

OUR Journal

Oregon Undergraduate Research

Volume 7, Issue 1, Fall 2014





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Letter From the Editor

Charlotte Rheingold, * Comparative Literature

Welcome to the seventh issue of the Oregon Undergraduate Research Journal! We are eager to share four wonderful undergraduate research projects on a range of topics covering World War II noir, empathy and disgust, the economics of Oregon public schools, and the use of human material from mummies as medicine. We are also pleased to include vibrant cover art from an Art major and an art spread by a Chemistry major that each evoke an environmental awareness in their conception and execution. As this issue shows, OUR Journal has once again successfully achieved its goal of providing a multidisciplinary platform for motivated students to display their work.

With an Editorial Board mostly comprised of new members, I would like to thank our student Editors who quickly learned the ins-and-outs of OUR Journal and who have shown unwavering commitment in their support of undergraduate research. I am proud of our group's camaraderie and the initiative that has been shown, which has made the process of publication a smooth one. I would like to acknowledge graduating Senior Sage Crusier, who completed her studies in English this term and has her sights set on graduate school. Sage made invaluable contributions to OUR Journal during her year and a half with us, and we will surely miss her!

I would like to especially thank Ian McNeely, Associate Dean for Undergraduate Education, for writing this issue's guest editorial, which highlights a few of the many benefits of undergraduate research as well as the value of a liberal arts education. I also, of course, would like to acknowledge the continuing support of our faculty mentors Barbara Jenkins of the UO Libraries and Kevin Hatfield of University Housing, the Department of History, and the Clark Honors College. Their guidance in assembling this issue and helping to expand the breadth of OUR Journal is greatly appreciated by the Editorial Board and myself.

Thank you for taking the time to explore the research of our exceptional authors and for supporting undergraduate research. Enjoy!

*Charlotte Rheingold is a Senior studying Comparative Literature with minors in French and Economics. This issue is her second as Chief Editor, and she has been involved with OUR Journal since January of 2013. Please email her at ourj.uoregon.edu if you would like to discuss this season's issue, or have any questions.



Artist's Statement: "Watercolor Cassowary"

Krista Young,* Department of Art



The unpredictability of artwork amazes me. All media are up for grabs and all imagery is worth consideration. My visual language is the link between varied media and my process of translating aspects of nature. Art is my way to understand and clarify the world around me. It helps give what I see meaning, and I use my artwork to communicate my feelings about social, political, and environmental problems, selecting certain media to reflect a particular mood. My work reflects my appreciation of the natural world and the play between geometric and organic forms in nature. I love to observe the intricate patterns and veins in nature and bring that detail through my artwork.

Working on a local organic farm for seven years has allowed me to explore the variety of shapes, colors, and lines that make up our earth. This work influenced a series of detailed and realistic animal and plant life drawings. This work shows not only my yearning to explore the intricacy of biological forms but my hope to create interactive pieces from simple line and shape. Nothing makes me happier than the challenge of creating and translating what I see in my mind into artwork and these pieces show the morphing purity of my observation.

*Krista Young is a Freshman studying Art at University of Oregon. Please direct correspondence to kristayoun9@gmail.com.



Guest Editorial: “Undergraduate Research and the Pursuit of a Meaningful Career”

Ian F. McNeely, Associate Dean for Undergraduate Education, College of Arts and Sciences

What can you do with a philosophy degree? That question—or some version of it—is one I hear a lot, from parents, from students, from politicians, and from concerned laypeople. It’s hardly a new question. But it is one that’s being asked with increasing urgency the more expensive college becomes. As tuition rises to offset declining state funding, students and parents want to know what they get for going thousands of dollars into debt. There’s an urge to play it safe: to major in a marketable field, like business, or economics, or journalism. But now more than ever, it’s critical to make the case that *any* liberal arts degree, whether it be in philosophy or any of the dozens of other disciplines we offer at Oregon, can and does lead to a rewarding and well-paying career. What’s the key to clinching this argument? Arguably, it’s undergraduate research.

Every discipline in the university imparts critical thinking skills, but research is what puts those skills to the test. Research is hard work; it’s where passion finds application; it’s the reason we call the disciplines “disciplines.” It trains us to ask new questions, to develop new methods of understanding, to synthesize what we discover with what we already know, and to communicate our findings to others—for the benefit of our colleagues and of the wider world. These skills, moreover, are transferable: once developed in one area of focus, a college major, they serve us well throughout our lives, including the several careers that today’s college graduates are likely to have by the time they retire.

Employers emphatically agree. When asked what educational practices they feel will better prepare college graduates for success in the workplace, they rank undergraduate research at the very top.¹ Some 83% want students to “develop research questions in their field and evidence-based analyses.” Nearly as many—79%—want students to “complete a project prior to graduation that demonstrates their acquired knowledge and skills.” Collaborative research and team-based projects win particular favor among today’s job creators.

I would never want to suggest that the sole purpose of a bachelor’s degree is to get a job. But part of the meaning of life is the ability to do work that is satisfying and challenging. Fortunately, employers count among our staunchest allies in defending the liberal arts in general, and undergraduate research in particular, as a path to that goal. More research, they tell us, prepares more adaptable thinkers. Now it’s up to us to make such opportunities available to even more of our students here at Oregon.

¹ Hart Research Associates, “It Takes More Than a Major: Employer Priorities for College Learning and Student Success” (April 10, 2013), p. 10. Available at https://www.aacu.org/sites/default/files/files/LEAP/2013_EmployerSurvey.pdf



Art Feature: “Realization” and “Photon Translation #9”

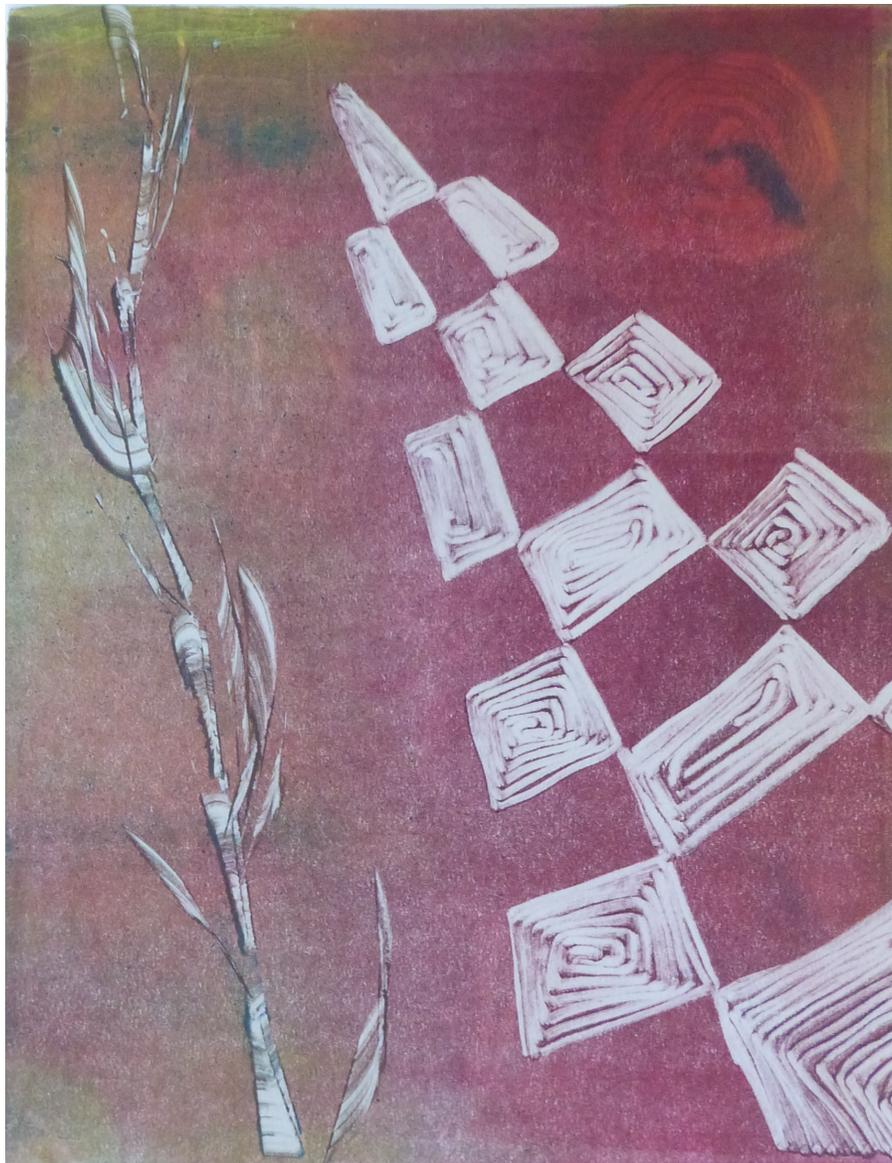
William Crowley,* Department of Chemistry



I am a Chemistry Major at the University of Oregon. I believe that art and science are inherently connected. From my perspective both are a means to gain a deeper understanding of nature. In science I'm enabled to ask and ascertain why things are and in art I realize the intrinsic harmony and beauty in the way things are in the world. From this perspective, the images I expose emerge from a focused trance. In this state I escape from the consciousness of self and feel connected to the earth.

In this piece there are two sets of mountain ranges with a human form between reaching. This represents humanity's endeavor to reach for knowledge by understanding nature. From nature we can understand ourselves. With finished work I am rarely content with the form. However, a piece fits my definition of success when it can bring me to a moment. For this piece it brings me to moment in which I feel that the search for knowledge is in harmony with nature.

*William Crowley is a Chemistry Major at the University of Oregon. Please direct correspondence to wgc@uoregon.edu.



When things are going well, the images I create are already there. I aspire to uncover the integral harmony of nature. Though the form is derived from nature, content comes from a strong emotion that cries to be heard and could not be expressed through other processes or mediums. Most of the time these feelings were cast aside and only through the process of art do I become conscious of these feelings.

In this piece I've juxtaposed elements of nature and geometric shapes to represent the balance of nature and humanity in the world. With finished work I am rarely content with the form. However, a piece fits my definition of success when it can bring me to a moment. This piece brings me to a moment in which I feel that humanity and nature are balanced bringing harmony to the world.



Psychoanalysis and Noir's American Nightmare

Albena Vladimirova Zahariev,* Clark Honors College

ABSTRACT

Sigmund Freud's work on psychoanalysis offers relief from the void left by World War II and accompanying frustrations with the American Dream. In acknowledgement of Freud's exposition of the danger of repression, noir permits the articulation of impulses repressed in the interest of war efforts through a narrative that functions as a nightmarish psychological expression. Furthermore, noir engages with Freud's work on unconscious motives to creatively and psychoanalytically explore potential motives behind behavior considered disordered according to American principles - such as crime and self-destructive behavior. Noir demonstrates the strong influence of a disordering environment on a protagonist's actions and motives, and promotes the value of a critically thinking "detective" who can explain disorder, encouraging the audience to fill this role themselves. Noir's demand for active audience interpretation works in contrast to World War II war efforts, which demanded complete faith in government propaganda. In this way, noir inspires the audience to themselves challenge the feasibility of achieving the American Dream through an American work ethic, the hard-boiled tradition, the ideology of individualism, and American values and traditions as a whole.

If necessity is the mother of all invention, then noir sprouted organically out of the need to process the psychological stress left behind by World War II and the accompanying realization of the widespread unattainability of the American Dream. Within noir, psychoanalysis functions most prolifically through the relationships between the protagonist, disordering environment, and detective. Their interactions illuminate the dramatic impression of outside forces on an individual's ability to achieve the American Dream. Noir casts these roles with creativity within a narrative presented as a raw, pulpy, nightmarish psychological expression in order to inspire and invite psychoanalytical interpretation by the audience. By toying with Sigmund Freud's work on motives and repression, noir both allows its audience a cathartic outlet to indulge previously repressed stress and impulses, as well as empowers its audience to approach disorder with critical thinking.

Post-war disillusionment sets the context for the great psychological stress noir seeks to address. American nationalistic attitudes during World War II demanded great dedication, hard work, and sacrifice for the sake of the war effort. Unwavering faith in the strength and value of the United States made way for criticism of the country. Soldiers returned home to find working women and minorities, bringing a greater focus onto social justice issues and the viability of the American Dream. Women refused to give up their newfound independence, leading to a sharp uptick in the divorce rate, which in combination with the great loneliness of increasing industrialization, contrasted the tight unity of the country during the war. Disillusionment

*Albena Vladimirova Zahariev is a freshman in the Clark Honors College at the University of Oregon.
Please direct correspondence to azahariev17@gmail.com.

reigned in the wake of the war, and America challenged the value of the individual. In “The Dark Mirror: Sex, Dreams, and Psychoanalysis,” Nicholas Christopher describes the role of noir in post-war America by quoting James Greenberg, saying that “film noirs were movies about adults, made for adults who had just been through a war” (88). World War II and a strained American Dream set the precedent for Freud's work to flourish in the United States by aiding Americans in processing post-war disillusionment.

The rise of Freud's popularity during the noir period introduced psychoanalysis as a means to process anxieties about the failing American Dream, by investigating the disordering forces at the root of the failure. Noir's disorder manifests in the form of psychological stress, but also in crime, evil, and irrational destructive behavior; basically, in any behavior that contradicts the American Dream. Freud's psychoanalytic work helps elucidate disorder by probing into the motives behind disordered behavior. The media found such potential in his work that Freud received two significant deals to use his skills to entertain: one specifically citing psychoanalysis' role in crime, offering Freud \$25,000 to psychoanalyze two defendants in a sensational murder trial for the *Chicago Tribune*, and another offering Freud \$100,000 to help write a romantic screenplay for Hollywood Producer Samuel Goldwyn (Christopher 187-8). Freud declined both offers. Perhaps he had no desire for the media to sensationalize his work, and perhaps the media's lack of an academic respect for his work frustrated him, but these offers demonstrated a strong public demand and desire for psychological understanding. To further establish the connection between crime fiction and noir, Amy Yang examines literature's influence on formation of Freud's psychoanalytic theory. In “Psychoanalysis and Detective Fiction: A Tale of Freud and Criminal Storytelling,” she discusses Edgar Allen Poe, who gave Freud the initial literary precedent for his work, and Sherlock Holmes, who provided Freud an analytic model. She explains how, in response, much criminal storytelling “embedded Freudian theories in subsequent forms, spinning the tales of crime into a journey into the human mind” (Yang 596). Although an amateurish adaptation of psychoanalysis, noir's detective narratives satisfy America's thirst for Freud's work by explaining crime through an exploration of the motives of the human mind behind it.

Freud's work underlies noir's functions in two primary ways. First, his work indicates a need to release repressed impulses, desires, and ideas. Americans at the time harbored a considerable volume of repressed impulses, especially considering the many freedoms, thoughts, and desires repressed in the interest of the war. In fact, the release of consumerist impulses unarticulated due to the war effort helps account for America's economic uptick following the war. Noir allows a similar release. In “Crime, Guilt, and Subjectivity in ‘Film Noir,’” Winfried Fluck comments on how noir “permits the articulation of impulses that may still be considered ‘extreme’ but are nevertheless ‘tempting’” (404). Christopher's article echoes this sentiment, saying that for the first time in American film, “Americans' sexual preoccupations, obsessions, and perversions are explicitly dealt with,” (89, 191). Through femme fatales, damaged heroes, and the proliferation of dramatic violence, crime, and murder, noir acts out the greatest nightmares and desires of a nation faced with shifting gender roles, great loneliness, and a threatened American Dream.

The film *Double Indemnity*, for example, indulges several of these nightmares and desires in order to provide the audience with a sense of release. In the film, femme fatale Phyllis Dietrichson manipulates Walter Neff, an insurance salesman, into assisting her in murdering her husband and staging the death as a train accident in order to make a “double indemnity” insurance claim. As a femme fatale, Phyllis indulges the audience’s fantasies of a powerful, sexually expressive, and aggressive woman, while simultaneously articulating their fear of the repercussions of unleashing and being manipulated by such a woman. This allowed the audience to process anxieties about women’s growing independence. Furthermore, Phyllis’s scheme indulges the audience’s fantasies of suspending moral inhibitions and selfishly staking out one’s claim to a piece of the American Dream—a fantasy resulting from America’s individualistic culture. By indulging this fantasy, *Double Indemnity* provides the audience a sense of release after being required to repress selfishness for the sake of WWII war efforts. Meanwhile, the film also articulates the nightmare of dealing with the anxiety of potentially being caught. Noir’s indulgently pulpy and melodramatic elements reiterate Freud’s stance on repression.

Secondly, Freud’s work encourages an analysis of motive and the impact of the environment on the individual. After articulating and releasing America’s repressed psychic material, noir began to ascertain the causes of disordered behavior. Psychoanalysis teases out the motives behind crime and otherwise disordered behavior that leads away from achieving the American Dream. In “Psychoanalysis and Detective Fiction: A Tale of Freud and Criminal Storytelling,” Amy Yang alludes to psychoanalysis’ role in displacing blame from the criminal: “it delved into the criminal’s mind, teasing out the underlying driving force for murder, even if the criminal was not actively aware of it at the time of crime” (597). She continues, “in other words, it dislodged the notion of free will from the intent to commit crime” (Yang 597). Yang’s argument thus prompts the question of the actual origins of the intent to commit crime. Rather than citing innate insanity, noir progressively moved towards considering the motivations behind psychotic action, typically recognizing the action as a reflection of the greater, cultural psyche.

“Gun Crazy,” the short story by MacKinlay Kantor, demonstrates noir’s inquisitiveness about the mind of a criminal. The story centers on Nelson Tare, a gun-obsessed boy who grows up to become a bank-robbing criminal. The story comes through the first-person perspective of his childhood friend, Dave. Dave’s first-person perspective uniquely reveals the childhood history of the criminal, as well as encourages outside conjecture on his motivations and how his past may have shaped his personality. For example, as the narrator recounts meeting Nelson for the first time, he comments on his baby talk: “Nelson was only a month younger than I, it turned out, but he still talked a lot of baby talk. I think kids are apt to do that more when their parents don’t talk to them much,” (46). Shunned by his environment, Nelson turned to guns as a source of power. At the climactic end of the story, officers stood ready with machine guns attempting to capture Nelson. However, Sheriff Clyde Boston, who had known Nelson as a child, recounted a hunting trip in which Nelson was unable to shoot a rabbit despite his excellent marksmanship. Recognizing his unwillingness to shoot a soul, Clyde tackled Nelson to the ground, preventing further violence. Using memories of Nelson’s past, Clyde recognizes Nelson as a fundamentally gentle person despite his criminal activity. “Gun Crazy” challenges the notion of the innately evil

criminal, encouraging empathy from the audience and a closer look at the criminal as a person, with the suggestion that these individuals are merely misunderstood.

Noir sources an individual's motives and psychological well-being to their environment, supporting John Locke's philosophy of the *tabula rasa*, which means "blank slate," and refers to the philosophy that individuals start out as neither basically good nor basically evil, but as blank slates to be shaped by their environment. At the heart of the American Dream lies the issue of overcoming one's past and environment—what Mark Osteen refers to in his article, "Introduction: Film Noir and the American Dream," as the "ideology of individualism—the belief that personal effort enables one to determine one's own destiny and character" (2). Psychoanalysis in noir deals precisely with the issue of the individual versus their environment, bringing out an attitude of fatalism that directly contradicts the ideology of individualism behind the American Dream. According to the ideology of individualism, people who fail to achieve the American Dream fail because of their character and unwillingness to work hard. However, in noir, "the obstacles aren't merely character flaws; they are features of society," (Osteen 3). Culturally, this shifts the blame away from the criminal, and onto the external factors, sharply contrasting America's individualistic attitude. In this exploration of motives and repressed motives, Freud's work helps Americans absolve their guilt for failing to achieve the American Dream. As a system that delves into outside influences on the individual psyche, psychoanalysis appeals to noir's audience because it investigates the failure of the American Dream as a failure of the environment—not of the individual.

Noir ironically paints American values as one of the greatest obstacles to achieving the American Dream. As a manifestation of American values, the *hard-boiled tradition* provides noir's foundation in examining the validity of American values as a means of achieving the American Dream. The hard-boiled tradition reinforces the values embraced by the American Dream: roughness, independence, quickness, focus, etc. However, these values do not ensure the hard-boiled hero's success in a noir narrative, and instead frequently lead to the hero's failure. David Goodis' short story, "Professional Man," exemplifies the conflict underlying the American Dream. As a professional, hard-working, dignified, and well-liked individual, the American Dream promises Freddy Lamb success. Instead, his persistent obedience leads to his downfall when his boss orders Freddy to murder his girlfriend. Freddy must either sacrifice his integrity as a professional man or sacrifice a woman he has real feelings for. The cold, calculating individualism and detachment that permits Freddy to kill professionally, allows his boss to force Freddy to act against his own best interests. Freddy's predicament comments on the failure of the American Dream for the working man within an individualistic society. In an individualistic society, a man with a strong work ethic who devotedly serves his boss gets taken advantage of, not rewarded. The hard-boiled tradition redefines individualism – in this world, one needs to be selfish and break rules in order to succeed.

The American neo-noir film *A Simple Plan* illustrates the motivating role of the American Dream in crime through an exchange between Hank and his friend Lou. After stumbling upon a bag filled with money inside a crashed airplane, Lou exclaims, "It's the American Dream in a goddamn gym bag!" Hank replies, "You work for the American Dream. You don't steal it." Hank

feels conflicted at the notion of keeping the money and committing a crime – particularly one with a potential victim. However, the same American work ethic that gives him pause before taking money he did not earn also makes him hesitate before giving up such a grand opportunity. Unlike Lou, Hank recognizes the vigilance and patience that would be necessary to avoid getting caught, and ultimately rises to the challenge. Regrettably for Hank, the film features unfortunate event after unfortunate event, despite his best efforts to control the situation.

The hard-boiled hero's split consciousness and objectivity demonstrates another value America encourages but fails to reward. The hard-boiled detective fundamentally remains "professional" and able to objectively study and interact with his disordered environment without becoming swallowed by it. Being only human, many noir heroes fail at maintaining objective separation from their environment in favor of pursuing their own interests. For example, Nick Curran, the homicide detective from the neo-noir film *Basic Instinct*, gets sexually involved with his prime murder suspect. This of course leads to his undoing because the relationship leaves him vulnerable, despite his successful solving of the case. Jeff Baily, the private investigator featured in the film *Out of the Past* also develops a relationship with the woman he was hired to track down. After she betrays him, he is surprised to run into her again, and succinctly expresses the emotional separation he has learned to be crucial by telling her, "Just get out, will you? I have to sleep in this room." However, even when noir protagonists succeed at maintaining an objective detachment from their environments, they fail. Freddy Lamb, for example, maintains his professionalism and kills his girlfriend, but says goodbye to his profession through suicide. Philip Marlowe, of Raymond Chandler's novel *The Big Sleep*, also remains professional. Unlike Nick Curran, he resists his suspects' seduction attempts, establishing him as a more powerful figure in the narrative than the incredibly wealthy characters he investigates. Yet even though he successfully maintains separation from his environment, in the end he remains a lonely, emotionally repressed man in an environment he condemns.

The protagonist's separation from his environment mimics psychoanalysis' distinction between the patient and his environment in order to explore the environment's effect on the psyche. Psychoanalysis recognizes the patient as distinct from his environment. However, psychoanalysis also acknowledges the environment's inevitable impression on the individual. The hard-boiled hero's attempts to stay separate from his environment not only will most likely fail, but the attempts breed repressed emotions, thoughts, and impulses. Noir's psychological approach highlights the impossibility of a psychologically secure, emotionally fulfilled, successful hard-boiled hero, proving the logical fallacy of achieving the American Dream through hard-boiled values.

Psychoanalysis functions in noir through three roles: the protagonist, the disordering environment, and the "detective" role that administers or encourages psychoanalysis. These roles play out most naturally and obviously in crime narratives, allowing the audience to burrow into the motives of a criminal. The criminal, frequently functioning as the protagonist, elicits empathy. By casting the everyday citizen (as opposed to a gangster) as the criminal, noir invites

viewers to identify with the criminal, prompting questions of moral responsibility and opening an examination of the motives and environment that lead to crime. The roles of the protagonist and disordering environment reaffirm the existence of forces beyond the protagonist's control that dictate his actions. The existence of a detective role unveils a figure that can clarify disorder. In "Why They Went Bad: Criminology in Crime Films," Nicole Rafter supports this idea by asserting that crime films grant an explanation for crime. Clyde, the sheriff from "Gun Crazy," takes a psychological interest in Nelson that helps explain his disordered behavior and present him as a more sympathetic character. Yang well articulates the role of psychoanalysis in crime solving, contending that Freud's work introduces an understanding of the unconscious as a valuable aid in crime solving (600). This detail proves particularly handy in entertainment, because, as Yang maintains, readers now, in addition to plot, want to understand the psyche of the criminal (597). Philip Marlowe, of Raymond Chandler's *The Big Sleep*, exemplifies the traditional, hard-boiled noir private investigator that uses his separation from the environment to understand and predict disordered human behavior. By anticipating that Carmen would attempt to kill him for refusing sex with her – and thus must have killed Regan for the same reason – Marlowe reveals a predictability and sense of order to otherwise inexplicable behavior. While noir may present crime as irremediable, noir crime films affirm that there are certain individuals equipped to decipher and deal with crime – sense hides behind disorder, and psychoanalysis helps reveal it.

As a creative genre, noir casts these roles creatively, sometimes stepping outside the traditional crime narrative. The noir may cast other characters (rather than the city) as the disordering environment, or may cast a psychiatrist, layperson, or even the audience as the detective, but in any case these roles facilitate a fatalistic investigation of the impact of the environment on the protagonist. For example, the neo-noir film *Mulholland Drive* appears to present entirely senseless disorder in a series of seemingly unrelated vignettes. The film appears to feature only a disordering environment and flawed protagonist—lacking the third role of a detective. In actuality, the film positions the audience to act as the detective and make sense of the twisting byzantine narrative. Without hope of interpretation, the film would simply be a horror film – the presence of a detective defines the noir genre.

Osteen submits a counterargument to the idea of perceiving noir through a psychoanalytic perspective. He argues that film noir questions "whether anyone – whether detective, war veteran or homeless woman – can truly reinvent him or herself; by questioning whether new consumer products and technologies such as fast cars can really liberate us; and by raising a skeptical eyebrow at the midcentury faith in psychoanalysis and the therapeutic ethos that supports it" ("Introduction" 2). However, noir's use of psychoanalysis does not intend to facilitate self-reinvention as much as catharsis – a release of repressed emotions and an acknowledgement of one's own shortcomings, as well as an attempt to explain them. As Osteen argues, psychoanalysis fails to offer an effective path to reinvention – and not because of the shortcomings of psychoanalysis, but because psychoanalysis reveals fault in the environment and in American culture. Reinvention, more than anything, reflects an ethic of the American Dream –the idea of overcoming one's environment and flaws. Of course, looking for liberation and growth in a destructive environment is bound to be fruitless, and as noir reveals, attempts

to resist the environment are exercises in futility. Noir may darkly reinforce hopelessness, but at least it uses psychoanalytic ideas to seek answers. Noir and neo-noir remain popular today because pessimistic, “intellectual” attitudes continue to prevail today.

Osteen raises a further counterargument against a psychoanalytic approach by suggesting that a cultural one serves more appropriately. Osteen points out how noir focuses obsessively on psychic disorder and how noir films bubble with cultural anxiety beneath their surface (“Introduction” 11, 14). While this might appear to call for a psychoanalytic approach, Osteen claims that his “approach is less psychoanalytic than cultural – an effort to chart noir’s political unconscious” (“Introduction” 14). Noir lays its flawed characters’ motivations on the table, exposing the uncontrollable influence of the environment on characters’ psyches. Considering this, Osteen’s reach for a cultural frame of reference towards understanding noir appears logical, because if noir emphasizes the influence of the environment, a cultural examination of the environment as a commentary on American culture looks tempting. While noir springboards off a flawed culture and its resulting frustrations – and *does* provide cultural commentary – noir’s fatalistic attitude transcends frustrations with the American Dream.

Noir portrays its environments far too creatively and inventively to accurately reflect American culture; noir psychoanalytically addresses the “cultural anxiety” Osteen references by toying with the causes of anxiety more broadly. For example, while the film *Gaslight* might culturally comment on the necessity for greater agency for women within married relationships, the film explores psychology more broadly. The film coined the psychological term “gaslighting,” which refers to a form of mental abuse in which the abuser manipulates the victim into doubting their own reality. The idea of “gaslighting” references the phenomenon of female hysteria, providing an alternative explanation to apparently irrational female behavior, rather than accusations of hysteria. Although Freud had an unfortunately inadequate understanding of women, and elaborated on hysteria as a legitimate diagnosis, he approached its diagnosis through its causes rather than its symptoms, which led to a reduction and eventual abandonment of the diagnosis (Micale). Had Paula been traditionally “diagnosed” by her behavior rather than its causes – particularly after her outburst at her friend’s musical gathering – she certainly would have been diagnosed with hysteria. The psychoanalytic approach the film takes reveals the bigger picture of what caused her behavior – her abusive, gaslighting husband. Certainly noir reflects the anxieties of its cultural and historical contexts, but it also takes these anxieties a step further. The domestic environment within the film can hardly be categorized as culturally typical, but provides a means to explain a victim’s seemingly inexplicable behavior – such as hysteria. Although the issue of hysteria became outdated, gaslighting remains relevant. Noir obsesses not just with how America as an environment produces flawed people, but how environments in general impact the psyche. Noir tests the notion to its limits, toying to see what kind of environments it takes to push noir’s poor heroes over the edge. Through psychoanalysis, noir provides the tools to continue examining culture and the individual psyche, rather than just providing a single cultural snapshot in time.

Noir’s disordering environment most frequently manifests in the form of cities, which reveal cultural anxieties. Tina Lent’s article, “The Dark Side of the Dream: The Image of Los Angeles in

Film Noir,” analyzes the representation of Los Angeles in noir more specifically, directly tying Los Angeles to noir’s efforts in processing the failure of the American Dream. Los Angeles dramatically shifted in the public’s perception from a promised land during the 1920’s to a wasteland by the 1950’s, which transformed it into a major target for criticism for the failure of the American Dream (Lent 329). Lent grants four primary reasons that Los Angeles came to draw so much public frustration, citing first its status as the newest major city on the farthest edge of the western frontier, thus framing the city as a bold symbol of promise so that its failure was much more sharply experienced (332). Second, she cites Los Angeles’s status as a classical American city with a centralized downtown district (Lent 332). Third, she cites atypical features of Los Angeles that emphasized its failure, such as its horizontal suburban growth that, rather than producing small close communities, produced loneliness, frustration, and isolation (Lent 333). Finally, Lent references Los Angeles as a home to the film industry – many writers came to Los Angeles with big dreams only to find themselves without work, and their disillusionment lead them to write novels set in Los Angeles discrediting the American Dream as a fraud (333).

Noir’s emphasis on setting and use of actual American locales such as Los Angeles contributes to the verisimilitude of noir’s otherwise outlandish stories. As a setting, Los Angeles takes a concrete and convincing visual form that many have had genuine experiences with and can relate to (Lent 335, 343). Lent claims that noir persuasively comments on American culture through its experience-based portrayals of Los Angeles. However, noir works much more effectively by treating Los Angeles and its cities as a symbol rather than presenting an accurate representation of them. While many have had concrete experiences with Los Angeles, many more have experienced Los Angeles through its portrayals in various media, so therefore noir reaches a broader audience by transforming Los Angeles into a grotesque symbol.

The more visceral the city’s association with despair and entrapment, the more effectively noir can elicit a specific emotional response, regardless of the accuracy of these portrayals. Schrader succulently describes noir as “a nightmarish world of American mannerism that was by far more a creation than a reflection” (226). For instance, Raymond Chandler’s short story “Red Wind” opens with a famous description of the opportunity for unpredictable violence that the Santa Ana winds seem to bring to Southern California. The line, “meek little wives feel the edge of the carving knife and study their husbands’ necks,” particularly creates a tangible image of evil within the “red winds.” Although the Santa Ana winds do not actually provoke such violence, the description gives the audience a (false) sense of familiarity with the disorder, perhaps evoking outside violent impulses and memories, while legitimizing them through the connection to a genuine Californian characteristic. In this way, noir administers a cathartic release of frustrations formed by a variety of experiences. The physical city, as a tinted symbol, forges a bridge for deeper, repressed emotions to be expressed in the real and physical world presented on the screen (or page). The noir city is thus not a neutral environment, but a tinted living nightmare inherently designed to inhibit noir’s heroes and tap into the darker emotions and impulses of the audience.

Noir’s environments function as a psychological expression by bridging together reality, the unconscious, and creation. Rafter describes how “narratives seem to be crucial to our efforts to

make sense of our lives. . . . they form a bridge, with heavy traffic in both directions, between the “real world” and our imagination, between social experience and its interpretation” (“Why They Went Bad” 68, 69). The audience takes advantage of noir to toy with the real world, their unconscious, and their imagination. Noir allows the audience to process their real world struggles by outlining patterns and drawing connections between thoughts, just as a dream would. Christopher references Welles to say, “Orson Welles was correct: a film, above all else, is certainly a dream” (206). More specifically, noir functions as a nightmare. The film *Gaslight* demonstrates this function. The film warps the typical home environment into an inventively horrifying nightmare in order to deal with cultural fears about the implications of empowered and working – and perhaps even wealthy – women. The film dramatically expresses women’s unconscious frustrations with accusations of hysteria and emotional exaggeration, and indulges the fears and emotions they were encouraged to repress and ignore. These separate issues tie together through the stylized, yet familiar, setting of the home.

Expressionist elements help create and dramatize the nightmarish depictions of noir’s settings and characters. In his article, “Notes on Film Noir,” Paul Schrader heavily emphasizes noir’s focus on style over content. Film noir employs numerous creative stylistic tools such as first person narration, subjective camera shots, flashbacks, byzantine plots, extreme camera angles, chiaroscuro, and vertical lines, among many others. These stylistic elements help antagonize the environment and antagonists by striking fear within the viewer and establishing negative emotional associations with the settings and characters. *Night of the Hunter*, directed by German director Charles Laughton, adds to the fear surrounding the antagonist, Harry Powell, through the dramatic *chiaroscuro* that frames him throughout the film. *Mulholland Drive*, a neo noir film that strings together seemingly unrelated vignettes within a byzantine plot, relies on *chiaroscuro* and dramatic camera angles and lines in order to elicit the ambiguous emotions that tie the film together.

Because noir’s style stands on an emotional base, it serves as an effective tool for cathartically eliciting strong emotional responses out of its audience, bringing unconscious emotions and issues to the surface. In doing so, noir encourages its audience to play psychoanalyst and toy with the psychologically hidden. Noir’s stylistic focus on water especially reflects Freudian teachings. Freud’s iceberg metaphor demonstrates how the greater part of a person’s mind, memories, and motives remain hidden in the unconscious by referencing the way the greater part of an iceberg is concealed underwater. Noir seems to reference water’s concealing property, inviting the audience to wonder what lurks beneath its surface. *Night of the Hunter* plays to this quality of water with its famous scene of the dead mother sitting at the bottom of the river with her hair flowing with the seaweed in the current. Other stylistic elements in noir serve similar concealing functions. For example, noir’s darkness, in addition to its eerie nightmarish properties, also conceals. Complex chronology, also in addition to being nightmarish, shares a concealing property as well, muddling the plot and inviting the reader to play psychoanalyst and untangle its puzzle—in doing so, accessing that hidden chunk of the proverbial iceberg and thus exploring the unconscious.

Noir's presentation as a dream invites dream analysis, which reveals the way the audience uses noir to process their problems and pasts. Freud asserts that we dream in order to deal with unsolved problems, which is a notion well reflected in the troubled noir protagonist who is "obsessed with the past, unable either to let go of it or to embrace it" (Osteen, "Someone Else's Nightmare" 23). Noir, like Freud's dream analysis, enables the audience to do both. In *Out of the Past*, Jeff attempts to repress rather than embrace memories of his past with Kathie and as a private investigator, until he can no longer ignore his history. He confesses the story to his girlfriend Ann, who forgives him, saying, "it's all past," and Jeff reveals an inability to let go of his past by replying, "maybe it isn't." As a traditional noir protagonist, Jeff represses his past, which inevitably explodes, forcing him to both embrace it, by eventually attempting to run away with Kathie, and simultaneously let go of it, by tragically dying at the end of the film. In a sense, noir tortures its protagonists in order to spare the audience the same pain – by indulging Jeff's past, noir allows its audience to vicariously indulge and acknowledge their own regrets and troubled pasts, and through Jeff's ultimate failure, noir permits the audience to let go of them.

Noir takes on a self-conflicting position as it both entertains a fascination with disorder and horror while simultaneously aiming to straighten out and make sense of this disorder. Noir's creative indulgence into horror aids the breakdown of repressed emotions and ideas and begins to examine and deal with them. However, noir encourages the audience to approach these narratives as an analyst – or psychoanalyst – as well. The narratives validate the audience's struggle, by allowing them to embrace, for example, Hank's poor decisions in *A Simple Plan*, but they also push the audience to understand their implications, the motivations that inspired them, and the ethics that surround them. Noir pushes the audience to approach the films with a critical mind. Thus, noir is both indulgently cathartic, yet constructively therapeutic as well. David Lynch's *Mulholland Drive* appears both completely incoherent, yet somehow wholly coherent at once, demonstrating the conflicting order and disorder that characterizes noir. The film pastes together dramatic, apparently unrelated storylines, scenes, and events into essential chaos. Yet, amidst the chaos, the scenes seem to fit together, held together by a unifying, ambivalent mood. Scenes reference each other, sprinkling connections between scenes and storylines throughout the film. Lynch heavily encourages viewers to draw their own conclusions and interpretations from the film, and critics have constructed wildly different theories about the film's meaning and plot. Just as the vague coherence of the film inspires creativity, the chaotic, ambivalent mood of noir as a whole inspires reflective and critical thinking that brings a sort of order and coherence to the genre.

Freud's dream analysis reveals the unifying relatable emotion of guilt at the core of all noir that permits its stylistic creativity. In "Someone Else's Nightmare," Osteen briefly outlines Freudian theory on dreams: "a dream consists of a manifest content (the particular images or situations within a dream) that camouflages latent content (the motivating emotions of memories)" (22). The manifest content of the dream is just the tip of the iceberg—so to speak—inviting the audience to interpret the concealed motivating emotions of memories that make up the unconscious, meaningful, part of the dream. Osteen cites Earnest Hartmann who argued that "the most significant element in any dream is not its specific imagery but its dominant emotion" ("Someone Else's Nightmare" 44). Because noir narratives serve a Freudian purpose

and are significant for their dominant emotion rather than specific details, they have the freedom to be creative – experimenting with wildly disordering environments to test the moral limits of characters – while ultimately still ringing true. Osteen argues that the most dominant emotion in noir is guilt: as he elegantly states, “What is guilt but an attachment to a past action that prompts need to relive and make it right?” (“Someone Else’s Nightmare” 45). Despite noir’s creativity, noir rings true broadly across audiences because its dominant emotion of guilt reads as relatable to many – particularly those feeling guilty and ashamed for failing to achieve the American Dream in a culture that blames the individual.

As “dreams” that allow the audience to process problems, noirs present creative examples of psychological and moral disorder for the audience to practice untangling, toying with the roles of the protagonist, disordering environment, and detective. As Fluck posits, “the central issue of *film noir* is the question of guilt” (382-3). Noir as a genre encourages the audience to explore a variety of “guilty” sources of disorder within society by casting a variety of different things, people, and forces within the role of the disordering environment.

Crime narratives present the ideal opportunity for examining guilt, and a closer look at the criminal heroes of noir reveals criminals significantly less in control of their circumstances and decisions than the heroes of crime narratives outside the noir genre. In “The Heroes of Crime Films,” Rafter comments on the crime genre more broadly, establishing the genre’s appeal through its heroes’ concrete moral base – whether those morals are good or evil. “Good good guys” have appeal for their lawful, ethical, and constructive behavior, whereas “bad good guys” have appeal for their self-determinism and boldness to claim the freedom to do whatever they want (147). Rafter concludes that crime films have appeal because their value structures allow viewers to identify with both types of heroes and shuffle back and forth between “good” and “bad” values – in other words, crime films captivate because they allow viewers to toy with morality. However, noir deviates from typical crime narratives in that while there may be a handful of luckier, more respectable characters in noir, and although noir’s protagonists are easy to empathize and sympathize with, they are hardly envied or admired. This distinguishes noir from the majority of crime narratives. Rafter references a category of protagonists that Carol Clover calls “victim heroes” (148). These protagonists double as ordinary people “thrust into a nightmarish predicament,” and although the hero usually comes out on top, it is not without much suffering along the way (148). In contrast to the powerful criminal heroes of crime narratives outside noir, noir’s heroes lack the power to take bold moral action – they play the victim, casting their environments as guilty.

Noir probes a wide variety of motives to explain the criminal behavior of noir’s protagonists. Rafter outlines three basic criminal motives presented in crime films: environmental causes, psychopathy or mental illness, and aspirations for a better life. Bad biology and fundamental evil generally get rejected as explanations (“Why They Went Bad”). Fluck distinguishes three types of film noir, each with their own interpretation of the noir character, and each with their own statement on and understanding of crime. Fluck’s three outlined figures of noir fit Freud’s id, ego, and superego – the detective representing the superego who sees “crime [as] a moral text,” and seeks to adhere to internalized principles of morality; the respectable citizen who

approaches crime through the ego, seeing it as “an unforeseen effect of repression” in their efforts to achieve their goals; and finally the drifter, who represents the impulses of the id and acts on “unpredictable, accidental vagaries of impulse and mood” (402). Crime films serve as useful narratives through which the audience tries to understand what causes crime, its nature, and the motivations of the people behind it. Rafter contends that “most [crime films] do so opportunistically rather than in order to promote a specific interpretation” (69). Noir’s creativity and variety comes from its significance as a process of questioning. That is, noir crime films do not intend to rationalize crime as much as nudge its audience to themselves take an active role in asking what causes crime themselves, thus promoting empathy for the criminal and audience.

Noir toys with tossing guilt on secondary characters, who are cast as additional aspects of the environment. Rafter draws the distinction between noir’s “explanatory psychos,” who are rounder characters whose crimes and disorder are accounted for, and noir’s “cameo psychos,” who are included “merely for local color” (“Why They Went Bad” 55). These “cameo psychos” are not afforded the same compassion and psychoanalytic explanation as the “explanatory psycho” protagonists. They simply serve as part of noir’s environment, supporting the corruption of the protagonist – frequently as an antagonist. Noir goes beyond the protagonist’s past and physical environment to cast blame on a diversity of people in his environment: from greedy men (*Night of the Hunter*) to crazy men (*Gaslight*, *Sunrise*), to femme fatales (*Double Indemnity*, *Kill Me Again*, *A Simple Plan*). Again, the resulting object of blame is not necessarily significant, but the morally and psychologically ambiguous narrative pressures the audience to ask questions. The audience enjoys ambiguous criminological messages because there is significance in debating movies’ meanings and moralities. Noir seeks to introduce psychoanalysis and promote critical thinking as tools.

Noir flirts with a segment of films that Rafter describes as existing without heroes. These crime films feature lead characters with no real redeeming traits, and the non-heroes of these hopelessly gloomy films aim to “erase the very idea of heroism” (“The Heroes of Crime Films” 160). Although audiences can appreciate crime as a tempting shortcut to the American Dream, these films claim “the dream has become empty, sleazy, and worthless, and crime has lost its glamour” (“The Heroes of Crime Films” 161). *A Simple Plan* seems to fit this description, as the film’s unfortunate unfolding of events demonstrates how the American Dream comes nowhere near worth the dramatic loss of lives, relationships, and personal integrity Hank permits in his pursuit of money. Viewers accustomed to “bad good” heroes secretly cheer Hank on, only to be faced with the ugliness and senselessness of the murders and crimes committed. However, the fact that viewers cannot resist cheering Hank on and urging him to keep the money divulges his redeeming qualities. Unlike Jacob and Lou, Hank earnestly attempts to make sacrifices to succeed, to use foresight and think smartly. The film reveals that anyone – even smart, moral individuals – can make grave mistakes in their pursuit for success. While audiences celebrate typical crime films for their heroes’ distinct control over their environments – whether for good moral reasons or for bad – they celebrate noir crime films for precisely the opposite reason. Audiences empathize with noir’s heroes precisely because they have no control over their environments. At the end of the film, the audience hates Hank’s decisions and circumstances, but does not necessarily hate him.

In addition to tweaking the environment, noir sometimes explores the issue of guilt by challenging the audience to determine the protagonist of the narrative, and in so doing, examines the individualism associated with the American Dream. In narratives such as *Kill Me Again*, the protagonist of the film is not immediately clear. Both Jack Andrews, the private investigator, and Fay Forrester, the femme fatale, are victims of circumstance and take charge of their situations in order to hopefully overcome them. By initially concealing who holds the role of the protagonist and forcing the audience to guess, noir challenges the individualism intrinsic to the American Dream. Psychoanalysis points out the complex network of environmental influences and motivations that shape the actions taken by an individual. This information implies a need for a compassionate, complex sociological and institutional examination of society as an environment, since it must balance and serve a whole society of people whose unique motivations and needs translate into actions that also affect other people. Because noir's environments are more powerful than the individual, the individual must break rules in order to succeed, acting in their own self-interests, thus creating more difficult circumstances for another individual, and consequently sparking more rule-breaking and selfishness—noir's harmful environments self-perpetuate. While Jack ultimately acts more nobly and succeeds as the protagonist, the audience can still empathize with Fay, who simply acted out of a need to survive her circumstances. By confusing the audience about the identity of the protagonist, the film tricks the audience into empathizing with both – something American individualism does not do. The typical heroic narrative enforces American individualism by emphasizing and celebrating the success of only one individual – in altering this structure, the film criticizes the way individualism fails to properly support society as a whole.

Femme fatales such as Fay function especially usefully within noir narratives because they confuse the audience. On one hand, they serve as powerful, easy-to-empathize-with protagonists who take charge of difficult circumstances by any means necessary. But, on the other hand, they function as “crazy” and evil monsters who manipulate other characters and make up a piece of the disordering environment. For example, in the film *Basic Instinct* the brilliant and confident Catherine Tramelle appeals to the audience through her aggressive control over her environment – mimicking the way Rafter claims more traditional crime heroes appeal to the audience. At the same time, she plays such an evil and manipulating role within the story that the audience struggles to see her as human and empathize with her. Within a single narrative, such as the novel *The Postman Always Rings Twice* by James Cain, a femme fatale can play a wide range of roles. Cora Smith acts as a sex bomb, victim, sacrifice to the law, and a fearful girl in need of protection, among other roles (Christopher 198). Her flexibility challenges the audience to rethink their understanding of a woman's role.

Because women traditionally lack agency and remain extra vulnerable to circumstance, the audience struggles to decide how to react to powerful femme fatales. They appeal as heroes because they seem so in control, but disgust because they must go to “evil” measures to gain their power. Femme fatales reveal the ugly side of individualism – disempowered individuals require greed to achieve the American Dream. Modern perspectives shame the femme fatale as anti-feminist for catering to the male gaze and presenting such an ugly image of female success.

The femme fatale is not necessarily an admirable figure because they must sacrifice their dignity and values in order to be successful – success is not necessarily dignified.

The film *Double Indemnity* shows the audience's awkward shift in exploring how to respond to the femme fatale. Phyllis plays a more subdued role than the typical femme fatale. *Double Indemnity* centers on the male perspective through its first person embedded narrative, voiceovers, and flashbacks. Despite Walter's patronizing, dismissive, and objectifying attitude towards Phyllis, her independence comes through to the audience. This irony may be a response to the women who, after taking over traditionally male jobs during WWII, were treated as incompetent by returning husbands who attempted to reclaim their jobs. The film points out that it is no longer feasible to ignore women's individuality. Walter treats Phyllis as a secondary character. However, although Walter prefers to pretend he has an individualistic hold on the entire murder plan, Phyllis brings an unpredictable element to the story that typical secondary characters do not. *Double Indemnity* challenges the idea of pursuing one's happiness with a complete disregard for others and mocks the notion of American individualism.

Born out of the psychological stress accompanying World War II, noir seeks to enable its audience to therapeutically work through their psychological disorder and to empower its audience to approach disorder with critical thinking. Nightmarish noir narratives frequently end poorly for their characters, who, trapped within their byzantine plots and old conflicts and habits, have no choice but to walk into their own doom. While noir cannot offer a solution for the failure of the American Dream, noir employs psychoanalysis to ensure its audience deals with conflicts and anxiety armed with the critical thinking skills necessary to tackle byzantine problems with good questions, creativity, and innovation. With that, noir displays a glimpse of optimism.

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The Real Consequences of Property Tax Compression For Oregon Public Schools

Andrea Vedder and Matt Davis,* Department of Economics

ABSTRACT

Since Oregon's stringent property tax reforms in the mid-1990s, tax limitations have created a complex and somewhat unpredictable levy system for local public service administrators who rely on property taxes to fund their operations. School districts, in particular, have hit the tax limitations and been forced to reckon with expected but uncollected ("compressed") property tax revenue. This study examines the relationship between property tax compression rates and school production in Oregon, which we measure with the district-wide percentage of eighth grade students who meet or exceed state standards in the mathematics assessment. From the Oregon Departments of Education and Revenue, we've compiled a panel data set on 147 school districts over the six academic years from 2006-2007 to 2011-2012. We've created an Ordinary Least Squares model designed to control for demographic, financial, and fixed district and year effects that may affect a district or year's overall level of student achievement, and attempt to isolate the effect that property tax compression has on district production. Our results indicate that there is a significant quadratic relationship between property tax compression rates and student achievement, such that while low levels of compression have positive effects on achievement, compression rates above 17.33 percent will negatively affect production. Simply put, our results indicate that a small amount of tax compression paradoxically benefits school districts, but that high tax compression rates bring down a district's percentage of students who pass state mathematics exams.

1. INTRODUCTION

Property taxes in Oregon are a messy system, and they are poorly understood by most of the state's constituents. In Oregon, property taxes are based on the lesser of two property values—assessed value, which is capped at a low growth rate, or real market value, which is determined at irregular intervals by county assessors—and a total dollar cap of \$15 per \$1,000 of that lesser value (1.5 percent). When a property tax is levied, it is only collected up to that cap; the amount not collected is "compressed" tax revenue, and the uncollected tax as a consequence of the cap is "compression." The major problem with compression is that even when the public votes to fund a project or a local government entity with property taxes, that project or entity may not receive those funds. Some school districts are losing millions of dollars to tax compression—millions of dollars that the community voted to give the district, but that the district can't collect or spend.

Moreover, some properties' "value" is egregiously lower than their sale price. Take, for example, the home at 4239 NE 7th Avenue in Portland, Oregon, which sold on April 1, 2014 for

*Andrea and Vedder and Matt Davis are Economics students who completed this project to achieve departmental honors. Please send correspondence to andrea.e.vedder@gmail.com.

\$490,000—it is a beautiful, refurbished, 4-bedroom, 3-bathroom Victorian on a corner lot, just eight blocks from a Whole Foods grocery store. But in 1996, it was dilapidated, smack in the middle of a high-crime neighborhood, and assessed at a value of just \$14,030.¹ Whoever bought that home will pay just \$339 in property taxes this year, when 1.5 percent of the \$490,000 purchase price would be \$7,350.

Another potential problem with tax compression is that a service the public has voted to fund is not only not actually being funded to the public's specifications, but has also been "paid for" in the voters' minds, and may therefore garner much less political support for future or concurrent supplemental funding, such as from the state general fund. Consider, for example, whether a typical citizen would vote to approve a local option levy in their district for \$10 million, if just two years earlier a local option levy for \$25 million had passed. Likely, that voter would doubt that the district really needed the additional funds. The reality may be that the district never collected all \$25 million, or even half of it.

If this is the case, and property tax compression presents a situation in which a valued and demanded service is simultaneously underfunded and hindered from successfully securing other public funding sources, then compression could be affecting Oregon's public services—including K-12 education—to a degree far beyond what the simple subtraction of collected tax from levied tax could tell us.

1.1 A BRIEF EXPLANATION OF OREGON PROPERTY TAX REFORM AND COMPRESSION

Oregon established its property taxes in the mid-nineteenth century, and almost nothing within this system changed until the 1990s. Prior to the changes, Oregon had a levy-based system, in which local entities would set their own tax rates based on their needs and estimate revenue based on the real market values of area homes. Tax rates varied depending on which taxing district a home lay within. These taxes funded schools at a rate no greater than \$15 per \$1,000 of real market value.

In the 1990s, Oregon saw a rash of statewide ballot measures aiming to radically change the property tax system in Oregon. One of the most significant of these was Measure 5—a state constitutional amendment passed in 1990 and fully implemented in 1992. This measure placed limits on the amount of tax that could be collected from a property. These limits were \$5 per \$1,000 of assessed value for school districts (phased in over three years), and \$10 per \$1,000 of assessed value for general local government expenses.

In 1997, Measure 50, another state constitutional amendment, further restricted the property tax system in Oregon by establishing limits on the growth rates of taxable property value, ostensibly to make property tax payments more predictable and to shelter homeowners from wild fluctuations in the real estate market. Taxable property value was defined as the 1996

¹ See Figure 8 in appendix for more information on this property's values and tax rate.

assessed value of a property, plus a 3 percent annual increase; this value is referred to as a home's assessed value. (New homes' assessed values are their original assessed value, plus a 3 percent annual increase.)

Tax compression is the effect of a passed tax increase, either in the form of a permanent rate increase or a local option levy, hitting the Measure 5 dollar-limit per \$1,000 of either a property's Measure 50-defined assessed value or its real market value, whichever is lesser. When tax compression occurs, only tax revenue up to each property's limit is collected and distributed amongst the government entities expecting property tax revenue to fund their budgets.

Local option levies—passed most often by public service districts like fire, police, and schools, to fund building renovations or other atypical expenses—are the first in line to lose revenue to tax compression. If a levy's collected taxes for a property are reduced to zero and tax compression is still in effect for that property, then permanent rate tax collection is reduced until the tax cap dollar-limit is reached.

This process is complex and confusing, leaving many Oregonians unaware that funding measures they supported on the ballot could be limited or eliminated by property tax compression. Local government officials and school district administrators themselves may not understand or anticipate the effects of tax compression on their revenue stream, and may not be accounting for it in their budgets.

1.2 OREGON PROPERTY TAXES AND K-12 EDUCATION

Property taxes in Oregon are essentially separated into two pools: taxes for local education, and taxes for every other local service. The two pools are taxed at different rates, and face different caps, with education funding being the most straightforward to measure and track.²

Before Measure 5 passed in 1990, property taxes paid for approximately 70 percent of Oregon's public education; by the 2011 school year, property tax revenue averaged just 30 percent of an Oregon district's revenue (Linhares, 2011). A cursory glance at the data shows that Oregon's school districts are experiencing property tax compression in greater numbers and at a greater magnitude than local governments and other local public services, which makes Oregon school districts a prime choice for examination of the real effects of property tax compression.

1.3 THE LINK BETWEEN TAX COMPRESSION AND STUDENT OUTCOMES

This study attempts to measure the effects of property tax compression on Oregon's education production by regressing the rate of compressed tax (as a percentage of total tax levied) on the percentage of eighth grade students who meet or exceed state standards on the mathematics assessment. The primary aim of this research is to determine whether tax compression has an effect on school outcomes that is distinct from the effects of the existence of a tax cap, or a reduction in overall funding levels. Given that tax compression in a school district

² See Figure 9 in appendix for an example of property tax distribution in Wasco County, Oregon.

is effectively a measured gap between that district's voters' demand for education funding and the district's actual education funding supply, we hypothesize that, at high levels of property tax compression, we may see negative results in education production.

Our principal finding is that property tax compression does have an effect on student achievement, significant at the 5 percent level. Tax compression positively affects student outcomes (at a diminishing rate-of-growth) until a school district reaches a tax compression rate threshold of 8.66 percent, after which point the positive effects of tax compression on student achievement begin to decline as the tax compression rate continues to increase. According to our model, the effects of tax compression remain positive until a total compression rate of 17.33 percent is reached; we predict that compression rates above 17.33 percent will negatively affect student achievement, although no Oregon district has yet reached that threshold (the highest compression rate in Oregon was in Morrow School District in 2012, at 16.83 percent).

2. LITERATURE REVIEW

Although several economic studies have looked at the link between school district funding and student performance, and a few have examined the impact that local tax limits have on school districts (both in terms of district funding and district-level student performance), none have attempted to answer the question of whether local tax *compression* has an effect on student performance.

There is a strong basis for investigating the unique effects of compression. While much of the existing literature examining the link between school funding and student performance finds few to no significant effects (Hanushek, 1986, 1989, and 1997; Hoxby, 2004), research examining property tax inputs specifically has found stronger links between tax revenue limitations and declines in student performance (Downes and Figlio, 1998; McMillen and Singell, 2007). In particular, Downes and Figlio (1998) find that a state's imposition of tax or expenditure limits on local government (including schools) significantly reduces the mean student performance in that state on standardized math tests, and that the reduction in scores is greater for poorer district areas. The authors use detailed data on individual students from the National Longitudinal Survey of the High School Class of 1972 and the National Educational Longitudinal Survey to control for demographics, and Census data to determine school district qualities, including the existence of local tax limitations, and compare student achievement levels on standardized reading and mathematics assessments in 1972 and 1992. They find no significant effect on reading scores, but did find relative reductions in the mean mathematics score to the order of 5.5 to 6 percent in states that implemented a tax limit in the 1970s or 1980s.

Both Dye, et. al. (2005) and McMillen and Singell (2007) find a negative relationship between property tax limitations, or "caps," and school district expenditures. McMillen and Singell (2007) find a significant decrease in district-level per-pupil expenditures in states that adopted a tax limit reform between 1990 and 2000, but a less-consistent relationship between class size and the same districts, suggesting that decreases in revenue most greatly affect non-

instructional costs. This finding is consistent with what one might expect from a unionized school district, in which instructional costs are nearly fixed. Dye, et. al. (2005) examine whether the revenue impacts of capped property taxes for school districts compound over time as a result of “assessed value” growth limits that err on the conservative side, and they find that while tax caps do reduce the growth of total school district expenditures, the effects do not seem to be any less binding in the short-run (two to three years) than in the long-run (nine years).

Although the existence of property tax caps in a district has been linked to lower expenditures and lower average student performance on mathematics assessments, no study that we know has attempted to measure the relationship between the amount of property tax lost to the cap and these same outcomes. Relatively little is known about the relationships between lost—compressed—property tax revenue and school district inputs or production. By measuring the rates of compressed tax revenue relative to the expected total tax revenue of a district, we hope to capture the unique effects of tax compression in the education production function—namely, the disconnect between a community’s demand for education (the levied tax) and its true education inputs (the collected tax).

3. HYPOTHESIS AND METHODOLOGY

We believe there are unique effects captured by property tax compression, more complicated than the simple fact of an imposed tax limitation. Compression in a school district represents a disconnect between the district’s demand—on the part of the voters—for education funding of a certain caliber, and the district’s actual education supply; the rate of compression essentially measures the magnitude of that disconnect. It stands to reason that, at high levels of property tax compression, we may see negative results in education production.

Is property tax compression affecting Oregon’s public school outcomes? We are testing this question by examining the relationship between a district’s tax compression rate and its student achievement levels, which we are measuring with the district’s percentage of eighth grade students who meet or exceed Oregon state standards in the annual statewide mathematics assessment. We expect to find that an increase in a district’s tax compression rate leads to a decrease in student achievement levels.

Eighth grade mathematics assessment scores are a well-established gauge for education production (Hanushek and Raymond, 2005; Hoxby, 2004), and they may best capture the true effects of a school district’s contribution to a student’s learning. By age 13, students have surpassed the period during which their performance levels in school are largely dictated by parental involvement and guidance, but are not yet running up against the complications of high school-level measurement, where math classes and ability levels can range from pre-algebra to college-level integral calculus. Comparatively, reading tests are too easily susceptible to a student’s interest and ability level developed outside of the classroom. Controlling for demographic and financial effects that may affect a district’s overall level of student achievement, we hope to isolate the effect that property tax compression has on district production.

3.1 REGRESSION EQUATION

We have run an Ordinary Least Squares regression to test our hypothesis.

Our final regression equation is as follows:

$$(1) \text{ MathSuccess} = \beta_0 + \beta_1 \text{TaxCompressionRate} + \beta_2 \text{TaxCompressionRate}^2 + \beta_3 \log \text{StudentCount} + \beta_4 \text{MinorityPercentage} + \beta_5 \text{MinorityPercentage}^2 + \beta_6 \text{Free/RedLunchPct} + \beta_7 \text{Year} + \beta_8 \text{Year} + \beta$$

Our endogenous variable, *MathSuccess*, is the percentage of eighth grade students who have met or exceeded the Oregon state standards for mathematics in a given school district during a given academic year, measured on a scale of 0 percent to 100 percent (not as a decimal). Our exogenous variable-of-interest, *TaxCompressionRate*, is the percentage of the total property tax levied (the permanent tax plus any local option levies) in a given school district during a given academic year that was compressed, calculated as the total number of compressed dollars divided by the total number of levied dollars and measured on a scale of 0 percent to 100 percent. *TaxCompressionRate*² is the square of the variable *TaxCompressionRate*.

Other exogenous variables included in our final regression are: *logStudentCount*, the log of the total number of students in a given district during a given academic year; *MinorityPercentage*, the percentage of the total number of students in a given district during a given academic year who are non-white, measured on a scale of 0 percent to 100 percent; and *MinorityPercentage*², the square of the variable *MinorityPercentage*. To capture fixed effects in each district each year, we've also included the binary exogenous variables *Year* and *District*.

We expected to find a negative relationship between *TaxCompressionRate* and *MathSuccess*, with the presumption that each percentage-point unit of *TaxCompressionRate* represents a fairly significant portion of a district's expected budget, and that it is missed when lost. In the case of the Crow-Lorane-Applegate School District in 2012, illustrated in Figures 1 and 2, the lost tax revenue constitutes one-sixth of the district's expected property tax revenue, or—assuming that property taxes in Crow-Lorane-Applegate roughly match the statewide averages for local funding totals (Linhares, 2011)—fully 5 percent of the district's operating budget for the year. It is hard to imagine that this wouldn't negatively impact the district's production, and, all the more so if tax compression is unexpected by school district administrators.

4. DATA DESCRIPTION

The data sources for the empirical analysis are the Oregon Department of Education's annual reports on school district budgets, demographics, and assessment results, as well as property tax compression data compiled in 2013 by the League of Oregon Cities from the

Oregon Department of Revenue's annual reports on property tax levies and collections, which are specific to school district and county.

We've compiled a panel data set that spans the academic years 2006-2007 to 2011-2012 and includes observations from each Oregon school district each year on the following: the total number of students in the district, as well as the percentage of non-white students and the percentage of students on free or reduced lunch programs; the percentage of eighth grade students who've met or exceeded state standards in mathematics; the district's total operating budget, as well as the district's breakdown budgets for capital expenditures, instruction, and support services; and finally the district's rates of permanent rate tax compression, local option levy tax compression, and total (combined permanent rate and local option levy) tax compression, each expressed as a percentage of the tax levied by the district. Figures 1 and 2 illustrate the calculation of the three tax compression rates for the Crow-Lorane-Applegate School District in Lane County in 2012.

We've mapped our annual data as follows: tax compression data for 2007 is based on the results of the 2006 election cycle (which affected the 2006-2007 school year budgets); district budgets, demographics, and assessments results for 2007 are based on the reports published July 1, 2007 (which correspond to the 2006-2007 school year).

FIGURE 1

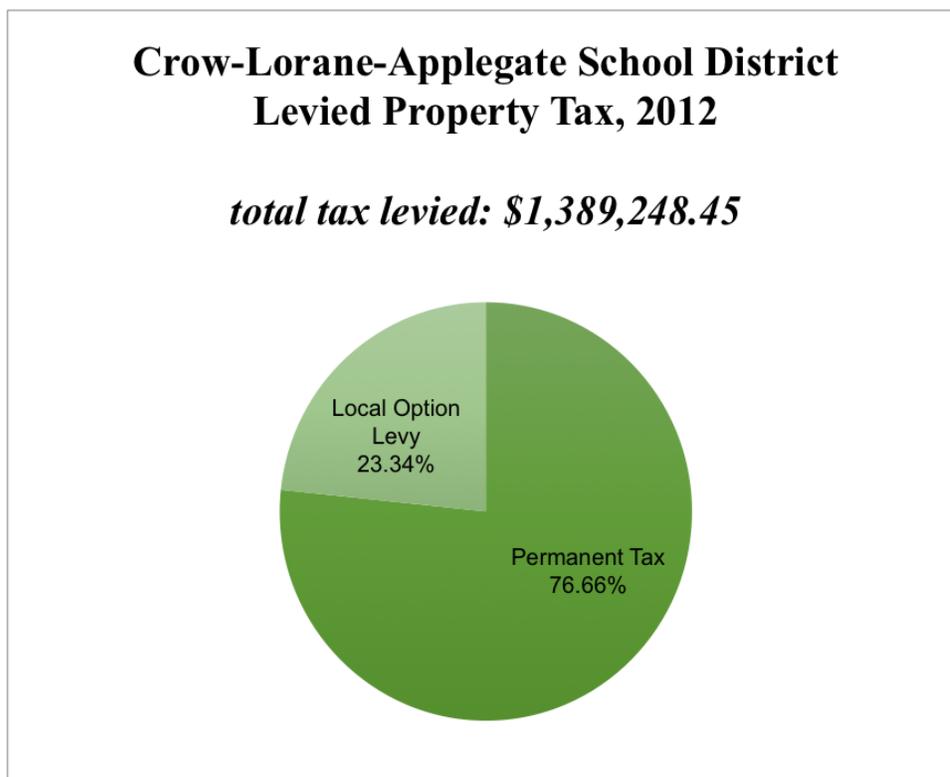
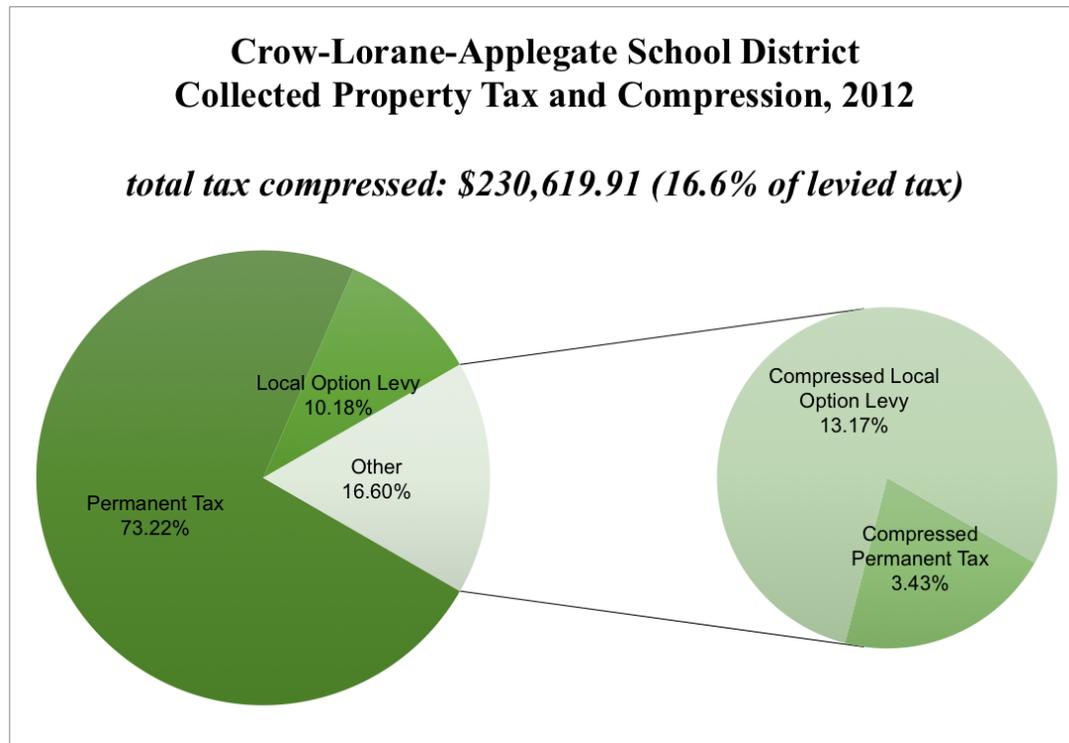


FIGURE 2



After several tests, we determined that not all collected variables were relevant to our final regression equation. The primary problem we encountered was high correlation between explanatory variables: the three measurements of tax compression (permanent rate, local option levy, and total, which is the combined permanent rate and local option levy) and the four measurements of school district budgets (the operating budget and its summary parts: capital expenditures, instruction, and support services). Because of this correlation, identifying the primary funding link(s) to district rates of meeting or exceeding math standards was less straightforward than we had hoped. In our final regression equation, we dropped all of these variables except for the total tax compression rate.

We also found that our data on student demographics were not as explanatory of *MathSuccess* as we had anticipated. Variables for the percentages of black, white, and Hispanic students in each district were highly insignificant in multiple regression variations, as were variables for the percentage of students in each district qualifying for the free lunch program or the reduced lunch program; all of the lunch program and individual ethnicity variables were dropped, although *MinorityPercentage*, the percentage of non-white students in each district, including but not limited to black and Hispanic students, was included in our final regression.

The insignificance of the government-assisted lunch program variables was particularly surprising to us, as we'd hypothesized that low household incomes would negatively impact *MathSuccess* and hoped to capture that effect with this data as a proxy. Table 1 presents

summary statistics of our regression's variables, excluding variable manipulations (such as logs and squares) and the binary variables for district and year. (See Table 4 in the appendix for summary statistics of collected variables that were not included in our final regression.)

Observations of our explanatory variable-of-interest, *TaxCompressionRate*, ranged, within one standard deviation of the mean, from 0 percent to 4.3 percent.

TABLE 1

Summary Statistics for Final Variables					
Variable	No. Obs.	Mean	Std. Dev.	Min.	Max.
<i>MathSuccess</i>	913	65.2	13.1	14.3	95.0
<i>TaxCompressionRate</i>	888	2.0	2.3	0.0	16.8
<i>StudentCount</i> *	917	3,515.0	6,480.9	76.0	45,362.0
<i>MinorityPercentage</i>	917	22.9	15.1	2.3	80.6
<i>Free/RedLunchPct</i>	908	52.2	15.1	2.5	91.7

* included in final regression as a log

There are 192 school districts in Oregon, but after dropping 45 districts for which we could not gather consistent data on tax compression, our dependent variable of interest, we landed at a still-sizable collection of data: 147 districts over six academic years, or 882 observations.

Data on the percentage of students in each district enrolled in a English as a Second Language (ESL) program, the talented and gifted (TAG) program, and in a special education program, such as a student individualized education program (IEP), would have been desirable, as we suspect that there are strong correlations between qualification for these programs and performance on state standardized tests. Given the time constraints of this research project, however, it was not possible to obtain this data. Budgets for each program were easily accessible, but they are not reliably reported from district to district or even from year to year, and so they did not yield helpful contributions to our analysis.

We also would have liked to examine the relationship between tax compression and eighth grade student outcomes over a much longer time period—ideally, beginning as early as the 1991-1992 academic year, at the outset of Oregon's property tax reform. Although this time span may have given us a more complete answer to our research question, it also would have created several problems, the most significant of which would have been accounting for the alterations to state standards for eighth grade mathematics assessment in 2001-2002 and 2006-2007.

5. RESULTS

We find that high levels of compression are linked to significantly lower student performance. Our regression results, shown in Table 2, indicate that tax compression does have a significant effect, at the 5 percent level, on the percentage of eighth grade students who meet

or exceed state standards in mathematics, and that whether the effect is positive or negative depends on the magnitude of the compression rate.

TABLE 2

Final Regression Results					
End. variable: <i>MathSuccess</i>					
R-squared: 0.5965					
Variable	Robust Coeff.	Std. Error	t	p-value	
<i>Constant</i>	32.55	50.94	0.64	0.52	
<i>TaxCompressionRate</i>	1.56	0.74	2.11	0.04	
<i>TaxCompressionRate</i> ²	-0.09	0.04	-2.06	0.04	
<i>logStudentCount</i>	7.00	6.92	1.01	0.31	
<i>MinorityPercentage</i>	0.02	0.24	0.09	0.93	
<i>MinorityPercentage</i> ²	0.01	0.00	2.21	0.03	
<i>Free/RedLunchPct</i>	-0.02	0.11	-0.20	0.84	
<i>Year</i> *	-	-	-	-	
<i>District</i> *	-	-	-	-	

* *i. binaries*

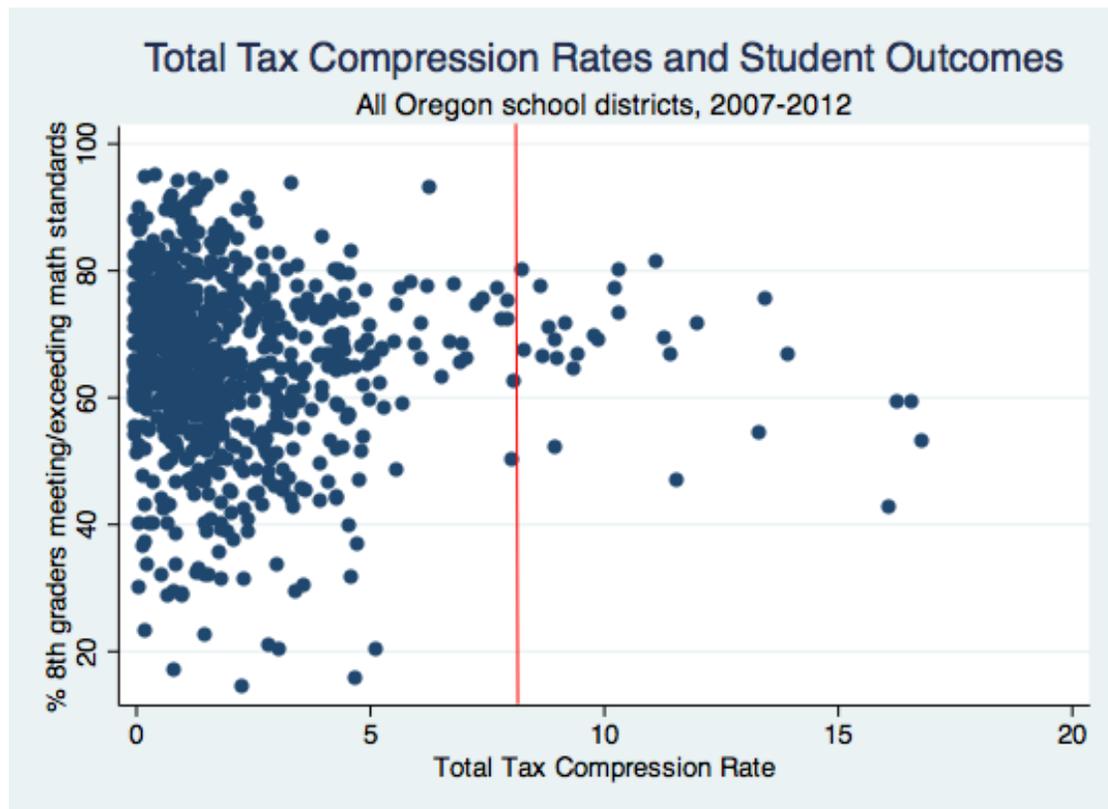
The coefficient estimates for our tax compression variable, a positive coefficient (1.56) for the linear term and a negative coefficient (-0.09) for the quadratic, indicate a relationship between tax compression and student outcomes that begins positively and then, at a certain rate of compression, tips into a diminishing trend. To identify that “tipping point” we took the derivative of the equation

$$(2) y = \beta_0 + \beta_1 TaxCompressionRate + \beta_2 TaxCompressionRate^2 + \beta$$

$$(3) y' = \beta_1 + 2 * \beta_2 TaxCompressionRate$$

and, setting Equation 3 equal to zero and using the coefficient estimates from Table 2 for β_1 and β_2 , solved for a *TaxCompressionRate* “tipping point” of 8.66 percent.

FIGURE 3



As is roughly illustrated in Figure 3 above and Table 3 below, tax compression significantly and positively affects student outcomes, at a diminishing rate-of-increase, until a school district reaches the 8.66 percent threshold, at which point the positive effects of tax compression on *MathSuccess* begin to decline as *TaxCompressionRate* increases. According to our model, the effects of tax compression remain positive until a total compression rate of 17.33 percent is reached.

TABLE 3

<i>Effects of TaxCompressionRate on MathSuccess</i>	
<i>TaxCompressionRate</i>	<i>MathSuccess**</i>
0.00	0.00
1.00	1.47
2.00	2.76
3.00	3.87
4.00	4.80
5.00	5.55
6.00	6.12
7.00	6.51
8.00	6.72
9.00	6.75
10.00	6.60
11.00	6.27
12.00	5.76
13.00	5.07
14.00	4.20
15.00	3.15
16.00	1.92
17.00	0.51
18.00	-1.08
19.00	-2.85
20.00	-4.80

**calculated based on regression results in Table 2*

***percentage-point deviation from mean attributable to
TaxCompressionRate*

Though no district in Oregon has yet reached a total tax compression rate of 17.33 percent (the highest rate in our data set was 0.5 percentage-points shy, at 16.83 percent, in Morrow School District in 2012), our model predicts that tax compression at this rate or higher will have a significantly negative effect on student outcomes.

We attribute the positive effects of tax compression on student achievement to two possibilities. First, because compression is a consequence of reaching a funding cap, the districts that are experiencing compression are at least attempting to maximize their tax base, and they collected significant revenue given their constraints. Second, there may be a state general fund mechanism that replaces lost property tax revenue to school districts but that overcompensates, doling funds in excess of the compressed revenue.

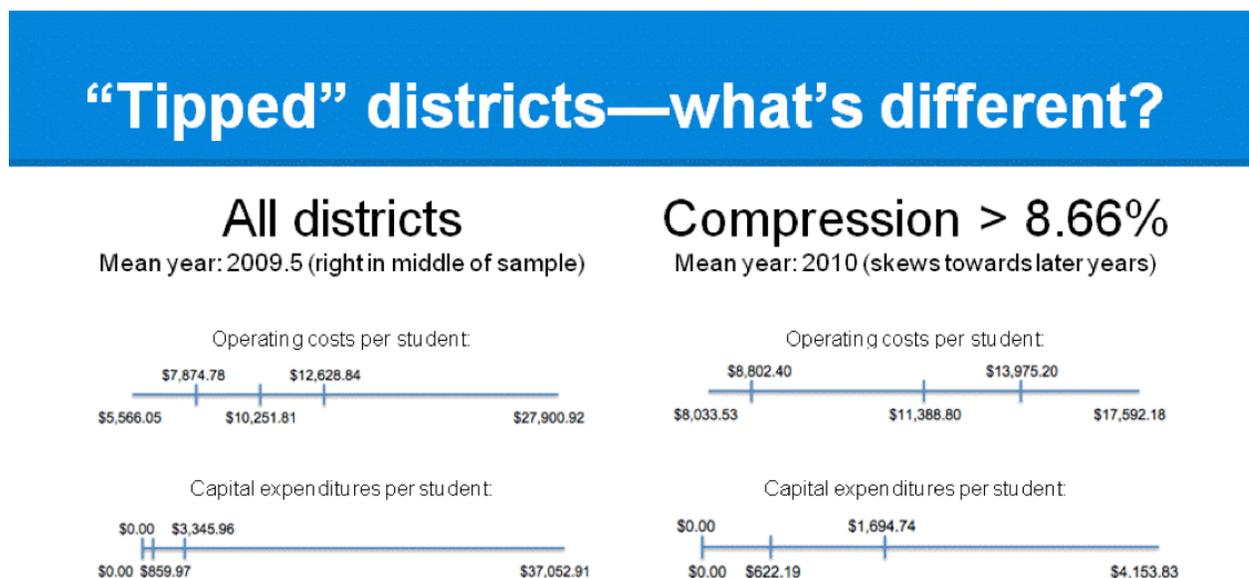
We believe the eventual negative effects of tax compression may be related to the same state general fund mechanism, which likely maxes out at a certain level of replacement funding, as well as to budget cut constraints faced by school districts due to union contracts with teachers

and staff. Or, potentially, due to enormous temporary expenses such as construction costs, which, if our sense is correct and tax compression is largely unanticipated by local administrators, may have been committed to after a local option levy was approved but before collected tax revenues fell short of projections.

5.1 THE DIFFERENCES IN DISTRICTS OVER THE “TIPPING POINT”

Twenty-six observations in our dataset reached the 8.66 percent “tipping point” for total tax compression rate; half of those observations included local option levies.³ Downes and Figlio (1998) find a stronger negative relationship between tax limits and student outcomes in poorer school districts, specifically those districts with lower per-pupil expenditures in the base year of their analysis, so in closer examination of the differences between districts with high rates of compression and those low or no compression, we turned our attention primarily to district funding levels. When comparing the per-pupil operating budgets for the two district groups in Figure 4, we find that “tipped” districts seem to be fairly representative of the center distribution of all districts (i.e., the means and standard deviations are comparable across the two groups). Neither the richest nor the poorest districts are included in the “tipped” group.

FIGURE 4



³ See Table 5 in the appendix for summary statistics of “tipped” districts.

Looking at per-pupil capital expenditures across the two district groups, we see that “tipped” districts are spending less: the mean and standard deviation for “tipped” districts are \$622.19 and \$1,072.55, respectively, while the mean and standard deviation for all districts are \$859.97 and \$2,485.99, respectively. Nearly 15 percent of all districts are spending more on capital expenditures than the maximum amount spent by a “tipped” district; half of all districts are spending more than the average “tipped” district. This data seems to support the findings of McMillen and Singell (2007), in that the compression-imposed revenue constraints of Oregon’s “tipped” districts appear to be channeled towards non-instructional budget cuts.

6. CONCLUSION

This study attempts to measure the effects of property tax compression, tax revenue expected but not collected due to tax caps, on Oregon’s education production by regressing the rate of compressed tax (as a percentage of total tax levied) and school district demographic data against the percentage of eighth grade students who meet or exceed state standards on the mathematics assessment. The primary aim of this research is to determine whether tax compression has an effect on school outcomes that is distinct from the effects of the existence of a tax cap, or a reduction in overall funding levels.

The principal finding of our research is that property tax compression does have an effect on student achievement, significant at the 5 percent level. Tax compression positively affects student outcomes, at a diminishing rate-of-growth, until a school district reaches a tax compression rate threshold of 8.66 percent, after which point the positive effects of tax compression on student achievement begin to decline as the tax compression rate continues to increase. According to our model, the effects of tax compression remain positive until a total compression rate of 17.33 percent is reached; we predict that compression rates above 17.33 percent will negatively affect student achievement.

While the results of our study establish a significant relationship between property tax compression rates and school outcomes, further examination of the state funding mechanisms that tax compression triggers would illuminate the counter-intuitive result that low rates of compression have positive effects on student achievement. We have suggested two possible explanations for these results: 1) that districts levying any local option are at least attempting to maximize their tax base, and therefore constitute a self-selected group of proactively managed districts, and 2) that there exists a state funding mechanism that replaces or attempts to replace lost tax compression revenue to school districts, but that does so imprecisely, effectively overcompensating the district. Further research on this subject should closely examine the equations used by the state for any general fund adjustments made after a district’s experienced tax compression. Furthermore, a more complete picture of the constraints school districts face in making budget cuts, when presented with lower-than-expected property tax revenue, may also contribute to our understanding of tax limitations and education; our results suggest that school districts in this position are making cuts to capital expenditures, which seems consistent with previous findings (McMillen and Singell, 2007), but more research is needed.

7. APPENDIX

FIGURE 8

An illustration: 4239 NE 7th Ave.

4 beds, 3 baths, 2,280 sq. ft.
Desirable corner lot in PDX
Asking price: \$499,900
Sale price, April 1: \$490,000

Assessed Value (2013): \$14,030
Real Market Value: \$114,000

Property tax: \$339
Effective rate: 0.069%

Data and image source: [Trulia.com](http://www.trulia.com)

<http://www.trulia.com/homes/Oregon/Portland/sold/1000392644-4239-NE-7th-Ave-Portland-OR-97211>



FIGURE 9

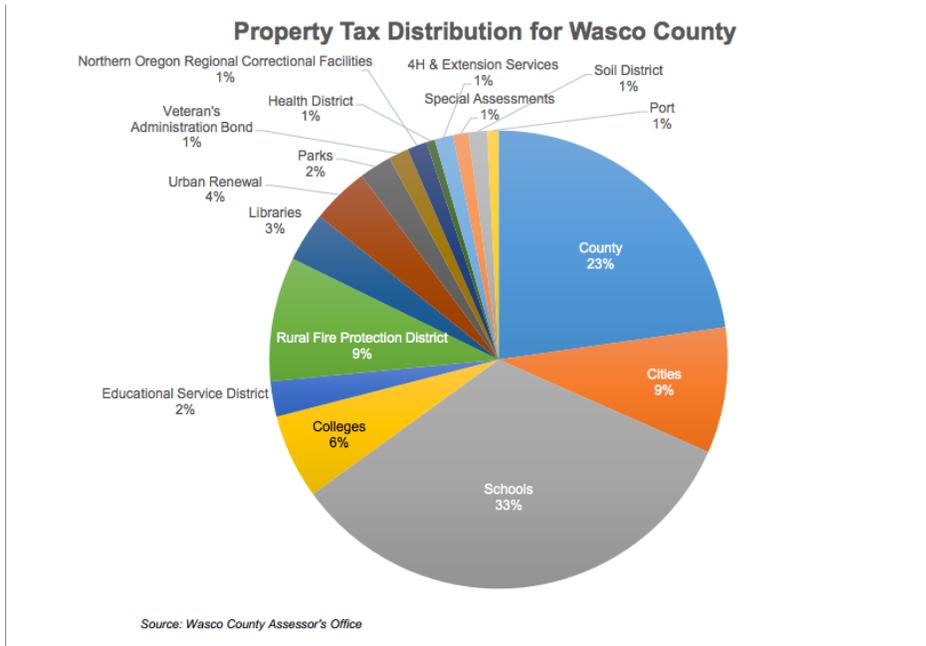


FIGURE 10

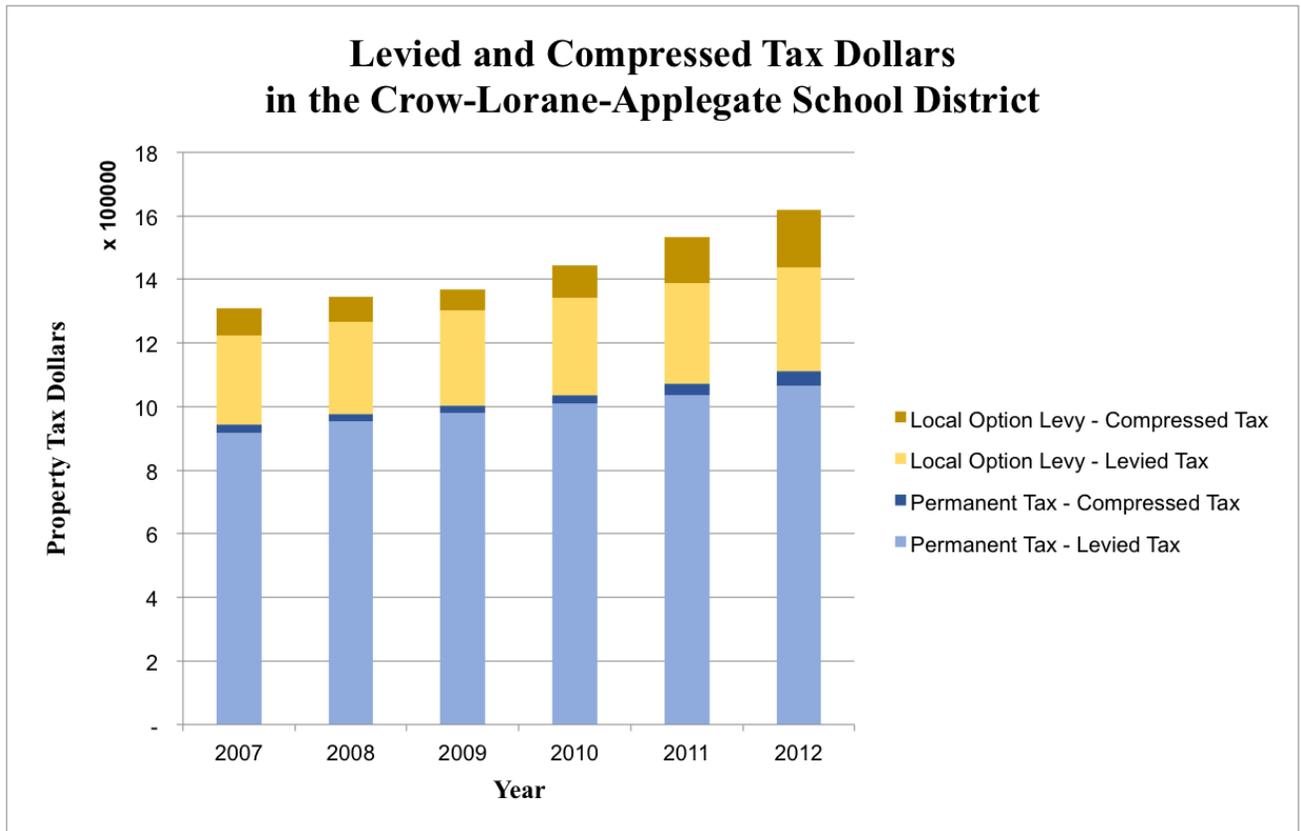


TABLE 4

Summary Statistics for Collected Variables					
Variable	# Obs.	Mean	Std. Dev.	Min.	Max.
<i>MathSuccess</i>	913	65.2	13.1	14.3	95.0
<i>TaxCompressionRate</i>	888	2.0	2.3	0.0	16.8
<i>StudentCount</i> *	917	3,515.0	6,480.9	76.0	45,362.0
<i>MinorityPercentage</i>	917	22.9	15.1	2.3	80.6
<i>Free/RedLunchPct</i>	908	52.2	15.1	2.5	91.7
<i>BlackPercentage</i> **	917	1.1	1.7	0.0	15.4
<i>HispanicPercentage</i> **	917	14.6	14.4	0.0	78.0
<i>WhitePercentage</i> **	917	76.2	14.9	19.4	97.1
<i>OperatingBudget</i> **	917	3.3e+7	6.3e+7	1,504,991	5.3e+8
<i>OperatingPerStudent</i> **	917	10,251.8	2,377.0	5,566.1	27,900.9
<i>CapitalExpenditures</i> **	727	4,160,645	1.2e+07	6.2	1.2e+08
<i>CapitalPerStudent</i> **	727	1,084.7	2,748.3	0.0	37,052.9
<i>InstructionBudget</i> **	765	1.7e+07	3.3e+07	618,192.1	2.5e+08
<i>SupportServBudget</i> **	765	1.1e+07	2.1e+07	579,252.3	1.8e+08
<i>LocalOpCompRate</i> **	86	15.8	15.1	1.1	69.9
<i>PermTaxCompRate</i> **	873	1.8	1.9	0.0	13.9

* included in final regression as a log

** omitted from final regression

TABLE 5

Summary Statistics for "Tipped" Districts					
Variable	# Obs.	Mean	Std. Dev.	Min.	Max.
<i>MathSuccess</i>	26	66.1	9.9	42.5	81.3
<i>TaxCompressionRate</i>	26	11.4	2.7	8.68	16.83
<i>StudentCount</i> *	26	4,572.3	9,208.3	160	45,362.0
<i>MinorityPercentage</i>	26	29.0	19.0	2.5	66.7
<i>Free/RedLunchPct</i>	26	51.7	16.4	21.8	79.4
<i>BlackPercentage</i> **	26	1.0	2.1	0.0	11.1
<i>HispanicPercentage</i> **	26	20.9	20.9	0.0	64.7
<i>WhitePercentage</i> **	26	70.6	18.6	33.0	95.0
<i>OperatingBudget</i> **	26	4.6e+7	1.1e+8	1,815,210	5.1e+8
<i>OperatingPerStudent</i> **	26	11,388.8	2,586.4	8,033.5	17,592.2
<i>CapitalExpenditures</i> **	23	5,570,600	1.1e+07	3,677.9	3.5e+07
<i>CapitalPerStudent</i> **	23	703.3	1,116.9	6.73	4,153.8
<i>InstructionBudget</i> **	18	1.0e+07	1.3e+07	968,233.4	4.1e+07
<i>SupportServBudget</i> **	18	6,255,310	7,364,156	615,755.4	2.4e+07
<i>LocalOpCompRate</i> **	13	40.8	19.1	18.4	69.9
<i>PermTaxCompRate</i> **	26	6.5	4.4	0.8	13.9

* included in final regression as a log

** omitted from final regression

TABLE 6

Secondary Regression Results				
End. variable: <i>logOperatingBudget</i>				
R-squared: 0.9984				
Variable	Robust Coeff.	Std. Error	t	p-value
<i>TaxCompressionRate</i>	-0.0033	0.0044	-0.74	0.46
<i>TaxCompressionRate</i> ²	0.0001	0.0003	0.46	0.65
<i>logStudentCount</i>	0.7064	0.0763	9.26	0.00
<i>MinorityPercentage</i>	-0.0030	0.0017	-1.74	0.08
<i>MinorityPercentage</i> ²	0.0000	0.0000	0.34	0.74
<i>Free/RedLunchPct</i>	0.0002	0.0010	0.16	0.87
<i>Year</i> *	-	-	-	-
<i>District</i> *	-	-	-	-

* i. binaries
N: 879

TABLE 7

Secondary Regression Results, “Tipped” Districts				
End. variable: <i>logOperatingBudget</i>				
R-squared: 0.9984				
Variable	Robust Coeff.	Std. Error	t	p-value
<i>TaxCompressionRate</i>	0.0233	0.0480	0.49	0.65
<i>TaxCompressionRate</i> ²	-0.0009	0.0019	-0.47	0.66
<i>logStudentCount</i>	0.5227	0.5878	0.89	0.42
<i>MinorityPercentage</i>	0.0019	0.0139	0.14	0.89
<i>MinorityPercentage</i> ²	0.0000	0.0002	0.32	0.76
<i>Free/RedLunchPct</i>	-0.0005	0.0092	-0.06	0.96
<i>Year</i> *	-	-	-	-
<i>District</i> *	-	-	-	-

* i. binaries
N: 26

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The Psychological Mechanisms of Oppression: Empathy, Disgust, and the Perception of Group Membership

Alexander Harris,* Philosophy

ABSTRACT

From a psychological standpoint, the oppression and marginalization of certain groups can be understood on the basis of two emotional mechanisms, empathy and disgust. This essay seeks to illuminate how both emotions are heavily modulated by *the perception of group membership* and how both show the capability to be heavily influenced by social and cultural contexts. This cultural prejudice works by determining what markers of difference (such as skin color or religion) are socially salient, which allows groups to build hierarchies based on those differences that would otherwise remain irrelevant. This paper does not seek to justify group domination as an organic product of psychology, but rather to merely give an account of how the psychological phenomena of disgust and empathy accentuate and collapse, respectively, the borders between people on the basis of in-group and out-group perception. Using the results of psychological tests, the author draws out certain arguments that are philosophically telling as well as politically relevant. Taken together, the social and psychological construction of differences between racial groups in the United States has altered how and when empathy and disgust have been elicited, and has thereby facilitated the reification of extraordinarily oppressive and atrocious group biases into a strict hierarchal system. With this understanding of *how* group oppression is able to take place on a psychological level we can better understand *what* can be done to mitigate the negative effects of in-group, out-group interaction.

1. INTRODUCTION

From a psychological standpoint, the oppression and marginalization of certain groups can be understood on the basis of two emotional mechanisms: empathy and disgust. Both emotions are heavily modulated by the perception of group membership and show the capability to be heavily influenced by social and cultural contexts. This cultural prejudice works by determining what markers of difference (such as skin color or religion) are socially salient, which allows groups to build hierarchies based on those differences that would otherwise remain irrelevant. This paper does not seek to justify group domination as an organic product of psychology, but rather to merely give an account of how the psychological phenomena of disgust and empathy accentuate and collapse, respectively, the borders between people on the basis of in-group and out-group perception. Taken together, the social and psychological construction of differences

*Alexander J. Harris is an undergraduate student at the University of Oregon working to complete degrees in both Philosophy and Political Science. His main interests are political and social philosophy (mostly in the Pragmatist tradition of John Dewey), Latin and Native American politics, and modern environmental issues. Alex plans to attend the University of Washington School of Law and someday practice environmental law in either Oregon or Washington. Please send all correspondence to alex.harris24@gmail.com

between racial groups in the United States has altered how and when empathy and disgust have been elicited, and has thereby facilitated the reification of extraordinarily oppressive and atrocious group biases into a strict hierarchal system.

2. EMPATHY

Empathy is an affective mechanism that facilitates pro-social motivation and behavior toward in-group members. Empathy allows an individual to vicariously experience the emotions and thoughts of another person without having direct communication with that person. This has served as an aid to understanding another's need as well as a motivating impetus to fulfill that need. This affective mechanism acts as a catalyst for cooperation and coordination amongst individuals, ultimately resulting in the net benefit of the parties involved. Studies show that empathic responses to the perception of pain in another involve an *affective response*, but not a sensory response of the pain experienced (Singer et al. 1157-1158). Thus, while empathy is commonly compared to stepping into the shoes of another, one never fully occupies these shoes because one cannot literally experience the sensory pain of another person. Nonetheless, empathy builds strong in-group ties that lead to extraordinary displays of altruism and self-sacrifice through bridging the gap between otherwise disparate individuals with strong affective responses.

How exactly does empathy build strong ties among individuals in a group? To answer this question, an important component of empathy must be identified. An individual will experience a greater affective response when observing the pain or suffering of an in-group member than she will experience when observing the pain or suffering of an out-group member. In other words, the intensity of an individual's empathic response to the observance of pain is largely determined by *her perception* of whether or not the victim is one of her own group (*us*) or a member of a different group (*them*). The elicitation of this affective response constructs a bond between the self and the victim, a bond that is very often strong enough to motivate and galvanize the observer into taking action to prevent the further suffering of the victim.

Contreras-Huerta et al. expand on this extraordinary aspect of empathy by comparing the neural empathic responses of perceived pain across racial lines. Their project is organized to answer two simple questions: does racial difference modulate empathic responses to pain, and if so, how does racial difference operate in the modulation of empathy? They attempted to answer these questions by testing the empathic reactions of Caucasian-Australians. The researchers, through a series of affective priming tasks, successfully created a minimal group paradigm, which is merely an artificial group created on a random basis. For example, a minimal group paradigm would be created if a teacher split a classroom full of students in half based on their birthday and then gave one group red hats and the other blue hats. The researchers in the Contreras-Huerta et al. study used this technique to create two groups and primed the participants until they showed strong association with and preferences for the group they were assigned. Once the participants had been primed, they were tested in an fMRI scanner to see if their empathic responses corresponded with the observed pain of in-group and out-group members. Surprisingly, despite the explicit identification with their group just moments before,

the participants experienced no more neural empathic affect to the observed pain of their in-group members than they did of the observed pain of out-group members.

Simultaneously, the researchers tested to see if racial biases were present in the reactions of the participants. Prior to the fMRI tests, the participants showed no aversion or preference to racial groups, but only to the groups to which they had been primed (groups created by the minimal group paradigm); however, the fMRI scans revealed that the observance of pain across racial lines resulted in a significantly diminished empathic response compared to the response of observed pain within racial categories. To further clarify, when Australian participants viewed Chinese participants getting poked with a needle, the Australian viewers experienced less empathic affect than they did when they viewed a fellow Australian getting poked with a needle. From these results, Contreras-Huerta et al. argue, "Race has been demonstrated as a feature impossible to ignore in facial processing, even when race is implicit and not relevant to the participant's task. Thus, it is possible that race may cause an automatic and bottom-up bias in empathic neural activation of pain" (Contreras-Huerta et al. 8).

The authors of this experiment posit that race may likely operate at a more basic level than broader social distinctions. My objection to this interpretation is twofold. Firstly, they base their conclusions on the fact that even though the participants of the survey showed clear group biases before the fMRI tests, the test results showed no difference in perceived pain across their primed group lines. Since the assignment to these groups was arbitrary and ultimately non-committal, I argue that the *psychological affect* associated with the membership of these fabricated groups was necessarily weak. The saliency of a social group is likely to be more pronounced if there is historical and symbolic baggage associated with the group and if that baggage is constitutive of group members' identity. Since the minimal group paradigm constructed by the researchers comes with no such baggage, it cannot be representative of other social groups, groups laden with symbolism and historic ties. Secondly, Contreras-Huerta et al. argue that race has such a deep impact on empathic responses because of the saliency of its physical cues (i.e. skin color), whereas the group membership of the participants was not associated with any physical cue. I argue that race has such a potent influence on empathic responses only because it has historically been rendered as a socially significant indicator of group membership on the basis of these physical cues. In other words, skin color is not just a spectrum of shades, but also a spectrum of social indicators that have historically, and still do, have an enormous impact on how people are organized materially, economically, politically, and culturally. Therefore, these phenotypical markers come with certain social baggage that causes the individual to psychologically determine in-group, out-group members, which thereby modulates her empathic responses. In a word, racial bias in empathic responses is not an organic, inevitable reality (bottom-up empathic discrimination), but instead an informed and learned bias that applies to all in-group, out-group interactions (top-down empathic discrimination).

To prove that group membership, and not race, is the paramount factor in determining the degree of empathic response, it is necessary to consider what effect real-world social categories, such as religion or culture, have on individuals. When Emile G. Bruneau et al. conducted an

fMRI test on the elicitation of empathy in Arabs and Israelis, the scans not only revealed a significantly diminished degree of empathic affect in the individual who observed pain in a member of the opposite group, but also more involvement in the prefrontal cortex. This region of the brain is responsible for discriminating between conflicting thoughts and then making decisions in accordance to the superior thought. This suggests that in some instances, the prefrontal cortex informs the physiological empathy system of the victim's out-group status, resulting in the weaker elicitation of empathy. This kind of "top-down" modulation of the empathic response illustrates that the group categories have cognitive significance and play an integral role in determining the empathic reaction.

To push this further, imagine a world where people are born with much greater phenotypical diversity within racial groups than usual. In this world, skin color, hair density, eye shape, and lip size would all be equally as physically salient as they are in real life; however, they would not carry any social significance. Since physical differences would not line up with social group categories, they would have as much social significance as eye color or belly button shape have in our world. Because, in our world, race has historically had such social saliency, and since none of us have ever known the world without such importance placed on phenotype, race is psychologically treated as an indicator of group membership. I argue that this treatment is not "natural" or "inevitable", but rather somewhat arbitrary and historically contingent. Therefore, this kind of psychological process is only "bottom-up" in the sense that it takes place at a very subconscious level, and not in the sense that we are biologically hardwired to feel strong aversions to different skin colors. Therefore, those group categories, such as race, that carry social significance and physically salient cues modulate and regulate the empathic reaction elicited in members of different groups. Since racial categories in the United States have always had major social, political, legal, and moral significance, and since these categories have been based on phenotypical markers, the actual empathy experienced by white Americans towards racial minority groups has likely been modulated and diminished.

From this view, it may seem appropriate to assume that one's empathy is modulated by the difference between herself and the victim she observes; however, it is not the difference between individuals that modulates neural empathic responses, but merely the *perception of difference* that is responsible. This perception is highly susceptible to culturally acquired prejudice, prejudice which is very often not the accidental product of social interactions, but rather the product of a cold, calculated agenda to dominate and oppress. Indeed, the dominant group generally chooses which differences should be considered socially salient and ignores those differences that hinder their agenda to control. Thus, skin color is rendered as a telling social characteristic, a sign of fundamental difference from the "neutral" white man, and his inferiors. By depicting racial differences as socially relevant indicators, the dominant group becomes convinced of these differences, prompting a recalibration of their empathic ties to the lesser group. Their dearth of empathy towards out-group members further confirms their conviction of their differences, for now in addition to telling themselves these differences exist they also *feel* the dissimilarities.

The fade in empathy for those who seemingly belong to different groups contributes to propagate and nourish rigid social hierarchies, and thus is dangerous to social egalitarianism. Situations in which racial minorities undergo severe suffering and misery fail to elicit strong affective responses in the dominant majority group. The dearth of affective content results in a lack of motivation or desire to change the conditions that gave rise to the suffering, especially when those conditions are economically beneficial to the dominant group. Unfortunately, those who are a part of the dominant group are likely to be in a position of power to prevent the suffering of minority groups. However, the dominant group lacks the affective response necessary to act altruistically towards other groups and thus generates a deep sense of apathy that bleeds into the political and social centers of power. This indifference allows for the justification of extremely unequal policies that perpetuate and maintain the systemic modes of dominance that originally produced the racial differences in the first place. The feedback loop is completed when oppressive policies breed tangible, material inequalities that accentuate the differences between racial groups and further the fade in empathy towards these groups.

A natural counterargument to the claims made thus far is that people do not derive their motivation to act morally from affect, but rather rely almost exclusively on general moral ideals that are more subservient to the rules of logic. In ardent opposition to this counterclaim is a mountain of evidence arguing that affect plays an extraordinarily important role in motivating or demotivating individuals to act morally. Paul Slovic et al. argue that in cases of charity, “compassion shown towards victims has been found to decrease as the number of individuals in need of aid increases, identifiability of victims decreases, and proportion of victims helped declines” (Slovic et al. 4). Their study starts by asserting that there is no logical reason to give less money to a group of six children than to give to one child, for, if anything, logic would demand that the group of six should get more because there is six times the need. Slovic et al., however, show that since the affect is greater if just one identified child is helped, people give more money on average to one child than to the group of six. In a similar study, Slovic et al. demonstrate that in cases of charity, providing information about those who cannot be helped will demotivate the individual from helping those she *can* help. The negative affect associated with the children not helped induces a sense of pseudo-inefficacy great enough to counteract the positive affect that would be achieved by helping those other children that *can* be helped (Slovic et al. 4) These studies illustrate how affect, however illogical, plays a crucial role in motivating people to act morally. While these studies do not demonstrate racial bias in empathic responses, they give evidence to the argument that the fade in empathic *affect* across racial lines must account for a major fade in *motivation* to act altruistically towards those racial out-groups.

3. DISGUST

Disgust is generally believed to have played an evolutionary role in keeping communities free of contamination and disease; however, there is disagreement about the exact evolutionary role of social disgust. One theory, as developed by Martha Nussbaum, argues that social disgust has served to reconcile our mortal, animal bodies with our desire to live forever. Nussbaum posits:

So powerful is the desire to cordon ourselves off from our animality that we often don't stop at feces, cockroaches, and slimy animals. We need a group of humans to bind ourselves against, who will come to exemplify the boundary line between the truly human and the basely animal. If those quasi-animals stand between us and our own animality, then we are one step further away from being animal and mortal ourselves. (107)

In this quote, Nussbaum identifies disgust as a mechanism used to anchor ourselves as human beings by identifying and isolating the non-human. While this view is extremely limited in its ability to account for the evolutionary development of social disgust, it does illustrate how disgust is necessarily dehumanizing to some while simultaneously humanizing to others. Nussbaum correctly identifies this universally human phenomenon as an emotion relating to the physicality of the body, a kind of obsession with purity and health. Disgust, therefore, uses dehumanizing means, such as slavery and extermination, to cleanse the body politic of any deviation from humanity.

Daniel Kelly, in his book, *Yuck! The Nature and Moral Significance of Disgust*, develops an alternative and superior model of disgust. His project identifies the original function of disgust as a mechanism that triggers the expulsion of toxic poisons and signals the threat of potentially contagious diseases. According to Kelly, emotional responses felt in disgusting situations protect us from becoming entangled with parasites and poisons that might be dangerous. This emotion came to involve a whole cluster of specific reactions such as the gape face, quick withdrawal of the body (especially of the face and mouth), and certain cognitive reactions such a sense of offensiveness and contamination. These reactions all served a biological purpose, but over the course of many thousands of years eventually became associated with disgusting situations, and thus developed a communicative function. This was useful for groups that wanted to ensure the health of the entire community so that they could avoid the spread of disease.

Kelly argues that since the same mechanisms that produce the emotion are also at work in the recognition of the emotion, "not only are people able to naturally recognize a gape as an expression of disgust, but doing so often involves the extra step of actually becoming disgusted oneself" (Kelly 2011. Pg 66). Thus, disgust is highly empathic and, ironically, extremely contagious. While the reaction and recognition of disgust are universal and innate functions that all people share, the elicitors of disgust are highly variable and are largely determined by social norms and susceptible to social learning. What accounts for the wide variety of disgust elicitors? Shouldn't we expect all human beings to be disgusted by the same disgusting things? From an evolutionary standpoint, disgust has developed to be susceptible to social learning because human beings have historically been such a nomadic species. The requirements of adapting to new environments (learning what is and is not safe to eat, drink or touch, and communicating that knowledge to others) have been paramount in the success of the human species.

But what gives disgust its moral and social orientation? Why has disgust been applied to the behavior of human beings? Kelly argues that at some point, the emotion had to be directed at specific groups of human beings infected with dangerous diseases. He argues, "the importance of socially acquired information about the specific poisons and parasites in the local habitat . . .

helped shape an acquisition system that was highly flexible. This combination of features left the emotion susceptible to accruing new auxiliary functions, particularly in the social domain” (Kelly 116). Kelly then argues that because disgust is the perfect candidate for motivating the strict adherence to social norms of the in-group and for punishing those who violate the norms (likely members of the out-group), the emotion was then co-opted to maintain these social norms. The maintenance of these norms was crucial for the survival of the human species, and was only possible through *motivating* each individual in a group to respect and comply with the norms.

Kelly argues that the obsession with norm unanimity further facilitated the coordination between individuals, which resulted in the benefit of the entire community. Disgust interpreted arbitrary ethnic markers (such as skin color) to have socially relevant meaning. Thus treating those ethnic markers as “an external, physical, and observable indicator of an underlying set of internal, psychological, and unobservable dispositions, namely, the beliefs, values, and clusters of social norms endemic to one particular tribe...” (Kelly 112). Disgust began to operate on the premise that the greater the similarity in values and norms, the more likely another is to cooperate, and since racial differences were thought to be telling of values and norms, racial differences were interpreted to be indicators of cooperativeness. Therefore, strong racial-group animus was formed and the encounter of racially different groups was likely to elicit *social* disgust. Once again, aversions to racial out-groups are not innate but rather were created through a process of attributing social meanings that operated as an indicator of group membership and cooperativeness to certain physically salient features (such as skin color).

Social disgust is elicited in a very different way than the original emotion of disgust, as the former is usually concerned with the protection of social norms and values whereas the latter is concerned with biological preservation. However, both forms of disgust produce the same cluster of emotional and physical *reactions*. Social disgust has communicative meaning and social significance. Since disgust has empathic capabilities, disgust elicited by out-group behavior or appearance is easily communicated, understood, and spread to fellow in-group members. The infectious capabilities of disgust combine with its visceral affective response to produce a widespread motivation in in-group members to isolate or eliminate members of the out-group. Such a response is likely to reify ethnocentrism and xenophobia into such atrocities as segregation, indiscriminate violence, and genocide. Therefore, by motivating people to both comply with social norms and punish those who violate those norms, disgust encourages and facilitates the dehumanizing treatment of racial minority groups.

While Kelly’s work on disgust offers a reasonable account of the origins and co-option of social disgust, he says little about how disgust has been deliberately co-opted by human beings as a tool of rhetoric. Hitler famously compared Jews to vermin and maggots before and during World War II to mobilize a fierce sense of anti-Semitism. Is this rhetorical technique unique to mid-20th century Germany? Surely it is not, judging by the comments of Israeli leaders such as Miri Regev, who stated the African immigrants in Israel “are a cancer in our body”, a comment which over half of Israelis agree (“The Peace Index”). The recent comment made by Ugandan President Yoweri Museveni displays a similar group attribution of disgust, justifying the passage

of new, bellicose laws against homosexuals by saying: “They’re disgusting. What sort of people are they?” (Abedine). Invoking disgust as a rhetorical device to manipulate public opinion or to justify hostile group animus appears to be a worldwide phenomenon.

In an analysis of different pieces of rhetoric that have been used to incite disgust in the public over the years, there seems to be a very common technique utilized: bodily metaphors. By comparing a group of people to diseases, insects, vermin, parasites, or feces, the speaker is able to effectively elicit a strong feeling of disgust in her listeners. Even though the listeners know that the out-group is not a “cancer” or “parasite”, the rhetoric successfully conflates the original feelings of disgust with those co-opted feelings of social disgust, resulting in the motivation to handle the elicitors of the disgust *as if* they are actually diseased and infectious. Another potent tool is the utilization of the strong emotional power of sexuality by comparing the infiltration of new out-groups to the rape of society. This is also often accompanied with portraying the out-group as hypersexual and animalistic, effectively causing the in-group to have genuine worries of sexual violence. Thus, the close relationship between the obsession of biological purity and that of social purity has allowed rhetoric to conflate the two, causing for a more dramatic affect and thus a stronger motivation to act violently.

In her essay *Genocidal Language Games*, Lynne Tirrell explains how hateful speech acts had an especially strong effect in evoking fear and disgust that motivated and justified the violence perpetrated by Hutus against Tutsis in the 1994 Rwanda Genocide. The derogatory terms with the most significance were “inyenzi”, which is Kinyarwanda for “cockroach”, and “inzoka”, which is Kinyarwanda for “snake”. In addition to accentuating the “us” and “them” distinctions, these terms rendered the Tutsis as subhuman animals, which effectively eliminated their membership in the moral community. Tirrell identifies the metaphorical significance of the term “cockroach” when she states, “cockroaches are pests, dirty, ubiquitous, multiply rapidly, are hard to kill, *ought* to be killed, show emergent tendencies when in groups, are resilient, (and) carry diseases” (200). Snakes, on the other hand, are generally treated with extreme caution and thus usually beheaded immediately. In fact, in Rwanda, the beheading of a snake is a certain kind of rite of passage for young boys, and thus the execution of a snake is a conferment of communal trust and pride (Tirrell 176). Tirrell argues that the comparison to insects and snakes is no accident, but instead a deliberate attempt to incite strong feelings of disgust and transform those feelings into the performance of violence. Upon considering Tirrell’s arguments about the reification of disgust-laden language into performative violence, Kelly’s evolutionary account of disgust, and words from leaders around the world, it becomes apparent that disgust plays a very active and palpable role in shaping in-group and, out-group distinctions. Once these distinctions are created, this destructive emotion wastes no time in motivating its hosts to eliminating out-group members, either socially (i.e. shunning) or physically (i.e. extermination).

4. CONCLUSION

It is evident that the oppression of certain groups can be largely understood on the basis of two emotional mechanisms, empathy and disgust. Both emotions are heavily influenced and affected by the perception of group membership, a perception that is easily manipulated and

transmitted through the collective consciousness. Empathy and disgust developed to maintain and bolster the welfare of the in-group. Empathy encourages prosocial behavior within the group and disgust discourages prosocial behavior towards the out-group. Disgust also enhances group separation on the basis of what is considered socially relevant, which allows group bias in the elicitation of empathy to grow. Physically salient differences, such as skin color, have been interpreted to have social and moral significance, allowing cultural prejudice to build hierarchies based on these physical differences. Since the perception of in-group and out-group membership has served as the basis for how disgust accentuates and how empathy collapses the borders between people, *perception* must therefore be altered if the present racial relations in the United States are to be improved. To prevent the reification of oppressive and atrocious group biases into strict hierarchal systems, group membership must be *extended* to include people across socioeconomic and racial lines. By including more people into one's in-group, the negative effects of social disgust will be largely avoided and the potential positive effects of empathy will be communally enjoyed.

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Curiosity as Object: Egyptian Mumia in Early Modern Europe

Spencer Kales,* Department of Archaeology, Clark Honors College

ABSTRACT

Throughout human history, people have maintained beliefs and practices that were meant to sustain health even though they seem, to the modern inquirer, to be quite ridiculous. A common source of medicinal material throughout history (even as recent as the 20th century in some cases) was human remains, either long dead or freshly deceased. One of these human-based ‘panaceas’ was mumia, the pulverized or tintured extract of human corpses—mummies—mostly from Egypt. A variety of products fell under this designation, and could be found in wide temporal and geographical range. The paper will address the procurement, manufacture, sale, and distribution of this macabre cure in order to argue that its ubiquitous nature led to its eventual fall from popularity.

Curiosity can be examined from any number of equally interesting perspectives. An inquisitor may choose to study the development of curiosity through ideas, concepts, or beliefs. One case, for example, is the natural philosophers of the early modern period that strove to understand how the world worked in the physical sense. Alternatively, one may pursue the history of curious objects, in which tangible materials, products, and artifacts are traced through time, and are used as a means of measuring change related to such objects. A class of such description is corpse medicine, the use of the deceased human body for its purported health benefits. A notable—and occasionally notorious—corpse medicine compound, commonly known as ‘mumia’—has a complex history, spanning from the embalming chambers of the Pharaohs to the counters of 20th century European pharmacies. Drawing from primary documents such as John Parkinson’s *Theatrum Botanicum*, and John Sanderson’s *Travels in the Levant*, as well as numerous modern scholarly opinions, this ‘object’ will be used to investigate evolving concepts of medical physiology, changes in geographical distribution via trade, and the effects of commercialization on its popularity and authenticity in 16th and 17th century Western Europe.

To better define objects as curiosities, Neil Kenny’s text, *The Uses of Curiosity in Early Modern France and Germany*, explores how “to call an object ‘curious’ was to say both something about the way in which a human subject had crafted it and something about the way in which it was an object of human attention.”¹ Human attention can be measured in the sense

¹ Neil Kenny, *The Uses of Curiosity in Early Modern France and Germany*, Oxford: Oxford University Press 2004, 169.

*Spencer Kales is a senior in the Clark Honors College, studying Archaeology and Spanish. He has rowed for the university’s team throughout his college career, and will be men’s team captain this coming year. Spencer plans to pursue a law degree after graduation to work toward safeguarding cultural material and intangible heritage resources, and work against the worldwide illegal antiquities trade. Please send all correspondence to nvskiguy@aol.com.

of how desired an object is, such as economical demand. Thus, Kenny claims that curious objects were “often commodified [...] endowing them with financial value” and “were often used in attempts to make money or else to boost their owner’s prestige.”² In order for such objects to have a market or monetary value, they needed to be “‘rare’, ‘uncommon’, ‘exotic’ . . . ‘beautiful’ . . . ‘noteworthy’” amongst similar descriptions.³ Logically, there would need to be a market for the exchange of curious objects, as the concept of value is incomplete without a group of people willing to pay said value. Kenny labels this market “the curious,” and describes it as “nearly as socially diverse as it was geographically far-flung, embracing aristocrats and merchants, physicians and apothecaries, lawyers and clergymen of all denominations; but it was united in its preoccupation with the marvels of art and nature.”⁴ As such, it was not an exclusive group in terms of social status, but rather one of economic status. The value of an object was also related to how far it had been removed from its primary context, as “curious fragments tended to be the ones that were dislocated from their proper place, whether literally, in cabinets of curiosities, or figuratively—when they were bits of knowledge divorced from the context of a discipline to which they belonged.”⁵ As the distance from the object’s geographical source increased, so did its scarcity, and theoretically, its monetary and cultural value.

Following Kenny’s definition, *mumia* is an object of curiosity. It was “human crafted” (as well as crafted from humans), and it was “commoditized” and sold to the public. Brought to Europe, it was “dislocated from [its] proper place” and ‘divorced’ from its original cultural context of Dynastic Egypt. One needs background knowledge about mummification to form a basis for *mumia*’s original cultural context of Dynastic Egypt. Karl Dannenfeldt, in the *The Sixteenth Century Journal*, compiled a plethora of primary sources on the subject in his article “Egyptionia Mumia: The Sixteenth Century Experience and Debate.” In 1516, Tome Pires, “a Portuguese apothecary and ambassador to China,” described the process as “when the man dies they remove his intestines, lungs, etc., and throw in myrrh and aloes; then they sew up the corpse and put it in a sepulchre with holes.”⁶ This is an intensely simplified, yet adequate explanation. This ‘apothecary’ was likely working from information handed down, transmuted by ages of replication and translation. These factors contribute to the increasing murkiness that accompanies knowledge’s endurance of time: a historical game of “telephone.”

Knowing how a mummy was prepared for burial was important in distinguishing whether or not it would be of medicinal use, as not all mummies were prepared in the same fashion. The method described by Pires required more time, labor, and material, and was therefore reserved for nobility. In the twelfth century, the Islamic physician Abd Allatif wrote that “The mummy found in the hollows of the corpses in Egypt, differs but immaterially from the nature of mineral

² Ibid, 168.

³ Ibid, 169.

⁴ Kenny, *The Uses of Curiosity*, 171.

⁵ Ibid, 176.

⁶ Karl Dannenfeldt, “Egyptian Mumia: The Sixteenth Century Experience and Debate,” *The Sixteenth Century*

mummy; and where any difficulty arises in procuring the latter, may be substituted in its stead.”⁷ As Allatif was seen as an authority in contemporary Islamic physiology, his advice was passed down to future generations of physicians, thereby propagating the ‘fact’ that the two subcategories of mummy could be used interchangeably.

In reality, the ‘mineral mummy’ was an inorganic bituminous petroleum (essentially very crude oil). The substance was collected from desert wells, or springs, and was not biologically derived from decomposed human flesh coupled with various compounds (such as aloe and myrrh). Robert Jacobus Forbes, in *Studies in Early Petroleum History*, suggests that “‘Mumia’ was a true ‘pissasphaltos’, that is a mixture of pitch and natural asphalt, whereas the original ‘mummy’ (or mummy primaria) was a waxy natural asphalt found in Persia.”⁸ Another type of mummy was “*Pulvis Mumiae*”, which was made by pulverizing—hence *Pulvis*—desiccated burial wrappings, bones, flesh, as well as the herb compound that soaked these materials, into a powder that could be mixed into other medicinal remedies.⁹ Basing their opinions on those of well-known physicians such as Allatif, later physicians and apothecaries continued to expand their manufacture and prescription of mummy, leading to a burgeoning market for both the raw materials and the subsequent ‘medicinal’ compounds.

With the growth of the trade came the promise of a profitable mercantile endeavor. The mummy business was good, attracting merchants and unskilled laborers alike. By necessity, there were multiple levels or capacities of people involved. Who was sourcing the materials, doing the work to prepare the product; who was actually making the transactions or collecting the profits? Dannenfeldt reviewed an instance where a group of Egyptian locals employed in the trade were apprehended, and were “Brought before the provost, they confessed under torture that they were removing bodies from the tombs, boiling them in hot water, and collecting the oil which rose to the surface. The men were imprisoned.”¹⁰ These men would have been at the lower end of the hierarchy, doing the dirty, physical work of extricating the corpses and refining out the desired substance. This line of work can be seen as analogous to that of the rag and bone men of early modern Europe, who scrounged through graves and trash in order to supply the raw materials for the hungry paper manufacturing trade.¹¹ Both trades needed unskilled labor in order to procure the necessary raw materials.

Working up from the bottom of the trade’s hierarchy, a demographic pattern emerges that highlights the activity of Egyptian Jewish physicians, apothecaries, and merchants. Dannenfeldt outlines how “the use of Egyptian mummies in medicine was begun by an expert Jewish physician of Alexandria named Elmagar . . . Other physicians of all nations followed his example and the widespread use of the drug caused Jewish merchants of Egypt to enter the lucrative trade by preparing dead bodies of all sorts and selling them to the Christians.”¹² From such

⁷ Dannenfeldt, *Egyptian Mummy*, 167.

⁸ Forbes, R.J., *More Studies in Early Petroleum History*, Leiden: Brill 1959, 25.

⁹ *Ibid*, 25.

¹⁰ Dannenfeldt, *Egyptian Mummy*, 16.

¹¹ Keller, Vera, In-class material, January 2014.

¹² Dannenfeldt, *Egyptian Mummy*, 170.

historical examples, it seems that religious differences could be minimized when it came to the subject of marketplace exchange. Similarities could be drawn to Early Modern European anatomists scrambling for freshly dead people to dissect for their anatomical inquiries, as Professor Guerrini discussed in her lecture “The Ghastly Kitchen,” as well as in her book *Experimenting with Humans and Animals*.¹³

The sale of counterfeit mumia to the undiscerning masses was a commonplace practice in early modern Egypt and Western Europe. The common person consuming mumia for its believed medicinal qualities would not likely have been able to tell the difference between *Mumia Vera* (“true” mumia from human corpses) and *Mumia Primera*—the bituminous mineral petroleum that had a longer documented history of medicinal use throughout the Levant. The fact that the two substances were fairly similar in appearance and texture (black and pitch-like) was combined with the ‘sagacious’ advice of the authoritative historical figures, such as Allatif, to make for a solid case as to the efficacy of this corpse medicine.

Word of such a miraculous panacea spread to European countries like France and England. The increasing popularity of mumia in Europe was in large part a result of historical travel writing, accounts of time spent in Northern Africa and the Levant, some of which were printed and sold to ‘the curious’. But how did such travel accounts increase the demand for mumia amongst European physicians and apothecaries? Kenny proposes, “It was collecting more than narrating that curiosity fostered in travel-writing. Most travel accounts were not only narratives but also lists, catalogues, or inventories: ‘curiosity’ denoted inventory more than narrative.”¹⁴ As a result of such stints of travel, some Europeans would bring back ‘curiosities’, whether that be the object itself or a primary description, to pique the interest of their curious associates or readers.

However, Kenny argues that a shift occurred in the mindset of the curious, which may have entailed an “agonized early modern attempt to make curiosity useful.”¹⁵ Some travel accounts, by acting more like “inventories”, may have promoted the physical acquisition of curious objects, such as mummified remains. By increasing the demand for and actual importation of objects, travel accounts augmented the apothecary use, resulting in the commodification of mumia on an international scale. Travel accounts that recorded curiosities are plentiful, but finding one to fit the exact context of this discussion took some deeper research. John Sanderson was an English traveler who was an agent of “‘The Turkey Company,’ which traded at this period in a ‘joint stock’, employing a number of factors in the East to sell the goods received from London and to invest the proceeds.”¹⁶

¹³ Anita Guerrini, *Experimenting with humans and animals: From Galen to Animal Rights*, Baltimore: Johns Hopkins University Press, 2003, 6-22.

¹⁴ Kenny, *The Uses of Curiosity*, 246.

¹⁵ *Ibid*, 246.

¹⁶ John Sanderson, *Travels in the Levant*, xiii.

The manuscripts were lost upon his death, but were eventually collected by William Petty, “an enthusiastic collector of old documents.”¹⁷ The account, “His First Visit to the Levant,” detailed Sanderson’s business dealings in Egypt, Israel, and Syria. He described his arrival in detail: “Frome Alexandria I went the 19th and came to Grand Cairo the 29th, passinge by land 1 ½ day and a night to Rossetto, and ther imbarcked up the river Nilus, our boat beinge drawne alonge the shore by the watermen Moors.”¹⁸ During his travels, he had time to explore for his own curiosity in addition to his business affairs. He documented some of the major historical and archaeological sites along his path:

The 28th of April 1586 I went to see the Peramidis and Momia, beinge of three jentellmen of Jarmani intreated to accompany them. The next day we returned. Thes Peramidis (one of the Seven Wounders ar divers, but espetially two, of a like bignes; at the bothome each 1000 paces about. One of them open, that in we went with wax candles lighted and up to the topp, wheare standith in a square rome a tombe hewed out of black marble or jett...[Also, the nearby Great Sphinx] “...ther is likewise a hudge figure of a head of stone, standinge upright to the necke out of the ground.”¹⁹

As he was in the vicinity of such prominent ancient Egyptian architectural monuments, he was also exposed to a historical source of ‘momia’, a large cavernous mass grave, where locals were likely to collect their materials for the trade:

The Momia, which is some five or six miles beyound [the pyramids ‘peramidis’], ar thousands of imbalmed bodies, which weare buried thousands of years past in a sandie cave, at which ther seemeth to have bine some citie in the times past. We were lett doune by ropes as into a well, with wax candles burninge in our hands, and so waulked upon the bodies of all sorts and sised [sized], great and smaule, and some imbalmed in little earthen potts, which never had forme; thes at the feet of the great bodies.²⁰

Sanderson is likely describing a collective grave, where people of lower social, cultural, and economic means would have been buried. These types of graves would have been less-well sealed, as well as more plentifully distributed throughout the landscape, and therefore would provide a larger amount of the raw material needed for the trade, at least that of ‘mumia vera.’

Sanderson describes the corpses’ appearance and compositional attributes, where: “They gave no noysome smell at all, but ar like pitch, being broken; for [he] broke off[f] all parts of the bodies to see howe the flesh was turned to drugge, and brought home divers heads, hands, arms and feete for a shewe.”²¹ The corpses were old enough to have lost their putrid scent, which also meant that they had stayed dry enough in this “sandie cave” to not decompose. The main end of mummification was removing the corpse’s moisture, a catalyst in decomposition. Removing

¹⁷ Ibid, x.

¹⁸ Ibid, 40.

¹⁹ Ibid, 44.

²⁰ Sanderson, *Journey to the Levant*, 44.

²¹ Ibid, 45.

light, oxygen, and moisture greatly increases the preservation of organic material. The high temperature and low humidity of the Egyptian desert is also helpful.²²

Sanderson attempted to understand how the “flesh was turned to drugge”, and may have been investigating whether or not these particular bodies had been treated with pissasphaltum during their embalming, which would yield a black, sticky texture, as Dannenfeldt claims, “...authoritative writers had said asphalt was used in embalming [of] the bituminous mumia...”²³ Sanderson’s log outlines his hope of having “a shewe” [show], in which he might display his collection of dismembered mummy appendages in a festive manner likely to engage the curiosity of friends and other guests upon his return to London. Providing tangible objects for the viewing pleasure of the folks back home was a key aspect of curiosity in practice. To further investigate the practice of the international movement or trade of mumia, Sanderson provided his readers with a first-hand account of such a transaction, where “We bought allso 600 lb. for the Turkie Company in pieces, and brought into England in the Hercules, together with a whole bodie. They ar lapped [wrapped] in 100 doble of cloth, which rotton and pillinge of[f], you may see the skinne, flesh, fingers, and nayles firme, onelie altered blacke.”²⁴ This passage showed Sanderson’s opinion of the cargo’s physical appearance, which notably describes the mummy’s “skinne [...] onelie altered blacke”. The Turkey Company here was acting as an importer of mummy to England, of course, by cargo ship. But how were they able to bypass the ‘laws’, whether or not they were codified, meant to restrict the sale of Egyptian corpses? A previous editor of Sanderson’s manuscript, by the name of Purchas, explained the transaction more in-depth in a note:

It is contrabanda to sell of them but by friendship which William Shales [Sanderson’s European trade contact in the Levant] had amongst the Moores (he having their language as perfect as English) with words and money the Moors will be entreated to anything. This body of momia after our arrivall was carried to the house of Sir Edward Osborne in Filpot Lane, in London, and there it was with the 600 pounds, til they were sold to the apothecaries.²⁵

From Purchas’ record, the answer is shown to be bribery, as in his opinion, “with words and money the Moors will be entreated to anything.” This did not seem to have been attempted defamation of the Moors character on Purchas’ account, but should rather be viewed as an illustrative example of the popularity and demand for mumia. People were willing to lie, cheat, and steal if necessary in order to profit from this trade, even risking imprisonment. Sanderson’s account contrasts with Dannenfeldt’s example of the poor locals who were jailed for being involved in the ‘illicit’ trade.

Why was this activity illegal? Were there specific laws against grave-robbing or exportation to Europeans? A likely explanation is that they were not wealthy enough to bribe their way past any ‘laws’ that were in place, that attempted to regulate the actions of these laborers, merchants,

²² Personal knowledge as an Archaeology major

²³ Dannenfeldt, *Egyptian Mumia*, 166.

²⁴ Sanderson, *Travels in the Levant*, 45.

²⁵ *Ibid*, 45, footnote 1.

and apothecaries. This note also further clarified the details of transporting the material, and was even specific as to the address of the distributor, “Filpot Lane” in London. The final portion of the mumia’s journey to Europe would have been purchase by individual apothecaries, where it was to be prepared in a number of ways and sold to the corpse-medicine-consuming members of the public in hopes of curing whatever ailment they believed it should.

The supposed curative properties of mumia have been historically documented, mostly through well-known physicians, such as Abd Allatif. Another Arabic physician, Avicenna, was approximately contemporaneous with Allatif. His beliefs regarding mumia’s curative properties were cited in *A History of Egyptian Mummies: And an Account of the Worship and Embalming* by Thomas Joseph Pettigrew:

Avicenna, one of the most celebrated physicians of antiquity, treats of the use of mummy in medicine. He describes it as...useful in cases of abscesses and eruptions, fractures, concussions, paralysis, hemicrania [chronic headache], epilepsy, vertigo, spitting of blood from the lungs, affections of the throat, coughs, palpations of the heart, debility of the stomach, nausea, disorders of the liver and spleen, internal ulcers, also in cases of poisons.²⁶

Avicenna believed that mumia would be helpful to administer to individuals suffering from these conditions, although one may anachronistically wonder how he thought paralysis would be mitigated by its use. Nevertheless, such notable authors heavily influenced later members of the field. For example, John Parkinson, a 17th Century herbalist and botanist, continued the validation of mumia in medicinal applications. His *Theatrum Botanicum; An Herball of Large Extent* (1640) outlined a medicinal concoction containing mumia. An ‘herball’ was a kind of do-it-yourself guide for using substances such as plants or minerals for their supposedly curative properties. The recipe for which follows:

Let a sufficient quantitie of Rubarbe be steeped in cinamon water, which being strongly pressed forth, let it be stilled in a glasse Limbeck in balneo (sp?), until the water be drawne forth, and the substance remaining be of the thickness of honey, which keepe in a close covered pot or glasse, for the use aforesaid. The powder of Rubarbe, taken with a little *Mumia* and Madder rootes, in some red wine, dissolveth congealed or clotted blood in the body, happening by any fall, or bruise, and healeth burstings, and broken parts, as well inward as outward; the oyle likewise wherein it hath beene boyled, being anointed worketh the same effect: it helpeth the yexing, or hickocke [hichup?], and all fluxes of the belly, if it be toasted or dryed a little by the fire.²⁷

Parkinson’s *Herball* makes use of “the Theater of Plants,” which grow naturally, but can also be domesticated in order to be harvested on a larger scale. The ‘rubarbe’ could have been locally sourced, but the ‘cinamon’ would most likely have been imported through international trade with more tropical locales. The mumia sticks out here as the sole ingredient not found in the “Theatrum Botanicum” of the world, as it was human-based. One may argue that it comprises naturally available elements into an ‘unnatural’—that is, not occurring in nature—combination. The proposed effects seem to be blood-thinning in nature, as the poultice or syrup was thought

²⁶ Thomas Pettigrew, *A History of Egyptian Mummies*, 9.

²⁷ John Parkinson, *Theatrum Botanicum*, Ch. 2, 159.

to “dissolve congealed or clotted blood” in the form of haematomas or contusions. These symptoms were also present in Avicenna’s treatment, namely “spitting blood from the lungs.” One contrasting characteristic is that Parkinson’s use for mumia is more specific as to the conditions it was intended to treat. A possible explanation for this observation is that Parkinson documented a more specific recipe, a variety of ingredients including mumia, as opposed to Vicenna’s more generalized list of symptoms supposedly treatable with mumia in general. Parkinson’s *Herball* was well-known, and would have been referenced by apothecaries, as well as individuals, trying to heal themselves with what nature provided.²⁸

Although it was popularly accredited as a miraculously curative substance, mumia was also the subject of attempted debunking throughout the height of its popularity. The obvious question exists: was it actually good for anything? Or did it have more of a placebo effect? How was it thought to function in the body? In addition to the petroleum substance bitumen, Richard Sugg, in *Murder After Death: Literature and Anatomy in Early Modern England*, proposes that the patients “were consuming the most vital spiritual essence of the human organism...they were eating the soul. The life force thought responsible for mummy’s efficacy was identified most commonly with the “spirits” of the blood...both divine and routinely physiological.”²⁹ There was even a supposed distinction concerning the age of the person, as this ‘life force’ was believed to be stronger if “the subject should be young, healthy, and prematurely killed, because “all living beings have a foreordained life span” and the remainder of that span can therefore effectively be drawn from their corpse.”³⁰ This metaphysical explanation was apparently good enough for the patients receiving such treatment, given the commercial success and popularity of mumia, as demonstrated in Sanderson’s account.

Neil Kenny explores the negative aspects of innovation driven by curiosity, where: “the danger was that curiosity might leave usefulness behind and go off on its own useless, speculative, error-strewn path instead of healing people. The deceitfulness of a prurient age lies in distinguishing the curious from the useful and in concentrating and expending its energies...on things which bring no practical benefit.”³¹ In relation to mumia’s effectiveness, Sugg discusses the 16th century French surgeon, Ambroise Paré, who staunchly objected to the commonplace prescription of mumia, as “we are...compelled both foolishly and cruelly to devour the mangled and putrid particles of the carcasses of the basest people of Egypt, or such as are hanged, as though there were no other way to recover the bruised [patients].”³² In addition, he claims to have “tried mummy ‘an hundred times’ without success” in the treatment of his own patients.³³

In the above statements, Paré addressed some of the key points in the discussion. He noted how the majority of mumia was sourced from mass burials of lower-status people, such as those

²⁸ Class exhibit label, *Recipe: The Kitchen as Laboratory in the West, 1400-2000*, 2.

²⁹ Richard Sugg, *Murder After Death: Literature and Anatomy in Early Modern England*, 42.

³⁰ Sugg, *Murder After Death*, 42.

³¹ *Ibid*, 42.

³² *Ibid*, 41.

³³ *Ibid*, 41.

described in Sanderson's travel log. He also doubted the authenticity of *mumia*, claiming that the majority was made from the remains of recently executed criminals, not 'real' mummies. Paré's critique on *mumia*'s authenticity had historical basis, as the Egyptian Jewish physicians and merchants were frequently offering counterfeit mummy to their customers. According to Barbara Scholz-Böttcher's article "An 18th century medication "Mumia Vera Aegyptica"— Fake or authentic?" "Egyptian and European Jews were heavily involved in the trade of mummies."³⁴ For reference, "Mumia Vera Aegyptica" means "true egyptian *mumia*", or at least that's what the apothecary would label it in effort to increase its validity. While Jewish apothecaries, physicians, etc., constituted a significant demographic involved in this trade, there were of course participants from a wide array of religious, ethnic, and national identities. "The increasing demand for, and commercial value of, real mummies, together with the restricted supply, resulted in an incentive for fraud and falsification."³⁵

There could only be so many known sources of authentic, ancient, mummified Egyptian corpses, so they had to get creative in order to stay competitive in the trade. Instead, they resorted to "dried cadavers of slaves that were filled with bitumen, or dried corpses of pilgrims to Mecca who perished in the desert sand, or those of travellers who had died in the Lybian Desert."³⁶ The average consumer would likely not be qualified to discern between the different types of mummy, or be able to distinguish "*mumia vera*" from "*mumia* prepared five years ago." Their ignorance would in turn increase the profit of the proprietors.

The international trade was not simply the transportation and sale of dried corpses. It was the exchange of ideas about physiology, apothecarial knowledge, and cultural beliefs: or, in other words, curiosities. The cultural interchange and cross-referencing that was responsible for the success and growth of the mummy trade also proved to be its downfall. As its use throughout Western Europe gained renown, it invited speculation from physicians like Ambrosie Paré, resulting its eventual disaccreditation. As the demand grew, the supply of ancient Egyptian mummies dried up, leading to the counterfeit substitution of any available corpse by merchants looking to strike it rich. The authenticity of *mumia* as a corpse medicine suffered as the 'remedy' reached the apex of its historical trajectory. Perhaps the Egyptians should have just kept their secrets . . . under-wraps.

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³⁴ Barbara Scholz-Böttcher, "Mumia Vera Aegyptica," 2.

³⁵ Scholz-Böttcher, "Mumia Vera Aegyptica," 2.

³⁶ *Ibid*, 2.

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