatham, interview by Bryn Whiteley, February 23, 2016.

[130] Tom Chatham, interview by Bryn Whiteley, February 23, 2016.

[131] Tom Chatham, interview by Bryn Whiteley, February 23, 2016.

[132] Tom Chatham, interview by Bryn Whiteley, February 23, 2016.

industry is that there are so many players that it is no longer a controlled market, presenting an opaqueness that some consumers do not agree with. The lab-made industry is so small that they can control their personnel and effectively present a transparency that is attractive to consumers seeking alternate forms of diamonds.

Diamonds are a simple stone because they are only comprised of one element, carbon. Chatham Laboratories began creating diamonds in the 1990s. The knowledge of creating diamonds is more widespread than colored stones. For this reason, many laboratories create diamonds. When these lab-made stones entered the jewelry market, De Beers invented two machines to differentiate natural diamonds from lab-made diamonds. The first machine is the DiamondSure™that can examine a significant number of diamonds at a time, both loose and set in jewelry. To determine if the diamond "passes" or is "referred for further tests" this machine detects the precense of the 415 nanometer optical absorption line, found in the majority of natural diamonds but not in lab-made stones.[133] This machine is not completely accurate because it cannot tell if the stone is natural or synthetic, but rather if it "passes" or "needs further tests." The other machine that De Beers created is more accurate. According to the Gemological Institute of America, the DiamondView™ "produces a fluorescence image of the surface of a polished diamond, from which the growth structure of the stone may be determined. On the basis of this fluorescence pattern – which is quite different for natural as compared to synthetic diamonds – the trained operator can positively identify whether a diamond is natural or synthetic."[134]Although both natural and lab-made diamonds are graded against the same scale, and for all other intents and purposes are so fundamentally the same, these machines create

[133] Shigley, James E. *Gems & Gemology In Review: Lab-made Diamonds*. 2005. The Gemological Institute of America. Carlsbad, California. Page 139.

[134] Shigley, James E. *Gems & Gemology In Review: Lab-made Diamonds*. 2005. The Gemological Institute of America. Carlsbad, California. Page 139.

miniscule differences to tell them apart. The problem with these machines is that they are too expensive for an ordinary jeweler to own and maintain, creating a hierarchy of politics between diamond experts.

Although the majority of Chatham Laboratories' sales come from colored gemstones, they do create diamonds because of the consumer demand. What is unique about the story of Chatham stones is that the company started based on Carroll Chatham's interest in chemistry. They use Carroll's story, the chemical composition of their stones, and the technical process for correctly cutting these stones to promote their product. Chatham does not rely on the intense ethos that natural diamond companies employ, perhaps because most Chatham stones are not purchased directly through Chatham laboratories, but by authorized dealers. The dealers have to disclose the type of stone they are selling, but they are also free to use their own ethos to make the final sale, which could differ slightly from Carroll's original story.[135]

MiaDonna: The Eco-Diamond

Unlike Chatham stones, the Portland-based lab-made diamond company MiaDonna does not focus on the rhetoric of the science of the diamond, but rather the more traditional images of diamond advertising. In 2005, Anna-Mieke Anderson was standing in the kitchen with her father when he asked her if she knew the source of her diamond engagement ring. Anderson's father, being an environmentalist, engaged in conversation about diamonds and diamond mining. Anderson then looked at her diamond certificate and noticed at the bottom that it read "assumed origin." This definition did not sit well with Anderson because of the themes of love and devotion that are associated with this gift. Not knowing the source of her diamond ring did not

[135] Tom Chatham, interview by Bryn Whiteley, February 23, 2016.

seem to support these images. It was after this conversation that she began researching diamonds and diamond mining practices. When she learned the horrors of blood diamonds, she wanted to do something to make a change. It was at this point that she began sponsoring a young boy in Liberia named Ponpon. The exchange of letters with Ponpon gave her more fire to physically make a change in the world of diamond jewelry. She inquired about conflict free diamonds, but no one could guarantee a truly conflict free diamond in 2005. It was then that she started MiaDonna and The Greener Diamond Foundation.[136]

MiaDonna is named for Anderson's daughter, Mia, and her late mother, Donna. Her passion as a mother gave her the motivation to make a change in the jewelry industry. When Anderson first started MiaDonna, lab-made diamonds were only available in various shades of yellow and at a much smaller size than most consumers desired. She knew that it was only a matter of time before scientists could make these diamonds colorless, so in the meantime she used diamond substitutes in her jewelry. When technological improvements allowed for larger sizes and colorless diamonds, MiaDonna began using lab-made stones. Anderson notes that not all lab-made diamonds are created equal. Especially in the last year, many new labs have been created since the process of growing diamonds is well documented and published. To control her supply chain, she only works with a few laboratories. MiaDonna certifies their stones through the GIA and the IGI. In addition to the certification process, lasers inscribe a serial number and "lab grown" on the side of MiaDonna diamonds. In addition to using lab-made diamonds, MiaDonna jewelry is set in recycled metals including white gold, yellow gold, and platinum. By using

[136] Anna-Mieke Anderson, interview by Bryn Whiteley, March 1, 2016.

recycled metals, MiaDonna jewelry prevents further mining of other natural resources, not just diamonds.[137]

Anderson's company also gives back to diamond mining communities through The Greener Diamond Foundation. The purpose of The Greener Diamond Foundation is to raise awareness and show the public what they are doing to help communities that have been negatively affected by poor diamond mining practices. Anna-Mieke personally makes trips to these communities to check on the status of their projects. Some of these projects include various farms. One of these farms in Sierra Leone is 100 acres and creates a space for over 500 reformed child soldiers to learn how to grow food. Another project trains women how to grow food on their own land. In return, they have to train another ten women. Various farms in Liberia are attached to schools, churches, and other meeting spots to teach people about agriculture. During the war, there were many different sites where it was illegal to grow food, so a whole generation of people do not know how to be sustainable. The Greener Diamond Foundation is a grassroots effort to give back to diamond-mining communities and provide them with the knowledge, education, and materials for a sustainable future.[138]

In a personal interview with Anna-Mieke, she noted that the use of the term "lab-made" to describe lab-made diamonds puts down the technology. Lab-made diamonds are a "cleaner, safer diamond product" as she mentions. Using the term "lab-made" suggests a disconnect between the technology and the product that simply is not there. Lab-made diamonds are diamonds, not some type of substitute. Needless to say, MiaDonna does not use this language to market their products. Instead, they focus on Anna-Mieke's story. Just as Chatham stones are

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[137] Anna-Mieke Anderson, interview by Bryn Whiteley, March 1, 2016.

[138] Anna-Mieke Anderson, interview by Bryn Whiteley, March 1, 2016.

marketed with a bit of the history of Carroll Chatham, MiaDonna jewelry is marketed with Anna-Mieke. In addition to her story, MiaDonna jewelry also uses the platform of "eco-diamonds." Anna-Mieke strongly believes that lab-made diamonds can "bring the love back to diamonds."[139] Lab-made diamonds eliminate the concern for humanitarian issues and preserve the integrity of the earth. With lab-made diamonds, consumers do not have to worry about these issues, and can focus on the representation of the product they purchase.

Anna-Mieke stated that Millennials are changing the way people shop and how products are produced. These types of consumers are demanding more philanthropic consumption trends. In many ways, Millennials are interested in the experience and the story behind the product, but they also want products that align with their core values and are asking more questions about the products they purchase.[140] In this sense, the traditional rhetoric about diamond advertising still holds true: there has to be a story. What is changing now is the value behind the product. Some Millennials are searching for products that do not have the connotation of humanitarian or environmental injustices that most natural diamonds carry. Until the certification process can guarantee the site of origin for natural diamonds, some consumers will turn to alternatives that better suit their values and provide the transparency they seek.

Lab-Made Diamonds as Environmental and Political Substitutes

The combination of accessible information about natural diamonds and demands from the emerging Millennial generation show that lab-made diamonds are a trend in philanthropic

[139] Anna-Mieke Anderson, interview by Bryn Whiteley, March 1, 2016.

[140] Anna-Mieke advertises her products through word of mouth, radio in Portland, but the majority of the advertising is online. She notes that there are two types of consumers she experiences. The first is a consumer that is attracted to the affordable price of lab-made diamond jewelry, and the additive quality of these products being conflict free is a bonus. The other type of consumer is one that seeks out the conflict free product, and the lower price is secondary to the intrinsic value of the product.

consumption, accomplishing deep ecological means of stimulating and educating the consumer culture. Norwegian philosopher Arne Naess's *The Shallow and the Deep Ecology Movement* outlines the different definitions of these environmental movements. Naess explains that shallow ecology only has two objectives, one being to combat pollution, and the other being to prevent the depletion of natural resources. Shallow ecology means ecological solutions for the betterment of humanity.[141] Lab-made diamonds accomplish both of these objectives. Even though the technologies required to create lab-made diamonds are not without pollution, depending on the energy source of the lab, lab-made diamond labs do not pollute nearly as much as open pit diamond mining. Likewise, lab-made diamonds prevent the depletion of natural stones from the earth. Although it is unclear exactly when natural diamonds will be depleted from the earth, the fact remains that they are a limited natural resource.

Deep ecology shares similar characteristics with shallow ecology, but deep ecology recognizes the need for a change in lifestyle in order for these ideals to be put into practice. This lifestyle change requires something greater than what shallow ecology has to offer. Deep ecology is about building a community in collaboration with the rest of the world. The majority of people with an anthropocentric perspective do not completely agree with a deep ecological way of life. Deep ecology involves looking past the self in order to think about effects on the rest of the world.[142] The diamond jewelry market has not seen a surge in deep ecological practices, but lab-made diamonds are a means of obtaining these objectives.

In order to realize the deep ecological meanings of lab-made diamonds, consumers need to evaluate their own personal environmental ethic. Environmental ethics are the values that

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[141] Naess, Arne. 2010. "The Shallow and the Deep Ecology Movement" in *Environmental Ethics: The Big Questions*. Edited by David R. Keller. Wiley-Blackwell publication.

[142] Naess, Arne. 2010. "The Shallow and the Deep Ecology Movement" in *Environmental Ethics: The Big Questions*. Edited by David R. Keller. Wiley-Blackwell publication.

guide human interactions with the natural world. A value is an estimation of worth of things that guides our sense of right and wrong. Values are usually divided into two different categories, intrinsic value and instrumental value. Intrinsic value consists of the essential characteristics of a particular subject simply by its existence, i.e., value without regard to its relation to humans. Instrumental value is found in objects that satisfy the need and wants of moral agents—value based on relation to humans. These types of values influence our habits in relation to others as well as the environment.[143] Lab-made diamonds challenge these ethics because they show how new technologies fit into changing environmental paradigms.

One objection that a consumer might raise to lab-created diamond technology is the perpetuation of the seemingly harmful and unnecessary jewelry market. While there is no inherent need for diamond jewelry, the United States has become habituated to this diamond culture. The case studies of Chatham and MiaDonna show that lab-made diamond companies differ in the use of rhetoric to advertise their product. The common thread of presenting some type of story proves that themes from the natural diamond industry are carried over into this emerging field. The lab-made diamond jewelry industry would not exist without the natural diamond industry. Therefore, lab-made diamond jewelry is not a replacement for natural diamonds, but rather an alternative for consumers, such as some Millennials, who seek products that align more with their core values.

What all the emerging lab-created diamond companies have in common is a self-interest in consumer education, increasing the amount of transparency by providing information about their process, and producing an intimate story in order to connect to the consumer. Both

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[143] VanDeVeer, Donald, and Christine Pierce. *The Environmental Ethics and Policy Book*. Belmont, CA: Thomson Wadsworth, 2003. Print.

Chatham Laboratories and MiaDonna have a section on their websites about consumer education. By no means do these companies try to diminish the work that has been done to improve mining conditions and practices. Instead, they offer education about lab-made diamonds. The diamond industry in general has gone through a series of phases where consumer trust has been broken, as in the case of blood diamonds. By being as transparent as possible, lab-made diamond jewelry companies regain a bit of trust from the consumer and establish relationships like that of many independently-owned jewelry stores in mid- to late-twentieth-century America. Most importantly, these new lab-made diamond jewelry companies are writing an exciting new chapter for diamonds. These new stories carry complicated histories that incorporate more than just the stone itself, including the values of their founders and a more philanthropic vision for the future of jewelry in general.

Lessons from Diamond Experts

Jewelers Circular Keystone magazine offers readers insight into issues in the industry. It focuses on expert-driven content, which often leads to conversation and can sometimes cause a bit of controversy. One author that sparks these types of conversations is Rob Bates. Bates has received many editorial awards, including the American Gem Society's Triple Zero Award for industry service.[144] Recently, Bates wrote a letter to Leonardo DiCaprio, an environmental celebrity and one of the stars of the 2006 film *Blood Diamond*. The main reason for Bates's letter is that DiCaprio invested in The Diamond Foundry, a relatively new company producing lab-grown diamonds.[145] Bates discusses information surrounding Nelson Mandela's concerns about

[144] For more information on Rob Bates and his writing success visit http://www.jckonline.com/authors/rob-bates

how the film *Blood Diamond* would impact diamond sales because many economies in Africa are dependent on the success of this natural resource. He points out that DiCaprio once said that the movie *Blood Diamond* was not meant to deter people from purchasing diamonds. However, Bates writes, "Today, of course, you seem to have changed your tune."[146] He points out that DiCaprio is now advocating for diamonds that are sustainably cultured without harm to humans or the environment. What seems to upset Bates the most is that DiCaprio is changing his position from statements made when *Blood Diamond* was released.

Bates highlights a few quotes from consumers attesting to the fact that lab-grown diamonds do not hurt anyone. He does not agree with this statement and continues to unpack this conversation a bit further by highlighting that lab-made diamonds are not replacing natural diamonds, but are being produced in addition to natural diamonds. He states that because of this simultaneous production, there are no social or environmental benefits. Bates writes, "For lab-grown diamonds to actually show a benefit, they have to *replace* natural diamonds. But that brings about an even bigger problem. Some 10 million people depend on the diamond industry and diamond mining in particular, sometimes in the poorest areas of the world."[147] One African country he cites as dependent on the natural resource production of diamonds is Botswana: "Diamonds make up 30 percent of Botswana's gross domestic product and 70 percent of its

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[145] The Diamond Foundry is located in San Francisco, California. The original team of engineers from the Massachusetts Institute of Technology, Stanford University, and Princeton University developed new techniques with solar power energy that they applied to the diamond making process. By using solar power credits they advertise a zero carbon footprint. Similarly to Chatham stones, the Diamond Foundry emphasizes the science behind the way their rough diamonds are produced, specifically focusing on the use of renewable resource technology that reduces their carbon footprint.

[146] Bates, Rob. "An open letter to Leonardo DiCaprio." *Jewelers Circular Keystone*. January 28, 2016. http://www.jckonline.com/blogs/cutting-remarks/2016/01/28/open-letter-leonardo-dicaprio

[147] Bates, Rob. "An open letter to Leonardo DiCaprio." *Jewelers Circular Keystone*. January 28, 2016. http://www.jckonline.com/blogs/cutting-remarks/2016/01/28/open-letter-leonardo-dicaprio

foreign exchange earnings."[148] Other African countries dependent on this commodity include South Africa, Namibia, and Sierra Leone. After citing several studies and quotes from African presidents, Bates concludes his letter by writing,

> Probably the best-case scenario would be if lab-grown diamonds become such a hot item that the natural industry comes under increased pressure to boost chain of custody controls and solve the remaining existing problems. (Those things need to happen regardless.) Unfortunately, real life doesn't always play out so neatly, or so well.[149]

Bates recognizes that this type of ideal circumstance is unrealistic and points out that lab-grown diamonds are a part of the diamond industry. What he tries to emphasize towards the end of the letter is that lab-grown diamonds are not some type of radical moral statement, even though many companies, like the Diamond Foundry, advertise themselves to be as such.

This dramatic letter produced an interesting chain of comments. One comment was from Anna-Mieke Anderson, CEO of MiaDonna. In her comments, she addresses that Bates neglected to mention that it is the *people* of Botswana who benefit from diamond mining, not the environment. Eventually, diamond deposits will run dry and the country will suffer from "the resource curse."[150] In addition to these facts, tens of millions of carats of confirmed conflict diamonds are already in the diamond market. She concludes her comments by writing,

> The lab-created diamond is simply the evolution of the diamond. The emergence of this new 'cleaner and greener' lab-created diamond industry will naturally evolve, because Millennial diamond consumers aren't their grandparents—it's that simple. History has taught us that if companies or industries are not agile and not able to adapt to new generation they do not survive.[151]

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[148] Bates, Rob. "An open letter to Leonardo DiCaprio." *Jewelers Circular Keystone*. January 28, 2016. http://www.jckonline.com/blogs/cutting-remarks/2016/01/28/open-letter-leonardo-dicaprio

[149] Bates, Rob. "An open letter to Leonardo DiCaprio." *Jewelers Circular Keystone*. January 28, 2016. http://www.jckonline.com/blogs/cutting-remarks/2016/01/28/open-letter-leonardo-dicaprio

[150] Bates, Rob. "An open letter to Leonardo DiCaprio." *Jewelers Circular Keystone*. January 28, 2016. http://www.jckonline.com/blogs/cutting-remarks/2016/01/28/open-letter-leonardo-dicaprio

[151] Bates, Rob. "An open letter to Leonardo DiCaprio." *Jewelers Circular Keystone*. January 28, 2016. http://www.jckonline.com/blogs/cutting-remarks/2016/01/28/open-letter-leonardo-dicaprio

Many industry experts say that Millennials will be the determining factor in the shift the jewelry industry is currently experiencing. In fact, in Bates's response to Anderson's comments, he admits that he has nothing against lab-grown diamonds, but does not agree with the selling point that lab-made diamonds are some type of moral statement. It is a case where the facts and the rhetoric need to match up in order for these features to be true. Lab-made diamonds themselves may not be a moral statement, but they do force the consumer to make more conscious decisions about the source and philanthropy of the products they consume. This letter is very important to the conversation about lab-made diamonds and rhetoric because it emphasizes many of the complications involved in rewriting the history of the diamond.

Conclusion

What is the future of the diamond jewelry market? Scientist Peter Bachmann, when asked about the diamond market and what the role of lab-made substitutes is in that market, responded by saying, "The diamond jewelry market is a very controlled market. Moreover, the value is in the head of people. Even for a very well trained jeweler it is sometimes very difficult to distinguish man-made diamonds from natural stones. The jewelry industry does everything possible to keep it that way, because the image of 'forever' and 'rare' and 'precious' is their business model".[152] Essentially, Bachmann believes that the consumer culture will always be on the lookout for the market schemes of companies such as De Beers. He does believe that lab-made diamonds will become popularized in the near future because these options are more cost effective.

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[152] Peter Bachmann, interview by Bryn Whiteley, April 2, 2013.

Dr. Bachmann touches on some of these changes, but only offers conjectures as to the future of the market because of his focus on the scientific background of diamonds. On the other hand, Martin Fuller, a working gemologist and appraiser for over 35 years, states that, "The whole jewelry industry is feeling a change. Not as many people are consuming on that conspicuous level anymore. The entire culture is changing."[153] He shared that most consumers these days are purchasing diamond engagement rings, wedding bands, and diamond stud earrings. These staple items will not leave the market anytime soon, but big flashy jewelry is no longer in style. He attributes this cultural shift to the mindset of the Millennials, the consumers who are challenging the current processes and products in the industry.

The discussion on lab-made diamonds is extremely important to the diamond jewelry industry. It is clear that these alternatives make up a solid portion of the market, a figure projected to increase in the coming years. After analyzing material from various interviews, as well as consulting sources, I draw several important conclusions. First, experts do not hold any prejudice against diamond substitutes. A few years ago, the lab-made diamond market and the natural diamond market were two distinct entities. Today, these markets have become mixed. Some companies mix natural stones with lab-made ones, while others deal with mostly natural stones and work with lab-made stones on a case-by-case basis. At any rate, there is no longer the distinction and separation of these diamonds that there once was. There is also no fear about lab-made diamonds replacing natural diamonds. There will always be consumers who prefer natural stones. What lab-made diamonds accomplish is filling consumers' demand for alternatives to natural diamonds that have been associated with various humanitarian and environmental conflicts.

[153] Martin Fuller, interview by Bryn Whiteley, February 24, 2016.

Another important conclusion is that diamonds are a finite resource, and consumers need to be well informed about alternatives. Even though new diamond deposits are found daily, diamonds mined from the earth take millions of years to create. The rate of mining far surpasses how fast the earth can produce natural diamonds. New diamond deposits present new challenges in mining techniques. How do you effectively mine for diamonds in areas of the world that are frozen for the majority of the year? How do you mine for diamonds located underneath the bed of the sea? The natural diamond industry is currently engaged in these conversations. There are many different predictions as to how many years diamond mines will have left. Some declare that diamond mines will be exhausted in 50 years, while some say that it could take several generations. The fact of the matter is that eventually natural diamonds will be mined out. Lab-made diamonds may provide the solution for this problem in years to come, but for the foreseeable future, lab-made diamonds mainly serve the purpose of being an alternative product for philanthropic consumers.

The history of diamonds and diamond jewelry is already being rewritten. Lab-made diamonds do not serve the purpose of replacing natural diamonds, but rather provide an alternative for consumers in search of philanthropic products. This is mainly due to changing attitudes of younger generations purchasing this type of commodity. Millennials will play a crucial role in how these changes ultimately affect the diamond jewelry market. What is certain now is that these changes are already being felt. Natural diamond markets are not experiencing negative effects from lab-made diamonds, and consumers now have a wider variety of options for purchasing diamond jewelry.

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MANUSCRIPT 3

Everyone's A Diamond in the Rough:
Rethinking Memory in a Mobile Society

Countless technologies exist to memorialize deceased loved ones. One popular option is cremation, but can ashes be used for more than simply burying or scattering? According to the Good Funeral Guide, multiple forms of cremated-remain technology exist, such as turning ashes into sculptures, combining them with paint, pressing them into a vinyl record, firing them out of shotgun cartridges, turning them into a crystal wind chime, and even turning them into a fireworks display.[154] One non-explosive keepsake item that people can carry with them each and every day is a diamond. In fact, one of the Oxford English Dictionary's definitions of "casket" is "a small decorated box for holding jewelry or other valuable things, especially in the past."[155] It seems fitting that an alternative to being buried in a casket is becoming jewelry to be treasured. Turning ashes into diamonds materializes the basic fact of carbon-based life, that humans can be transformed into other carbon-based material, like diamonds.

In this manuscript, I discuss the alternative burial technology of turning ashes into diamonds. I explore the ways in which this emerging process is a technology of memorialization for an increasingly mobile society, in which place, culture, and tradition are progressively more unsettled. At the same time, the product of a diamond created from cremated remains affects both the relationship that American consumers have with diamonds and their relationship with death and dead bodies. This conversation materializes through the framework of the natural versus lab-made duality of diamonds. Turning a body into a diamond reflects the practice of gifting diamond jewelry, including the symbolism of eternal love. Diamonds created from ashes

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[154] "What To Do With The Ashes." The Good Funeral Guide. Web. 29 Apr. 2015. http://www.goodfuneralguide.co.uk/tombstones-and-ashes/what-to-do-with-the-ashes/

[155] "Casket Noun - Definition, Pictures, Pronunciation and Usage Notes | Oxford Advanced Learner's Dictionary at OxfordLearnersDictionaries.com." Casket Noun - Definition, Pictures, Pronunciation and Usage Notes | Oxford Advanced Learner's Dictionary at OxfordLearnersDictionaries.com. Web. 10 Apr. 2015. http://www.oxfordlearnersdictionaries.com/us/definition/english/casket

are literally lab-made, potentially complicating the relationship between American consumers and diamonds because of the connotation of the process and representation of lab-made stones.

One company that performs this transformation is LifeGem Diamonds, located outside of Chicago, Illinois. LifeGem Diamonds is the only company employing this technology in the United States. LifeGem Diamonds offers this service for not only human ashes, but also for hair, pet ashes, and potentially for celebrity diamonds.[156] Two other companies in the world offer similar services. Phoenix Diamonds, located in Britain, offers the technology to turn hair into diamonds, and Algordanza, located in Switzerland, also uses ashes-to-diamonds technology. Algordanza mostly serves international clients, particularly in Japan, where nearly everyone is cremated. Though LifeGem Diamonds also profits from international business, there is a distinct essence of national pride in having a "Made in America" product.[157] The history of death practices in the United States, such as cremation and embalming, carries unique values and traditions that are reflected in LifeGem technology and the diamonds they create.

Mourners have always preserved images of their dead loved ones, often using death technologies including cremation and embalming. LifeGems, rather than being a revolutionary departure from these methods, is a logical next step. LifeGems does not complicate the mourner's relationship with death more than other memorial practices, but rather creates a lasting memory, a physical keepsake of the memory of a loved one. For LifeGem customers, these products are intended to ease the grieving process by allowing the mourner to actually hold something made from the one they have lost. LifeGem Diamonds technology enhances the memories of the deceased by allowing the mourner to physically carry a piece of their dead loved

[156] Celebrity diamonds meaning diamonds made from hair or ashes of celebrities.

[157] This essence of national pride is true for other forms of death technology as well, such as embalming, which is explained later on in this manuscript.

one, but it also creates a new memory of how the ashes have been given a technological rebirth. LifeGems draw together the traditional association with healing and enduring love along with the memorializing and community identity functions of death technologies to create a memorial technology that is perhaps uniquely apropos of contemporary mobile society.

What is a LifeGem?

Alicia Oltuski, author of *Precious Objects: A Story of Diamonds, Family, and a Way of Life*, writes about her interview with one of LifeGem Diamonds' co-founders, Dean VandenBiesen. In this interview, VandenBiesen recounted how his younger brother Rusty came up with the idea for LifeGem. Their grandmother was very religious and displayed religious artwork and artifacts in her home. Rusty was about four years old when he realized the meaning behind these objects: he knew that one day he was going to die. Years later, Rusty was not pleased by any of the current options for his body after death. It was then that Rusty confided in VandenBiesen, they enlisted their good friend Greg Herro, and they started the patent process for LifeGem Diamonds. By 2002, LifeGem Diamonds was receiving some of their first clients.[158]

[158] Oltuski, Alicia. *Precious Objects: A Story of Diamonds, Family, And A Way Of Life*. 2011. Scribner. New York.

LifeGem – The best your body will ever look!

Figure 13: Greg Herro (left) and Dean VandenBiesen (right) presenting LifeGems at a funeral conference.[159]

What is a LifeGem? A LifeGem is a high quality diamond created from a lock of hair or cremated remains (cremains). There is a four-step technical process to creating a LifeGem. First, LifeGem Diamonds uses patented technology to capture carbon from cremains or a lock of hair. This technology uses a high-nitrogen, low-oxygen atmosphere to capture the maximum amount of carbon needed to create a LifeGem. According to the LifeGem Diamonds website, "Our advanced and delicate procedure has been specifically designed to capture almost all of the available carbon in an 8 ounce (or less) portion of the cremated remains, or a lock of hair equal to that collected during a typical men's haircut."[160] Since most of their stones are typically less than two carats, not very much ash or hair needs to be used. The Gemological Institute of America (GIA) reported in *Gems & Gemology In Review* that an average human body contains enough carbon to make at least ten one-carat lab-made diamonds.[161] Depending on the size and

[159] Greg Herro and Dean VandenBiesen presenting LifeGems at a funeral conference. http://agoodgoodbye.com/tools-of-the-trade/new-trends-in-memorial-jewelry/ Public domain.

[160] "LifeGem.com." LifeGem.com. Web. 15 Mar. 2015. http://www.lifegem.com

[161] Shigley, James E. *Gems & Gemology In Review: Lab-made Diamonds*. 2005. The Gemological Institute of America. Carlsbad, California. Page 184.

color (colorless, blue, red, green or yellow) of the LifeGem, the cost varies between $4,000 and $25,000.

Figure 14: Photo from the LifeGem brochure illustrating all of the available colors[162]

During the second stage of the LifeGem process, the carbon is turned into graphite by exposure to extremely high temperatures (up to 3,000 degrees Celcius) under precise conditions. A crucible etched with a consumer identification number secures the carbon to complete the purification process. Once the carbon has turned into graphite, the graphite is placed into a diamond press in the third step. The diamond press replicates the high temperatures and high-pressure forces that a natural stone experiences in deep earth. According to LifeGem Diamonds,

[162] Photo from the LifeGem brochure illustrating all of the available colors. www.lifegem.com Public domain.

> The pressure needed to create a diamond, nearly 1,000,000 p.s.i., needs to be tightly contained by massive steel forgings. Deep in the heart of each press are precision machined semi-spheres designed to exert and maintain constant pressure on the individual octahedral diamond growth chamber. Inside the growth chamber, precisely calculated variables of heat and pressure cause the purified carbon (graphite) to break down into individual atoms and crystallize into a rough diamond. At the optimal crystallization point, the carbon molecules bond together in a pattern found only in a diamond.[163]

Computers monitor the growth of these diamond crystals, but no physical monitoring can take place because of the extreme temperature and pressure. The longer the graphite sits in the diamond press, the larger the resulting rough diamond crystal. These diamond crystals are molecularly identical to natural diamond stones and present all of the same traits (hardness, brilliance, fire, and luster). Finally, diamond cutters at LifeGem Diamonds facet the rough stones into jewelry as an expression of memorialization. All LifeGem stones are inspected by the GIA, using the same diamond certification process as most of the jewelers in the United States. According to the GIA, "Because of the presence of trace amounts of boron in the recovered carbon, the lab-made diamonds are type IIb."[164] This type of classification more acutely describes the scientific makeup of the diamond itself. In a diamond classified as type IIb, certain boron atoms replace carbon atoms in the crystalline diamond lattice structure. This does not mean that the diamond is no longer a diamond. It simply means that these boron impurities place the diamond under a different classification category from natural diamonds. The purity of a diamond is affected by the other elements it has been exposed to.[165]

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[163] "LifeGem.com." LifeGem.com. Web. 15 Mar. 2015. http://www.lifegem.com

[164] Shigley, James E. *Gems & Gemology In Review: Lab-made Diamonds*. 2005. The Gemological Institute of America. Carlsbad, California. Page 184.

[165] See Figure 15 for an example of a diamond with trace amounts of boron. Note the blue color.

Figure 15: A blue LifeGem Stone pictured at the GIA.[166]

VandenBiesen remembers that some of the first people immortalized by LifeGem Diamonds were 9/11 victims, cancer victims, the pilot of a commercial flight that had crashed, and a baby who died soon after childbirth. Even after thirteen years of service, VandenBiesen can still remember specific clients. His most memorable client was eight-year-old Hannah Rowley. She learned about LifeGem Diamonds when she was in the hospital fighting her battle with leukemia. Hannah wanted to be a diamond for her mother to help her through the grief of losing a child. After Oltuski reports this interaction of her interview with VandenBiesen, she writes, "And this, I believe, is the simple reason for LifeGem's success: it creates something beautiful out of the ugly business of death."[167] Death is not an easy subject to come to terms with. Though every person will eventually die, realizing our own death versus how people cope with the death of others is an extremely unique process. Hannah came to terms with her own death, and used her time to figure out how to help her mother cope. In many ways, the "ugly business of death" is how those who are still living physically handle the loss of a loved one. Unlike Hannah and her family, not everyone is as receptive to this technology.

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[166] Shigley, James E. *Gems & Gemology In Review: Lab-made Diamonds*. 2005. The Gemological Institute of America. Carlsbad, CA. Page 184.

[167] Oltuski, Alicia. *Precious Objects: A Story of Diamonds, Family, And A Way Of Life*. 2011. Scribner. New York. Page 276.

Critiques of LifeGem

LifeGem Diamonds does have their critics. Oltuski writes, "The media clips LifeGem posts on its website feature Jay Leno calling it creepy, and Kelly Ripa joking about a tennis bracelet for the black widow, a diamond for each of her husbands."[168] All jokes aside, Oltuski presents the idea of becoming a LifeGem to her father, a man who raised a family in the diamond district of New York City and dealt with natural stones nearly his entire life. His response showed his disgust: "I think you should let someone rest in peace and not carry them around like a necklace, a token, or something like that. Like a lucky charm."[169] Though it might seem fitting for someone so involved with diamonds to eventually become one, this type of keepsake technology clearly does not fit everyone's vision of memorialization.

In 1963, Jessica Mitford published *The American Way of Death* addressing issues surrounding the seemingly forged profit of the funeral business. Mitford questions what the modern "American way of death" actually entails and intricately describes different funeral practices and trends. Mitford writes, "A new mythology, essential to the twentieth-century American funeral rite, has grown up—or rather has been built up step-by-step—to justify the peculiar customs surrounding the disposal of our dead."[170] She questions the "American tradition" of funerary practices**,** brings to light issues surrounding consumer demands, writes about the importance of the "memory picture," and highlights issues about the terminology of funeral professionals, requiring the reader to re-evaluate their view of funerary practices. Before her death in 1996, Mitford revised and updated her original analysis and confronted new trends

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[168] Oltuski, Alicia. *Precious Objects: A Story of Diamonds, Family, And A Way Of Life*. 2011. Scribner. New York. Page 275.

[169] Oltuski, Alicia. *Precious Objects: A Story of Diamonds, Family, And A Way Of Life*. 2011. Scribner. New York. Page 284.

[170] Mitford, Jessica. *The American Way of Death Revisited*. 1998. Vintage Books. New York. Page 16.

about death and the funeral business. She asked the reader to contemplate the following comparison:

> Is the funeral inflation bubble ripe for bursting? Back in the sixties, the American public suddenly rebelled against the trend in the auto industry towards ever more showy cars, with their ostentatious and nonfunctional fins, and a demand was created for compact cars patterned after European models. The all-powerful U.S. auto industry, accustomed to telling customers what sort of car they wanted, was suddenly forced to listen for a change. Overnight, the little cars became for millions a new kind of status symbol. Could it be that the same cycle is working itself out in the attitude towards the final return of dust to dust, that the American public is becoming sickened by ever more ornate and costly funerals, and that a status symbol of the future may indeed be the simplest kind of 'funeral without fins'?[171]

Mitford presents a scenario where consumers have to question a practice and a profession from which they have become so far removed. Her approach in this style of investigative journalism allows the reader to see how the funeral industry profits off of grieving mourners who are too consumed by the loss of their loved one to question or challenge the burial and memorial options presented by funeral professionals.

Are LifeGems just another example of what Mitford criticized in 1963? A 2013 ABC News article presented LifeGems as a macabre object. The author, Sunaina Rajani, wrote about the profitability of this business.[172] Although Rajani did not directly reference Mitford in this brief article, Rajani made some of the same claims. Is LifeGem Diamonds another way to commodify the body? LifeGems may be a technology to give a new vision of death, but LifeGem Diamonds does not appear to commodify the death process. Oltuski interviewed a mortician named Brian McKee at Thibadeau Mortuary Service in Maryland only days after she interviewed VandenBiesen. McKee does not offer LifeGem services to all of his clients, but does present the idea of keepsake items. If the client seems interested, McKee will explain LifeGem Diamonds along with other alternative keepsake technologies. So far, Thibadeau Mortuary

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[171] Mitford, Jessica. *The American Way of Death Revisited*. 1998. Vintage Books. New York. Page 19.

[172] "Turning the Dead Into Diamonds." ABC News. ABC News Network, 5 Dec. 2013. Web. 20 Apr. 2015. http://abcnews.go.com/blogs/business/2013/12/turning-the-dead-into-diamonds/

Service has sold two LifeGems, one to the widow of an American soldier, and the other to a widower whose wife lost her battle with cancer.[173] The LifeGem website is full of information, and any potential client or curious internet user can request a brochure. LifeGem Diamonds does not explicitly state that their technology is the most appropriate form of death care, instead presenting LifeGems as an alternative to more traditional burial practices.

According to the Oxford English Dictionary, a commodity is "a product or raw material that can be bought and sold."[174] Using this definition, LifeGem technology is literally a way to commodify the dead body. But is LifeGem another profitable scheme presented to vulnerable mourners? As mortician Brian McKee explained, LifeGems are not presented along with traditional sales of caskets and urns, but rather as keepsake items. One could compare LifeGems to the appealing items located behind the cash register of most stores. For example, the intention upon entering a grocery store is to buy groceries, but if left at a long checkout line, one might pick up a magazine, lip balm, or other small add-on products. These small products do not replace the groceries, but are an addition to the items the consumer needed and set out to purchase in the first place. LifeGems do not replace traditional forms of burials or cremations, but offer another memory picture for the mourner. Looking further into the business side of LifeGems, the funeral home does receive a ten percent commission from LifeGems Diamonds per stone. Curiosity does beg the question of how LifeGems will stay in business if they are waiting for large numbers of people to choose this type of alternative technology.

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[173] Oltuski, Alicia. *Precious Objects: A Story of Diamonds, Family, And A Way Of Life*. 2011. Scribner. New York. Page 284.

[174] "Commodity Noun - Definition, Pictures, Pronunciation and Usage Notes | Oxford Advanced Learner's Dictionary at OxfordLearnersDictionaries.com." Commodity Noun - Definition, Pictures, Pronunciation and Usage Notes | Oxford Advanced Learner's Dictionary at OxfordLearnersDictionaries.com. http://www.oxfordlearnersdictionaries.com/us/definition/english/commodity?q=commodity

In Oltuski's interview with VandenBiesen, he emphasized that LifeGem Diamonds is geared toward the common mourner (for both human and pet ashes), but that he sees celebrity diamonds as potentially becoming a large portion of their business. In fact, LifeGem Diamonds has already made a diamond out of Beethoven's hair, which sold for more than $200,000 on eBay to a private buyer. Likewise, LifeGem Diamonds has acquired Michael Jackson's hair and plans to turn those locks into diamonds. Many might wonder about the authenticity of these celebrity diamonds. How will consumers be sure that the Michael Jackson diamond is indeed made out of Michael Jackson's hair? Fortunately for LifeGem Diamonds, they have certified Michael Jackson's hair using DNA verification from Cedars-Sinai Medical Center. If the celebrity diamonds do end up being a major profit for the business, this type of in depth verification process will continue.[175]

Celebrity diamonds could bring major profit to the company in the future. For now, though, LifeGem Diamonds remains focused on helping the common mourner, which brings us back to Rusty's story. How does Rusty feel about death now compared to the options available before LifeGem Diamonds? Oltuski writes, "I wanted to know if Rusty felt better about death since he created the company. Dean said, 'Yeah, this was something that made him feel better about mortality…kinda gave him this feeling of, 'Okay, I won't be forgotten. I won't be alone,' so that aspect, that thought, made him feel a lot better about mortality.'"[176] Rusty's story is the core of LifeGem Diamonds, proving that the image of the company is not simply about seeking profits. History shows that mourners have carried objects of their deceased loved ones as a way to preserve a memory picture. LifeGem is an evolution of this tradition.

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[175] Oltuski, Alicia. *Precious Objects: A Story of Diamonds, Family, And A Way Of Life*. 2011. Scribner. New York. Page 282.

[176] Oltuski, Alicia. *Precious Objects: A Story of Diamonds, Family, And A Way Of Life*. 2011. Scribner. New York. Page 282.

Mourning Symbols

Before the emergence of the funeral industry and various forms of death technology, American families took care of proper mourning preparations and burials. Jessica Mitford writes,

> From colonial days until the nineteenth century, the American funeral was almost exclusively a family affair, in the sense that the family and close friends performed most of the duties in connection with the dead body itself. It was they who washed and laid out the body, draped it in a winding sheet, and ordered the coffin from the local carpenter. It was they who carried the coffin on foot from the home to the church and thence to the graveyard, and who frequently – unless the church sexton was available – dug the grave. Funeral services were held in the church over the pall-covered bier, and a brief committal prayer was said at the graveside. Between the death and the funeral, the body lay in the family parlor, were the mourners took turns watching over it, the practical reason for this being the ever-present possibility that signs of life might be observed.[177]

Once funeral directors and other death professionals emerged, the practice of families physically burying the deceased disappeared. Instead of family members preparing the body in their home, it was transported to a funeral home where it could be properly taken care of by funeral professionals and presented to the mourning family in the fashion they saw fit. Just because the family was no longer performing these preparation tasks, however, does not mean that the process changed. Funeral industry professionals still treated the body with great care to make the deceased ready for viewing.

Americans have two main concerns about their deceased loved ones. The first is that the body is cleansed, both through spiritual last rights and physical washing. The second is that the mourners create a lasting memory picture of the deceased, ways they will remember the body at the funeral and beyond. The Victorian era exemplifies these two ideas through the concept of the "good death" and relics. The good death was the dominant Victorian image of dying peacefully at home. As author Deborah Lutz writes, "The 'goodness' of death made the moment of death, and even the expression on the face of the one just dead, a kind of text that could express

[177] Mitford, Jessica. *The American Way of Death Revisited*. 1998. Vintage Books. New York. Page 147.

spiritual salvation, that might be marked with the signs of the loved one's final worthiness of passing into heaven."[178] Nineteenth century consumers began to use this good death concept to visually remember their loved ones through photography. One style of death photography was "spirit photographs," in which the deceased person's soul appeared in the background of family portraits. These images were not limited to family members. Some included important figures of the time, such as Abraham Lincoln. These spirit photographs captured the peaceful soul of the person who departed by the good death. Author John Troyer writes, "The public acceptance of the spirit photographs suggests that the power of the machinery producing the images could capture the 'true' appearance of death as it affected the living."[179] Spirit photography was not the only form of creating a lasting image of a deceased loved one. Other forms included paintings, drawings, and postmortem photography. The purpose of these visualizations was to show the dead as somehow being alive and at peace.

These various methods changed how Americans looked at the dead body and death itself. No longer were mourners forced to confront a decaying body. Instead, they could connect to the peaceful resting body. Troyer continues,

> Human memories of a pre-photographic corpse were confounded by the body's inevitable state of decomposition, meaning that viewing the dead body needed to occur before it began breaking down. Through photography large numbers of people beyond immediate family members could look at a life-like representation of the dead body indefinitely and in any location the image traveled. As a mechanical apparatus, the camera was effectively removing the dead body from any time and space constraints created by death.[180]

In a similar fashion, LifeGems create another mobile society because they do not keep the body in one place, but carry the representation and the memory of the body wherever they travel.

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[178] Lutz, Deborah. "The Dead Still Among Us: Victorian Secular Relics, Hair Jewelry, and Death Culture." *Victorian Literature and Culture*. 2010. Cambridge University Press. Page 133.

[179] Troyer, John. "Embalmed Vision". *Mortality*. Vol. 12, No. 1, February 2007. Page 27.

[180] Troyer, John. "Embalmed Vision". *Mortality*. Vol. 12, No. 1, February 2007. Page 27.

Postmortem photography affected the way Americans physically saw death, but still carried with it the concepts of the good death. LifeGems technology serves the same purpose by allowing the mourner to create their personal vision of the deceased.

Portraits and photography were not the only vehicles for memorializing the dead. Mourning jewelry began as early as the Renaissance in Europe, but quickly spread to the United States in the Victorian era. Marjorie Simon, author of "Objects of Remembrance: Contemporary Mourning Jewelry," writes,

> But the popularity of mourning jewelry soared in the nineteenth century during the reign of Queen Victoria, when mourning itself seemed to become an art. The Queen was born into the Industrial Revolution and presided over British colonial dominance (1837-1901) in a time of enthusiasm for science and global exploration. Her beloved husband Prince Albert was only 42 years old when, in 1861, he succumbed during an outbreak of typhoid fever. Victoria remained in deep mourning for the next 40 years, wearing only black clothing and jewelry, which had an enormous impact on custom and fashion for future generations. The Victorian era, comprising nearly the entire nineteenth century, has since become synonymous with extremes of feeling and a virtual cult of death.[181]

Other forms of mourning objects include bracelets of woven hair and lockets. Jewelry was a way to express emotions of both love and loss. Queen Victoria used black clothing and jewelry to outwardly display her deep sorrow for the loss of Prince Albert. Americans fascinated by all things English imitated the fashion Queen Victoria mandated. Demand for black clothing and jewelry skyrocketed. Mourning jewelry became widely popular in the United States during the Civil War. Hair jewelry was a major form of mourning jewelry because it encompassed sentimental connections to the person as well as visions of the deceased being at peace. Hair is a symbol for life and often intimately initiates strong memories associated with another person. This is why Queen Victoria had several rings made from Prince Albert's hair. She wanted to feel connected to him, to remember and memorialize him.[182] LifeGems are a twenty-first century

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[181] Simon, Marjorie. "Objects of Remembrance: Contemporary Mourning Jewelry." *Metalsmith.* 2009. Vol. 29. No. 5. Page 24.

[182] Margulis, Marlyn Irvin. "Victorian Mourning Jewelry." *Antiques & Collecting Magazine*. 2002. Vol. 107 Issue 3.

form of mourning jewelry. Instead of displaying a lock of a loved one's hair, a mourner can wear a diamond made of that same hair. The same symbolism and connection is carried through the LifeGem as well as other forms of mourning jewelry. This is not a new concept or fashion in the United States, but rather a different form and display of the same sentimental connection to the deceased. Other types of technology also allow the mourner to create this intimate image picture, such as embalming.

Comparison to Embalming

In many ways, the cherished connection that LifeGems create follows a similar trajectory to the history of embalming in the United States. Embalming became a widely accepted practice in the United States in the mid nineteenth century, mostly because of the Civil War. Bloody battles such as Bull Run, Antietam, and Gettysburg forced leaders to reevaluate the treatment and burial of the dead. Many families, especially from the North, wanted their soldiers returned home. There were many obstacles that did not always guarantee a safe return. One such obstacle was figuring out how to slow down the decomposition of bodies in order to ship them home. Historian Drew Gilpin Faust writes in her book *This Republic of Suffering: Death and the American Civil War* that "Families sought to see their lost loved ones in as lifelike a state as possible, not just to be certain of their identity but also to bid them farewell. Embalming offered families a way to combat at least some of the threats the war posed to the principles of the Good Death."[183] Since soldiers did not always die at or near home, embalming provided the technology to preserve this vision.

[183] Faust, Drew Gilpin. *This Republic of Suffering: Death and the American Civil War.* 2008. Vintage Books. New York. Page 93.

Embalming, however, was not strictly for victims of war. Embalming soon found its way into civilian life. There are many reasons why the everyday consumer would choose embalming. Dr. Carl Lewis Barnes wrote an extensive textbook about embalming in the nineteenth century. He offers four reasons for embalming the dead:

> A GREAT Many reasons have been advanced for embalming the dead. Some of these are plausible, while some are, perhaps, fanciful, but in the majority of cases the principal reason [1] is to prevent the appearance of putrefaction until such time that the body may be viewed by the friends of the deceased, or until it can be conveyed to a suitable resting place. This is the first and prime reason why embalming is practiced so extensively in this country. Since the discovery of germ theory in disease, and also since the discovery of the cause of putrefaction in animal tissues, we have added the second, but by no means the last importance cause, viz: [2] that of disinfecting the body. The importance of this subject can hardly be overestimated, since, by the introduction of the antiseptic fluids to the body by means of the arterial system, the fluid penetrates every tissue, and, by the aid of osmotic action, enters even those tissues not supplied by the blood current, killing the germs of contagion and putrefaction, and thus preventing the spread of contagious or infectious diseases and the development of poisonous gases, which might have serious effect on the living… Other reasons for embalming are those that relate to [3] preservation of a body until it may be identified. A fanciful reason [4] for embalming is that the body is made to look life-like. Some of the fluids on the market, especially those containing the arsenate of soda, have the tendency to produce a redness or color to the cheeks and exposed mucous surfaces.[184]

Just as families of soldiers were concerned with the body decaying, so too were civilians. Embalming technology provided the means for creating a memory picture of the deceased. From the point of view of the mourner, two major concerns are addressed by the use of this technology: the body physically looks like the deceased, and the body is cleaned or purified. Author George Sanders writes, "Embalming and proper burial, it was believed, were the most sanitary means to dispose of dead bodies, an idea that resonated in a populace that had recently become aware of germ theory."[185] Just as colonial families washed the deceased before presenting them in the front parlor, embalming provided a cleansing of the entire body by disinfecting.

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[184] Troyer, John. "Embalmed Vision". *Mortality*. Vol. 12, No. 1, February 2007. Page 33.

[185] Sanders, George. "The dismal trade as culture industry." *Poetics*. Vol. 38, No. 1, 2010. Page 50.

How did the embalming process become so widespread? Just as diamond jewelry is advertised to consumers, so too was embalming in the late 1800s. For example, one embalming advertisement from 1863 reads,

> Bodies Embalmed by Us NEVER TURN BLACK! But retain their natural color and appearance; indeed, the method having the power of preserving bodies, with all their parts, both internal and external. WITHOUT ANY MUTILATION OR EXTRACTION, and so as to admit of contemplation of the person Embalmed, with the countenance of one asleep.[186]

The language in this advertisement is very important because it raises many important themes in how Americans visualize death. The consumer is drawn to this technology by using language like "natural," "preserving," "countenance," and "asleep." Mourners do not want to memorialize a decaying body, but rather a preserved image of the one they have lost. The language in this advertisement promises an intact, life-like appearance of the deceased.

Unlike embalming, LifeGems do not physically present the direct image of the deceased, but bear a great deal of symbolic value and representation of the physical body. Take, for example, the story of "The Embalming of Jenny Johnson," recounted by Mark Harris in his book *Grave Matters: A Journey Through The Modern Funeral Industry To A Natural Way Of Burial*. Harris describes in detail how Tom Fielding, the funeral director at Fielding Funeral Home, helped Jim and Myra Johnson deal with the funeral arrangements for their daughter Jenny. Through Fielding's interactions with the Johnson family, he knew that alternative keepsake technologies were not an appropriate purchase because they wanted to honor Jenny according to traditional Catholic beliefs. Fielding walked the Johnsons through casket selection, various other requirements based on where Jenny would be laid to rest, and the death certificate before performing embalming services. Harris provides a vivid description of the intricate process of how Fielding embalmed Jenny's body. Harris writes, "In the end, the modern embalmer is just as

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[186] Troyer, John. "Embalmed Vision". *Mortality*. Vol. 12, No. 1, February 2007. Page 32.

much artist as dermasurgeon. With his arsenal of chemicals, tools, and techniques, he's an illusionist who literally changes the face of death, transforming the ashen, lifeless corpses in his care into lifelike bodies at rest."[187] Fielding worked with the Johnsons to decide on Jenny's final wardrobe and makeup. Myra brought in a picture of Jenny at prom, which Fielding used as a guide for how to create a lasting "memory picture" of Jenny. Fielding's goal was to create "the lasting illusion of a beautiful girl who has slipped peacefully off to sleep."[188] Embalming is a labor-intensive process that sometimes requires several hours to create a final, lifelike image of the deceased. This image is what the mourners desire, a final expression of the one they have lost. The way an embalmed body appears is the final physical encounter that the mourner has with the deceased. This idea of a final "memory picture" translates to the LifeGem technology.

The responsibility of workers at LifeGem is to walk clients through all of their options, just as Fielding did with the Johnsons. LifeGem clients are faced with the task of choosing what size, color, and shape they wish to see in the final product. In choosing these options, they are creating the final "memory picture" of their lost loved one. LifeGem Diamonds makes a very clear statement that they ultimately cannot guarantee exactly the size or color of the final product because sometimes bodies are not rid of impurities, even in ash form. In fact, most bodies have some levels of boron left in them, so the majority of LifeGems, if left untreated, would be some shade of blue.[189] This element of uncertainty does not change the final "memory picture" the

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[187] Harris, Mark. *Grave Matters: A Journey Through The Modern Funeral Industry To A Natural Way Of Burial.* 2007. Scribner. New York. Page 18.

[188] Harris, Mark. *Grave Matters: A Journey Through The Modern Funeral Industry To A Natural Way Of Burial.* 2007. Scribner. New York. Page 27.

[189] Shigley, James E. *Gems & Gemology In Review: Lab-made Diamonds*. 2005. The Gemological Institute of America. Carlsbad, California.

client constructs. Instead of choosing what makeup to place on the body, the client chooses the color of the LifeGem. Instead of choosing the final outfit, the client chooses the LifeGem's shape. The lasting image of the lost loved one is embodied through the physical appearance of the stone, just as it is in the embalmed body. In a way, creating this lasting "memory picture" is more about how the mourners cope with the loss of the deceased and how they will translate these memories into the future. With embalming, this vision is more of a mental picture, but a LifeGem physically enters these memories into everyday conversations.

Comparison to Cremation

Another type of death technology connected to LifeGem Diamonds is cremation. Unlike embalming, cremation does not emphasize the visual representation of the body, since this process incinerates the corpse and all that is left is grain-sized particles. Stephen Prothero, author of *Purified by Fire: A History of Cremation in America*, details various phases of cremation history. In the early phase of cremation, this technology was perceived as bad for the church and bad for business. Funeral directors had established businesses that were profitable, such as embalming and casket sales, and many churches preached that cremation was not part of Christian doctrine. Early Christians adopted the Hebrew tradition of burial and declared that cremation was a pagan practice. As an example of this dogma, the Vatican banned cremation in the Roman Catholic Church in 1886. When the church convened the Second Vatican Council in the 1960s, however, Pope Paul VI lifted the ban on cremation.[190] Cremation technology was not initially accepted, like the embalming process, likely because of concerns about church doctrine. However, cremation rates in the United States are on the rise: "Today, some thirty percent of all

[190] Prothero, Stephen. *Purified by Fire: A History of Cremation in America*. 2001. University of California Press. Los Angeles, California. Page 165.

Americans are cremated. By 2025, the percentage will jump to forty-five percent, predicts the Cremation Association of North America (CANA), an industry group based in Chicago; five years later, the number of cremations will outnumber burials for the first time in our history—and stay there."[191] As a comparison, countries with religious preferences other than Christianity have extremely high rates of cremation. India's cremation rate is over ninety percent. That is not to say that cremation rates in predominantly Christian countries are not increasing. Great Britain's cremation rate is around seventy percent. Since cremation is now acceptable burial technology recognized by most churches, it is becoming a more popular way to memorialize the deceased.

Religious preference is a major driving force for end-of-life care and burial, but other concerns also influence these decisions. One other reason for choosing cremation could be environmental concerns, since "Cremation trims much of the thirty million board feet of lumber that's diverted to coffins annually, the million and a half tons of concrete funneled into burial vaults."[192] The cremation process does not require the same amount of materials that other traditional burials insist upon. The cremated body does not take up as much land space, nor does the cremated body need to be buried at all. Even with all of the environmental advantages of cremation, there are also negative impacts. A series of various filters cannot entirely eliminate pollutants created during the cremation process. Some of these pollutants include carbon monoxide, soot, sulfur dioxide, and trace metals. Different levels of mercury present health risks to the physical environment for all humans, plants and animals. Harris writes,

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[191] Harris, Mark. *Grave Matters: A Journey Through The Modern Funeral Industry To A Natural Way Of Burial.* 2007. Scribner. New York. Page 55.

[192] Harris, Mark. *Grave Matters: A Journey Through The Modern Funeral Industry To A Natural Way Of Burial.* 2007. Scribner. New York. Page 56.

> The toxic metal, which is linked to brain and neurological damage in children, is found in dental amalgams. The cremation retort's high temps vaporize any mercury in dental fillings of the deceased, sending the metal up the stack and into the atmosphere. From there it's carried by prevailing winds, some of it falling into lakes and streams, where it's taken up by fish and other aquatic life—and eventually by humans who consume them.[193]

The amount of mercury emitted by crematoria is a matter of debate. Tests conducted by the Environmental Protection Agency (EPA) and the cremation industry concluded that mercury levels from crematoria add up to less than two hundred forty pounds.[194] The EPA declared that levels of pollutants from crematoria, including mercury, are low and there is no need to mandate federal emissions limits for incinerators. However, given greater environmental concerns over the past several decades, many state and local agencies have created their own pollution caps.

Besides religious preference and environmental concerns, cost is also a factor in considering burial choices. Traditional burial practices and other services like embalming can be quite costly, especially when there are other rules, regulations, and unexpected costs associated with cemeteries. When compared to a traditional burial, cremation is a more affordable option. Harris writes,

> The average cost of a cremation is $1,800, which includes the pickup of remains from the place of death, a viewing prior to cremation, casket/container, urn, and cremation itself. You'll pay more for fancier caskets and urns, and interment of the urn in more desirable cemetery locales and columbaria niches. The cost of cremation runs closer to $1,000 if you choose what's called "direct cremation" (no viewing, with the body going directly from the place of death to the crematory) and if you go with a cardboard casket and cardboard urn.[195]

This cost information highlights Mitford's concerns and addresses how the funeral industry makes a profit. This quote also educates the consumer about cheaper options. With this wealth of

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[193] Harris, Mark. *Grave Matters: A Journey Through The Modern Funeral Industry To A Natural Way Of Burial.* 2007. Scribner. New York. Page 61.

[194] Harris, Mark. *Grave Matters: A Journey Through The Modern Funeral Industry To A Natural Way Of Burial.* 2007. Scribner. New York. Page 61.

[195] Harris, Mark. *Grave Matters: A Journey Through The Modern Funeral Industry To A Natural Way Of Burial.* 2007. Scribner. New York. Page 67.

information about pricing widely available, how do cremation industries advertise their services to the public?

Just as embalming and diamond advertisements seek to persuade the consumer, so too does the business of cremation. Two major pitches are responsible for the boom of cremation rates in the United States. First, cremation is a way to prepare for memorialization. Cremation is a form of commemorating the life of the deceased just as embalming is. These processes differ in that cremation presents a different, unseen image of the deceased. Second, cremation is also only one of the many options or choices for consumers. Consumers no longer have a standard of burial technologies to choose from, but instead have a variety of techniques to care for their dead. Although the family no longer physically takes on these duties as they did in the colonial era, there is still a lengthy process to prepare the body for a funeral service or burial.

These two ideas materialize in business mottos and pamphlets throughout the funeral industry. Instead of using the memories and grieving processes of the consumers to pinhole them into purchasing a specific type of burial technology, cremation advertisements emphasize options. These options take themes from death photography in that they allow the consumer to create a vision as to how they will memorialize the deceased. This process is different from embalming because the physical appearance of the body itself is removed, but the sentiment in how the cremated remains are presented is still a common theme through these technologies. There is always a way to customize the burial process, and there is no one set standard.

Comparisons between embalming and cremation highlight important connections between ritual and advertising. The technical process of preparing the deceased through a variety of funerary options demonstrates a changing culture of ritual as expressed through advertising rhetoric. Authors Cele Otnes and Linda Scott write,

> Advertising and rituals are both powerful institutions that create and modify culture… Advertising can influence ritual through rhetoric designed to change the enactment of ritual. Rituals also influence advertising, as when ritual symbols are used as signs in secular messages. Ads themselves can be interpreted as performing ritual functions when they fetishize or narrativize a product, and they can accomplish such singularization by using a variety of textual forms and a range of rhetorical strategies.[196]

Advertising as such transfers ritual meaning to a product. This bilateral relationship is present in the funeral industry through embalming, cremation, and LifeGems. Advertising allowed for embalming to become a commonly accepted practice among civilians following the devastation of the Civil War. In a similar fashion, cremation advertisements emphasize the availability of options to memorialize the deceased. LifeGem advertisements, on the other hand, alter the rituals previously established by other death technologies.

Technorenascentia

LifeGems create a new kind of ritual and memorialization, one where place, culture, and tradition are more diverse than they ever were in previous historical record. In this way, LifeGems represent a new role in society where technology determines the roots of culture. This emerging technology forces a re-imagination of community in an internet age. In order to describe this reinterpretation of changing culture, I propose a new term: "Technorenascentia." The literal translation of technorenascentia is "technological rebirth." Technorenascentia encompasses the symbolism of the famous 1947 advertising slogan from De Beers, "A Diamond is Forever," but also presents LifeGems as a function of memorialization. LifeGems carry the symbolism and memory people construct from the deceased while they were living, literally giving a new life to an object made from the lost loved one.

While LifeGems may not be the "American way of death," they do help the mourner return to everyday life. As Prothero writes, "Both burial and cremation as practiced in the

[196] Otnes, Cele and Linda M. Scott. "Something Old, Something New: Exploring the Interaction between Ritual and Advertising." *Journal of Advertising*. Vol. 25, No. 1, 1996. Pages 33-50.

contemporary United States respond to decay by forbidding it, via either embalming or incineration (or both)."[197] One difficult fact about death is the concept of the decaying body. Most mourners hold a vision of peace for their deceased and do not dwell on the fact that the body decays. Both embalming and cremation postpone or prevent the decomposition process, allowing the mourner to connect to the memorial image they create. With LifeGems literally being diamonds, there is no possibility for the body to decay because diamonds last for millions of years due to their inherent physical properties. These stones then become part of familial history that can be passed on for generations.

Just as De Beers advertises with the slogan "A Diamond is Forever," LifeGem Diamonds uses the phrase "because love lives on…" In their latest brochure, they discuss meanings and images of love, ending the conversation by talking about love and memory. LifeGem Diamonds writes, "Love is more than a memory. To desire a LifeGem diamond can mean only one thing. You have experienced a love without equal. You have had someone truly special in your life and mere words simply will not do. Love knows no boundaries. Love knows no end. LifeGem…*because love lives on*."[198] Love can be described as something intangible, but with a LifeGem, mourners can continue to feel the love of the deceased. Physically displaying the love and care that goes into creating a LifeGem radiates the love the deceased shared in the physical world, a technological rebirth of love.

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[197] Prothero, Stephen. *Purified by Fire: A History of Cremation in America*. 2001. University of California Press. Los Angeles, California. Page 4.

[198] "LifeGem.com." LifeGem.com. Web. 15 Mar. 2015. LifeGem brochure.

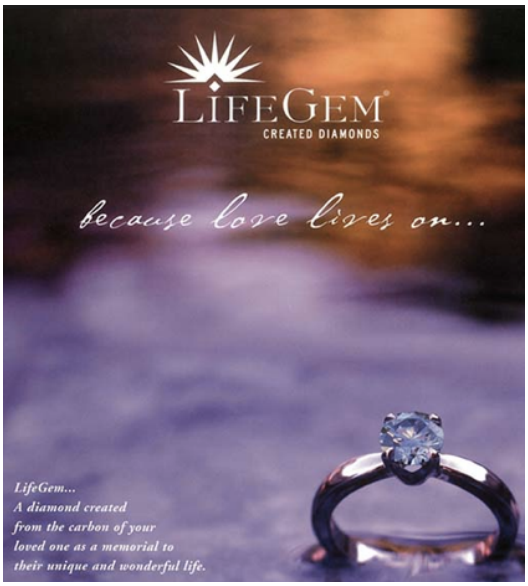

Figure 16: The cover page of LifeGem Diamonds' brochure highlighting their slogan "because love lives on."[199]

In combing through some of the testimonials from LifeGem Diamonds, the majority of their clients express the desire to physically hold onto a piece of their lost loved one. One woman explains the power that this technology holds in remembering her husband. She gives a vivid depiction of her husband's blue eyes, and how her LifeGem captures the reflection and memory of her husband's eyes. In this example, the LifeGem physically resembles the deceased. One other widow, Elizabeth Hile Needham, explains,

> I had earrings made out of two of the princess cut diamonds and have been offered money for them…my come back is "you cannot afford them…they are worth more than you could ever pay me." All I can say is putting my husband's death into something with so much LIFE was the best move I could have ever made…All my love to you and anyone that had a hand in my husband's…death and rebirth.[200]

For Elizabeth, the LifeGem represents the rebirth of the memories she holds of her deceased husband. The majority of the testimonials make some reference to their lost loved one as finally being "home," and, likewise, that they have properly memorialized that person through their

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[199] The cover page of LifeGem Diamonds' brochure highlighting their slogan "because love lives on." www.lifegem.com Public domain.

[200] "LifeGem.com." LifeGem.com. Web. 15 Mar. 2015. http://www.lifegem.com "Testimonials"

LifeGem. Through the technology of LifeGem, mourners give birth to a lasting image of their deceased.

What is it about diamonds that allows the mourner to heal? Is it the process of creating the stone? Is it the mythology of the healing properties attributed to diamonds? Oltuski writes, "If diamonds satisfy man's need to incarnate love, LifeGem satisfies his desire for immortality, or just about as close to it as we may get. In a way, it comes close to the mythic powers the ancient world ascribed to the gemstone. The Greeks once believed that diamonds were the tears of the gods."[201] Is LifeGem Diamonds creating a new version of these ideals? In many ways, yes. LifeGems hold on to the image the mourner creates of the deceased. These stones will outlive countless generations of human beings, feeding into ideas about immortality and ascribing mythic powers to the stones. Unlike tombstones, LifeGems are mobile, and the history behind this type of mourning jewelry can be passed down. Therefore, the memory of the deceased is mobile, rather than place-based. In contrast to tombstones, LifeGems are not place-based. This new category of keepsake funerary items re-imagine how we think of a community. A more mobile society consists of lives that are portable and place-less. A tombstone only contains a certain amount of information about a person's life, while a LifeGem can ignite legacies and conversations about the deceased or the relationship that the living remember having with the person transformed into the LifeGem.

The grieving process requires a significant amount of time and energy. Depending on the circumstances, some people never fully recover from such a loss. LifeGem not only encompasses the symbolic gesture of a rebirth, but also the physical powers that diamonds provide to those

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[201] Oltuski, Alicia. *Precious Objects: A Story of Diamonds, Family, And A Way Of Life*. 2011. Scribner. New York. Page 276.

still in the living world. Robert M. Hazen, author of *The Diamond Makers,* explains how humans have treasured and desired diamonds for other properties more than jewelry items, writing that diamonds "are the stuff of magic and legends. Mystics and alchemists ascribed wondrous attributes to the stones, which were said to grant the wearer awesome strength on the battlefield, as well as potency in the bedroom. Wise men proclaimed diamonds to be a protection against evil, an antidote to poison, a cure for insanity, and a charm for women in childbirth."[202] LifeGems feed into the idea of deceased loved ones looking down and protecting their living relatives, encompassing the ancient properties ascribed to diamonds. In this way, LifeGems encompass more than the legacy of the deceased, actually giving the mourner some type of power or protection because they feel closer to the one that they have lost. Technorenascentia, therefore, is not solely about the technological rebirth of the subject, but also encompasses other types of indescribable properties.

What About the Legacy of LifeGems?

When LifeGems get passed down, who is responsible for ensuring the legacy of the deceased? Will people several generations removed from the departed know the significance of these stones? Ideally, the story of the LifeGem should be passed down from generation to generation like other family heirlooms. However, there is an element of uncertainty in ensuring this safe passage. LifeGems are certified by the GIA, so if anyone were to try to sell their stone and bring the certification with them, it is doubtful that a diamond jewelry dealer or pawn shop would sell a diamond generated from human remains. In the future, any number of scenarios might not guarantee that these stones will not be bought and sold. One environmental principle that applies to LifeGems is thinking about the world, or specific objects, seven generations

[202] Hazen, Robert M. *The Diamond Makers.* 1999. Cambridge University Press. UK. Page 2.

ahead. This idea stems from Native American principles about duties to future generations. Many environmental scholars use this principle as a way to exemplify environmentally friendly actions, thinking about how the choices people make today might affect people seven generations in the future. In applying this principle to LifeGems, one can only hope that the memory carried within the stone lives for at least seven generations, if not more.

LifeGems represent an alternative technology using cremated remains that embody images of love and rebirth. These stones do not complicate the mourners' memories of the deceased, but rather enhance the lasting "memory picture" of a lost loved one. Through the process of choosing the size, color, and cut of the LifeGem, mourners construct how they wish to memorialize those who have passed on. The process of creating this lasting memory is healing for the mourner throughout the grieving process, but also gives the mourner hope for the future by holding on to a piece of someone they loved so dearly. Since Americans have a deeply rooted relationship with diamond jewelry as a vehicle for showing ultimate forms of love and devotion, LifeGems present a unique option for consumers to memorialize their dearly departed. LifeGems carry the sentiment established by the natural diamond industry even though these stones are literally lab-made diamonds. The fact that these diamonds are made in a lab does not complicate the memory picture for the mourner because without this technology, these connections to the deceased could not be physically acquired. Ultimately, LifeGems are physical aids to memory; the mourner constructs how this technological rebirth lives on.

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CONCLUSION

Toward the Philanthropic Consumption of Diamonds

The Hope Diamond is one of, if not the, best-known diamond in the world. This gem fascinates not only because of its staggering size and color, but also thanks to its complicated history. The original stone weighed roughly 112 carats and was purchased by the French merchant Jean Baptiste Tavernier, who then sold the diamond to King Louis XIV of France in 1668. After Louis the XVI and Marie Antoinette attempted to flee France in 1791, the revolutionary government seized the jewels of the French Royal Treasury. In 1792, the diamond was stolen. It passed through a series of owners until 1949, when Harry Winston, Inc. purchased the diamond from its last private owner, Evalyn Walsh McClean. Harry Winston showed the Hope Diamond on display in exhibits and at charitable events.[203] On November 10, 1958, they donated the Hope Diamond to the Smithsonian. Since 1958, the stone has only left the museum four times.[204] As author Richard Kurin writes in his book *Hope Diamond: The Legendary History of a Cursed Gem*, "As a famous object, powered by its biography, sustained by its venerable setting, with rich, powerful and famous friends, the Hope diamond does not now need to stand for anything else, save itself. It is its own symbol, its own icon."[205] The Hope Diamond is one of many large celebrity diamonds that draw the attention of crowds all over the world. Americans in particular share a unique fascination with diamonds and diamond jewelry. Kurin

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[203] Kurin, Richard. *Hope Diamond: The Legendary History of a Cursed Gem*. 2006. HarperCollins Publishers. New York, New York.

[204] The first trip was in 1962 where it was on display at an exhibit in the Louvre. The second trip was for a show in Johannesburg in 1965. The third trip was when it was lent to Harry Winston for their 50th anniversary celebration in 1984. The final trip was in 1996 when the stone was sent to Harry Winston for cleaning and restoration.

[205] Kurin, Richard. *Hope Diamond: The Legendary History of a Cursed Gem*. 2006. HarperCollins Publishers. New York, New York. Page 299.

notes that new generations of diamond enthusiasts are born through images of celebrities.[206] The Hope Diamond and other famous gems stay in the public eye through the media.[207] The value of jewelry increases when it has a *story*.

The theme weaving through these three manuscripts is the evolving social history of the diamond. The first manuscript details the emergence of the social construction of the diamond as a lasting image of "love," "devotion," and "eternity." The second manuscript challenges the first by confronting the political technology of lab-made diamonds. The third manuscript explores how a technological rebirth of the diamond further exaggerates the themes of manuscript one, but also encompasses the politics of lab-made diamonds established in manuscript two. What all of these manuscripts have in common is the continuation of twentieth century themes. The strong connection consumers established with diamonds in the mid-twentieth century, in combination with lasting advertising campaigns, has produced generations of consumers that carry on the original themes. Instead of changing or replacing the language of advertisements because of humanitarian or environmental issues, lab-made diamond companies prolong twentieth century themes through the lens of sustainability. These three manuscripts represent different facets of diamond controversies and conversations.

These manuscripts speak to a new ethos of consumption, one where there is more transparency and less environmental impact. In his book *Plan B 4.0,* Lester Brown poses three models of social change. The first is the "catastrophic event model," which he calls the Pearl Harbor model, where a dramatic event forces human culture to fundamentally change. The

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[206] Kurin, Richard. *Hope Diamond: The Legendary History of a Cursed Gem*. 2006. HarperCollins Publishers. New York, New York.

[207] There are exhibits in museums around the world that display jewelry from celebrities and royalty. Besides the Hope Diamond, there are many examples, including the jewelry worn by actress Elizabeth Taylor. Taylor's gems brought millions of dollars at auction after her death in 2011.

second is where a society reaches a tipping point on a particular issue, requiring a gradual change in thinking and attitudes toward that tipping point. The third is the "sandwich model," where strong political leadership fully supports grassroots movements on specific issues. So which model will lab-made diamonds fall under? The most likely scenario is the second model, the tipping point. There is already evidence of a tipping point when it comes to the diamond industry. More and more consumers are becoming concerned with the source of their diamond, and whether or not other humans were hurt in the sourcing process. These emerging concerns and questions suggest a future trend in philanthropic consumption.

There are scholars who write about philanthropy, and there are scholars who write about consumption, but only a few have combined these two concepts in relation to the consumer. Philanthropist and public relations professional Mary B. Leon Vail writes about a "Philanthropic Footprint," stating, "A Philanthropic Footprint, a term I coined, is an emotional and physical journey that is guided by one's heart, mind and soul. It is an imprint of goodness created through a series of altruistic steps that encourage a positive change in society while forgoing opportunities for financial or economic gain. It is an imprint for the betterment of humanity."[208] Vail points out that unlike an environmental footprint that seeks to reduce consumption, a Philanthropic Footprint should be maximized in order to engage in activism. A Philanthropic Footprint focuses on the emotional and spiritual charge of one's actions. In many ways, a Philanthropic Footprint challenges the consumer to consider a new approach. This new approach includes researching and educating themselves on products that contribute to their Philanthropic Footprint, instead of spending expendable income on items that do not assist with this goal.

[208] Vail, Mary B. Leon. *What's Your Philanthropic Footprint?* 2014. AuthorHouse. Bloomington, Indiana. Page 1.

While Vail highlights the emotional response to philanthropy, scholars Patricia Mooney Nickel and Angela M. Eikenberry focus more specifically on consumption philanthropy. Consumption philanthropy occurs when a product pairs with the support of a charitable cause. For example, Eikenberry writes,

> I do my main charity work once a week—at the grocery store. Like some of you, this week I bought organic yogurt that only is healthier for my family and the Earth, but also supports nonprofit environmental and educational organizations. I also picked up snack bars that promote peace (no kidding!) and salad dressing that funds various (unnamed) charities across the country. For all of this hard work, I reward myself with some Endangered Species Chocolate, which helps "support species, habitat, and humanity," according to the company's Web site. Delicious.[209]

Instead of applying a Philanthropic Footprint to items purchased with expendable income, Eikenberry combined her everyday grocery needs with products that support charitable causes. The purchase of these products also highlights the fact that Eikenberry researched which organizations these items support. This aspect of consumer research is critical for consumption philanthropy, a trend that can be seen in the diamond industry when consumers seek out products that support their own environmental ethic and expand their Philanthropic Footprint.

Another example Eikenberry describes is the Product Red campaign. Since its launch in 2006, this campaign has seen celebrity endorsements from politician Robert Shriver and U2 lead singer Bono. Eikenberry writes,

> By purchasing select Product Red-branded items from companies like Gap Inc., Apple Inc., Dell Inc., and Starbucks Corp., consumers can also support nonprofits like the Global Fund to Fight AIDS, Tuberculosis, and Malaria. The most well-known among the Red products, the Red iPod, costs $199, with $10 of that amount going to the Global Fund. So far, Red and its corporate partners have contributed more than $59 million to charity.[210]

Consumption philanthropy seems to provide the solution to many societal issues. Consumer confidence greatly increases because they can feel good about making a small contribution to

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[209] Eikenberry, Angela M. "The Hidden Costs of Cause Marketing." *Stanford Social Innovation Review.* 2009. Pages 51-55. http://ssir.org/images/articles/2009SU_Feature_Eikenberry.pdf

[210] Eikenberry, Angela M. "The Hidden Costs of Cause Marketing." *Stanford Social Innovation Review.* 2009. Pages 51-55. http://ssir.org/images/articles/2009SU_Feature_Eikenberry.pdf

philanthropic sources. Charities raise more funds, allowing for more opportunities to educate consumers. Corporations' reputations are bolstered by the fact that they support and endorse charitable causes, which in turn helps increase their profits.

While all these qualities are positive attributes of consumption philanthropy, there is a deeper level of inquiry that exposes elements of risk, including misinformation in marketing strategies and the potential for miscommunication between charities and corporations, leading to a corrupt vision of charity. Critiques of consumption philanthropy focus on these logistical issues without confronting the assumption that that even convenient and small acts of philanthropy do good things. Consumption philanthropy provides great short-term fixes for specific solutions to collective social and environmental problems. Vail's Philanthropic Footprint focuses on the betterment of humanity as a whole, not just one specific category of humanity. Eikenberry argues that consumption philanthropy has downfalls in terms of looking at the bigger picture, collective social issues. What she fails to mention is that consumption philanthropy is a means for attaining solutions to the bigger picture. There is no way that the concept of philanthropic consumption can be applied to a broad social issue, like poverty, in its entirety. Philanthropic decisions are also a matter of personal choice. Consumption philanthropy gives the consumer the power to choose which products to purchase, and which charities to support.

The combination of consumer power and effective marketing strategies determines the success or failure of a particular commodity. For diamond jewelry, over 50 years of advertising created and ingrained a diamond culture in the United States. Americans will continue to have a need and desire for diamond jewelry, a trend that will not drastically alter in the near future. What has changed over the past several years is the consumer demand for products with no

negative connotations. Lab-made diamonds are products that meet this need and fulfill the goals of new philanthropic consumers.

Lab-made diamonds will not replace natural diamonds in the near future because not all consumers actively seek out diamond alternatives. New generations of consumers do not share the same values as older generations. Lab-made diamonds meet the needs of these new generations by providing a product without negative social or environmental impacts. These manuscripts describe how consumers are adjusting their cultural understanding of diamond jewelry as a commodity. Through this evolution, from natural diamond buyers, to lab-made diamonds, and finally to memorial diamonds, it is clear that the diamond industry is experiencing a paradigm shift thanks in part to the onslaught of this new category of consumers. What is evident, as I have shown, is that the diamond industry is adapting and making philanthropic consumption part of their market niche.

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APPENDIX A

VirginiaTech

Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120, Virginia Tech
300 Turner Street NW
Blacksburg, Virginia 24061
540/231-4606 Fax 540/231-0959
email irb@vt.edu
website http://www.irb.vt.edu

MEMORANDUM

DATE: February 1, 2016

TO: Doris T Zallen, Bryn Whiteley

FROM: Virginia Tech Institutional Review Board (FWA00000572, expires July 29, 2020)

PROTOCOL TITLE: The Technological Invention of Synthetic Diamonds: A Social History of Politically and Environmentally Correct Substitute

IRB NUMBER: **13-215**

Effective February 1, 2016, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the Amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

http://www.irb.vt.edu/pages/responsibilities.htm

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As:	**Expedited, under 45 CFR 46.110 category(ies) 5,6,7**
Protocol Approval Date:	**February 1, 2016**
Protocol Expiration Date:	**January 31, 2017**
Continuing Review Due Date*:	**January 17, 2017**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
An equal opportunity, affirmative action institution