

# The Drew Review



Drew University  
*The College of  
Liberal Arts*

May 2018  
Volume 11



The Drew Review, the annual research journal for the undergraduates of the Drew University College of Liberal Arts (CLA), publishes the undergraduate research from the previous calendar year. We aim to showcase the intellectual vibrancy of the students of the CLA.

The board currently consists of seven editors, selected by faculty nomination, application, and invitation. Published students can apply for a position on the board, with the remaining positions filled by faculty nomination and student application with a writing sample.

Submissions to the Review require a faculty nomination. Students who believe their work is exceptional should approach their professor for a nomination. The Drew Review accepts papers of no more than twenty-five pages in October and February from the previous semester. This year, we received thirty-nine submissions and have selected ten for publication.

As we are a double-blind, peer-reviewed journal, all submissions should be sent as a Word document to the corresponding editors without naming the student author or professor for whom the essay was written in the body of the essay. The student author's name and paper title should be in the faculty nomination. Images and graphs will be published in black and white and must be compatible with Word. It is the author's responsibility to ensure that all images can be reproduced. All published essays will use in-text citations referencing a works cited bibliography, and the specific citation style is dependent on the discipline of the particular essay. Students can expect to be asked to make revisions prior to publication.

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**11th Edition (May 2018)**

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**A Social Autopsy of Rockefeller Republicanism**  
**William Scott Andrews (CLA 2018)**

**Abstract**

This article is a “social autopsy” that reexamines the decline of moderate or “Rockefeller” Republicanism. Using survey data from the American National Election Survey, the article challenges the historical narrative that attributes Rockefeller’s political demise and that of his wing of the Republican Party to Barry Goldwater and the 1964 Republican Convention. Survey data suggests instead that Rockefeller and his wing of the GOP were already in a state of decline before the 1964 Convention. The big question for the future is whether or not the Rockefeller wing will find a place in the emerging version of the Republican Party.

## **The Rise and Fall of Liberal Republicanism**

Given the current state of political polarization and party tribalism, the average American might be surprised to learn that for a majority of the 20th century the GOP included not just moderate but even liberal positions (Chua 2018; Baldassarri and Gelman 2008). By “liberal,” I do not necessarily mean Democratic, but rather a political ideology that endorsed social equality, civil rights, and limited government regulation of business. This combination of both conservative and liberal views resulted in a wing of the Republican Party which championed big business and Wall Street as well as public-private investment in public infrastructure. This wing saw itself as the embodiment of good, efficient government in contrast to what was perceived as inefficient, corrupt, and wasteful Democratic governance. It also espoused culturally liberal views by supporting civil rights and an active governmental role in ensuring social but not necessarily economic equality. In short, this faction of the Republican party was comprised of voters and politicians who combined fiscally conservative views with socially liberal values.

Today, this form of liberal or moderate Republicanism has all but disappeared from the political landscape. Instead, the Republican party has moved even further to the right, calling moderate Republicans ‘Republicans in name only’ (or ‘RINOS’) (Skocpol and Williamson 2012; Brennan 1995). Yet, for much of the 20th century, this form of Republicanism was a dominant political force within the party. What happened?

The sudden decline and relative disappearance of this wing of Republicanism is the subject of this essay in which I argue that liberal to moderate Republicanism, epitomized by former New York Governor and Vice President Nelson Rockefeller, was in fact in decline earlier than the 1964 GOP primary convention. The 1964

Convention is frequently cited by historians, biographers and political scientists as the beginning of the end of both Rockefeller's political career and moderate Republicanism. In the following section, I describe the emergence of liberal Republicanism and the ascendancy of Nelson Rockefeller as a political figure within the Republican party.

### **Fiscally Conservative, Socially Liberal: Rockefeller Republicanism**

Beginning in the early 20th century, President Theodore Roosevelt was a leading Republican figure who spearheaded major reforms in what is now known as the Progressive Era. This era was a time when many individuals challenged business and political corruption to make these systems fairer for all Americans. Under the Roosevelt Presidency (1901-1909), Congress passed the Pure Food and Drug Act and legislation which broke up many corporate monopolies, as well as efforts to conserve the environment (Brinkley 2009). In many respects, Roosevelt's views would define liberal Republicanism.

After Roosevelt's time in the spotlight faded, the standard of this wing of the GOP was taken up by New York Governor Thomas Dewey. During this period, the liberal Republican ideology became referred to as the "Eastern Establishment," reflecting the growing influence of not just Dewey but also Wall Street and elite universities on the East Coast (Nye 2014; Brennan 1992). Under Dewey's tenure, New York saw the start of the New York University system, an increase in teachers' salaries, and the first state law which prohibited any form of racial discrimination in the workplace (Smith 1984). At the same time, Dewey also increased aid to New York public employees and merged many government agencies together to make them operate more effectively. His biggest accomplishment was the reduction of the state's debt by

over \$100 million. Dewey coined his ideology as “pay-as-you go liberalism,” believing that a government could be progressive while being economically solvent (Smith 1984). Due to his success as New York Governor, Dewey would ultimately become the Republican nominee for the 1944 and 1948 elections. In 1944, Dewey lost to Franklin D. Roosevelt. In 1948, he lost to Harry S. Truman in what many historians considered a major upset victory for the latter. As a result of these two defeats, Dewey would fade out of the spotlight as the liberal wing’s leader.

After Dewey, Governor Nelson Rockefeller emerged as the most prominent leader of liberal Republicans. Rockefeller had such a profound impact on this wing of the party that the term “Rockefeller Republican” became used to describe voters and politicians who believed in moderate to center right fiscal policies while having moderate to center left views on social issues (Smith 2014; Schechter 2002). Under Rockefeller’s four-term tenure as Governor of New York, the state created the New York Council on the Arts, and expanded the state university system, environmental protections, and state medical services and facilities. Rockefeller was characterized as a “practical problem solver” and not a strict ideologue. Yet, despite the influence this wing had, the 1964 election cycle brought radical changes to the Republican party, and by the 1970’s Liberalism as a whole virtually vanished from the party leadership (Smith 2014; Costantini and Craik 1969).

### **A Social Autopsy of the Demise of Rockefeller Republicanism**

The conventional narrative of Rockefeller’s political decline suggests that his divorce and quick remarriage, liberal views, and Goldwater’s ascendance contributed to his downfall (Smith 2014; Kabaservice

2013; Marshall 1999). However, these historical interpretations tend to reflect the “great man” theories of history that largely focus on major figures and events and tend to oversimplify what is often far more complex and intricate (Hook 1943; Carlyle 1841). Specifically, these types of historical and political narratives tend to overlook the larger social and political context in which such figures and events emerged (Spencer 1896).

Accordingly, while we cannot go back in time and gauge voters’ opinions, we can examine social surveys that measured public sentiment in order to assess the social and political context of Rockefeller’s collapse and perhaps glean some new insights. For example, some survey data suggests Rockefeller’s political career was already over by 1962. This is well before the 1964 Republican Convention, which is typically cited as signaling his political decline. In the following section, I describe the specific survey, questions, and variables used in my analysis.

### ***The American National Election Survey***

The data collected by The American National Election Survey (ANES) is considered by many scholars as the “gold standard” of American political surveys (Aldrich and McGraw 2011). Since 1948, this survey has been fielded every other year in conjunction with both the Congressional and Presidential election cycles. This survey includes thousands of variables that measure a respondents’ demographics, party affiliation, campaign interest, political participation, and attitudes towards specific political candidates and policies. While the ANES appears similar to other nationally representative surveys such as the General Social Survey (GSS), the ANES specifically focuses on voter demographics, attitudes, and preferences, making it an ideal dataset to examine a research question.



I examined several variables over a period of twenty years (1956-1976). I included the following variables: Respondents attitudes towards Nelson Rockefeller (VCF0444), Should Government Reform Health Care? (VCF0805), Liberal-Conservative Index (V801), 5 Category Party Identification (V302) and Region (V112) (see Table 1). I looked at what self-identified Republican attitudes were towards government reform of healthcare because that position was strongly favored by the Rockefeller wing. I next used control variables. To satisfy this, I only examined the attitudes of Republicans or Republican leaning respondents in an effort to see where Rockefeller stood within the party. Because of this, I left out the opinions of Democrats and Independents, as they could not have an impact on Rockefeller in a Republican race.

**Table 1: Selected Variables From the American National Election Survey**

Dependent Variables	Type	Years Sampled	Sample Size
Rockefeller Thermometer (VCF0444)	Scale (0 to 100 degrees)	1968-1976	4,771
Should Government Support Health Care? (VCF0805)	Categorical (1 = govt should help people get low cost health care, 2 = govt should stay out of it, 9 = No opinion/DK/NA/Other)	1956-1968	7,316
Liberal-Conservative Index (V801)	Scale (0 to 100 degrees)	1964-1970	467
Control Variables			
Party Identification, 5 Category (V302)			
Region (V112)			

*Source: American National Election Survey*

In the following section, I revisit the conventional narrative of Rockefeller's political demise, introducing tables and descriptive statistics from the selected variables above where relevant.

## Declining Republican Support for Government Health Care Reform

While Rockefeller was considered by many to be a pragmatist or problem-solver rather than an ideologue, some Republicans found his views perplexing, if not in outright opposition to the conservative view. For example, during his tenure as Governor of New York, Rockefeller carried out the largest state-level expansion of Medicaid, famously noting, “[i]f you don’t have good education and good health, then I feel society has let you down” (Roberts 2014). Data from the American National Election Survey indicates that while a majority of Republican and Republican-leaning voters had initially supported government reform of healthcare during the late 1950s and early 1960s, by 1964 those in favor had dwindled to less than a third. This suggests that Rockefeller’s views were increasingly out of line with his own party (see Table 2).

**Table 2: Percent of Self-Identified Republicans and Leaning Republican Favoring Government Reform of Healthcare**

Year	1956	1960	1962	1964
<i>Help people get doctors and hospital care at low cost</i>	42.4	51.6	48.2	29.3
<i>Stay out of this</i>	36.9	28.7	38.5	49.9
<i>No opinion/don't know/not sure/depends/no interest</i>	20.6	19.7	13.3	20.8

*Source: American National Election Survey, 1948-2004.*

## The Republican Party Moves in the “Right” Direction: The 1964 Presidential Election

Rockefeller first campaigned for President in 1960, but quickly saw that his association with being a “liberal” was not welcomed in the Midwest and Southern states. He cancelled his campaign after it became clear that Richard Nixon, Eisenhower’s Vice President, would be the winner.

1964 was a pivotal year both for the Rockefeller wing and the GOP as a whole. The Republican presidential primary race was divided between the Rockefeller wing and the “new conservative” wing based in the Southwest, led by Arizona Senator Barry Goldwater. Goldwater wanted the Republican electorate to perceive the Rockefeller wing as representing the Northeastern “establishment” and criticized Rockefeller for being too “liberal,” spending wastefully, and for being elitist. Many Republicans were also alienated by the fact that Rockefeller had divorced his first wife only to remarry a woman nearly two decades younger, a practice that was not easily accepted at that time.

The resulting Republican convention was an all-out civil war, pitting Rockefeller and the Eastern Establishment against Goldwater and the new conservatives. While the Rockefeller faction tried to win the nomination, too many factors worked against it for the wing to win. Viewed by some as a sore loser, Rockefeller arguably made the situation even worse when he spoke out against the direction of the party, criticizing Goldwater and the Republicans who backed him stating, “[t]hese extremists feed on hate, fear, and terror. They have no program for America” (Harris and Bailey 2014). Rockefeller’s speech was roundly met with boos and Goldwater won the nomination easily. Moreover, during his acceptance speech, Goldwater alienated the Rockefeller Wing when he stated, “extremism in the defense of liberty is no vice,” and that “moderation in the pursuit of justice is no virtue,” a jab clearly directed towards Rockefeller and moderate Republicans (Somin 2016). Though Goldwater lost the 1964 election to incumbent Lyndon B. Johnson, the Republican Party had begun its shift towards the right.

Yet, if Rockefeller’s political demise began in 1964, survey data suggests that Republican voters increasingly grew cold toward him over the following years. Examining

survey data from the American National Election Survey (ANES), Republican support for Rockefeller swiftly declined between 1968 and 1976. Using a feeling thermometer survey question, the ANES asked how “warm” or “cold” respondents felt towards particular candidates (Lavrakas 2008). Temperatures above seventy degrees are interpreted as warm and favorable, while lower temperatures indicate a less favorable view of the candidate. As Table 2 indicates, while roughly one in ten Republicans were cold towards Rockefeller in 1968, by 1974 more than a quarter had cooled on him. Yet, by 1976, nearly half of Republicans surveyed rated Rockefeller at zero degrees, effectively freezing him out of Republican politics.

**Table 3: Feeling Thermometer for Self-Identified Republicans Towards Rockefeller**

Year	1968	1974	1976
Percent Responding 0° (zero degrees)	11.1	28.8	49.0

*Source: American National Election Survey (ANES) 1952-1992*

Using the same survey data, Republicans within the Eastern Establishment also began to move away from moderate politics. Since 1964, the ANES has asked respondents to report their political philosophy, using a political thermometer survey item ranging from zero as the “most liberal” to 97 representing the “most conservative”, and 49 representing “neutral.” Data shows the average political temperature increased almost five degrees between 1964 and 1970, while the percent responding 71 degrees or higher nearly doubled during that same period, suggesting that the Eastern Establishment was becoming more conservative and less moderate or liberal.

**Table 4: Political Temperature of Self-Identified Republicans and Republican-leaning Respondents in the Northeast**

Year	1964	1966	1968	1970
Average political temperature (0 = most liberal, 97 = most conservative, 49 = neutral)	56.69	55.93	55.07	61.54
Percent reporting 71 degrees or higher	16.2	13.9	13.2	30.2

*Source: American National Election Survey, 1948-2004.*

## Conclusion

In *Heat Wave* (2002), Eric Klinenberg performed what he described as “social autopsy”, re-examining the circumstances that led to the death of 739 people during the record-breaking 1995 heat wave in Chicago. Contrary to the conventional narrative which had been reported in the media, he found that lack of access to health facilities and the area where these individuals lived were the contributing factors, suggesting that the roots of the disaster were in fact due to poor government oversight and city planning rather than the victims’ choice to be in the predicament they were in.

Similarly, this paper re-examined the political demise of Nelson Rockefeller and the moderate Republicanism with which he came to be associated. While certain aspects of the survey reflect the historical narrative, other aspects were subtle but more powerful, indicating that Rockefeller Republicanism was in decline as early as 1963.

What does this mean for the broader historical and political landscape? First, it suggests that while we tend to assess politics in terms of historical events such as elections, political shifts among the electorate may actually be occurring earlier, suggesting that the historical narrative is late or retrospective. Presidential elections may occur every four years, but the political waters of public opinion

ebb and flow in between, and in some cases may presage a “wave election” (Cook 2013; Abramowitz 2011).

Second, it suggests that the dominant narratives of politics need to shift away from a “great man” theory of history towards what historians refer to as a “people’s history” that includes not just political figures and elections but also the attitudes, values, and beliefs of voters (Zinn 1980; Thompson 1966). After all, it is the voters themselves that determine the outcomes of elections.

A third implication is that historians, political scientists, and sociologists may want to re-examine dominant political narratives through the lens of social and political surveys. For example, the emergence of the Tea Party movement is frequently associated with the 2009 Taxpayer March on Washington, or 9/12 Tea Party, but a closer examination of polls may in fact suggest that this nascent political movement began even earlier. Today, we constantly see this happening within political campaigns and newsrooms. Polling and news organizations are in a constant state of measuring and sorting public opinion.

**Table 5. Percent of Republicans’ Self-Placement on Liberal-Conservative 7 Point Scale, by Year**

	1996	2000	2004	2008	2012	2016
Extremely Liberal	0.5	1.2	0.0	1.2	0.7	1.3
Liberal	2.7	5.5	1.0	1.6	2.8	0.6
Slightly Liberal	6.4	5.1	5.9	2.4	4.8	4.5
Moderate	31.2	27.6	26.0	26.9	22.2	23.1
Slightly Conservative	21.8	20.9	25.2	22.7	24.2	23.3
Conservative	31.0	32.9	34.1	39.4	37.0	39.0
Extremely Conservative	6.5	6.9	7.9	5.8	8.1	8.2
Average	4.9	4.9	5.1	5.1	5.1	5.2
Std Deviation	1.2	1.3	1.1	1.2	1.2	1.2
Unweighted sample size	785.0	671.0	393.0	498.0	433.0	623.0

*Source: General Social Survey*

The increasing average suggests the Republican voter has become measurably more conservative (e.g. 4.9 in 1996 vs. 5.2 in 2016). However, nearly a quarter of self-

identified Republicans still identify themselves as moderates, suggesting that while Republicans may have shifted further right, there is still a sizable segment of the party that views itself as moderate.

The political picture gets a little darker, though, when we look at the ANES. For example, according to the most recent wave of the ANES, in 2016 more than half of all Republicans surveyed self-identified as either “conservative” (41%) or “extremely conservative” (10%), while less than three percent of Republicans sampled self-identified as “slightly liberal” (2%), “liberal” (0.7%) or “extremely liberal” (0.2%). Around only one in ten Republican respondents self-identified as “moderate” or “middle-of-the-road” (12%), approximately half of that recorded by the GSS in 2016.

So, is Rockefeller Republicanism dead? The liberal ideology of the wing certainly looks near-dead. Still, even though the percentage varies among polls, there is a sizable group of self-identified moderates.

Future research should explore these discrepancies across surveys. Both observe trend of increasing conservatism but report different percentages for self-identified moderate Republicans. Is this discrepancy attributable to methodological differences in terms of sample size and questionable wording? In addition, future research should examine Republican respondents’ attitudes towards signature Rockefeller policies and positions. For example, President Trump recently advocated tougher sanctions on drug-related crimes, a position reminiscent of Rockefeller’s drug laws (Smith 2014). On the other hand, Republicans have voted on numerous occasions to repeal the Affordable Care Act, with little measured Republican support for government health care reform (Rovner 2017).

Based on the survey data, it is clear liberalism as a whole is all but dead within the Republican Party. Some biographers have suggested that, considering Rockefeller’s



position on government intervention to help the average American, he should have run as a Democrat. However, the overwhelming consensus is that he and his followers would never have taken this position. While the narrative for studying Rockefeller has been that 1964 was the beginning of the end for his political career, the data provided here shows that in fact it began a little earlier. Perhaps one day Republican voters will swing again and self-identified liberals will grow in number and moderates will gain control of the party as they once had in the 1940's. For now, however, Nelson Rockefeller, just like liberal Republicanism, is all but a forgotten footnote in history.

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States*. New York: Harper & Row.

**The Importance of Proxies in the Determination of  
pCO<sub>2</sub> for the Early Eocene Climatic Optimum  
Mason A. Scher (CLA 2020)**

**Abstract**

The Early Eocene Climatic Optimum was a transient warm peak that occurred 50.9-51.5 Ma and is characterized by a rapid increase in atmospheric CO<sub>2</sub>. There are several paleoclimate proxies used to reconstruct paleoCO<sub>2</sub> including nahcolite, stomata, paleosols (calcite and goethite), and boron. Each of these proxies is critiqued by looking at how directly the measurement corresponds with paleoCO<sub>2</sub>, possible sources of error, and agreement with other proxy methods. Using these data, a hard lower limit (680 ppm) and soft upper limit (1260->1500 ppm) of p CO<sub>2</sub> are determined. The more we know about the way the Earth's climate has changed in the past, the better we can predict the future. Through studying paleoCO<sub>2</sub> levels, a more complete picture of prehistoric climate is painted, and correlations between CO<sub>2</sub> levels and other factors such as global temperature, ocean acidity, and plant productivity can be found.

## Introduction

Climate change is a global and growing problem. As anthropogenic effects on our planet build and compound, the pressure to figure out where our planet is heading continues to rise. When solar radiation hits the earth (as UV and visible light which travels easily through the atmosphere) it is absorbed and then reemitted as infrared radiation. Carbon dioxide ( $\text{CO}_2$ ) is a major greenhouse gas that contributes to global warming by trapping this infrared radiation, as infrared is far less able to pass through the atmosphere than UV/visible radiation. As atmospheric levels of  $\text{CO}_2$  and other greenhouse gases rise, more and more heat is trapped, increasing the temperature of the planet. This creates what is known as the greenhouse effect. Carbon dioxide is produced and released into the atmosphere through many processes, but the largest anthropogenic contributor is the burning of fossil fuels.<sup>5</sup>

Before industrialization, global carbon dioxide levels were at 280 ppm (parts per million), but by 2005 levels had quickly increased to 379 ppm.<sup>6</sup> According to measurements from the Hawaiian Mauna Loa observation post, paleo $\text{CO}_2$  (p $\text{CO}_2$ ) passed the point of 400 ppm in 2013.<sup>7</sup> If emissions continue at the current rate, p $\text{CO}_2$  could reach 1800 ppm within the next 300 years.<sup>8</sup> Though 300 years seems like a very long time when measured against a human lifespan, it's an incredibly small amount of time when we consider the enormity of the geologic time scale, pictured in Figure 1. A level of 1800 ppm would also be unprecedented, considering that for the last 650,000 years, p $\text{CO}_2$  fluctuated between 180 to 300 ppm.<sup>9</sup>

In order to use estimates of p $\text{CO}_2$  to predict how greenhouse gas emissions will affect global temperatures in the future, models are developed using physical laws of the universe and observations of past changes.<sup>9</sup> Though some present day observations can contribute to the

understanding of earth systems, it is necessary to look to geologic records of ancient climates in order to understand changes on a larger timescale. Comparing these historic changes to computational models helps to correlate and assess the validity of the model estimates. This study of past climates, termed paleoclimatology, allows scientists to create reconstructions of the Earth's climate millions of years ago and study both how and why it changed.

Through these studies, we can better understand the rate of climatic changes, how these changes interact, and the feedback mechanisms (both positive and negative) that result. The better we understand these processes, the better we can predict what will happen as a result of human action, and the more reliably we can target and change specific behavior for the betterment of our planet. An area of particular interest for paleoclimate studies is the Early Eocene Climatic Optimum (EECO). This period, which occurred from 51.5-50.9 million years ago, is characterized

by a sharp increase in  $p\text{CO}_2$  and temperature, where the peak reached somewhere around a  $7^\circ\text{C}$  increase from the average for the time.<sup>10</sup> The atmospheric  $\text{CO}_2$  levels during this time reached about 1000 ppm.<sup>6</sup> Since  $p\text{CO}_2$  could reach these levels in the relatively near future (<300 years), EECO studies are especially relevant. Though other greenhouse gasses are significant,  $\text{CO}_2$  has been studied more thoroughly for the EECO and greater amounts of proxies have been developed for reconstructions.

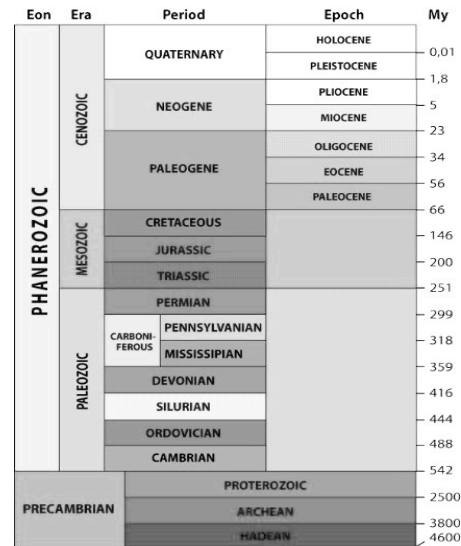


Figure 1.<sup>1</sup> The geologic time scale. The Eocene epoch is shown between 34 and 56 million years ago.



In order to reconstruct paleoclimates, scientists need to find ways in which to measure historic levels of weathering, temperature, precipitation, and various atmospheric substances. Proxies are “physical, chemical and biological materials preserved within the geologic record (in paleoclimate archives) that can be analyzed and correlated with climate or environmental parameters in the modern world”.<sup>11</sup> These proxies can give information for temperature, weathering, precipitation, different atmospheric gas concentrations, and more. Some proxies are direct, and others indirect. Direct proxies include ice cores, which contain bubbles of air that can be analyzed to obtain direct measurements of CO<sub>2</sub> levels for the time of ice formation. Indirect proxies, however, are more numerous and give information that is calibrated to phenomena (temperature, pCO<sub>2</sub>, etc.) in the climate, requiring additional studies to connect the proxy to the phenomena.<sup>11</sup>

There are several proxy methods that are used to estimate CO<sub>2</sub> levels for the EECO, but it is important to note that aside from the nahcolite proxy, all are indirect methods of assessing atmospheric CO<sub>2</sub> concentration.<sup>4</sup> Though ice core data is a direct proxy for pCO<sub>2</sub>, the oldest ice cores (from about 1.5 Ma) do not come close to the early Eocene (51.5-50.9 Ma) and as such cannot be used for the EECO. Due to the other proxies’ indirectness, error bars and uncertainty are large. However, that doesn’t mean the data gleaned is useless. This paper will look at four different proxy methods: nahcolite, stomata, paleosol, and phytoplankton/boron, and will discuss why these data are related to CO<sub>2</sub> levels as well as their reliability, then bring this information together to show estimated levels of CO<sub>2</sub> for the EECO. The current rapid increases we’re seeing in pCO<sub>2</sub> far surpass the changes that occurred during the EECO, highlighting the importance of these paleoclimate studies that are too often regarded as irrelevant.

## Proxy Review

Proxy methods have been developed, adjusted, and refined in the recent past but work must still be done before high confidence can be placed in paleoclimate reconstructions. In this section, each of the 4 proxy methods will be explained, discussed and critiqued.

### *Nahcolite*

Nahcolite ( $\text{NaHCO}_3$ ) is a mineral which is part of the nahcolite-trona-natron system (a system of minerals that all contain sodium and carbonate) and is currently the only direct proxy developed for paleo $\text{CO}_2$  estimation for periods outside of ice core data. As ancient salt lakes dried up during the early Eocene, some of these minerals formed through precipitation. Under varying levels of  $\text{CO}_2$  and temperature, either nahcolite, trona, natron, or some combination thereof will form. Since nahcolite only precipitates at high  $\text{CO}_2$  levels, it would be expected that lower limits of p $\text{CO}_2$  would be easily determined if nahcolite was found to have precipitated during the EECO. If it was found, then the minimum required concentration of  $\text{CO}_2$  must have been present at the time. However, establishing this lower limit has proven difficult. In 1966, Eugster found that nahcolite would only precipitate at  $\text{CO}_2$  levels above 1330 ppm, or above 1125 ppm when nahcolite was coprecipitated with halite.<sup>12</sup> More than forty years later, these numbers were still being used in the analysis of Eocene deposits, until 2010 when the lower limit was adjusted from >1330 ppm to >~1000 ppm.<sup>13</sup> Even more recently, the lower limit has been readjusted again to 680 ppm, down to about half the original lower bound of 1125 ppm, through the refinement of the triple point for natron, nahcolite, and trona<sup>4</sup> system pictured in Figure 2.

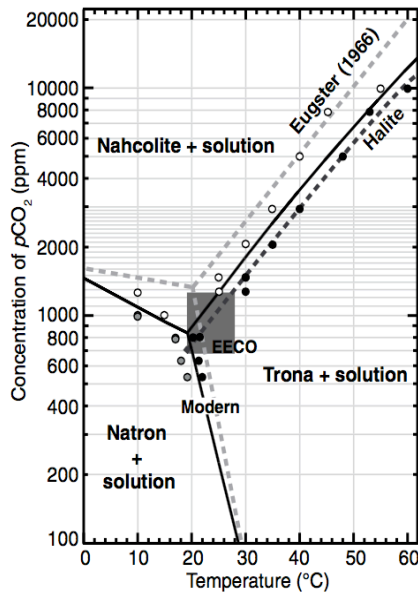


Figure 2.<sup>4</sup> Updated stability fields from Jagniecki et al. (2015) are shown here (black boundaries) including the boundary for coprecipitation of nahcolite with halite (dashed black line). The grey, white, and black dots represent data points from Jagniecki's experimental work. The grey dashed lines show Eugster's work from 1966. The grey box shows mineral precipitation from the early Eocene.<sup>4</sup>

Seeing as this is the only direct proxy measurement for  $p\text{CO}_2$ , it would be useful to apply this method to all of geologic history in order to paint a full picture of changes in  $\text{CO}_2$  concentration. Unfortunately,  $p\text{CO}_2$  must be above 680 ppm for the minerals necessary for this analysis to form.<sup>4</sup> Pre-industrial values for  $p\text{CO}_2$  were 280 ppm, a far cry from the minimum necessary for precipitation. Because there are so few instances of such high  $\text{CO}_2$  levels and temperatures in the recent geologic past (65 million years), this makes the number of available deposits limited and also

relegates them to very specific time periods. Fortunately for EECO studies, the  $\text{CO}_2$  concentration was high enough to cause these reactions to occur.

The Green River Formation in Wyoming is one of the main sites used to study the early Eocene. Here, more than  $32 \times 10^9$  metric tons of nahcolite have been found, along with deposits of trona in the Bridger Basin.<sup>4</sup> This

means that the nahcolite proxy can be used for the early Eocene climatic optimum, establishing a lower limit of pCO<sub>2</sub> for the EECO. Using the updated stability fields from Jagniecki, the range of pCO<sub>2</sub> for the EECO is 680-1260 ppm,<sup>4</sup> far lower than an earlier reported range from the nahcolite proxy of 1125-2985 ppm. These new values from the nahcolite proxy are closer in agreement with results for pCO<sub>2</sub> from other proxies (stomata, paleosols), buttressing the argument that the new ranges are more accurate than previous. Nahcolite is a direct method for pCO<sub>2</sub> reconstruction, making estimations more accurate than through indirect methods, and establishing definitive minimum concentration of CO<sub>2</sub> at 680 ppm for the Early Eocene Climatic Optimum.

### ***Stomata***

Stomatal density and index are two methods used as proxies for paleoCO<sub>2</sub> reconstructions. To perform photosynthesis, plants require CO<sub>2</sub>, which is acquired through pores in the surface of their leaves, called stomata. Stomata are evident on both fossilized and living plants. Carbon dioxide enters the leaf, while water vapor and oxygen exit. The number of stomata present on leaves must collect enough CO<sub>2</sub> for the plant to sustain itself through photosynthesis. However, it is important that a leaf not have too many stomata, as water escapes through these openings. Water is also necessary for photosynthesis, so plants have to take in enough CO<sub>2</sub> without letting too much water vapor out. Due to this fine balance, stomata are carefully calibrated to the environment, and more specifically, the atmosphere. The number of stomata present on a leaf varies inversely with CO<sub>2</sub> concentration, meaning that as CO<sub>2</sub> concentration increases, the number of stomata decreases. At higher CO<sub>2</sub> concentrations, there are fewer stomata present than at lower concentrations.<sup>14</sup>

It had been thought that for CO<sub>2</sub> concentrations above pre-industrial levels, stomata would no longer be sensitive to changes in CO<sub>2</sub> concentration. Nonetheless, work by Woodward showed that plants are still responsive at high levels,<sup>15</sup> though other methods of stomata quantification must be used. There are two methods that can be used to quantify stomata: stomatal density and stomatal index. Stomatal density is simply the number of stomata per unit area of a leaf. Unfortunately, stomatal density is reflective of more factors than just CO<sub>2</sub>, such as water stress, temperature, and irradiation<sup>14</sup> as epidermal cells expand and contract with changes in these variables<sup>3</sup>, altering the distance between stomata and therefore density. Stomatal index is a slightly more complicated calculation that accounts for changes in epidermal and stomatal cell size. Theoretically, the results should be more accurate as it is subject to fewer environmental factors. Problems do arise with this method, however. Papillae are protrusions on the surface of leaves, and they can make the counting of epidermal cells quite difficult. In cases such as these, stomata are still easily counted but epidermal cells are not, making ED values inaccurate. Stomatal index is dependent upon ED, but stomatal density can still be calculated with accuracy as it excludes ED values.

$$SI(\%) = \frac{SD}{SD + ED} \times 100$$

**Equation 1. Stomatal index (or frequency) equation, where SD is stomatal density and ED is epidermal cell density.<sup>3</sup>**

Another issue is the extreme difficulty of testing whether short-term responses to CO<sub>2</sub> variations are affected by evolutionary changes over very long periods of

time when plants are subjected to different levels of CO<sub>2</sub>. It is conceivable that plant offspring would be selected for adaptability to high or low pCO<sub>2</sub> with different amounts of stomata, affecting how stomatal density or index would be related to CO<sub>2</sub> and the transform functions that are used. In order to use stomatal responses as a proxy, it must be assumed that these evolutionary changes are minimal.<sup>6</sup>

Once stomatal index or density values are collected from fossil data, the data must still be used to generate paleoCO<sub>2</sub> reconstructions. In order to do so, fossil records must be compared to experimental data from extant (presently living) plant species. A clear impediment to making these comparisons is the fact that plants evolve over time, so many species from more than 50 million years ago (during the EECO) are extinct. There are, however, some species that span as far back as the late Cretaceous, ~70 million years ago,<sup>14</sup> such as *Gingko adiantoides*. In a review of stomatal response experimental data with different species, *Gingko* was found to have an inverse relationship with CO<sub>2</sub> for both stomatal index and stomatal density.<sup>14</sup>

Fossil deposits of *Gingko adiantoides* have been found in British Columbia and dated at 50.61±0.16 Ma,<sup>3</sup> a point within the greater EECO span. In this study, *G. adiantoides* fossil records are compared to modern *G. biloba* leaves, the nearest living equivalent of *G. adiantoides*. Papillae were common on both the fossil records and modern leaves collected, so while stomatal density could be calculated easily, stomatal index could not be calculated with confidence. Though stomatal index is the preferred method of measurement, for this study stomatal density was sufficient as it carries the same inverse relationship with pCO<sub>2</sub> as stomatal index.<sup>16</sup> After running the calculated stomatal density values found in Table 1 through transform functions, pCO<sub>2</sub> for the EECO was estimated to be >1300 ppm, but more conservatively

>600 ppm. This conservative estimate accounts for the inability to reliably calculate stomatal index and its reliance on stomatal density.

Originally, other studies had lower estimates of pCO<sub>2</sub> for the EECO, closer to modern day levels, which was surprising given the greenhouse climate of the EECO. An overhaul of the stomatal index proxy in 2009, however, tweaked the statistical analyses and transform functions for the proxy in order to establish a “probability density” for pCO<sub>2</sub> estimates where the overlap is more easily seen between studies. In addition to changing the error bars, EECO estimates from previous studies were increased to 450-700 ppm.<sup>17</sup> These values overlap with the estimates found by Smith et al. in 2009, further legitimizing both the new analyses of errors and further work done by Smith.

As a proxy, stomata are useful because of their well-studied direct relationship with pCO<sub>2</sub>.

Sample	Stomatal density (mm <sup>-2</sup> )						Stomatal index (%)					
	n	N	x	σ	s.e.	95% CI	n	N	x	σ	s.e.	95% CI
<i>Modern Ginkgo biloba</i>												
Acetate peel dataset	25	75	<b>97</b>	22	3	5	25	75	<b>9.5</b>	2.1	0.2	0.5
Macerated cuticle dataset	30	90	<b>95</b>	23	2	5	25	57	<b>10.7</b>	1.8	0.2	0.5
Long-shoot leaves acetate peels	12	36	<b>107</b>	21	4	7	12	36	<b>10.7</b>	1.8	0.3	0.6
Long-shoot leaves macerated cuticle	15	45	<b>105</b>	24	4	7	12	31	<b>11.3</b>	1.7	0.3	0.6
Short-shoot leaves acetate peels	13	39	<b>87</b>	18	3	6	13	39	<b>8.3</b>	1.6	0.3	0.5
Short-shoot leaves macerated cuticle	15	45	<b>85</b>	17	3	5	12	26	<b>10.5</b>	1.8	0.4	0.7
<i>Fossil Ginkgo adiantoides</i>												
All specimens	14	42	<b>60</b>	12	2	4	14	42	<b>5.8</b>	1.5	0.2	0.4
Unit 1	4	12	<b>55</b>	14	4	8	4	12	<b>5.1</b>	1.3	0.4	0.7
Unit 2	5	15	<b>59</b>	10	3	5	5	15	<b>5.8</b>	1.0	0.3	0.5
Unit 3	5	15	<b>64</b>	11	3	6	5	15	<b>6.4</b>	1.7	0.4	0.9

Note: n, number of leaves; N, number of counts; x, mean; σ, standard deviation; s.e., standard error of mean; 95% CI, 95% confidence interval. Data was rounded at the last step of calculations to one decimal place for SI, and error was calculated on raw values in all cases. Numbers in bold are mean values.

**Table 1.<sup>3</sup> Stomatal density and index values are presented for fossil specimen of *G. adiantoides* from the Early Eocene Climatic Optimum and for modern day samples of *G. biloba* leaves.<sup>3</sup> Both stomatal density and index values are significantly larger (about 2x) for modern day samples than for Eocene samples, indicating higher levels of CO<sub>2</sub> for the early Eocene than today.**

The IPCC, in a 2013 report that compiled proxy paleoclimate data from hundreds of studies, stated that



stomatal evidence is valuable because of this well understood relationship, but skepticism is necessary because the stomatal proxy is more accurate at low levels of  $p\text{CO}_2$ .<sup>6</sup>

Considering that the EECO was a very large thermal maximum and also a very large  $p\text{CO}_2$  maximum, the validity of estimates from the stomatal proxy for the time period must be critically assessed.

### ***Paleosols***

Paleosols are another proxy method for paleo $\text{CO}_2$  reconstructions. Calcite ( $\text{CaCO}_3$ ) and Goethite ( $\text{Fe}(\text{CO}_3)\text{OH}$ ) are two minerals contained in paleosols that provide useful information. By analyzing the ratios of carbon isotopes ( $^{13}\text{C}/^{12}\text{C}$ ) contained in these minerals, atmospheric  $\text{CO}_2$  can be reconstructed for the time of their formation.

When calcite and goethite form, they incorporate carbon from their surrounding soil. Fractionation occurs, which is the preferential incorporation of one isotope over another. For example, plants preferentially incorporate  $^{12}\text{C}$  over  $^{13}\text{C}$ , so the ratio  $^{13}\text{C}/^{12}\text{C}$ , and thus the  $\delta^{13}\text{C}$  (the ratio of  $^{13}\text{C}/^{12}\text{C}$  in parts per thousand) is low. The ratio of inorganic  $^{13}\text{C}$  to  $^{12}\text{C}$  contained in soil, and therefore incorporated into calcite and goethite, is dependent upon the  $p\text{CO}_2$  at the time, which is the basis of this proxy. As  $p\text{CO}_2$  increases, so does the  $\delta^{13}\text{C}$  of inorganic carbon (that found in calcite and goethite). There are two ways that carbon (and  $^{13}\text{C}$ ) can become incorporated into these minerals: through the respiration of organisms within the soil, and from atmospheric  $\text{CO}_2$  diffusing into the soil<sup>13</sup>. As such, both must be taken into consideration as contributing to  $\delta^{13}\text{C}$  when using  $\delta^{13}\text{C}$  measurements from minerals for atmospheric  $\text{CO}_2$  reconstructions.

CALCITE: Paleosol samples containing calcite from the

Green River Basin in WY have been used to study the EECO. In one study, 107 individual paleosols were analyzed for  $\delta^{13}\text{C}$  levels in calcite. With Equation 2, this  $\delta^{13}\text{C}$  data was able to reconstruct  $\text{pCO}_2$  for the EECO. In this study,  $\delta^{13}\text{C}_s$  was calculated for each sample and corrected for temperature changes. A problem that arises with this proxy is the determination of  $S_z$  (the concentration of  $\text{CO}_2$  respired by soil), which scales to the  $\text{pCO}_2$  outcome of equation 2. In the past, a standard value of  $\sim 5000$  ppm was used, revised to  $\sim 2500$  ppm in 2010 after finding through lab studies that  $\sim 5000$  ppm is a gross overestimate. Using a standard value for  $S_z$ , however, does not take into account the variability of  $S_z$  values under different environmental conditions. To avoid this problem, the Green River Basin study calculated  $S_z$  for each paleosol sample using Equation 3. This study concluded that EECO  $\text{pCO}_2$  was  $>1500$  ppm,<sup>10</sup> with the standard error  $\pm 681$  ppm.<sup>18</sup>

$$\text{pCO}_2 = S(z) \left( \frac{\delta^{13}\text{C}_s - 1.044\delta^{13}\text{C}_r - 4.4}{\delta^{13}\text{C}_a - \delta^{13}\text{C}_s} \right),$$

**Equation 2.** This equation is used to convert paleosol  $\delta^{13}\text{C}$  data into reconstructed  $\text{pCO}_2$ , as used by Hyland and Sheldon in their 2012 study.  $S_z$  is the concentration of  $\text{CO}_2$  respired by soil,  $\delta^{13}\text{C}_s$  is the  $\delta^{13}\text{C}$  of soil  $\text{CO}_2$  which is measured from calcite samples,  $\delta^{13}\text{C}_r$  is the  $\delta^{13}\text{C}$  of preserved organic matter, and  $\delta^{13}\text{C}_a$  is the  $\delta^{13}\text{C}$  of atmospheric  $\text{CO}_2$ .<sup>10</sup>

$$S(z) = 5.67(\text{MAP}) - 269.9,$$

**Equation 3.** This is the relationship used to determine  $S_z$ ,<sup>18</sup> where MAP is Mean Annual Precipitation, measured for each paleosol sample individually in the Green River Basin study.

The CO<sub>2</sub> reconstruction determined by this study seems high compared to pCO<sub>2</sub> as determined by the nahcolite proxy (680-1260 ppm), but when error is taken into account, the values overlap. Though this study took many possible sources of error into consideration, there is low confidence in the ability to estimate  $\delta^{13}\text{C}_a$  accurately, as reported by the IPCC.<sup>6</sup> Aside from this doubt in estimation, this calcite paleosol proxy leaves little room for error when utilized with such a large sample size and individual measurements as in the Green River Basin study.

GOETHITE: A similar equation to Equation 2 is used for goethite paleosol analysis. Samples collected from Ione, California in 2004 have been used by Yapp in EECO pCO<sub>2</sub> estimations. This study utilized four samples and analyzed  $\delta^{13}\text{C}$  found in goethite to conclude that EECO CO<sub>2</sub> levels were ~2700 ppm, with error bars of 300 ppm.<sup>19</sup> This estimate is even higher than that from the calcite paleosol proxy, which could be due to a miscalculation.

CO<sub>2</sub> reconstructions from goethite require the use of a fractionation factor early on in calculations. The fractionation factor used by Yapp (~1.0025) in analysis has proven to be inaccurate. In 2008, a study that analyzed carbon isotope fractionation in minerals found not only that there is more than one pathway for carbon to be incorporated in goethite, but that each pathway has its own fractionation factor. For pathway A, the fractionation factor is 1.1704, and for B 1.1928,<sup>20</sup> both clearly divergent from 1.0025. Additionally, CO<sub>2</sub> estimates are affected by soil moisture and the amount of time that the carbon resides in soil<sup>13</sup> which may not have been accounted for. Yapp claimed that his reconstructions were legitimized by the high pCO<sub>2</sub> values found by the boron proxy and stomatal proxy, but the values that he cites<sup>14; 21</sup> have since been proven to be too high. The divergence of this estimate (~2700 ppm) from calcite, stomata, and nahcolite proxy

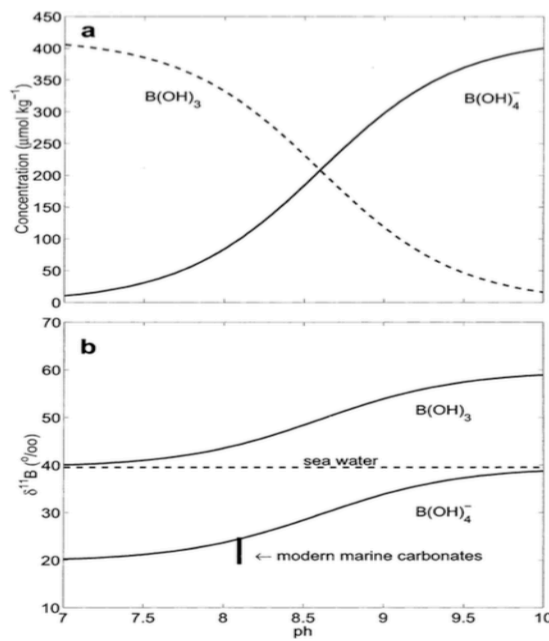
data, in addition to sources of error for this estimate, make these results questionable.

### ***Boron***

As atmospheric carbon dioxide concentration increases, more  $\text{CO}_2$  is dissolved into the ocean's surface, forming carbonic acid in sea water. This then causes a decrease in pH, so the ocean is more acidic. Changes in the pH of the ocean alter the balance between acid/base systems such as  $\text{B(OH)}_3$  and  $\text{B(OH)}_4^-$ . The more acidic the water, the higher the concentration of  $\text{B(OH)}_3$  and the lower the concentration of  $\text{B(OH)}_4^-$ . Both of these chemical species have a higher content of  $\delta^{11}\text{B}$  at higher pH levels. Foraminifera (single-celled marine plankton with shells) incorporate  $\text{B(OH)}_4^-$  into their shells, which are categorized as marine carbonates. These shells form sediments at the bottom of the ocean which have been extracted by geologists for paleoclimate studies. By examining the content of  $\delta^{11}\text{B}$  in marine carbonates, ocean acidity for the time can be reconstructed. Furthermore, because acidity is so heavily reliant upon aqueous  $\text{CO}_2$  content, this can be calculated from reconstructed pH values. Finally, aqueous  $\text{CO}_2$  concentration can be used to calculate atmospheric  $\text{pCO}_2$  through transform functions. The boron proxy takes measurements of  $\delta^{11}\text{B}$  which is then used to determine pH, then used to find aqueous  $\text{CO}_2$ , and then used to determine atmospheric  $\text{CO}_2$ . Clearly, this is an indirect method of paleo $\text{CO}_2$  reconstruction and is further removed from  $\text{CO}_2$  than stomata, requiring more steps to get from  $\delta^{11}\text{B}$  measurements to  $\text{pCO}_2$  than from stomatal density or index to  $\text{pCO}_2$ .

Refinements have been made to this proxy in the recent past. Newer studies of marine foraminifera use different fractionation factors than previous studies, which were adjusted in 2006<sup>22</sup> and have an important bearing on reconstructed pH. These fractionation factors are a

measurement of the ratio of  $\text{B(OH)}_3$  to  $\text{B(OH)}_4^-$  in ocean water, and if incorrect values are used then the measured  $\delta^{11}\text{B}$  will indicate different pHs. Work in 2009 found that  $\text{B(OH)}_3$  might also be incorporated in addition to  $\text{B(OH)}_4^-$  in marine carbonates.<sup>23</sup> If this is true, then the calibration reliability of the boron isotope proxy is seriously undermined for past studies. Higher  $\delta^{11}\text{B}$  is correlated with higher pH because  $\delta^{11}\text{B}$  in  $\text{B(OH)}_4^-$  increases with pH. This relationship is also true for  $\text{B(OH)}_3$ , as seen in Figure 3. However, if  $\text{B(OH)}_3$  is also incorporated into marine carbonates, then this would throw off the  $\delta^{11}\text{B}$ -pH calibration as  $\text{B(OH)}_3$  contains a higher percentage of  $\delta^{11}\text{B}$  than  $\text{B(OH)}_4^-$ .



**Figure 3.<sup>2</sup>** The first graph pictured shows the inverse relationship of the concentrations of  $\text{B(OH)}_3$  and  $\text{B(OH)}_4^-$  vary with pH. As pH increases,  $\text{B(OH)}_3$  decreases while  $\text{B(OH)}_4^-$  increases. The second graph shows how  $\delta^{11}\text{B}$  increases with pH for both  $\text{B(OH)}_3$  and  $\text{B(OH)}_4^-$  in parts per thousand (‰), and displays the higher value of  $\delta^{11}\text{B}$  in  $\text{B(OH)}_4^-$  and  $\text{B(OH)}_3$ .<sup>2</sup>

In 2000, an extensive study by Pearson et al. was published that used this boron proxy to reconstruct  $\text{pCO}_2$  for the last 60 million years, not including the period

between 25-33 Ma as there were insufficiently preserved foraminifera samples collected. Sediments were collected from the tropical Pacific which contained marine carbonates from several different foraminifera species. This article put EECO CO<sub>2</sub> reconstructions at ~3,600 ppm, with error bars ranging from ~3,000 to 4,600 ppm.<sup>21</sup>

There are several issues that come up with this study, considering the refinements made to the proxy since this paper was published as well as possible sources of error. First, the fractionation factor used in the 2000 study is wrong.<sup>2; 13</sup> Second, there is also the possibility that the foraminifera species studied were not properly compared to extant species. This would allow for better understanding of how  $\delta^{11}\text{B}$  is related to pH changes for the specific species studied (the same way that nearest living equivalents must be utilized for the stomata proxy). The third and largest issue with the 2000 reconstruction is that measurements of  $\delta^{11}\text{B}$  were assumed to be solely from the incorporation  $\text{B}(\text{OH})_4^-$  into the carbonates, so if  $\text{B}(\text{OH})_3$  was also incorporated into these samples, then the pH reconstructions are too high as  $\text{B}(\text{OH})_3$  has a higher  $\delta^{11}\text{B}$  content than  $\text{B}(\text{OH})_4^-$  and would drive measurements up. This also means that reconstructed levels of aqueous CO<sub>2</sub>, and therefore atmospheric CO<sub>2</sub>, are too high as well. It makes sense that these estimates might be too high considering where the other proxies place EECO pCO<sub>2</sub>. While estimates from Nahcolite and stomata place EECO pCO<sub>2</sub> somewhere between 450-1260 ppm, the 2000 study placed estimates at about three times these values, between 3000 and 4600ppm. The difference in these concentrations is about 1750 ppm. The value of this discrepancy is larger than some EECO pCO<sub>2</sub> estimates, which is cause for concern.

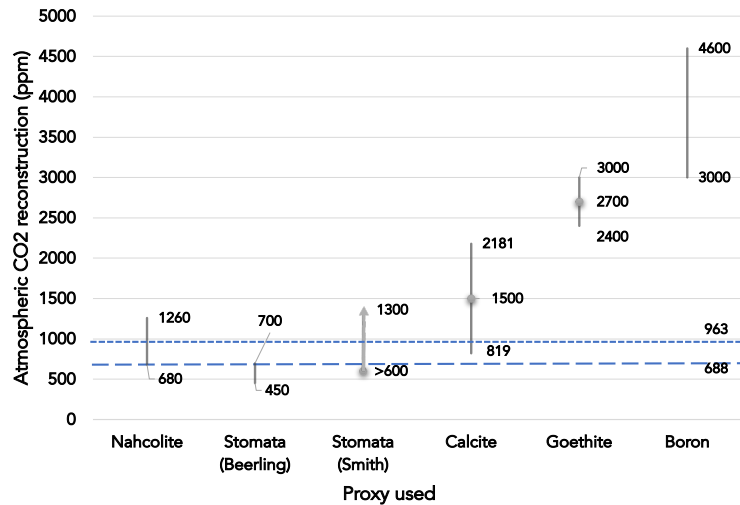
Considering the many sources of error for these estimates, their reliability is certainly questionable. In the period since these refinements have been made to the boron

proxy, studies have not come out that give new estimates for the EECO specifically.

### **Proxy Data Compilation**

As the only direct proxy method, reconstructions of EECO from the nahcolite proxy deserve the most credence. Because nahcolite cannot form under 680 ppm CO<sub>2</sub> and nahcolite deposits exist for the EECO, 680 ppm is the definitive lower limit. Proxy reconstructions that disagree with this value from nahcolite must be reconsidered and assessed for errors. Both stomata proxy reconstructions overlap with nahcolite estimates, as does the calcite reconstruction, seen in Figure 4. The stomatal proxy has been more thoroughly studied and refined than the calcite, goethite, and boron proxies, so it makes sense that these values would be more in agreement with nahcolite than others.

Goethite and boron reconstructions diverge from nahcolite, and therefore must be viewed critically. While the nahcolite proxy cannot determine a hard upper limit for EECO pCO<sub>2</sub> values, the lack of any overlap between these two other proxies and estimates from nahcolite is worrying. The many possible sources of error for goethite (incorrect fractionation factor, multiple pathways, soil moisture, time in soil) and for boron (several transformation functions, incorporation of B(OH)<sub>3</sub> into marine carbonates, comparison to extant species) also makes the reliability of these estimates questionable. It is plausible that with further study and revision, these estimates will be brought down into agreement with the nahcolite reconstructions of CO<sub>2</sub>.



**Figure 4. pCO<sub>2</sub> reconstructions for the EECO from each proxy discussed. Results from nahcolite,<sup>4</sup> stomata (Beerling),<sup>17</sup> and boron<sup>21</sup> are ranges, as depicted by vertical lines with no dot. Goethite<sup>19</sup> and calcite<sup>10</sup> results are both reported with error bars; the dot representing the value of pCO<sub>2</sub> and vertical lines showing error. Smith reported pCO<sub>2</sub> estimates to be >600 ppm, represented by a dot with an arrow up to Smith's less conservative estimate of >1300 ppm.<sup>3</sup> The dotted line represents the calculated weighted mean (963±101 ppm) of all data, while the dashed line represents the weighted mean of the nahcolite, stomata, and calcite proxies (688 ± 108 ppm). This graphical representation of the data discussed makes differences and agreement clearly visible.**

The more agreement that is seen between proxy methods, the more accurate the methods and the estimates become. There was, after all, only one actual value of maximum pCO<sub>2</sub> for the EECO. Once all proxy measurements come to agree on a value, it can be considered legitimate. For now, EECO pCO<sub>2</sub> reconstruction is not completely clear. A lower limit of 680 ppm has been established, and the most reliable proxies (nahcolite, stomata, and calcite) with the smallest room for error create



an upper range of 1260 ppm (from nahcolite) - >1500 ppm (from calcite). Though Beerling's reconstructions from stomata suggest an upper limit of 700 ppm, Smith reported a value of >600 ppm, or less conservatively >1300 ppm, in agreement with an upper limit of 1260 ppm to >1500 ppm.

The calculated weighted mean and weighted error<sup>24</sup> of all data give an estimate of 963 ppm  $\pm$  101 ppm, graphically represented as the dotted line in Figure 4. It is clear from the graph that goethite and boron estimates are outliers from the rest of the data, which either overlaps or comes close to overlapping with this mean. We also calculated a weighted mean without the outliers. This weighted mean gave an estimate of 688 ppm  $\pm$  108 ppm, represented by the dashed line in Figure 4. For both of these calculations, we assume that the upper and lower limits represent one standard error and are not hard minimum or maximum values.

### **Conclusion**

Several proxies are used in paleoCO<sub>2</sub> reconstructions, some more specific and reliable than others. The nahcolite proxy is a direct method of CO<sub>2</sub> reconstruction and is, therefore, most reliable. Stomatal responses to CO<sub>2</sub> have been well studied and the proxy refined, giving valuable pCO<sub>2</sub> values though the stomatal proxy is indirect. The calcite proxy, also indirect, when used with large sample sizes and meticulous calculations for variables, can also give worthwhile estimates. Goethite and boron (both indirect proxies) estimates are ridden with sources of error, boron more than goethite, so reconstructions from these proxies must be viewed more critically. After considering sources of error and the directness of each proxy described, a hard lower limit of 680 ppm CO<sub>2</sub> and a softer upper limit of 1260 - >1500 ppm CO<sub>2</sub> are established for the Early Eocene Climatic

Optimum. We calculated a weighted mean including all proxy data presented in this paper to be  $963 \text{ ppm} \pm 101 \text{ ppm}$ , and another weighted mean excluding outlying proxy data (from boron and goethite) to be  $688 \text{ ppm} \pm 108 \text{ ppm}$ . In order to narrow this range, future work should be done to consider and eliminate sources of error from the boron and goethite proxies especially, but for calcite and stomata as well, as there still exists disagreement.

Because of the vastness of the geologic time scale, the EECO is not given the attention it deserves. Currently, the world is experiencing a rapid increase in atmospheric  $\text{CO}_2$ . The  $\text{pCO}_2$  peak during the EECO developed over a span of 350,000 years, during which time  $\text{CO}_2$  increased 3 to 5-fold.<sup>10</sup> Projections show that a level of 1800 ppm  $\text{CO}_2$  (a 4.5-fold increase from current levels) could be reached in just 300 years if anthropogenic emissions continue at the current rate<sup>8</sup>. This is the same magnitude of change as the EECO, but it could occur more than 1000 times as quickly. By studying the EECO more closely, a better understanding of how ecological, atmospheric, and biological systems react to such changes in atmospheric  $\text{CO}_2$  can be obtained and the world better prepared for the future. Paleo $\text{CO}_2$  reconstructions for the Early Eocene Climatic Optimum are an important place to start in the understanding of paleoclimates and the earth's sensitivities to atmospheric changes.

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**Polyphonic Singing in Context: Throat-Singing  
Techniques in the Tuvan People of Central Asia  
Ian Nadler (CLA 2018)**

**Abstract**

Observed by various cultures worldwide, polyphonic singing is a vocal technique in which multiple simultaneous sounds are produced by a single singer. The Republic of Tuva developed one of the most diverse and noteworthy polyphonic vocal styles, known as Tuvan throat-singing. While Tuva maintains an extensive variety of throat-singing voices, each style was generated to mimic some aspect of nature as a means to practice animism. However, polyphonic voice would not be possible without certain fundamental patterns dictated by the physics of sound. The harmonic series, for example, which is commonly known as the overtone series, is the frequency pattern that any complex sound naturally follows and which gives rise to unique tone color or timbre. Each voice gets its exclusive timbre from the different harmonics it produces, but polyphonic singing takes advantage of those generated harmonics within the voice. Focusing on the Tuvan culture's approach to the polyphonic voice through a technical analysis of throat-singing techniques provides a framework within which to extrapolate purpose for polyphonic singing in other cultures.

From providing the human species with the ability to communicate through language, to allowing us to produce music independently by singing, the versatility of the voice is extensive. It is through this versatility that individuality arises in the music of various cultures. There is no disputing that singing is a universal expression of music that has developed globally in some capacity in all cultures; however, singing is not approached in the same way in each culture. Polyphonic singing is a perfect example of this lack of uniformity.

Not all cultures developed this singing style, but rather it developed using varying techniques in different cultures, and its functional use varies depending on the culture. Polyphonic singing, simply put, is a vocal technique that allows a singer to produce two or more pitches simultaneously. This vocal approach is observed in cultures of Central Asia including Tuva, Mongolia, and Tibet, as well as in the South African Xhosa Women, the Dani people of New Guinea, and even in some Western cultures. While the predominant Western polyphonic technique, overtone singing, is wide spread, the most noteworthy style of polyphonic singing originated in the Tuvan region of Russia. This style is the most extensive, with three major technical approaches -- *khöömei*, *sygyt*, and *kargyraa* -- and with numerous substyles within each approach. Whether polyphonic singing is used as a part of a religious ritual, to demonstrate an appreciation for nature, as a status symbol, or even as a way simply to demonstrate vocal mastery, a technical analysis of major Tuvan throat-singing styles can help us determine the cultural purpose for these polyphonic vocal techniques within the Tuvan culture, and identify how these approaches may share similarities to polyphonic singing of other world cultures.

Even though Tuvan throat-singing may be the most well-known throat-singing culture of today, the people of Tuva were not the sole progenitors of throat-singing.

Throat-singing itself originated from the Turk-Mongol people of the Southern Siberian and Central Asian regions (Pegg 32). Essentially, Mongolian cultural influence upon the Tuvan people influenced the creation of Tuvan throat-singing. The Turkish word *Khöömei*, which is the basic Tuvan throat-singing style, was originally the Mongolian word *xöömei*, further supporting that the Mongolian culture actually introduced throat-singing to the Tuvan tribe. This likely occurred due to the great degree of cultural mixing throughout ancient history in this region, which can be attributed to the highly nomadic nature of both peoples, and their contact via intersecting trade routes and well-documented tribal warfare (Tongeren 84). For centuries to follow, until the Chinese Manchu Empire ended in the early 1900s, Tuvans and Mongols were actually unified politically (Tongeren 121), providing another contributing explanation regarding their overlap, especially evident in the throat-singing traditions of each group. When considering the polyphonic technique, superficial beauty is easily identifiable in the sonority generated, but there must be more to the Tuvan use of throat-singing than aesthetic pleasure.

When uninformed Western musicians first hear throat-singing, the unique quality of the sound produced intrigues them; however, that is not the sole intention of this technique in Tuvan culture (Barras & Gouiffès 60). Originally, Tuvan herdsman and hunters exclusively used throat-singing because they believed the throat song pleased their horses, quickening their pace (Tongeren 56). However, this has changed in modern times; now, Tuva allows people of all professions to practice and perform throat-singing, from carpenters to miners (56). As a nomadic culture, the people still interact constantly with their external environment and that is where the true purpose for Tuvan throat-singing lies.

Animism's strong spiritual underpinning has been integral to the belief system of the Tuvan people since before throat-singing's inception. Animism entails a belief that natural structures and phenomena have spirits (Levin & Edgerton 80). As a means to convey this spirituality, Tuvan society made use of throat-singing, using the sonorities produced to mimic nature. They use their singing as a way to connect with nature, almost as a form of sonic meditation. It is commonplace in animism to believe that animals, the weather, or even landscapes possess spiritual power. By emulating the sounds found in nature, Tuvan throat singers believe humanity can obtain this raw power by connecting to spirits. This tendency towards mimicry is substantiated through the development of the different styles of throat-singing in Tuva, where a number of the styles are meant to emulate aspects of nature like rushing water or the galloping of horses. Tuvan throat-singing performers commonly seek solitary refuge when performing their singing (Tongerren 56). In doing so, they can connect intimately with the earth through their songs.

Animistic practice is more of a societal ideal of the Tuvan people, not directly linking to a specific religious observance; however, there have been documented cases of the use of throat-singing in shamanistic study. In this religion, throat-singing is used in ritualistic contexts by shamans, or kham as they are called in Tuvan, to interact with different spirits, beyond nature spirits associated with animism, in their beliefs (Tongerren 80). Using throat-singing for such ritualistic practice is quite common due to the high prevalence of shamanism within Central Asian cultures. When shamans are referenced, the idea of spiritual healing often coincides, but the Tuvan people do not actually believe that throat-singing itself possesses any specific healing power. Shamans just use singing as a tool in conjunction with ritual practice to facilitate spiritual healing or even combat possession in some cases (Glenfield



iv). They do, however, believe that soft production of *khöömei* or *sygyt* aids in the delivery process of childbirth (Tongerren 81). While little substantiates this claim, it is ironic that singers use throat-singing in this way to help women in this way, particularly because, historically, women could not throat-sing. However, when looking at gender roles in the singing practice today, evidence shows a cultural shift in gender roles among the Tuvan people.

Misogynistic prejudice does not limit female presence in professional throat-singing; it results from a Tuvan cultural misconception. From a technical standpoint, when it comes to overtone singing, women drew the biological short straw. Men have the advantage because, anatomically, women tend to have shorter vocal cords and a smaller pharyngeal “tube” for resonance between their lips and vocal cords. This results in two main issues: first, they have a smaller resonating body with which to amplify the sound they produce, and in turn the harmonics they generate, so their voices are quieter (Tongerren 30). Second, women’s average pitch is about an octave higher than men’s, which limits the number of harmonics they can generate.

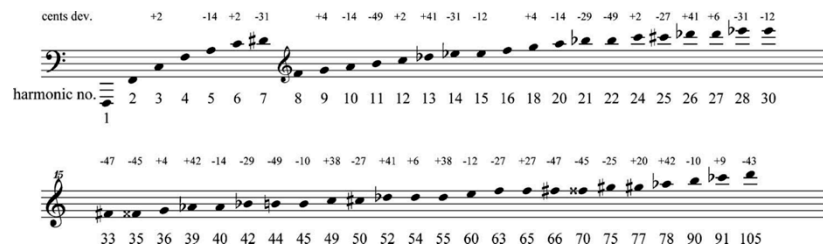
Overtone singing is best produced in frequencies going up to 2000 Hz and women generally start higher in the frequency range; therefore, they have fewer harmonics to access (30). However, this can be remedied through the practice of *kargyraa*, a technique that allows for women to lower their base frequency by about an octave or more, similar to the range of the average male singer. It is important to note, though, that *kargyraa* can be more difficult for women to learn due to the absence of these lower frequencies in the female voice. It can be done generating a timbre unique from the male voice’s production of *kargyraa* (Cope 40). Tuvans believed that throat-singing caused infertility, which explains why such a strict taboo against women throat-singing existed for such a

long portion of their history; however, in modern Tuva, more and more women have begun to practice throat-singing professionally (Levin & Edgerton 82). Because of this broader use, the practice of throat-singing in Tuvan culture has developed its own structural characteristics, which speak to the influences of culture on musical practice.

With capitalism's spread to areas of Central Asia in the 1990s, the practice of throat-singing in Tuvan culture has gone through a musical transition. There has not been a massive upheaval of past tradition, in that a focus on mimesis of nature still prevails, but now that the Tuvan people realize musical performance can yield monetary reward, stage performance is becoming more commonplace (Tongeren 237). Thus, many professional throat singers have moved from the rocky steppes to luxurious concert halls, and many groups have even performed in places like Japan or the United States. As a result of this touring, Western musical concepts influenced many of these groups, resulting in a generation of bands like Yat-Kha, a traditional Tuvan/rock fusion band (Yat-Kha). While some look at these rapidly changing trends in the throat-singing tradition with antipathy as the genre strays from their spiritual intentions, for others, exposure to a new culture's music only enhances the Tuvan people's ability to appreciate their own musicality, facilitating a more diverse perspective. Non-Tuvan musicians should also appreciate this recent instance of cultural diffusion in that it has allowed Westerners the opportunity to experience the unique polyphonic styles of Tuvan music. Music would not exist without the physics of sound. In music, sound is broken down into four major aspects: loudness or amplitude, pitch or frequency, duration or interval of time, and timbre or the compilation frequencies within the oscillating waveform. Without the harmonic series, timbre would not exist and all sound would be pure

sine wave tones. However, that is simply not how musical sound exists. The harmonic series can be calculated mathematically whereby it starts with the fundamental frequency and follows a general pattern. Consider this example: orchestras typically tune to an A4, which sounds at 440 Hz. This will be our fundamental frequency. To calculate the harmonic series from this pitch, we follow the following procedure. The first overtone sounds one octave above the fundamental. This pitch has a frequency twice the fundamental, i.e. 880 Hz. The third overtone sounds a perfect twelfth above the fundamental at a frequency three times the fundamental, i.e. 1320 Hz. The fourth overtone sounds a perfect fifteenth at a frequency four times the fundamental, and so on ad infinitum. This pattern is depicted visually in Figure 1. What is important to note is that all of these higher frequencies sound at the same time, just at lower and lower amplitudes as the overtones get higher (Wannamaker 99). Modern pianos use equal temperament, and is the tuning system to which Western listeners are accustomed, but the harmonic series actually follows the mathematical structure of tuning.

FIGURE 1: HARMONIC SERIES



*Harmonic series musically notated with F1 as the fundamental. The numbers above each harmonic indicate the magnitude and direction of cent difference relevant to equal temperament at which each harmonic sounds from: Wannamaker, Robert. "The spectral music of James Tenney." Contemporary Music Review, Vol. 27, 2008, pp. 99*

When playing an A4 in concert pitch on a clarinet versus, for instance, a saxophone, one is playing the same fundamental of 440 Hz, but what makes these two instruments' timbres differ is the relative amplitude of the certain overtones produced when sounding that fundamental A4. The cylindrical structure of the clarinet dampens the even-numbered harmonics, whereas the conical shape of the saxophone allows for those even harmonics to be amplified, giving the saxophone a denser timbre. The voice is no different from these instruments: each voice gets its unique timbre from the different overtones it produces, but overtone and throat-singing take advantage of those generated harmonics within the voice. In overtone or throat-singing, the mouth is manipulated into different shapes by the singer, using different formant placement to amplify certain overtones in the harmonic series, while sustaining the fundamental pitch. Formants are mouth shapes generally used to generate different vowels in speech, but are also used in overtone singing as a filter to dampen the unwanted harmonics while singing (Levin & Edgerton 82). With a general understanding of how throat-singing is generated, one can begin to ascertain the role the musical structure will play.

Polyphonic singing is actually quite a general term. In analyzing the Latin roots that make up the word, “poly” means more than two or many, and “phon” means sound. In sum, “polyphonic” means many sounds. By adding singing to the word polyphonic, it then refers to singing techniques which produce more than one sound. This can be achieved in one of three main ways. First, the performer simply sings and then begins to whistle at the same time, so most do not even mention it when referencing polyphonic singing. Subharmonic singing is the second and most difficult method, which requires the controlled vibration of different sphincters in the larynx depending upon the style of subharmonic singing used, whether it be strohbass,

kargyraa, or growl singing (Ken-Ichi 1). The third and most popular method has performers first sing and then manipulate their mouths, which is the vocal resonating space, to amplify certain frequencies of the harmonic series. When polyphonic singing is discussed, the two most common genres are overtone singing and throat-singing. Overtone singing, a Western musical practice, solely uses the third polyphonic singing method of harmonic series manipulation to generate the second tone. Throat-singing uses the harmonic series in addition to certain styles that also incorporate subharmonic singing.

Musical structure is a telling attribute indicating certain values of a culture. In countless cultures, pentatonicism reflects a recurring scalar pattern seen in musical structure. The pentatonic scale comes in a variety of different forms, but it consistently entails up to only five unique pitches. In contrast, the Western system is predominantly diatonic, using seven unique pitches and possessing a set interval structure. A popular example of pentatonicism that is well known can be noted in the popular spiritual “Amazing Grace”. However, pentatonicism, while not exclusively Asian, is typically associated with Asian cultures, fittingly for this case. Tuvan throat-singing is no exception to the pentatonic tonal tendency, which can be heard in the harmonic pitches most frequently used in the melodies they generate. The overtones most commonly isolated together in Tuvan throat-singing melodies are the 6th, 7th, 8th, 9th, 10th, and 12th harmonics, carefully avoiding the 11th harmonic. This makes a pentatonic pattern, since the 6th and 12th harmonics are the same pitch an octave apart (Levin Grove). Importantly, of those harmonics, the majority of melodies use the 7th quite sparingly (Levin and Edgerton 87).

Western music theory further supports the aesthetically pleasing pentatonic patterns that these throat-singing melodies tend to follow. By analyzing the intervals of each of these harmonics relative to the fundamental sound, mostly pleasant, or consonant, intervals are observed (Clendinning & Marvin 106). Using *Figure 1* as reference for this discussion (for simplicity all intervals will be presented within a single octave), the 6th harmonic is described as a perfect 5th (P5) from the fundamental, it would really be a perfect 19th. Building sequentially from that P5 generated between fundamental and the 6th harmonic, one hears a minor 7th (m7) for the 7th harmonic, an octave for the 8th harmonic, a Major 2nd (M2) for the 9th harmonic, a M3 for the 10th harmonic, and another M5 for the 12th harmonic. Aside from the m7, which is created by the 7th harmonic that is the least frequently used in this pentatonic group, each of the previously mentioned intervals are among the most commonly used in all modern Western music. While not a direct correlation, the popularity of these intervals in Western culture is predominantly due to the positive emotional associations we have with them.

Looking from the opposite perspective of harmonics that are avoided in these Tuvan melodies, such as the interval generated by the 11th harmonic being a tritone as well as the m7 generated by the 7th harmonic, one can justify why these singers choose to shy away from these tones. The tritone in Western music is often referred to as the devil's interval due to its unpleasant sonority, and a m7 is not much better (Clendinning & Marvin 107). Taking Western analysis one step further, in the context of equal temperament, the instability of the 7th and 11th harmonics can be further substantiated. As mentioned previously, the harmonic series does not follow the equal temperament tuning system to which Western ears are accustomed. As a result, the 7th harmonic falls 31 cents flat of the pitch that

would make the interval between the fundamental and this harmonic a true m7, and the 11th harmonic falls 49 cents flat of the pitch that would make the interval between the fundamental and this harmonic a true tritone (Figure 1). In the equal temperament system, there are 100 cents between each semitone, therefore being 50 cents away from a semitone is the most out of tune any pitch can be because it falls a quarter tone away, or halfway between two semitones. Therefore, the 7th and 11th harmonics are so far flat that even an untrained ear can hear how the intervals they create sounds mistuned and unpleasant.

For perspective, when looking at the preferred harmonics in the pattern none of them falls more than 14 cents away from their respective semitone, which is a frequency variation that is imperceptible to most untrained ears. Rigid Western musical analysis can only reveal so much about this ancient musical style. Throat-singing was created long before the rules of Western musical theory had even been defined; therefore, analyzing the mode of transference can elucidate more about the cultural impact on this polyphonic style.

Aside from its pentatonic nature, most throat-singing tunes have a character similar to folk music in that they are transmitted orally, are unique to the culture, tell tales of nature, and are constantly evolving with time through oral tradition. In fact, due to the lack of rigid form, the freedom of throat-singing compositionally facilitates a highly improvisational nature (Tongerren 67). Performance in many cases often requires original creation on the performer's part since there is not an extensively documented common repertoire. There are also extended pauses of up to 30 seconds in throat-singing, which is strange to a Western ear since one might think that these divide the unitary musical melody. However, Tuvan performers do not see each phrase as belonging to one overarching musical idea, but rather each phrase is its own

original sonic portrait and the phrases can interact with one another. Aside from allowing the performer to catch his or her breath, a major purpose for the pause is for the performer to listen to the ways in which the past phrase is interacting with nature and ambient sound (Levin & Edgerton 87). The performer then uses that preceding sonority to formulate a response in his or her next phrase, once again conveying the focus of the spiritual connection to nature in a format comparable to a conversation, where the performer is waiting for nature to respond in those breaks.

When it comes to familiarity, throat-singing is the norm in Tuvan culture and is so common that it is held with the same regard as Western modal singing. As such, children are fascinated by it at early ages, but quickly get used to its prevalence as they move into adulthood (Tongerren 57). Unlike Western trained musicians, throat-singing teachers in Tuva use a very hands-off, non-detail-oriented approach. Clearly it is quite effective since some children are able to produce the khöömei voice by two years of age, but generally the student learns almost exclusively by watching and listening to a teacher sing, receiving very little direct technical instruction (70). Their hands-off approach is due to their lack of a formally defined musical teaching style. Music is taught by imitation of an experienced singer, and the little guidance received is through word of mouth. After a demonstration, the “teacher,” who would be more of an elder singer providing an example as a Western student might see it, would likely say “You see,” meaning the student should gather all they need just from listening to the master (Tongerren 70). This exposes the role of mimicry in this society as seen not only in the music, but in the pedagogy of throat-singing. Looking at the Tuvan word *chylandyk*, which are the first sounds made by children when they are attempting to produce the khöömei sound through imitation of an elder



singer, the mimicry learning practice can be seen (Tongeren 69). Still, it is intriguing that students do not really master their voices until their late teens to early twenties. For instance, at age 13, children are able to produce the harmonics of sygyt voice but cannot control the fundamental or the specific harmonic pattern desired.

Even the concept of musicality in Tuvan culture is foreign in comparison to the accepted Western conception of the idea. In fact, Tuvan culture does not even have a word for music that equates to the Western term, but rather refers to the idea of music as the sounds of their world that they are in turn offering back to the world itself (Levin NPR Podcast). In addition, there are no set words for drone or overtone like there are in Western culture, which is surprising due to the fact that these musical constructs are fundamental to the production of their throat-singing style (Tongeren 71). Tuvans developed an understanding of these ideas by practicing the techniques themselves. Each performer embarking on his or her own journey comes to a personal perspective of what these sonorities mean to him or her individually. Generally, they are using their musical performances as a means to connect spiritually with nature. Creative skill comes predominantly from intuition and experience with the throat-singing style, not a detail-orientated anatomical understanding of what they are producing from their throats, or how to notate the melodies they produce. This is partially the reason why research delving into understanding their unique polyphonic voices is not extensively documented. As the structural form of Tuvan throat-singing developed, different unique voices became integral to the practice.

While there is a plethora of different unique Tuvan throat-singing styles, three main voices make up the fundamental core of the average Tuvan throat-singing performer. They are khöömei, sygyt, and kargyraa (Tongeren 64). As with most polyphonic singing, the

fundamental is maintained in the voice as a pedal tone while harmonic manipulation generates the melody (31). Khöömei is the main style that is the easiest to learn, similar to Western overtone singing, and is sung in the midrange of the voice generating the lower overtones in the harmonic series, meant to mimic the sound of wind swirling around rocks. Sygyt is sung in the upper part of the vocal range generating high overtones often described as flute- or whistle-like meant to emulate the nature of a breeze or bird song. The third style, kargyraa is the most technically unique form, generated in a completely different manner than the previous two voices. It produces a low subharmonic fundamental frequency meant to ground the singer to the earth, generating a harmonic-rich tone, and producing lower harmonics.

Some musicologists argue that there are two more core voices called borbangnadyr and ezenggileer, but these are more ornamental techniques that can be used in conjunction with one of the other three main voices -- generally khöömei or sygyt -- to produce unique musical effects (66). Borbangnadyr is used to mimic the sound of rushing water, and ezenggileer is meant to emulate the sound of a cantering horse, demonstrating how throat-singing is meant to further a connection with nature. Aside from the main three throat-singing voices, there are endless sub-techniques due to different regional technical approaches, and partially due to many famous throat singers generating their own styles of throat-singing to differentiate themselves, thus making their timbre unique and desirable (Pegg Grove). Kargyraa, for example, has two different substyles, with dag-kargyraa the lower one and xov-kargyraa the higher one, and they are referenced as mountain and steppe kargyraa, respectively. A technical appreciation for each style can cement a link to the purpose of throat-singing in Tuvan culture and how polyphonic singing is generated.

Technical production of these core voices, seems easy when watching a professional, but can take years to master. The main aspect that separates Eastern throat-singing from Western overtone singing is the use of the squeezed voice technique that allows for airflow control (Cope 36). Aside from giving throat-singing its unique timbre, the main purpose of the squeezed voice is to amplify the harmonics by limiting the backflow of the sound from reverberating into the throat. The khöömei voice is essentially creating the same resonating space in the mouth cavity as in Western overtone singing while also performing the squeezed voice technique, which is why this is the most simplistic of the main voices (36). Of the remaining two styles, there is much debate over which is more difficult, but each presents its own unique challenges. Sygyt uses the same squeeze voice technique as khöömei while using the tongue to filter out the lower overtones and isolating the high piercing harmonics. This is done by placing the tip of the tongue against the upper gum right above the front teeth, having the sides of the tongue pressed against the upper gums relative to the molars on each side, and then using the rest of the tongue to block the opening between the mouth and the throat, leaving a small opening on either side of the mouth so a very limited airflow is allowed to pass (Levin & Edgerton 82).

By doing this, the resonating space where the harmonic is generated has been made smaller, allowing for the higher harmonics to sound; changing the position of the middle part of the tongue allows for different harmonics to be elicited. The most skilled sygyt singers can come close to eliminating the fundamental frequency altogether, really isolating the whistle harmonics. As mentioned previously, the fundamental in kargyraa throat-singing is created in a completely different way than in the other two voices. The placement of the voice is close, but slightly farther forward than vocal fry. Here the subharmonic fundamental is

generated by getting both the ventricular and vocal laryngeal folds vibrating concurrently using a constant glottal push, whereas in the previous two voices just the normal vocal folds have been vibrating (Ken-Ichi 2). In this technique, since both of these resonating structures are vibrating at the same time, two tones are already being produced. The ventricular folds actually generate a pitch that is half the resonating frequency of the normal vocal folds; thus the two pitches are an octave apart (1). Once this base phonation is achieved, the formants can be manipulated in the mouth to generate different overtones, thus with this style, there are actually at least three tones produced at a time. As such, awareness of the cultural development of polyphonic techniques is revealed.

Polyphonic singing has developed in a myriad of different cultures worldwide, so by focusing on its inception in the Tuvan culture through a technical analysis of their throat-singing techniques, the purpose for polyphonic singing in other cultures can be extrapolated. Cultures world-wide use music to connect to nature. This is a key motivation of Tuvan throat-singing, highlighting different elements of their environment in the multitude of voices they use to emulate different aspects of nature. Certainly, different cultures use the polyphonic techniques for different applications other than the appreciation of nature; however, what is important to note is that by understanding how the technique is performed within a historical context (whether Western, South African, or Central Asian), purpose can be derived. Not all cultures developed a polyphonic method of singing, but thanks to the innate versatility of the human voice, singing is universal to all human musical cultures, linking us closer across this vast world.

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**The Impact of *Ziglar v. Abbasi* (2017) and the Rights of  
Non-Citizens  
Brooke Winters (CLA 2019)**

**Abstract**

This paper examines the recent Supreme Court case *Ziglar v. Abbasi* (2017) and considers the impact of the Court's ruling on future damages cases in the aftermath of state abuses of power. Deconstructing the previous *Bivens* precedent, *Ziglar v. Abbasi* denied six non-citizens their damages claims after they had suffered severe abuses in a Brooklyn detention facility in the early aftermath of September 11th. The *Ziglar* decision abdicated the Court of any responsibility in damages from the post- September 11th period, deferring the issue to Congress due to national security concerns. Using frameworks from political theorists Derrick Bell, Leti Volpp, and David Cole, as well as a discussion of the Court's ruling by Garret Epps from *The Atlantic*, this paper argues that the denial of these men's damages claims stems from racial and religious biases within the U.S. This paper also emphasizes growing concerns about the deterioration of constitutional rights in the name of national security. These issues should be a concern for both non-citizens and citizens in the United States.

*Ziglar v. Abbasi* (2017) is a recent and important case in which the Supreme Court gutted the precedent set by the Warren Court in *Bivens v. Six Unknown Narcotics Agents* (1971). *Ziglar* deals with how the Court handles damages claims in the face of constitutional rights violations by federal officials. It answers if and when to apply ‘new context’ in cases in which federal officials have violated an individual’s constitutional rights. To understand the Court’s decision to rule against the plaintiffs’ damages claims when their rights were clearly abused, and race, religion, and citizen versus non-citizen must be taken into account. To understand the Court’s decision to gut the *Bivens* precedent, the dynamics of race, religion, and the diminishing rights of non-citizens in the face of a national security threat must be analyzed. This analysis also furthers the understanding of future significant consequences of the ruling. *Ziglar* demonstrates the Court’s prioritization of national security and the protection federal officials over constitutional rights.

In *Ziglar v. Abbasi* (2017), the plaintiffs, six non-citizen detainees of “Arab or South Asian descent,” were held in a Brooklyn federal prison after being arrested for immigration violations during FBI investigations of various tips in the early aftermath of the September 11th terrorist attacks (*Ziglar v. Abbasi*, 137 S. Ct. 615, 1). The six men in this lawsuit were unconnected to any terrorist activities but were held for periods of 3 to 6 months, depending on the detainee. The detainees were subjected to 23 hours of solitary confinement, to 24 hours of lights on in their cells, physical abuse, which included broken bones, verbal abuse such as insulting their religion and making sexual comments, and strip searches. The legal issues at hand in this case were that the detainees claimed that federal officials violated their Fifth Amendment rights to due process and equal protection due to their apparent race, religion, or national origin. They also claimed that the



frequent strip searches were a violation of their Fourth Amendment right, that the wardens at the facility allowed the guards to engage in this abuse, an additional violation of their Fifth Amendment rights, and that there was a conspiracy among officials to treat them in this manner due to their assumed race, religion, and national origin.

To understand the detrimental impact of the *Ziglar* ruling, one must understand the significance of the precedent set by *Bivens*. In the *Bivens* case, the Court states that the “[p]etitioner's complaint alleged that respondent agents of the Federal Bureau of Narcotics, acting under cover of federal authority, made a warrantless entry of his apartment, searched the apartment, and arrested him on narcotics charges” (*Bivens v. Six Unknown Narcotics Agents*, 403 U.S. 388). Additionally, Bivens “claimed to have suffered great humiliation, embarrassment, and mental suffering as a result of the agents' unlawful conduct,” which consisted of threatening “to arrest...his entire family...[conducting] a visual search of his private parts...[and] causing Bivens ‘great humiliation, embarrassment, and mental suffering’” (*Bivens v. Six Unknown Narcotics Agents*, 403 U.S. 388, Pfander 5). James E. Pfander underscores the importance of the *Bivens* decision in his article *The Story of Biven*, which discusses the two different interpretations of the case. The first of those interpretations is that the Court intervened to secure constitutional rights “on behalf of an individual for whom damages represented the only available remedy” (Pfander 4). As Justice Harlan put it, “for people in Bivens’ shoes, it’s damages or nothing,” seeing as there was no evidence that would require suppressing under the Fourth Amendment (4). Pfander describes that in *Bivens* “the issue was ‘merely’ whether the plaintiff can show injury consequent upon the violation of his Fourth Amendment rights” and not the “government’s submission that a showing of necessity was required to sustain the action”

(11). The Court also needed had to determine if Congress or the Court were the right body to determine redress issues. They ruled in a 6-3 decision that the issues at hand in the case were under the Court's jurisdiction and that Bivens was entitled to compensation for federal officials violating his rights. This interpretation set the precedent. The dissenting interpretation is that *Bivens* represents an overreach by the Warren Court, which some some Justices view as "outdated and ripe for reconsideration" (Pflander 4). The precedent set by *Bivens* has been gutted by the *Ziglar* decision in favor of the second interpretation.

In *Ziglar*, the Court needed to determine if the detainee's claims for compensation against federal officials were applicable under the precedent set by *Bivens*. In a 4-2 decision, the Court ruled that *Bivens* does not apply in this case because it was a new context case. They reasoned that the Court operates under a different ideology than when *Bivens* was decided. The opinion of the Court states that "during this 'ancient regime...the Court assumed it would be proper judicial function to 'provide such remedies'" during a compensation case for constitutional violations (*Ziglar v. Abbasi*, 137 S. Ct. 615, 8). To support their reasoning of a new Court ideology, the Court applied a two-part test to determine if *Bivens* would apply. This two-part test created the new context precedent. The first question was to ask whether or not the same constitutional issues were at hand in *Ziglar* as they were in *Bivens*. The second question to ask was whether "the mechanism of injury was the same mechanism of injury in a previous *Bivens* case" (*Ziglar v. Abbasi*, 137 S. Ct. 615, 15). The Court states that "[i]n the present suit, respondents' detention policy claims challenge the confinement conditions imposed on illegal aliens pursuant to a high-level executive policy created in the wake of a major terrorist attack on American soil. Those claims bear little resemblance to the three *Bivens* claims the Court has

approved in the past,” establishing *Ziglar* as a new context case (*Ziglar v. Abbasi*, 137 S. Ct. 615, 16-17). Since the Court determined it is a new context case, they then needed to determine whether or not the Court or Congress was the appropriate body to deal with compensation claims. Regarding this, the Court again shows a deference to national security in its opinion. The ruling states that “respondents’ detention policy claims challenge more than standard ‘law enforcement operations’...They challenge as well major elements of the Government’s whole response to the September 11 attacks, thus of necessity requiring an inquiry into sensitive issues of national security,” which the Court asserts are the prerogative of the President and Congress, not the Court (*Ziglar v. Abbasi*, 137 S. Ct. 615, 19). The Court concludes that because Congress has not acted to give the plaintiffs monetary compensation for their treatment, the Court is not in the power to do so. Furthermore, the Court ruled that a “reasonable officer in the petitioner’s position” would not be aware that the actions taken regarding prisoner abuse were “an unlawful conspiracy,” showing deference toward federal officials in the context of constitutional violations when national security is involved (*Ziglar v. Abbasi*, 137 S. Ct. 615, 33).

The rejection of an application of *Bivens* to *Ziglar v. Abbasi* represents a shift away from the Warren Court ideology, out of a deference to both federal officials and Congress. It is a decision that will have significant consequences. Justice Breyer, who issued a strong dissent, argued against this deference to national security. He stated that “[h]istory tells us of far too many instances where the Executive or Legislative Branch took actions during time of war that, on later examination, turned out unnecessarily and unreasonably to have deprived American citizens of basic constitutional rights” (Epps). Breyer further went on to make an explicit connection to *Korematsu* (1944), the case which dealt with Japanese-American citizens and Japanese

immigrant non-citizens who were detained without valid reason in World War II in the name of national security. Breyer states that “[t]he pages of the U.S. Reports themselves recite this Court’s refusal to set aside the Government’s World War II action removing more than 70,000 American citizens of Japanese origin from their west coast homes and interning them in camps—an action that at least some officials knew at the time was unnecessary” (Epps). *Korematsu* reflects another case of the Court deferring to state action in a time of war. Breyer’s turn to this case to neglect constitutional rights during a national security crisis was poorly addressed. Gutting *Bivens* in the name of national security post-9/11 ignores egregious patterns of rights abuses sanctioned by the Court throughout history. The *Ziglar* decision was detrimental because it created a precedent for denying compensation in the face of rights abuses for both non-citizens and citizens.

*Ziglar v. Abbasi*’s impact is that it further diminishes non-citizen pathways to seek compensation for violations of their constitutional rights. The issue at hand here is the deconstruction of the *Bivens* precedent through this case. This puts non-citizens at further risk of having their constitutional rights abused in detention centers. Furthermore, the Court creates a precedent to deny compensation claims in future abuse cases in the context of both future non-citizen and citizen cases of damages claims. It prioritized U.S. national security over rights preservation in order to validate the U.S. response to the September 11th attacks. In David Cole’s article *Their Liberties, Our Security: Democracy and Double Standards*, he discusses how the denial of non-citizen rights is an issue that is written off because those whose rights were denied were Arab men. As Cole argues, the U.S. has struck “an illegitimate balance, sacrificing the liberties of noncitizens in furtherance of the citizenry’s purported security,” while in reality, this ‘divide’ that protects citizen rights from

being trampled by national security is not as definitive as it is made out to be (Cole 292). Cole addresses the justifications for this double with three arguments. Firstly, constitutional rights such as due process and equal protection under the law apply to “all persons” and not just citizens (292). Secondly, by undermining non-citizen rights and ‘protecting’ citizen rights, the U.S. “compromises our legitimacy” domestically and internationally (292). Lastly, the erosion of non-citizen rights creates precedents for how it handles citizen rights cases. These were the issues at hand in *Ziglar v. Abbasi*.

Preventative detention using immigration laws to hold Arab men in the early post September 11th aftermath sets a dangerous path going forward, a path that Cole critiques in his work. He states that “the vast majority of the detainees...held on immigration charges, have been tried in proceedings closed to the public, the press, legal observers, and even family members” and that if these circumstances had been seen in a different country, “we would not hesitate to call the detainees ‘disappeared’” (294). As Cole emphasizes, the Constitution does not allow for people to be imprisoned for investigative purposes (295). Additionally, by detaining non-citizens under immigration violations, Cole states that “[w]hen a foreign citizen agrees to leave, there is no legitimate immigration purpose to keep him detained. Yet many non-citizens have remained in custody for months while the FBI investigates them and are allowed to leave only after the FBI clears them” (295). Using immigration statutes to detain non-citizens as a preventative and/or interrogative measure for terrorism prevention is not within the scope of powers of the U.S. Constitution. Yet, the rejection of non-citizens’ rights allows national security to take priority over civil liberties. This is a major impact of *Ziglar v. Abbasi*, as the compensation claim against federal officials for rights

violations was denied despite acknowledgement of terrible conditions within the Court's decision.

Although this case will have a significant impact in future cases, it received very minimal popular news outlet coverage. A search on Google News from February 13th, 2018 for "*Ziglar v. Abbasi*" brings up only 192 results, some of which are from SCOTUS blogs that reach a limited niche audience and some from larger news outlets like *The Washington Post* or *The Economist*. This limited coverage reflects a lack of concern from the general public about the issues at hand in the case. Why did such egregious rights abuses go so significantly underpublicized? That Arab and Muslim men were at the center of this case played a role in why the abuse of rights went under-noticed.

Derrick Bell's work in Critical Race Theory sheds light on the role of race and its impact in the case. Bell's work asserts that law is not neutral in regards to how people of different races are treated. Derrick Bell coins the term 'racial realism' to show "how law is used to preserve a status quo regarding the oppression of Blacks and other people of color" (Adams 124). In his work *Who's Afraid of Critical Race Theory?*, he discusses the backlash over a bill in Florida that would have provided compensation to black victims of the KKK from over 70 years prior. The KKK destroyed a black community by "murdering, raping, pillaging, and finally burning all the property in sight" (1995 U. Ill. L. Rev. 893 1995). The compensation bill never came to fruition because "[s]tate officials who opposed the measure noted that the statute of limitations had expired, and that 'compensation would be 'bad for the county and bad for our state' because it would encourage similar claims'" (1995 U. Ill. L. Rev. 893 1995). The rejection of compensation from this case and in *Ziglar* are rooted in the prioritization of the state's image and the state's security. Bell makes it clear that the state of Florida, was concerned with preserving their image, denying the

damages claim at hand, and preventing future damages claims down the line. Concern for the state's image and the prevention of future damages claims played roles in *Ziglar*. Looking at *Ziglar v. Abbasi*, it is apparent that racial and religious biases were the foundational reasons for the men's arrests, just as racial biases influenced the lack of action in Florida regarding black victims of the KKK. In *Ziglar*, their mistreatment included withholding Korans and taunting them while they prayed (Epps). Their arrests and treatment were fueled by xenophobic sentiments in the early 9/11 aftermath. It is not a coincidence that *Bivens* was gutted when those seeking damages were men of Arab descent.

The question of racial and religious discrimination must be examined in conjunction with that of citizenship status. In Leti Volpp's *The Citizen and the Terrorist*, she argues that "September 11 facilitated the consolidation of a new identity category that groups together persons who appear 'Middle Eastern, Arab, or Muslim.' This consolidation reflects a racialization wherein members of this group are identified as terrorists, and are disidentified as citizens" (Volpp 1576). The coded identification of 'Middle Eastern or Muslim' acts as both an us-versus-them divide and a clear example of the intersection of race and religion as the basis for exclusion. This divide acts as the grounds for denying these groups their constitutional rights. While Volpp's work focuses on the relationships between race, religion, and citizenship, her work is even more applicable so to the marginalization of non-citizens, who are further at risk of suffering state abuses. Volpp makes reference to the detention of the *Ziglar* detainees in her work when describing the rise of racial profiling after September 11th. She asserts that "the majority were identified to the government through suspicions and tips based solely upon perceptions of their racial, religious, or ethnic identity" (1578). Volpp also writes that "[t]hose individuals who are noncitizens--currently being

interviewed, deported, and detained---are made even more vulnerable by their noncitizen status and the power of immigration law to control their fate” (1598). Drawing on Volpp’s work allows us to see how the creation of the ‘Middle Eastern, Arab, or Muslim’ identity has been used to exert racial profiling since September 11th. Those who are ‘Muslim looking’ are the target of state racial profiling. The additional factor of being a non-citizen increases the level of denial of one’s rights. Furthermore, this increase in the state’s racial profiling has an increased adverse effect on non-citizens, who are easily detained under immigration law and more prone to being the target of state abuses. The Court’s decision to deny the *Ziglar* detainees compensation illustrates this point.

In addition to rights deterioration, Garret Epps from *The Atlantic* discusses the implications of the case in the context of the Trump administration’s policies. Epps argues it is “impossible to read this case as simply a dispute about events now nearly a generation in the past,” as the Court’s decision cast doubt upon “whether a court should second-guess *any* administration if plaintiffs seek ‘an inquiry into sensitive issues of national security [that are] the prerogative of the Congress and President’” (Epps, emphasis original). Epps connects a refusal to question an administration to the Trump administration’s current controversial travel ban. He goes on to critique the language of Kennedy’s decision, writing that “[his] language...betrays acute anxiety about holding high officials responsible, since ‘high officers who face personal liability for damages might refrain from taking urgent and lawful action in a time of crisis. And ... the costs and difficulties of later litigation might intrude upon and interfere with the proper exercise of their office’” (Epps). Epps points out that labeling the actions as ‘lawful’ is questionable at best, seeing as the reported and acknowledged conditions of these detention centers clearly



indicate civil rights abuses. Moreover, Epps expresses a concern that this case will be used as precedent for future cases in which detainees seek damages under similar contexts of national security.

*Ziglar v. Abbasi* sets a dangerous precedent for future cases of constitutional rights violations damages cases. Despite a clear abuse of both the plaintiffs' rights and immigration laws, the Court ruled in favor of the federal officials. The Court removed itself as the branch responsible for deciding damage claims for rights violations. Instead, the Court left this responsibility to a Congress who would never grant these plaintiffs damages for the severe rights violations they endured. The denial of rights to non-citizens is an understudied but important dilemma. As Bell and Volpp's works emphasize, law is not neutral in the face of race or religious identity, and the biases against men perceived to be Arab and/or Muslim in the aftermath of September 11th played a significant role. *Ziglar* represents a concerning deconstruction of the *Bivens* precedent. With national security viewed as grounds for new context and the growing invocation of national security to justify a scaleback of constitutional rights, it is reasonable that the future of due process and equal protection rights claims will grow more uncertain in the expanding War on Terror.

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**“With them I can create a new world!:)” The Teaching  
of Nazi Morals in the Education of Boys in Nazi  
Germany  
Kelly Duddy (CLA 2019)**

**Abstract**

This paper studies the education of boys in Nazi Germany. It argues that education moralized Nazi ideals such as Aryanism, anti-Semitism, and dehumanization. The paper analyzes primary sources from students and teachers who lived through this period, including Ziemer, Heck, and Mann. These documents offer insight into the curriculum, how it was taught, and how it affected students. Photographs and propaganda are used to show the type of education the Nazi Party encouraged. The paper contributes to the historiography of Nazi education, a field in which there is limited research. Studying education through an analysis of morality provides a more nuanced perspective into why young Germans so ardently supported Nazism. This research is important because it enables historians to learn more about how radical education affected the aggressive behaviors of children.

The Third Reich is one of the most infamous regimes in history. Even today, people question how the atrocities of the Holocaust could have occurred. Former Hitler Youth member, Alfons Heck, explains that his belief in Nazism began with his education. Former school director, Gregor Ziemer, concurs that in Nazi Germany indoctrination began when children were very young, starting in pre-school.<sup>1</sup> Educating children also could have affected their parents, because the Gestapo were known to use children to test adults' loyalty to the Nazi party.<sup>2</sup> Therefore, some parents resisted telling their children that the material learned in school was morally wrong for fear that the Gestapo would kill them and/or their children.<sup>3</sup> The Hitler Youth were the *Führer's* biggest pride.<sup>4</sup>

Children trained to be soldiers throughout their lives, and schools attempted to form their belief system, rooted in the concept of "blood and soil"—the doctrine that prioritized Aryanism (blood) and Germany (soil), even over their own lives. In order to protect their precious "blood and soil," German children were taught that they must fight the worst enemy—Jews, because Jews were to blame for all problems in history, current crime and suffering, and the future deterioration of the human race.<sup>5</sup> Pedagogy in Nazi Germany was organized to teach Nazi morals of Aryanism and anti-Semitism throughout various subjects in the Nazi curriculum, including racial science, German history, and even mathematics. Since morals are defined as standards of behaviors, the development of Nazi morals in boys had a direct effect on their judgment of right and wrong and their behaviors of dehumanization of the Jewish people.

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<sup>1</sup> Alfons Heck, writer. "Heil Hitler! Confessions of a Hitler Youth." In *Heil Hitler! Confessions of a Hitler Youth*, directed by Arthur Holch. HBO. 1991; Ziemer, 48.

<sup>2</sup> Ziemer, 44, 75; Teeling, William, "Youth on the Rhine: The Problem of the Saar", *Friends of Europe*, no. 15 (London: Friends of Europe, 1934).

<sup>3</sup> Mann, 15.

<sup>4</sup> Heck, 22.

<sup>5</sup> Pine, 42.

In order to prove the argument that Nazi indoctrination was moralized, this paper analyzes the experiences of educators and students living in Germany during the Nazi regime, as well as Nazi propaganda and teaching materials. According to accounts of former German educators and students, the portrayal of Jews in academic lessons was meant to affect the social norms of dehumanizing the Jewish people. This prejudicial portrayal of Jews seemingly intensified as students' education progressed. Ultimately, this paper attempts to provide a nuanced perspective on how Nazi education, specifically the indoctrination of the superiority of the Aryan race, in accordance with the social norm of anti-Semitism in the classroom, taught Nazi morals that moralized the belief that the eradication of the Jewish population was necessary for the success of the "proper" human race.

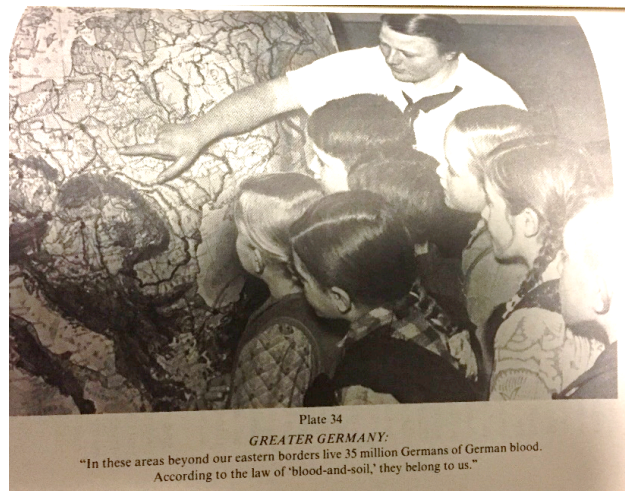


Figure 1: Greater Germany, Nationalsozialistische Deutsche Arbeiter Partei, 1942, Christa Kamenetsky, *Children's Literature in Hitler's Germany*, (Athens, OH: Ohio University Press, 1984), 125.



Figure 2: The teacher uses a racial chart, *Rassenkunde in der Volksschule*, *Neus Volk* 2, no. 7 (July 1934): 9/ RMBSCCL, Duke University. Claudia Koonz, *The Nazi Conscience*, (Cambridge: Belknap Press, 2003), 153.

According to Lisa Pine, many subjects in the Nazi curricula emphasized the ideal of “blood and soil.”<sup>6</sup> The education of ideals such as this instilled Nazi morals in boys that raised them to be fervent rather than simply obedient. In her work, *Education in Nazi Germany*, Pine studies the education of youth in Nazi Germany, specifically focusing on education policy, historical context, and the curricula of total education. She analyzes the new curriculum curated within the education system and how it reflected ideology, especially Aryan pride, race superiority, and the concept of “blood and soil.” Pine’s research cites specific examples of lessons on racial purity, anti-Semitism, and “blood and soil” in biology, physics,

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<sup>6</sup>Pine, 42.

chemistry, geography, history, mathematics, German, and racial studies. For example, as seen in Figure 1, Nazi propaganda showed that the Nazi Party wanted students to be seen studying “blood and soil” in geography, determining that the Aryans have the right to reclaim all the land that racially belongs to them. This teaching moralized Aryanism.

Similarly, Mathematics studied “national political problems”, such as calculations of bomb trajectories, the amount of funds that would be wasted on students with mental handicaps, and the percentage of Jews living in Germany.<sup>7</sup> In chemistry, students learned about “the nature of chemical weapons” and “the effects of poisons on human beings.”<sup>8</sup> These lessons moralized Nazi ideology, emphasizing the national need for the soldier mindset, the concept of survival of the fittest, and the discrimination towards Jewish people. Considered some of the most important subjects in school, biology and racial science introduced eugenics (the study of ways to improve genetics to better the human race) and craniology (the “study of the shape and size of the skulls of different human races”).<sup>9</sup> Figure 2 is another example of propaganda, depicting a lesson on racial science, for the Nazi Party wanted the public to know that racial studies were a crucial element of education. Pine says, “Whilst biology teaching did not propose overtly the policy of the genocide of the Jew, it did provide a legitimization of this policy.”<sup>10</sup> As Pine argues, this is a form of indoctrination of Nazi ideology, specifically “blood and soil.” These teachings were more than just the installation of obedience; it moralized

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<sup>7</sup>Pine, 51.

<sup>8</sup>Pine, 48.

<sup>9</sup>“Craniology.” Oxford Dictionaries | English. 2017. Accessed December 11, 2017. <https://en.oxforddictionaries.com/>; Pine, 42.

<sup>10</sup>Pine, 44.

Aryanism and anti-Semitism that led to a generation of Germans who fervently believed in them.<sup>11</sup>

In the study of education in Nazi Germany, scholars agree that the focus of Nazi curriculum was the indoctrination of Nazi ideals, such as anti-Semitism and Aryanism, in order to create a new generation of young German soldiers who were fervently obedient to Hitler and who dehumanized Jews.<sup>12</sup> While I am in agreement, my research suggests a new nuanced perspective: Nazi curriculum was more than just the indoctrination of ideals; it moralized by encouraging day-to-day conformity to the Nazi ideology. According to the Oxford and Merriam Webster dictionaries, *ideology* is systematic ideas about a social group or culture that forms the basics of political, economic, or societal policies and actions.<sup>13</sup> The distinction between ideology and morality is that *morality* is conformity to a system of moral law concerning good and bad or right and wrong behaviors.<sup>14</sup> Ideology is systematic and structural, whereas morality is conformity to this system. It is more of a focus on behaviors than beliefs. Therefore, in a sense, morality resides within ideology. My argument delineates that indoctrination of ideology was moralized, because these Nazi “morals”<sup>15</sup> were repeated

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<sup>11</sup>Pine, 42-49

<sup>12</sup>Pine, 140; Gregory Ziemer, *Education for Death: The Making of a Nazi*. (New York: Oxford Press, 1941), 193; Alfons Heck, *A Child of Hitler: Germany in the Days When God Wore a Swastika* (New York: Bantam Books, 1985), 27; and Erika Mann, *School for Barbarians: Education under the Nazis* (New York: Dover Publications, 1938), 20.

<sup>13</sup>“Ideology”. Oxford Living Dictionaries | English. 2018. Accessed March 16, 2018. <https://en.oxforddictionaries.com/>; “Ideology”. Merriam Webster Dictionaries | English. 2018. Accessed March 16, 2018. <https://www.merriam-webster.com/>; “Ideology”. Oxford English Dictionaries | English. 2018. Accessed March 16, 2018. <http://www.oed.com/>.

<sup>14</sup>“Morality”. Oxford Living Dictionaries | English. 2018. Accessed March 16, 2018. <https://en.oxforddictionaries.com/>; “Morality”. Merriam Webster Dictionaries | English. 2018. Accessed March 16, 2018. <https://www.merriam-webster.com/>; “Morality”. Oxford English Dictionaries | English. 2018. Accessed March 16, 2018. <http://www.oed.com/>.

<sup>15</sup>Defined as “standards of behaviors.” “Moral”. Oxford Dictionaries | English. 2017. Accessed December 10, 2017. <https://en.oxforddictionaries.com/>.



and modeled, encouraging aggressive<sup>16</sup> behaviors such as Aryan and anti-Semitic discrimination and dehumanization of Jews.

This ardent behavior of young Germans became the norm based on the Nazi morals taught in classrooms. The works of Erika Mann and Alfons Heck, authors who lived in Nazi Germany, support this thesis with examples of their experiences. Erika Mann, daughter of the celebrated novelist, Thomas Mann, authored *School for Barbarians: Education under the Nazis*. In her work, Mann interviews other Germans who also experienced the Third Reich, analyzes curricula, and incorporates her own personal experiences of Nazi culture. Mann argues that German youths were educated to become obedient soldiers of Nazism.<sup>17</sup> In one secret interview with the wife of a Nazi party member, the woman tells a story of a young Aryan boy dehumanizing a Jew even near his own death.

Mrs. M says:

Just after Hitler came in, they had an emergency operation, a little 'Aryan' boy with appendicitis. Peritonitis had begun; it was a matter of life and death, you see, and the Professor, who still held his post, was performing the operation himself. And in the silence of the operating room, deep under the anesthetic, the child began to scream, suddenly, shouting phrases cut so deep into his soul that they remained even during the death under ether. 'Down with the Jews!' he cried out, 'Kill the Jews, we have to get rid of them!' My husband [a Nazi physician who worked for the Professor] tells me that moment gripped him--the calm Jewish Professor, going steadily on with the operation, the knife not

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<sup>16</sup>Defined as “ready or likely to attack or confront.” “Aggressive”. Oxford Dictionaries | English. 2017. Accessed December 10, 2017. <https://en.oxforddictionaries.com/>. =

<sup>17</sup>Mann, 46, 115.

trembling, everything going ahead to save that screaming child. And, really, on the other side, a thing like that is far worse than any humiliation for a child, far uglier, more hopeless. It drives me mad to think that my son might ever be able to turn to death and murder in his sleep, because he had been taught to do so, and because I had no right to stop that teaching.<sup>18</sup>

This example shows how children were instructed in a classroom that normalized prejudice and murder for the benefit of humanity, and parents could not stop it. Thus, these children developed Nazi morals that caused them to do more than obey. This is an example of a child who believed in these morals, so much so that it infiltrated his subconscious and affected his behavior. Like Mann, Gregor Ziemer experienced first-hand the educational transformation of boys to soldiers through the moralization of Nazi ideals. Director of the American school in Berlin from 1928-1938, Gregor Ziemer's *Education for Death* recounts his experiences, specifically how he convinced the Minister of Education, Bernhard Rust, to allow him to observe classes from kindergarten through high school for both sexes in the Nazi schools in 1938. Part of his book analyzes the Nazi Official Teachers' Manual: *Education and Instruction, Official Publication of the Reich and Prussian Ministry of Knowledge, Education, and Nazi Culture*. Ziemer argues that education developed children into Nazi soldiers.

He also describes his experiences observing lessons on the power of Germany and racial purity. Ziemer recorded all the conversations and observations almost as soon as they occurred and only edited them after he left

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<sup>18</sup>Mann, 16-17.

Germany.<sup>19</sup> One of the lessons that Ziemer mentions in a primary level history class was “if Jews had stayed in Palestine, there would be no trouble in the world today.”<sup>20</sup> This is an example of an anti-Semitic moral, because the teacher blames the worlds’ problems on the Jews. Even in a kindergarten classroom, Ziemer observed children saying they will become soldiers and shoot Frenchmen for the *Führer*, but their teacher corrected them saying, “It may not be a Frenchman whom you will shoot, but German boys will grow up and become soldiers and then they will do what the Fuehrer says”.<sup>21</sup> No matter their age, students were taught these lessons with this soldier-mindset that encouraged violent behaviors. Ziemer says, “Hitler demands the bodies and souls of the German pre-school children.”<sup>22</sup> The use of the word “soul” is key, because education was more than just military training—it was the development of their souls, their morality (thus, their judgement of right versus wrong behaviors). Another moral the Nazi educators taught was Aryanism, and within that, survival of the fittest and racial purity. In a *pimpf* (boys ages 6-10) classroom, Ziemer sat in on a German lesson in which the students read a poem about refusing to show mercy. It read, “‘Please,’ begged the victim, ‘let me go, for I am such a little foe.’ ‘No,’ said the victor, ‘not all, for I am big, and you are small!’” The teacher used this fable to teach that Germany is like the predator; she is strong and cannot be merciful to the weak. Articulating this moral, the teacher explained to the class:

‘This struggle is a natural struggle. Life could not go on without it. That is why the Fuehrer wants his boys to be strong, so they can be the aggressors and

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<sup>19</sup> Ziemer, 5.

<sup>20</sup> Ziemer, Gregory, *Education for Death: The Making of a Nazi*. (New York: Oxford Press, 1941), 74.

<sup>21</sup> Ziemer, 51.

<sup>22</sup> Ziemer, 52.

the victors, not the victims. Life and nature respects only the strong and big. Germany will be strong.

The Fuehrer will make it so strong that it can go out and attack any foe the wide world over.<sup>23</sup>

According to Ziemer, this fable entertained the students and emphasized morals of survival of the fittest, mercilessness, and the strength of the Aryan race. According to philosopher and professor Jonathan Glover, these morals that came from the ideas of Nietzsche were integral to Nazi beliefs, especially the “rejection of Judeo-Christian morality of compassion for the weak.”<sup>24</sup> This replacement of compassion and merciful morals with those of Social Darwinism and Aryanism allowed for the moralization of discriminatory and aggressive behaviors.



Figure 3: German Survival of the Fittest Poster, Munich, 1938, United States Holocaust Memorial Museum Collection, (Washington, D.C., 2004).

Similarly, Figure 3 shows a poster from the 1938 racial science textbook, *Erblehre und Rassenkunde für die Grund- und Hauptschule*, by Alfred Vogel.<sup>25</sup> In the

<sup>23</sup>Ziemer, 67-68.

<sup>24</sup>Glover, Jonathan, *Humanity: A Moral History of the Twentieth Century*, (New Haven, CT: Yale University Press, 2000), 325.

<sup>25</sup>United States Holocaust Memorial Museum Collection, (Washington, D.C., 2004).

geography class that followed, Ziemer notes that the class discussed countries (like America) that were failing due to their “racial sins” and democratic governments. The teacher explained to the students that countries, especially the United States, were corrupt due to intermarriage and intermingling with Jews and Negroes. When asked to define democracy, students answered with definitions such as “A democracy is a government by rich Jews.” The teacher rationalizes these teachings by stating that the U.S. has the highest rate of unemployment in the world, so it is true that American democracy and racial sins are detrimental to the success of the nation. Not only does this lesson discourage the positive democratic morals such as equality and freedom, but the lesson also teaches the importance of blood purity and the corruption of Jews. This “legitimization” of the Nazi ideals further moralized Aryanism and prejudice.<sup>26</sup>

Through the system of total education, music class was also used for indoctrination purposes. In preschools, children under the age of six sing, “*Hurrah, hurrah, to the battle-front march we! With weapons, with tents, with helmets, and lance to kill the enemy!*”<sup>27</sup> This plants the importance of being a soldier and killing the enemy at the forefront of Germany’s youngest minds. Another nursery song sang of fervent obedience to the *Führer*. It went, “*We love our Fuehrer, we honor our Fuehrer, we follow our Fuehrer, until men we are; We believe in our Fuehrer, we live for our Fuehrer, we die for our Fuehrer, until heroes we are.*”<sup>28</sup> This nursery rhyme indoctrinates young minds with a mold of obedience and the Nazi moral of self-sacrifice. These two morals were increasingly stressed as students progressed through their education. For example, in a *Jungvolk* class (ages ten to fourteen), Ziemer observed

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<sup>26</sup>Ziemer, 68-70.

<sup>27</sup>Ziemer, 36.

<sup>28</sup>Ziemer, 48-49.

the boys singing, “Adolf Hitler is our savior, our hero. He is the noblest being in the whole wide world. For Hitler we live, For Hitler we die. Our Hitler is our Lord who rules a brave new world.”<sup>29</sup> This increases the level of ardor, because Nazism becomes their religion; Hitler is likened to God, and self-sacrifice becomes their ultimate goal; they *live and die for Hitler*. Morality is often associated with religion, and Nazism becomes German boys’ religions. Therefore, education moralized Nazi ideology.

Ziemer’s *Education for Death* reveals that Nazi education set the standard that students are meant to die for Hitler—that self-sacrifice should be their life goal.<sup>30</sup> Education that prepared students to be soldiers and instilled the Nazi culture mattered more than traditional education. I agree with Ziemer that education indoctrinated Nazi ideals, such as self-sacrifice for the state. However, I also believe that the focus was to develop a morality in boys that rationalized discriminatory and destructive behaviors.

The 1991 HBO documentary, *Heil Hitler! Confessions of a Hitler Youth*, features an interview with Alfons Heck, a figure often referenced by contemporary scholars. Alfons Heck, former member of the Hitler Youth, became a leader of a battalion at only sixteen years of age. In this interview, Heck describes some of his experiences growing up in Nazi Germany and the central role the Hitler Youth played in his life. Alfons Heck’s memoir, *A Child of Hitler: Germany in the Days When God Wore a Swastika*, published in the United States in 1985, recounts his memories growing up in Nazi Germany, especially his experiences moving through the ranks of the *Hitlerjugend* (Hitler Youth).

Heck tells how his education, even starting in elementary school, had an agenda centered on the idea of a master race and racial purity, as well as the retelling of

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<sup>29</sup>Ziemer, 120.

<sup>30</sup>Ziemer, 20.

history that claimed, “Jews made war on [Germany] for the past a thousand years.”<sup>31</sup> In the interview Heck explains the indoctrination of the Nazi values in the minds of the youth and how much Hitler appreciated the Youth, both of which caused the Hitler Youth to become, according to Heck, the most fervent believers in Nazism and the ones most willing to sacrifice themselves, even until the very end.<sup>32</sup> In his memoir, Heck states that childhood ended at age ten, when boys became “political soldiers of the Third Reich.”<sup>33</sup> He also describes that his anti-Jewish education exposed him to racial science and discrimination at a young age and ended his friendship with a Jewish peer.<sup>34</sup> His story reveals first-hand experiences of discrimination being normalized within the classroom setting.

It is important to note that Heck wrote his memoir roughly forty-five years after his experiences. Before the introduction, Heck gives a disclaimer, stating that since his experiences have occurred quite a while ago, he cannot confirm that every detail is accurate. However, he also adds that his narrative is how he experienced it, so it is essentially his autobiography.<sup>35</sup> Heck’s memoir provides a first-hand account of how defending the argument that the indoctrination of Aryanism and anti-Semitism framed Hitler’s plan to eradicate the Jewish population as a moral objective. Heck explains that after the introduction of the Nuremberg Laws of September 1935, his weekly racial science classes increased its focus on defining how Jews were alien compared to Germans.<sup>36</sup> Heck’s earliest memory of discrimination is of his teacher, Herr Becker, making Jewish students sit in a corner of the classroom called

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<sup>31</sup>Heck, Alfons, writer. “Heil Hitler! Confessions of a Hitler Youth.” In *Heil Hitler! Confessions of a Hitler Youth*, directed by Arthur Holch. HBO. 1991.

<sup>32</sup>Heck, Alfons, writer. “Heil Hitler! Confessions of a Hitler Youth.” In *Heil Hitler! Confessions of a Hitler Youth*, directed by Arthur Holch. HBO. 1991.

<sup>33</sup>Heck, *A Child of Hitler: Germany in the Days When God Wore a Swastika*, 1.

<sup>34</sup>Heck, *A Child of Hitler: Germany in the Days When God Wore a Swastika*, 157.

<sup>35</sup>Heck, *A Child of Hitler: Germany in the Days When God Wore a Swastika*, vii.

<sup>36</sup>Heck, Alfons, *A Child of Hitler: Germany in the Days When God Wore a Swastika*, 13.

Israel.<sup>37</sup> Later, when Jewish students were removed from the schools, Herr Becker affirmed, “They [the Jewish students] have no business being among us true Germans.”<sup>38</sup> In another similar circumstance, Heck describes how he was taught to despise the Jewish race and treat them as inferiors, as well as to believe in the *Führer* and the German cause more than life itself.<sup>39</sup> Written on the wall of Heck’s classroom was “The Jews are traitors to Germany and our misfortune.”<sup>40</sup> Although not direct orders to dehumanize and eradicate the Jewish population, these examples developed morals that legitimized anti-Semitism and Aryanism and in turn led to aggressive behaviors.

Heck blames his educators for his blind belief in the values of Nazism. He grew up knowing only the discriminatory beliefs of Nazism—even his parents feared teaching him right from wrong because the Gestapo used children to uncover adult resistance.<sup>41</sup> His teachers were the ones who formed his conscience and his worldview, and thus, from six years old, began deceiving him, affecting his mental development and allowing his natural naivete to stay with him as he entered adolescence. Towards the end of his memoir, Heck writes that he, a commander in the Hitler Youth, did not know that Hitler and the Nazis attempted to murder all the Jews.<sup>42</sup> I struggle with this claim because the majority of sources I have examined in this paper clearly articulate that education emphasized the destruction of the Jewish people.

As Hitler articulated in his speech, “The Racial Conception of the World”, “the crown of education is racial

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<sup>37</sup>Heck, *A Child of Hitler: Germany in the Days When God Wore a Swastika*, 13.

<sup>38</sup>Heck, *A Child of Hitler: Germany in the Days When God Wore a Swastika*, 14.

<sup>39</sup>Heck, *A Child of Hitler: Germany in the Days When God Wore a Swastika*, 13.

<sup>40</sup>Heck, *A Child of Hitler: Germany in the Days When God Wore a Swastika*, 27.

<sup>41</sup>Heck, Alfons, writer. “Heil Hitler! Confessions of a Hitler Youth.”; Heck, *A Child of Hitler: Germany in the Days When God Wore a Swastika*, 32 and 237.

<sup>42</sup>Heck, *A Child of Hitler: Germany in the Days When God Wore a Swastika*, 121.



consciousness.”<sup>43</sup> Therefore, many writers of educational pamphlets and textbooks prioritized racial purity in their curriculum.<sup>44</sup> For example, Dr. Von Leers, the Director of the Division of Foreign Policy and Foreign Relations of the German Institute for Policy at the time, wrote *History on a Racial Basis*, a small book used in German classrooms in the late 1930s. In his work, he states that race is central and discusses the racial interpretation of history. Von Leers writes about how history should be taught in the modern classroom, with a particular focus on the superiority of Aryanism. Von Leers concludes his short work with a recap of an anti-Semitic view of history. When used in classrooms, this book reinforced the Nazi morals of Aryanism and anti-Semitism, morals which encouraged behaviors of “race purification”, i.e. ethnic cleansing.<sup>45</sup>

Another author who wrote about how history should be taught was Dr. Wilhelm Rödiger, a teacher and a school director under Hitler. His *The Teaching of History*, published in 1937, was a handbook for teachers that was a compilation of his educational pamphlets, which was then published, printed, and distributed by Hitler’s Ministry of Education, to guide and instruct teachers on how history should be taught and what content should be included. For example, Rödiger includes topics such as Hitler as the historical figure most like Jesus Christ, the concept of “blood and soil”, and nationalism.<sup>46</sup> He also states that race should first be taught with emotion and then with reason.<sup>47</sup> According to the charismatic leadership principle, by focusing on an emotional delivery of Nazi ideals, students

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<sup>43</sup>Hitler, Adolf, “The Racial Conception of the World,” *Friends of Europe*, no. 37 (London: Friends of Europe, 1936), 17.

<sup>44</sup>Mann, 39.

<sup>45</sup>Johann Von Leers, “History on a Racial Basis,” *Friends of Europe*, no. 42 (London: Friends of Europe, 1936), 6-7, 20.

<sup>46</sup>Rödiger, Wilhelm, “The teaching of history: its purpose, material and method,” *Friends of Europe*, no. 57 (London: Friends of Europe, 1937), 13, 17, 34.

<sup>47</sup>Rödiger, 5.

were more likely to believe in these ideas more fervently, thus developing their morals based-off of them.<sup>48</sup>

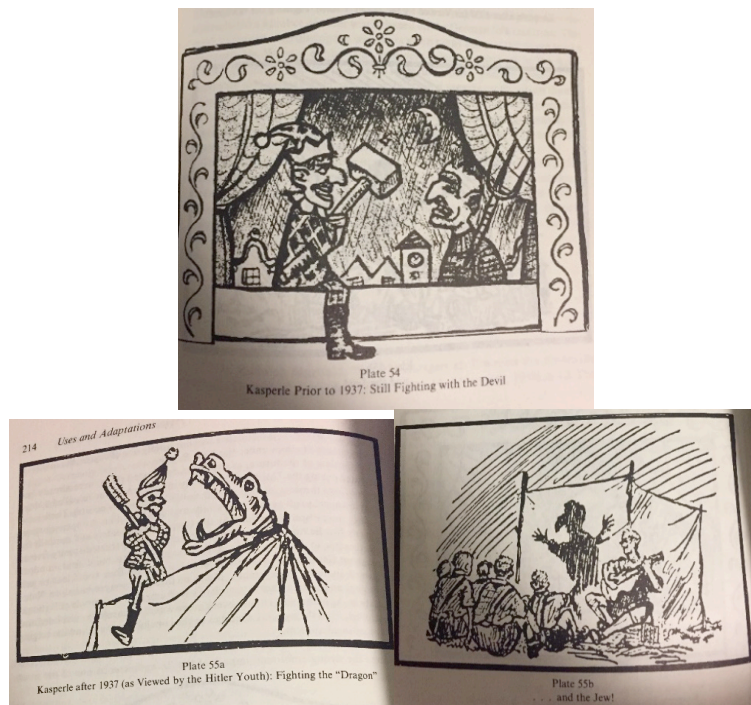


Figure 4: Von Drinnen und Draussen. Heimatifibel fur die Deutsche Jugend. Frankfurt, Dieswerd, 1942. Christa Kamentsky, Children's Literature in Hitler's Germany, (Athens, OH: Ohio University Press, 1984), 213-214.

In 1938, Ernst Hiemer, a German author, wrote *Der Giftpilz* or *The Poisonous Mushroom*, a story read in both classrooms and homes. This children's story also included illustrations, which "made the book more poisonous."<sup>49</sup> *The Poisonous Mushroom* is an example of widespread

<sup>48</sup>George Victor, *Hitler: Pathology of Evil*, (Washington, D.C.: Potomac Books, 2007) 100-102; Jay Conger. *Charismatic Leadership in Organizations*, (London: SAGE Publications, Inc., 1998), 15.

<sup>49</sup>Hiemer, Ernst, "The Poisonous Mushroom," *Friends of Europe*, no. 68 (London: Friends of Europe, 1938), 3.

propaganda used for the anti-Semitic education of Germany's children. It described the Jews in a plethora of contradictions, such as greedy capitalists and murderous communists. It also taught children mini-morality lessons such as "Jews are devils in human form" and how to recognize a Jew.<sup>50</sup> This concept of teaching children that Jews are the equivalent of the devil is seen in Figure 4 (above), a series of illustrations of the three enemies (in mythology) the Germans must fight: the Devil, the dragon, and the Jew.<sup>51</sup> In Figure 4, the illustration from the tale portrays identifiers of Jews. The description reads, "The Jewish nose is crooked at its tip. It looks like the number six..."<sup>52</sup>

According to the *Friends of Europe* journal, *The Poisonous Mushroom* articulated "Hitler's religious racial ideas in pedagogical form."<sup>53</sup> Ultimately, the overarching theme of Hiemer's story is seen in Figure 5 (below), which shows a mother with her son who is holding a mushroom. The caption reads, "Just as it is often very difficult to tell the poisonous from the edible mushrooms, it is often very difficult to recognize Jews as thieves and criminals..."<sup>54</sup> Teachers and parents used Hiemer's book in classrooms and in homes to reinforce Nazi ideology and to create a norm of prejudice, which led to the development of anti-Semitism in German youths.<sup>55</sup>

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<sup>50</sup>Hiemer, 6.

<sup>51</sup>Christa Kamenetsky, *Children's Literature in Hitler's Germany*, (Athens, OH: Ohio University Press, 1984), 208, 213.

<sup>52</sup>United States Holocaust Memorial Museum Collection, (Washington, D.C., 1988).

<sup>53</sup>Kamenetsky, 125.

<sup>54</sup>United States Holocaust Memorial Museum Collection, (Washington, D.C., 1988).

<sup>55</sup>Gregory Paul Wegner, *Anti-Semitism and Schooling under the Third Reich*. (New York: RoutledgeFalmer, 2002), 357.

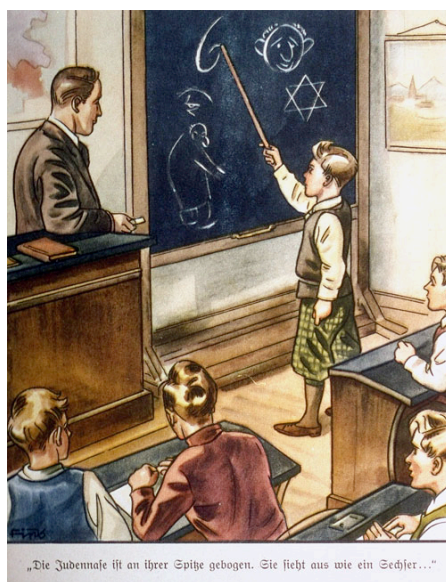


Figure 5: Page from “The Poisonous Mushroom,” 1935, United States Holocaust Memorial Museum Collection, 1988.



Figure 6: Page from the anti-Semitic German Children’s Book “Der Giftpilz” (The Poisonous Mushroom), 1935, United States Holocaust Memorial Museum Collection, 1988.

In her book, Christa Kamenetsky also writes of other children's literature and how they were used in Nazi Germany. Kamenetsky's esteemed work, *Children's Literature in Hitler's Germany*, studies the role of literature in the education and indoctrination of German youths. Her research reveals the five themes that were required in Nazi literature: "blood and soil, leadership and followership, honor and loyalty, service and sacrifice, and struggle and work."<sup>56</sup> These themes established morals that were imbedded in the minds of young German boys, which in turn moralized boys' aggressive behaviors. She analyzes works that include Aryan folklore, racial history, and the religiosity of Nazism. Overall, Kamenetsky argues that the particular language and themes of Nazi literature were purposed to achieve the Nazi goal of subordination. In addition, I believe these themes moralized Aryanism and anti-Semitism, and contributed to the dehumanization of Jewish people by young Germans.

Similar to Kamenetsky's argument that education was used to achieve Nazi goals, Claudia Koonz's *The Nazi Conscience* argues that the youth represented "the body and soul" of the Nazis.<sup>57</sup> In addition, Koonz analyzes the morals and ethics of the Nazis in the Third Reich. She also discusses how the education system and the Hitler Youth Organization taught the young people of Nazi Germany to commit completely to Nazi ideology. One of Koonz's main arguments is that "with the swastika in their hearts, the youth were taught to love fellow Aryans and expel outsiders from their moral community."<sup>58</sup> Koonz studies the responses of educators when Hitler reformed the education system. She analyzes many of the curricula aspects, such as "the Jewish question", and she argues how this instruction affected the psychology of the youth.

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<sup>56</sup>Kamentesky, 187.

<sup>57</sup>Koonz, Claudia. *The Nazi Conscience*. (Cambridge: Belknap Press, 2003), 131.

<sup>58</sup>Koonz, 131, 309.

Koonz concludes, “the moral mandate was clear: honor the *Führer*, expel aliens, sacrifice for the *Volk*, and welcome challenges.”<sup>59</sup> In other words, like the themes analyzed by Kamenetsk, Koonz argues that obedience, prejudice, and self-sacrifice were the Nazi conscience that developed from the norms present in the classroom and the Hitler Youth. According to the Oxford Dictionary, conscience can be defined as “A person's moral sense of right and wrong, viewed as acting as a guide to one's behavior.” This “Nazi conscience” that Koonz writes about supports the claim that the educational indoctrination of Nazi ideals developed the morality of boys and encouraged aggressive behaviors.<sup>60</sup>

Just as Koonz mentions the psychology of the German youth, Gilmer W. Blackburn focuses on the malleability of the masses. In his book, *Education in the Third Reich: A Study of Race and History in Nazi Textbooks*, Blackburn argues that one of the most attractive and important aspects of Nazism is its focus on the youth.<sup>61</sup> Blackburn explains how education was crucial to the regime because it manipulated the minds of the young and turned them into a “malleable mass.”<sup>62</sup> He discusses how history was used to teach that the Germanic race was superior, and therefore, it was crucial to protect the blood purity of its race.<sup>63</sup> Blackburn writes, “The Reich government in a directive advised textbook writers in 1939 that the past was to be used to convert the doubting and unbelieving,” so that even students and teachers whose morals told them to believe otherwise would succumb to the racist lessons that Jewish people are to blame for all problems in history.<sup>64</sup> Blackburn argues that it was

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<sup>59</sup>Koonz, 162.

<sup>60</sup>“Conscience”. Oxford Dictionaries | English. 2017. Accessed December 13, 2017. <https://en.oxforddictionaries.com/>. =

<sup>61</sup>Gilmer W. Blackburn, *Education in the Third Reich*. (Albany, US: State University of New York Press, 1985), 5, 6.

<sup>62</sup>Blackburn, 118.

<sup>63</sup>Blackburn, 29.

<sup>64</sup>Blackburn, 36.

common for students to have a “melancholy preoccupation with death and self-sacrifice” and the drive for “blood purity protection.”<sup>65</sup> These Nazi ideals of sacrifice and prejudice became morals, altering students’ views of right and wrong behaviors and increasing the likelihood of aggressive behaviors to protect the Aryan blood.

Similar to Blackburn’s argument that curriculum directives encouraged Nazi morals of Aryanism, anti-Semitism, and the glorification of self-sacrifice, Gregory Paul Wegner argues that it was the curriculum that developed these morals. Wegner’s book, *Anti-Semitism and Schooling under the Third Reich*, analyzes the different subjects taught in schools during the Nazi Regime and discusses how anti-Semitism was incorporated into lessons.<sup>66</sup> Wegner explains how the Jewish people were looked at in terms of history and blamed for all the troubles of the German people and why that made Aryans the superior race.<sup>67</sup> His work also studies curriculum derivatives, particularly “The Jewish Question”<sup>68</sup> and Dieter Klagges’s writings on race history. According to Wegner, Klagges was “one of the most prominent of all Nazi history pedagogues and textbook writers,” and the main theme across the curricula and textbooks that he wrote was making Jews the scapegoats for all of history.<sup>69</sup> Wegner’s research examines “the gross distortion that Jews were historically responsible for the nation’s misfortune.”<sup>70</sup> Wegner also reveals the increasing importance placed on historical curriculum as time progressed: in 1933 curriculum was rewritten to spend more time on history than any other subject; in 1935 the Reich Institute for the History of New Germany was founded to increase the

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<sup>65</sup>Blackburn, 25

<sup>66</sup>Wegner, 23.

<sup>67</sup>Wegner, 263.

<sup>68</sup>Wegner, 79.

<sup>69</sup>Wegner, 308.

<sup>70</sup>Wegner, 125.

visibility of history education within the community; and in 1936 new textbooks were published and distributed to schools that summarized German history while explicitly blaming Jews for all problems in history.<sup>71</sup> I agree with Wegner's argument that education "institutionalized anti-Semitic prejudice"<sup>72</sup> and produced children who were racially conscious and praised self-sacrifice. These lessons were more than just indoctrinating ideals though—they were morals, because they served as the basis for children's conscience of right and wrong behaviors. Children believed anti-Semitic actions were morally right.

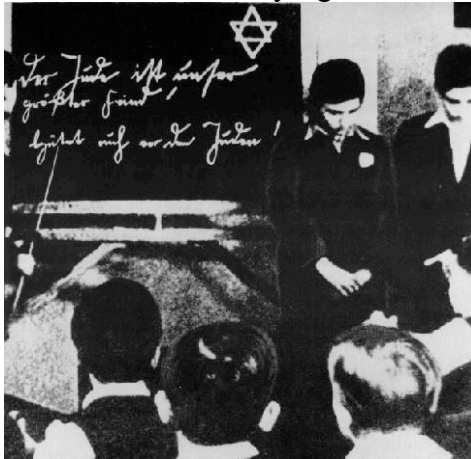


Figure 7: Jewish student humiliated in the Nazi-run schools of 1938 c. 1935, Photo Archive, Dokumentationsarchiv des Oesterreichischen

Figure 7 is a picture taken from Dokumentationsarchiv des Oesterreichischen Widerstandes (Documentation Archive of the Austrian Resistance) circa 1935. This picture shows two young Jewish boys standing at the front of a classroom with their heads bent down, because they are being shamed by their teacher and peers. Besides the description by the Documentation Archive, it is evident that the two students are Jewish based on the

<sup>71</sup>Wegner, 120-123.

<sup>72</sup>Wegner, 424.





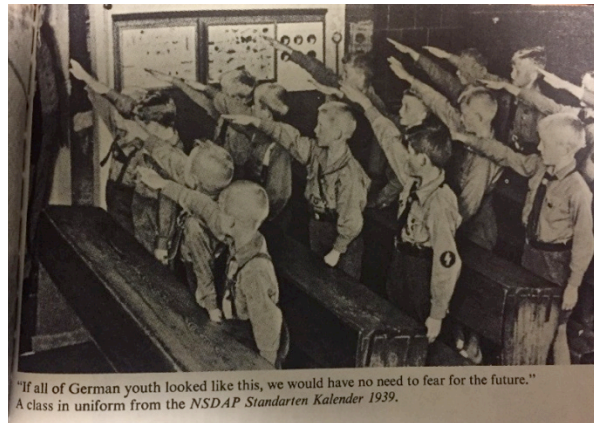


Figure 9: German schoolchildren in uniform, NSDAP standarten kalendar, 1939, Geroge Mosse, *Nazi Culture: Intellectual, Cultural, And Social Life in the Third Reich*, (New York: Grossert & Dunlap, 1966).

George Mosse's *Nazi Culture: Intellectual, Cultural, and Social Life in the Third Reich* is an overview of many aspects of culture within the Nazi regime, including the Nazi culture within education. Mosse analyzes a multitude of these subjects through the use of primary documents and the stories of those who lived through it all. Mosse studies the foundations of racism and how it was taught to students through racial biology. Figure 8 shows one such poster that was used to teach racial science. Mosse argues that Nazis did not simply change education—they transformed the content and thus student thinking.<sup>74</sup> In Chapter 8, Mosse studies the education of the youth from racial instruction at various levels. According to Mosse, the radical teachings of the Nazis were met with enthusiasm from the students due to the “social pressures” within the classroom and outside of school, including the home.<sup>75</sup>

<sup>74</sup>George L. Mosse, *Nazi culture: intellectual, cultural, and social life in the Third Reich*. (New York: Grosset & Dunlap, 1966), 82.

<sup>75</sup>Mosse, 264.

Figure 9 depicts a photograph featured in Mosse's book that emphasizes the importance of racial instruction within the classroom. It was the most pertinent subject, according to Hitler and the Nazis, because as the caption reads, "If all of German youth looked like this, we would have no need to fear for the future."<sup>76</sup> In other words, race was the key to a successful Germany, so the youth must be instructed on its importance. After all, as Hitler once said, "Whoever has the youth has the future."<sup>77</sup> Mosse argues that racial concepts were emphasized in the school and home cultures. These concepts became morals, leading students to believe they must act on these racial beliefs in order to preserve Germany and the Aryan race.

One teacher who experienced this totalitarian education that developed Nazi morals, Vivian Ogilvie, taught in Germany for three years before returning to England to write *Education under Hitler: The Experience of a British Teacher in Germany*, a series of articles arguing against the changing of the narrative of history to reflect Nazi ideology. Of his experiences, Ogilvie cites changes in religious instruction within a few different subjects, including the likening of Hitler to Jesus.<sup>78</sup> Ogilvie explains the culture of nationalism and how it fueled the indoctrination of Nazi ideals. In one example, Ogilvie describes how the Bible was to be used to teach anti-Semitism (because the Jews killed Jesus).<sup>79</sup> According to Ogilvie, the narrative of history that is taught is that the Aryans are the strongest, noblest heroes in history, as opposed to the Jews who are the source of all problems.<sup>80</sup> In his conclusion, Ogilvie warns readers of the dangers of this Germanic education; he writes that the themes within the classroom

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<sup>76</sup>Mosse, XVI.

<sup>77</sup>Mann, 3.

<sup>78</sup>Ogilvie, Vivian, "Education Under Hitler", *Friends of Europe*, no. 17 (London: Friends of Europe, 1934), 6.

<sup>79</sup>Ogilvie, 10.

<sup>80</sup>Ogilvie, 12-13.

are the same within the overall culture of Nazi Germany.<sup>81</sup> Thus, these morals of Aryanism and anti-Semitism are being developed in both the educational curriculum and the societal norms within the classroom and the home. Ogilvie's experiences support the argument Nazi that indoctrination developed morals of self-sacrifice and obedience, and especially of Aryanism and anti-Semitism.

In conclusion, the education of boys in Nazi Germany was more than just the indoctrination of Nazi ideals—it was the development of Nazi morals that encouraged aggressive behaviors, such as Aryanism, anti-Semitism, discrimination, and dehumanization. The study of this subject is crucial to this field because, in general, Nazi education has barely been examined. Moreover, the argument that the Nazi indoctrination moralized aggressive behaviors in young German boys, which contributed to the dehumanization of Jews and other enemies of the Reich, offers a nuanced perspective on the interpretation of education in Nazi Germany. The impact of Nazi education needs to be better understood. More research is needed for example, on the factors that led to societal acceptance of the persecution and eradication of the Jews. To that end, this paper could be expanded into a broader study of the total moral education of the youth, including school, the Hitler Youth, and propaganda effort, etc. and how the German society rejected traditional Judeo-Christian morals in exchange for Nazi morals.

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<sup>81</sup>Ogilvie, 13.

**Opioid Treatment: An overview of available treatment options for pregnant women in relation to NAS outcome**  
**Alexander Pearce (CLA 2019)**

**Abstract**

Opioid abuse is a growing issue in the United States. Pregnant women and their unborn fetuses are particularly affected by this epidemic. Women who abuse opioids during pregnancy put their child(ren) in danger of being born with neonatal abstinence syndrome (NAS). In this paper, methadone, buprenorphine, and a combination drug buprenorphine/naloxone are assessed for their treatment efficacy and various symptom outcomes. Currently, there does not seem to be a single, foolproof treatment which alleviates both NAS and adverse birth effects. Although buprenorphine was not found to be the most effective in reducing NAS, it effectively reduces other adverse effects associated with NAS that have a greater potential to affect neonates long-term.

## Introduction

Opioids are a class of drugs that include the illegal narcotic heroin, as well as legal prescription pain relievers which include but are not limited to oxycodone, hydrocodone, codeine, morphine, and fentanyl. Opioids are naturally-occurring or synthetic chemicals that interact with opioid receptors on nerve cells in the brain and nervous system to produce pleasurable effects while relieving pain.<sup>8</sup>

Opioids work by attaching to specific proteins called opioid receptors (See Figure 1)<sup>14</sup>. These receptors are found on nerve cells throughout the body, with a high concentration in the brain, spinal cord, and gastrointestinal tract. The binding action to the receptors reduces the perception of pain and produces a euphoric sense of well-being, as well as respiratory depression and reduced gastrointestinal motility. The effects of opioids are mediated by specific subtypes of opioid receptors (*mu*, *delta*, and *kappa*) that are activated by the body's natural opioids such as endorphins or enkephalins. Through repeatedly administering synthetic opioids (prescription or heroin) to receptors, the production of natural endogenous opioids is inhibited and, when discontinued in use, accounts for withdrawal symptoms.<sup>14</sup> In recent years, the abuse of and addiction to opioids such as heroin, morphine, and prescription pain relievers has grown significantly, leading to the global problem seen today, which affects the health, social, and economic welfare of many societies. It is estimated that between 26.4 million and 36 million people abuse opioids worldwide.<sup>8</sup> Although the United States, accounts for fewer than 3 million people globally who regularly use and abuse opioids, opioid use in the United States has steadily increased since 2000.<sup>1</sup> In the United States, an estimated 2.1 million people suffer from substance use disorders related to prescription opioid pain relievers.<sup>6</sup> The consequences of opioid usage have been devastating and are only worsening. For instance, in 2014,

an estimated 49.2% of all drug related deaths in the United States resulted from opioid abuse.<sup>6</sup>

Several factors contributed to the recent increase in prescription drug abuse, including a drastic surge in the number of prescriptions written and dispensed by medical professionals, greater social acceptability, and assertive marketing by pharmaceutical companies.<sup>14</sup> In the past twenty-five years, data have illustrated that the total number of opioid pain relievers prescribed in the United States has risen significantly. The number of prescriptions for opioids such as hydrocodone or oxycodone has escalated from around 76 million in 1991 to nearly 207 million in 2013, with the United States as the biggest global consumer, accounting for almost 100 percent of the world total for hydrocodone (e.g., Vicodin) and 81 percent for oxycodone (e.g., Percocet or OxyContin).<sup>14</sup>

In terms of abuse and mortality, prescription opioids account for the greatest proportion of the prescription drug abuse problem. Deaths related to prescription opioids have greatly increased since the early part of the 21st century. In the United States, drug overdose is the leading cause of accidental death, with 52,404 lethal drug overdoses in 2015.<sup>8</sup> Opioid addiction is the leading cause behind this epidemic, with 20,101 overdose deaths related to prescription pain relievers in 2015.<sup>8</sup> In addition to rising mortality rates, as opioid abuse continues to increase in the United States, one specific population at risk is pregnant women and their unborn fetuses.

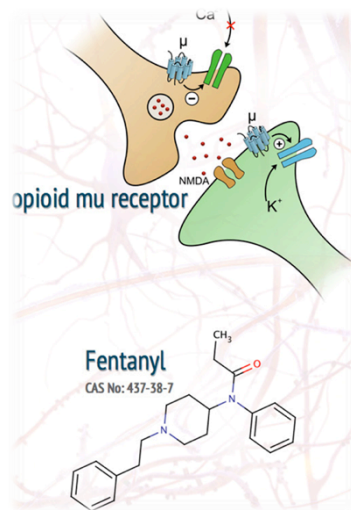


Figure 1. Mu-Opioid Receptor.

Opioid use often produces a sense of well-being and pleasure because these drugs affect brain regions involved in reward. People who abuse opioids may seek to intensify their experience by taking the drug in ways other than those prescribed. However, pregnant women jeopardize the health of their baby since the effect on an unborn fetus can be detrimental. Drugs can affect the fetus in multiple ways. Early in gestation, during the embryonic stage, drugs can have significant teratogenic effects.<sup>1</sup> However, once past major structural development of the fetal period, drugs have subtler effects, including abnormal growth and/or maturation, alterations in neurotransmitters and their receptors, and brain organization. These are considered to be the direct effects of drugs.<sup>1</sup>

Opioids cross the placenta at rapid rates. The passing of opioids across the placenta often leads to a combination of physiologic and neurobehavioral withdrawal signs in neonates. These symptoms occur immediately post-birth and include sweating, irritability, feeding problems, diarrhea and seizures.<sup>1</sup> In addition to these immediate symptoms, infants often require prolonged hospitalization and treatment with medication. These



symptoms are better recognized as Neonatal Abstinence Syndrome (NAS).<sup>1</sup>

## Neonatal Abstinence Syndrome

Neonatal Abstinence Syndrome (NAS) is a drug-withdrawal syndrome in newborns that occurs after in utero exposure to opioids.<sup>11</sup> The syndrome is characterized by a wide array of signs and symptoms but typically manifests in the first few days of life as hypertonia, tremors or seizures, watery or diarrhea-like stool, impaired weight gain due to feeding intolerance, and respiratory distress.<sup>13</sup> The number of mothers using opioids from 2000 to 2009 increased from 1.19 (95% CI, 1.01-1.35) to 5.63 (95% CI, 4.40-6.71) per 1000 hospital births.<sup>11</sup> In conjunction with an increase in the use of opioids among pregnant women, the incidence of neonatal abstinence syndrome in the United States has grown nearly threefold or increased from 1.20 (95% CI, 1.04-1.37) to 3.39 (95% CI, 3.12-3.67) per 1000 hospital births.<sup>11</sup> See Table 1.<sup>11</sup>

**Table 1.** Characteristics of Newborns Diagnosed With Neonatal Abstinence Syndrome vs All Other US Hospital Births in 2009<sup>a</sup>

Characteristics	Neonatal Abstinence Syndrome		All Other US Hospital Births	
	Unweighted, No. (n = 9674)	Weighted % (SE)	Unweighted, No. (n = 1 113 123)	Weighted % (SE)
Male sex	5309	55.0 (0.5)	585 755	51.1 (0.8)
Clinical conditions				
Respiratory diagnoses	2993	30.9 (0.7)	255 623	8.9 (0.1)
Low birthweight, <2500 g	1733	19.1 (0.5)	174 038	7.0 (0.2)
Feeding difficulty	1749	18.1 (0.7)	67 582	2.8 (0.1)
Seizure	207	2.3 (0.2)	3385	0.1 (<0.1)
Insurance				
Medicaid	7510	78.1 (0.8)	500 384	45.5 (0.7)
Private payers	1541	15.5 (0.7)	529 351	47.5 (0.7)
Self-pay	453	4.7 (0.3)	44 725	4.3 (0.2)
Other	162	1.7 (0.2)	29 509	2.7 (0.1)
Zip code income quartile				
1 (lowest)	3309	36.3 (1.3)	295 761	28.0 (0.6)
2	2547	26.9 (0.8)	274 445	26.2 (0.4)
3	2228	23.1 (0.9)	269 044	24.8 (0.4)
4 (highest)	1344	13.7 (0.7)	243 501	21.1 (0.7)
Hospital characteristics				
Urban	8257	88.6 (1.1)	963 206	87.7 (0.4)
Teaching	5036	54.3 (2.1)	510 141	44.0 (1.0)
Children's	1720	19.8 (2.1)	142 853	11.8 (1.2)

<sup>a</sup>Data were obtained from the Kids' Inpatient Database. Subcategories of the unweighted numbers may not sum to total because of missing values.

## Long-Term Effects Related to Prenatal Drug Exposure and Subsequent Neonatal Abstinence Syndrome

Many neonates affected by NAS experience several long-term effects that go beyond immediate pharmacotherapy and NICU admittance in addition to NAS symptoms. These effects are broken down into various categories and can be seen in Table 2.<sup>1</sup>

**TABLE 2** Summary of Effects of Prenatal Drug Exposure

	Nicotine	Alcohol	Marijuana	Opiates	Cocaine	Methamphetamine
Short-term effects/birth outcome						
Fetal growth	Effect	Strong effect	No effect	Effect	Effect	Effect
Anomalies	No consensus on effect	Strong effect	No effect	No effect	No effect	No effect
Withdrawal	No effect	No effect	No effect	Strong effect	No effect	*
Neurobehavior	Effect	Effect	Effect	Effect	Effect	Effect
Long-term effects						
Growth	No consensus on effect	Strong effect	No effect	No effect	No consensus on effect	*
Behavior	Effect	Strong effect	Effect	Effect	Effect	*
Cognition	Effect	Strong effect	Effect	No consensus on effect	Effect	*
Language	Effect	Effect	No effect	*	Effect	*
Achievement	Effect	Strong effect	Effect	*	No consensus on effect	*

\* Limited or no data available.

Opioid-exposed children do not seem to suffer any long-term effects on growth.<sup>1</sup> However, in toddlers prenatally exposed to opioids, hyperactivity and short attention span have been documented and older children often will demonstrate memory and perceptual problems. Cognitive and executive functioning does not seem to be affected by opioid exposure. Furthermore, these results are not conclusive; longitudinal studies thus far have not produced consistent findings among those prenatally exposed to opioids with regard to development. Presently no data exists on language development for opioid exposed neonates. Likewise, achievement is another area that has not been studied conclusively and no data is available on long term achievement.<sup>1</sup> There is an urgent need for longitudinal studies to understand long term effects/outcomes of NAS.

## **Treatment**

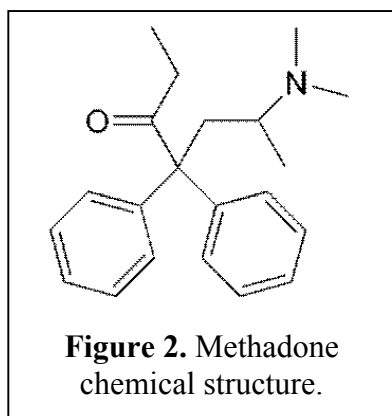
The process of ceasing to take an addictive drug is known as withdrawal. Often, women who abuse opioids will confuse early signs of pregnancy such as nausea, vomiting, and cramping with opioid withdrawal symptoms.<sup>6</sup> This frequently leads to prolonged, and in some cases, increased use of opioids. It is evident that there are detrimental risks associated with misunderstanding early signs of pregnancy with withdrawal symptoms. Therefore, it is increasingly recommended for pregnant women who are addicted to opioids to enter a treatment program. Often, treatment programs consist of methadone or buprenorphine; however, in response to the recent rapid growth in prenatal opioid abuse and NAS, the US Congress passed the Protecting Our Infants Act in 2015, aiding in the discovery of additional treatment options. This legislation requires the Department of Health and Human Services to evaluate and recommend available treatments for women who continue to abuse opioids while pregnant. Currently, methadone and buprenorphine are used to treat general opioid dependence as well as opioid addiction among pregnant women. More recently, a combination drug buprenorphine/naloxone has been developed.<sup>6</sup> The College of Obstetricians and Gynecologists recommends the use of methadone for opioid-assisted therapy, but evidence also exists supporting the use of buprenorphine and the combination buprenorphine/naloxone (B/N) treatment, causing a lack of consensus for a single standard of care.

### **Methadone**

Methadone is a synthetic, narcotic analgesic (a pain reliever). Often used in nonpregnant patients to treat opioid dependence, methadone is also used to care for pregnant women and their unborn fetuses.<sup>3</sup> This approach improves maternal and neonatal outcomes compared to no treatment

or medication-assisted withdrawal.<sup>3</sup> The drug shares many of the same effects and characteristics of morphine and acts in similar ways to it and other narcotic medications (see Figure 2 for chemical structure).<sup>3</sup>

Methadone possesses a chiral carbon, meaning the structure is a mirror image at the carbon center. Methadone is a mix of both D- and L-isomers which bind equally to the  $\mu$ -opioid receptors. This is often not the case with other opioids. Methadone leads to decreased tolerance compared to other opioids because of both its agonist and antagonist



effects. Moreover, the gradual and mild onset of action prevents the user from getting high and experiencing euphoric effects.<sup>6</sup>

Curiously, the chemical structure of methadone was first discovered in the 1930's when a team of scientists were searching for a less addicting pain reliever than morphine.<sup>12</sup>

Toward the end of the 1930s, two scientists uncovered Hoechst 10820, or polamidon, a synthetic substance. As World War II dragged on, the supply of morphine and other analgesics dwindled, and as a result, German scientists synthesized the substance. At the end of the war, the rights to the drug were transferred to United States due to war requisitions and the United States later coined the name methadone.<sup>12</sup> Introduced to the United States in 1947, methadone acted as a pain reliever until the resurgence of heroin addiction in the 1960s. During this time, researchers searched for a substance that could reduce or eliminate drug craving and withdrawal signs and symptoms. The logic behind methadone was that it could act as a method to manage or maintain heroin addiction. Ultimately, in 1964, methadone maintenance, a

treatment in which methadone substitutes other narcotics to prevent withdrawal, was discovered, and its effectiveness and usefulness aided in expanding treatment.<sup>12</sup> In 1972, the federal government developed regulations sanctioning methadone's use when treating heroin addiction. In recent years, the federal government modified regulations of methadone to allow physicians and other health care professionals to provide methadone more effectively and consistently.<sup>12</sup>

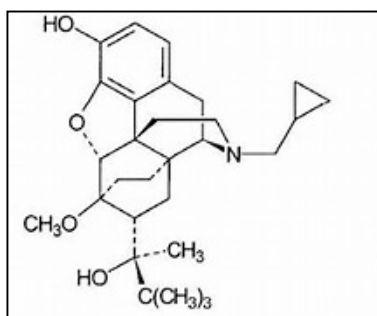
Single doses of methadone are primarily administered orally, as tablets, powder, and liquid for the treatment of addiction, and should not exceed 80 – 100 milligrams daily, with a target daily dose of 60 mg. The dose can last anywhere from 24 to 36 hours depending on user characteristics which include age, weight, level of addiction, and tolerance; the long-acting nature of the drug is a distinct advantage since it requires less frequent administration. On the other hand, due to methadone's opioid nature and extensive half-life, there is potential for an overdose, and the risk is heightened if taken with other central nervous system depressants.<sup>6</sup>

Although methadone does not pose the same issues as illegal or misused opioids, neonates exposed to methadone do require significantly longer NAS treatment and significantly longer hospital stays than alternative treatment options.<sup>3</sup> Furthermore, a fetus exposed to methadone is at risk for adverse effects such as low birth weight.<sup>6</sup>

### **Buprenorphine**

Buprenorphine is a long-acting, phenanthrene derivative composed of three fused benzene rings in its chemical base (see Figure 3, below).<sup>6</sup> Buprenorphine lessens the euphoria derived from opioid abuse by acting as a mixed agonist-antagonist. Buprenorphine lessens any

associated euphoric effects by acting as a partial agonist to  $\mu$  receptors, and an antagonist to the  $\delta$  and  $\kappa$  receptors. The mixed agonist-antagonist property, accompanied by prolonged absorption and coupled with a slow dissociation rate from  $\mu$  receptors, allows longer action duration.<sup>6</sup> Moreover, buprenorphine's low intrinsic receptor efficacy reduces opioid-like effects and diminishes the risk of overdose when compared to methadone.



**Figure 3.** Buprenorphine chemical structure.

Child-bearing women who use buprenorphine to treat opioid addiction increase their likelihood of delivering a child with a

higher birth weight, a larger head circumference, and fewer birth defects when compared to child bearing women who use methadone. Moreover, buprenorphine lowers the risk of preterm birth over methadone, while also increasing the likelihood of giving birth to larger infants with longer gestation periods.<sup>6</sup>

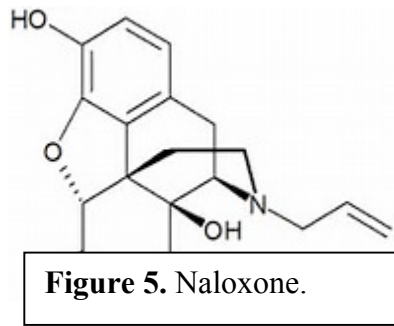
Buprenorphine, like methadone, also has some disadvantages. Similar to methadone, buprenorphine increases the risk of respiratory depression and death especially when coupled with alcohol or central nervous system depressants (e.g. sedatives or antipsychotics). Moreover, buprenorphine-containing products can give a sense of euphoria, increasing their likelihood of abuse. This sense of euphoria only occurs when taken in large quantities; therefore, it is important to carefully monitor buprenorphine intake; often, the target daily dose is 12 mg.<sup>9</sup> Buprenorphine results in a significantly reduced neonatal hospital length stay for neonates born with NAS. In fact, buprenorphine-exposed neonates require significantly less

morphine to treat NAS. One particular study projected that buprenorphine-exposed neonates require 89% less morphine than methadone-exposed neonates to treat NAS.<sup>9</sup>

### **Buprenorphine/Naloxone (B/N)**

An alternative treatment for opioid addiction, the combination of B/N and its chemical property prevents buprenorphine abuse.<sup>6</sup> As aforementioned, buprenorphine acts as a partial agonist for the  $\mu$ -opioid receptor. Buprenorphine's agonist-binding property blocks the  $\mu$ -opioid receptor site, keeping opioids from attaching. In addition to buprenorphine, naloxone is an antagonist that not only binds to receptor sites to block opioid action, but can also reverse side effects of opioid use. See figure 5 for chemical structure of naloxone.<sup>6</sup> In fact, naloxone removes opioids from the brain's  $\mu$ -receptor, which brings the individual into a state of withdrawal.<sup>6</sup> The effects of B/N do not increase linearly with dosage, making it a potentially favorable treatment option. Patients experience a 'ceiling effect' because buprenorphine only partially binds to the  $\mu$  opioid receptor, and eventually plateaus at a certain concentration. This 'ceiling effect' makes buprenorphine a safer choice than other full agonists which are also often consumed at higher doses.<sup>6</sup>

Because the pure opioid antagonist, naloxone, is included along with buprenorphine, B/N has minimal street value, and a low likelihood for abuse, which makes it a favorable treatment option for opioid addiction. Moreover, B/N has a high retention rate as well as a high completion rate.<sup>15</sup> On average, a 24-week treatment plan with 30-32 mg dosage saw a completion rate of 60% and only 21% relapsed. Comparatively, approximately 55–80% of patients who use methadone, and close to 50% of those who use buprenorphine relapse.



Although B/N appears to be a potentially favorable treatment option having shown comparable effects to neonates born without opioid exposure, it is still a newer treatment and does not yet have longitudinal studies for

its long-term effects.<sup>5</sup> Therefore, women who become pregnant while taking B/N are advised to switch to the buprenorphine mono-product or in other words, discontinue use of naloxone, but maintain the buprenorphine regimen.<sup>6</sup>

### **Adverse Birth Outcomes Among Pregnant Women Treated with Methadone or Buprenorphine**

Methadone treatment has been used since the early 1970s while buprenorphine treatment has been used since only 2002. Both methadone and buprenorphine have comparable efficacy rates for reducing opioid use in pregnant women. Unfortunately, in terms of NAS, neither methadone nor buprenorphine were significantly better at reducing prevalence, frequency and length of treatment.<sup>14</sup> In addition, neither treatment is superior for maternal, fetal, and child outcomes across all symptoms. Therefore, assessing all evidence regarding the safety of methadone and buprenorphine treatment on maternal and fetal outcomes to suggest the better treatment option proves important. Although complete opioid abstinence is ideal and the only surefire way to avoid any potential adverse effects for both the mother and fetus, women should avoid acute withdrawal since repeated cycles of intoxication and withdrawal are associated with fetal distress and intrauterine growth restriction, preterm labor and even



pregnancy loss.<sup>7</sup> Thus, we will examine methadone and buprenorphine across variables.

### **Fetal/congenital anomalies**

Fetal/congenital anomalies, defined as defects at birth or identified chromosomal defects and cardiovascular, central nervous system, craniofacial and musculoskeletal malformations, and no significant difference between methadone and buprenorphine treatment in magnitude of congenital anomaly development.<sup>15</sup>

### **Preterm Birth**

Preterm birth is defined as before 36 weeks' gestation. Buprenorphine results in a significantly lower risk of preterm birth compared to methadone.<sup>15</sup>

### **Infant growth outcomes**

On average, neonates exposed to buprenorphine are 324 g heavier than neonates exposed to methadone. Similarly, head circumference is significantly larger in neonates exposed to buprenorphine than to methadone. On average, neonates exposed to buprenorphine have a head circumference 0.90 cm larger than methadone exposed neonates.<sup>15</sup>

### **Sudden infant death syndrome**

There was no significant difference observed for infants exposed to buprenorphine compared with methadone for SIDS.<sup>15</sup>

### **Fetal/child development**

Neonates exposed to buprenorphine are less likely to experience adverse neurobehavior development than neonates exposed to methadone. In addition, buprenorphine-exposed neonates have a lower rate of adverse nervous system development as well as fetal heart rate and movement.<sup>15</sup>

### **Adverse effects**

There are significantly fewer maternal adverse effects (AEs) associated with buprenorphine-treated women versus methadone-treated women.<sup>15</sup>

### **The Safety of Buprenorphine+Naloxone**

Often, women who become pregnant while undergoing buprenorphine/naloxone treatment switch to the buprenorphine mono-product due to safety concerns.<sup>5</sup> However, neonatal outcomes of B/N are comparable to the outcomes of neonates exposed to no opioids during pregnancy (see Table 4).<sup>5</sup> In fact, there are no statistical significant differences in birth weight, number of preterm deliveries, number of congenital malformations or number of stillbirths. Further studies are needed due to a lack of research but at the moment no significant health risks in comparison to opioid free pregnancy have been shown to negatively affect the mother or fetus. It is likely that B/N will become a more popular drug in years to come.<sup>5</sup>

Table 4. Primary Outcomes.

	A Bup/Nalox (n=62)	B No opioids (n=618)	A-B p Value	C Illicit opioids (n=159)	A-C p Value
Primary outcomes					
Preterm delivery, n (%)‡	2 (3.2%)	26 (4.21%)	>0.999†	7 (4.4%)	>0.999†
Birth weight (g), mean±SD‡	3541±540	3553±569	0.924*	3274±551	<0.001*
Congenital anomalies, n (%)	2 (3.2%)	5 (0.8%)	0.127†	0	0.078†
Stillbirths	0	5 (0.8%)	>0.999†	1 (0.6%)	>0.999†

\* $\chi^2$  test was used.  
†When assumptions for the  $\chi^2$  test were not met, the Fisher's Exact test was used.  
‡Birth weight and gestational age were limited to live births that were >500 g and >20 weeks.

## Conclusion

Data have shown more promising pregnancy outcomes in terms of efficacy and safety for women and neonates who are part of a treatment program compared to those who continue to use illicit opioids throughout gestation. The purpose of this paper was to evaluate the best treatment option, particularly in reducing NAS and its related symptoms. Unfortunately, at the moment, there is not one treatment that reduces NAS prevalence while also controlling for additional maternal, fetal, and child outcomes. More research must occur to determine the effectiveness of buprenorphine/naloxone on reducing opioid tendencies and the long-term outcome on neonates. However, between methadone and buprenorphine; buprenorphine appears to have better results. Although it is not better at reducing NAS, our primary objective, it does reduce other adverse effects such as preterm birth, child developmental issues and maternal adverse effects in addition to producing larger neonates if the drug is properly administered.<sup>7, 15</sup>

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**Reconstructing Racial Caste: Challenging Black  
Otherness in *13<sup>th</sup>* and *The New Jim Crow*  
Sofia Amorim (CLA 2019)**

**Abstract**

The history of racial caste in post-Reconstruction America is often taught as a linear narrative that frames particular events as isolated occurrences divorced from the social and political contexts of their history. This narrative too often renders black agency and citizenship as conditional products of compliance with a dominant white narrative of racial history. The presentation of blackness as distinct from American identity led to the criminalization of black bodies and intellect. Ava DuVernay's Netflix documentary *13th* provides a powerful portrayal of this history of racial caste as well as a counter-narrative to the conventional "story" of Reconstruction. Historian Hayden White's theory of linear narrativity and history, alongside Michelle Alexander's analysis of racial caste history in *The New Jim Crow*, can be used as a lens through which to think critically about DuVernay's documentary and the effects of the narrative histories it portrays. This analysis, then, functions as a call for greater recognition of a problematic narrative that produces racial caste in America. Failure to see this narrative contributes to the pervasiveness of racism in contemporary American politics and rhetoric.

It is impossible to discuss the history of racism within the United States without first addressing the failure of Reconstruction after the Civil War. The history of the Reconstruction Era is one that is often taught as a linear narrative and from the perspective of white America. This historical narrative contributed to the nation's failure to fully integrate African Americans and construct an equitable economy and society—a failure that, in turn, perpetuated a bias against black Americans and the stereotype of the African American as a criminalized “other.” This bias gave rise to institutions of racism that systematically oppressed the black community in the post-Civil War era. The conventional and linear narrative of Reconstruction tends to isolate specific moments from their social, political, and historical context. History, then, becomes a “story” with a beginning, middle, and end. As theorist and historian Hayden White notes, historians provide “accounts of the reality that they perceived, or thought they perceived, to exist within or behind the evidence they had examined.” To varying degrees, they also “narrativize that reality” or “impose upon it the form of a story” (White, 6). For White, this narrative structure is an imposition, implying that events follow a sequence of building tension, a climax, and eventual resolution.

White notes the problematic effects of historical narrative by suggesting that it replaces authentic interpretations of history's manifestations with a simplified story format. Michele Alexander's *The New Jim Crow* builds upon White's concept of a narrativized history by arguing that America's understanding of contemporary race relations is dependent on a historically white narrative of racial caste. This narrative of racial caste laid the groundwork for dividing the black community from impoverished whites. This division further allowed the history of economic class struggle to become distinguished from civil rights and social equity movements, raising the



question of whether urban concerns of mass incarceration were a result of economic inequity *or* racism. The question then arises of whether these histories are separate stories within respective timelines or simultaneous histories that continue to shape one another.

The history of Reconstruction was heavily influenced by a “cause-and-effect” narrative that presented contemporary racism as a direct result of the Union Army’s victories in the Civil War. Economically devastated after the war, the South not only tried to reconstruct not only its economy but also its history. D.W Griffith’s 1915 film *The Birth of a Nation* reinforced the narrative that the equity of African Americans threatened the values of the American South. Within this narrative, racial purity, white supremacy, and white nationalism were at stake. Presenting the KKK as the ‘saviors’ of conservatism and American “ideals,” the film’s portrayal of Reconstruction as an assault on America fueled the already existing tension between races.

Within the last one hundred and fifty-two years, racial caste has expanded into the realm of social politics as a means not only to establish but also to reinforce socioeconomic inequality. The characterization of African Americans as “other” and synonymous with poverty, ignorance, and violence serves as the basis for segregation, further reinforcing a narrative propagated by Griffith’s film in the early twentieth century. Through consistent marginalization, black Americans become more and more disenfranchised. Those who were once considered inhuman became second-rate citizens in the post-slavery era.

Ava DuVernay’s 2016 documentary *13th* analyzes the role of de facto segregation and the way legal statutes target black communities and perpetuate racist practices of forced labor and political and social oppression. The documentary also attempts to counter and reshape the historical image of African Americans as the victims. The

flip side of the criminalizing stereotype, this image also contributes negatively to historical memory and popular conceptions of blackness in the wake of Reconstruction's failure. One point must be made abundantly clear: racial caste was not reborn in American society. Rather, racial caste has been rebranded in legally permissible contexts, such as the exploitation of labor. In this regard, it was never dismantled to begin with. The documentary *13<sup>th</sup>* makes this point through a close reading of the language of the Thirteenth Amendment. This amendment is most commonly remembered as the one that abolished slavery. In the DuVernay's documentary there is a moment when the Thirteenth Amendment's text appears on the screen. The text appears in fragments, first with the words that reaffirm the belief that slavery has indeed been abolished: "neither slavery nor involuntary servitude... shall exist within the United States" (00:01:52-00:2:36). There are notable gaps between the words, an emptiness on a black screen, where words are left out.

One assumes that the missing words would be limited to legal jargon, but when the missing words appear on the screen to reveal the amendment's full text, a formerly overlooked phrase becomes especially noticeable. The full text of the amendment reads: "Neither slavery nor involuntary servitude, *except as a punishment for crime whereof the party shall have been duly convicted*, shall exist within the United States, or any place subject to their jurisdiction" (emphasis added). This language presents the abolition of slavery as conditional upon the subject's lack of criminality. As the documentary suggests, this forgotten phrase provided legal justification that would mold the American prison system. In a sense, institutionalized slavery was not yet destroyed; instead, it was made conditional—appropriate only as punishment for a crime—through the language of the Thirteenth Amendment. This language, along with the failure of Reconstruction,

provided an invisible loophole that paved the way for the criminalization of African Americans in the post-slavery era. The criminalization of African Americans, in turn, allowed slavery to persist under a new name.

The narratives propagated by those who persecuted African Americans shaped the modern understanding of post-Reconstruction America's history. This white narrativization of race relations ignores its own role in the construction of such a history, as well as its implicit role in silencing the black voice in telling this history. As Michelle Alexander writes, "the liberal philosophy of race relations emphasized the stigma of segregation and the hypocrisy of a government that celebrates freedom and equality yet denies both on account of race" (Alexander, 32). By "narrativizing a discourse," this philosophy of race presents a linear history with resolution, neglecting the complex social and political histories that play important roles in the establishment of an inequitable system (White, 7). It also undermines the power and agency of black people by constructing *their* sociopolitical/cultural narratives. Legislative loopholes created an environment that normalizes institutions of racism and appeared acceptable through the political and legal discourse that legitimized them. The popular portrayal of African Americans as a group "other" than American further "justified" their being ostracized in white America. Modern caste systems still perpetuate this marginalization. For example, the white establishment's creation of the negative black image reinforces an oppressive power differential that limits black engagement in social and political discourse. It also limits their ability to construct their own sociopolitical/cultural narratives. Texts such as Alexander's *The New Jim Crow*, Clayton Pierce's analysis on caste education, and DuVernay's *13<sup>th</sup>* provide an alternative narrative to the history that continued after Reconstruction, challenging a

white narrative of black oppression that presents this story as resolved.

Michelle Alexander's *The New Jim Crow: Mass Incarceration in an Age of Colorblindness* clarifies the consequential effects of this development by presenting the American prison system as an entity that executes modern racial caste. Alexander addresses the changes that "have been justified by new rhetoric, new language, and a new social consensus...the process through which white privilege is maintained, though the rules and rhetoric change" (Alexander, 21). Here, Alexander references the emergence of the Jim Crow laws more directly, analyzing how the linguistic construction of the law creates the foundation for inequity. In many cases, the vagueness of language constructs a space in which to marginalize and criminalize those who challenged the written laws.

In order to preserve white America's economic and social privileges, the nation's political rhetoric was redesigned to preserve a caste system. If the institution of slavery had kept blacks in a designated and restricted socioeconomic status, the question after Emancipation was how America would accommodate the integration of such a vast population within its economy and society. In America's attempt to integrate black communities into a capitalist economy, the legal framework regarding rights and citizenship had to change. This, however, did not necessarily change the economic circumstances of black Americans. New laws, in fact, limited their opportunities. Early vagrancy laws restricted opportunities for employment and housing, incidentally criminalizing unemployment and leading large numbers of black men into the prison system. *13<sup>th</sup>*'s initial introduction to the conditional abolition of slavery invites the viewer to reflect upon their own understanding of the history or establishment of racial biases in relation to the criminalization of black bodies. Veiled by ambiguous

language, a new political rhetoric perpetuates racist ideology, reconstructing slavery as a system of forced labor in light of the Thirteenth Amendment.

The language of the white narrative of black history and oppression suggests the following timeline: racial inequality began when rich plantation owners created a racial divide between indentured servants (Alexander, 25), a divide that escalated after Reconstruction's failure to integrate blacks into society. In responding to this narrative, one needs to understand that history does not necessarily fulfill a structural resolution. White emphasizes this point in a study that treats "historical representation not as the imperfect histories they are conventionally conceived to be, but rather as particular products of possible conceptions of historical reality, conceptions that are alternative to...the fully realized historical discourse that the modern history form is supposed to embody" (White, 10). Through the linear evolution of "progressive" racial reform, "politically correct" language is thought to be more inclusive and objective in order to relate the history of racial caste to the whole of American history. In doing so, "separate but equal" discourse euphemized segregation and discrimination. By interpreting the history of racial segregation as a linear narrative, one excludes the contextual histories of racial oppression that occurred around the imagined timeline that the constructed narrative provides. Describing a linear evolution of "progressive" racial reform, this more simplified narrative tends also to use more "politically correct" language that is thought to be more inclusive and objective in order to relate the history of racial caste to the whole of American history. Yet a closer look at the perpetuation of racial discrimination exposes the effects of specific legislation of the post-Civil War era and the way it enabled racial inequality. The language of Reconstruction and Jim Crow was designed by a politically

and economically dominant white society that continued to construct an image of black society as “other.”

Just as white America erected the image of the “dangerous” and “savage” black male, the black community countered these stereotypes by redefining what it meant to be “other” in white society. Intellectuals such as Booker T. Washington and W.E.B Du Bois debated how black society should interact with white American society. Washington’s popular program of racial uplift sparked controversy for its isolation of blacks from the whole, while Du Bois pushed for more political and integrating reforms. These philosophies provided a basis for black intellectual politics and exposed ideological divides within the black community that linger today. However, both ideologies emphasized the importance of education in the progress of racial uplift. During the Civil Rights Era of the 50s and 60s, there was a surge of black intellect movements that promoted education as a means to combat racial caste.

Clayton Pierce’s *W.E.B Du Bois and Caste Education* exposes a connection between the education of black communities under a white government and the co-articulation of racial capitalism to ensure an underprivileged black community. If economic and social laws effectively kept blacks from participating in American social politics, it was believed that through education the black community could create a space where they could have a presence in society. As Pierce writes, “black populations have been managed and shaped to fit the needs of racial capitalist society, where schools play a pivotal role within the racializing assemblages that produce unequal forms of life: human and less than human” (Pierce, 27). Pierce’s claim effectively paints the American education system as yet another re-imagination of racial caste. He analyzes the research of W.E.B Du Bois and his assessment of the American education system as an institution that does not consider the value of black intellect but rather

molds black minds to serve the needs of a white-dominated society. This “molding” occurs at the expense of black social and political mobility. Du Bois understood that blacks were marginalized and continue to be marginalized, raising the question of how the black community can move forward in the face of segregation.

As physical black body was deemed a threat to white society, institutions were created to contain and condition black bodies into a population compromised socially, economically, and politically. This population was also increasingly disenfranchised through mass incarceration. Activist intellectuals like Angela Davis exposed the notion of the black criminal as a physical manifestation of the “law and order” rhetoric that was politically useful for politicians. She pushed for educational reform within the black community in order to carve out a niche for black intellectualism. Whereas Pierce had identified black disenfranchisement within the white-directed education system as a continued form of racial caste, Davis argued that black intellectualism enabled the black community to challenge the political and social establishments that perpetuated black oppression. In *13<sup>th</sup>*, director Ava DuVernay physically juxtaposes the image of the black intellectual with the image of the black criminal. Within this segment, Davis also reflects upon her own experiences challenging the narrative logic of racial oppression by questioning white interviewers about how they present their own questions. Often, Davis rephrases the questions of the interviewer in order to properly answer them. In restructuring the language of the interview, Davis exposes the limits of political rhetoric. *13<sup>th</sup>* also features photos of Davis that starkly contrast white conceptions of black identity. (00:47:50-00:50:09). The viewer first sees Davis in the cultural context that she currently inhabits: a powerful black female icon, educator, scholar, and political activist. As she begins to discuss how the government

criminalized her image, the documentary cuts to an FBI *Wanted* poster followed by an image of her in handcuffs and a radio voiceover declaring her one of the government's "most wanted" fugitives. In cutting the images in this particular sequence, the documentary calls the viewer's perception of Davis into question as well as their perception of what defines criminality. By exposing the way even she was once presented as criminal, the documentary reasserts the way race was misrepresented in American politics and media in post-Civil Rights America.

The question then becomes whether the label of criminality is the result of a violation of "law and order" or of challenging the very definition of what constitutes "law and order" in America. *13th* focuses on the image of Angela Davis as well as how the American media presented her during the height of black intellectual movements in the 1960's. On trial, Davis directly challenged the political system by presenting the system's establishment as a subject to be questioned. As a prominent figure in the black resistance, Davis' appearance became central to her representation in the media. The images and clips of Davis were used to inform the viewer of two contradictory perceptions: first, how she appeared to embody black criminality in an era of sociopolitical movements, and secondly, how her image challenged the notion of criminality as defined by white America. A black intellectual woman challenging the judicial system, with an afro, promoting black liberalism, all went against the accepted normalized identity American whites had constructed for blacks. As commentator Van Jones observes, Davis resists not just the political norm of plea bargaining but also the beauty norm of pressing and relaxing black hair to appear more like white hair. The documentary links a contemporary celebration of black difference to a historic moment of remonstrance through a single shot of Van Jones holding up his fist, a gesture



symbolic of black power, that is spliced directly into a shot of Davis making the same gesture when entering the courtroom. Thus the documentary captures what White calls the “fullness and continuity in an order of events” (White, 13). Through the linkage of these two moments in time, the documentary highlights a withstanding cultural influence that stems from black “otherness.”

Historical events cannot be isolated to one moment in time. If an event is significant, it creates a ripple effect that resounds generations later. The story of racial uplift did not end with desegregation. Rather, it continued in a new context within the black intellectual movements of the 1960s. The pursuit of equity and equality for the black community continued through the twentieth century but was not seen as such by the broader establishment. As African Americans turned to black nationalism, the movement was increasingly linked with criminality and deemed separate from Civil Rights. In challenging the reconstruction of social caste, the reconstruction of black identity challenged aspects of the American sociopolitical establishment. In response to oppressive social politics, the narrative construction of black identity expressed the black community’s persistence in challenging white history’s imposing *lack* of a narrative that claims a finite resolution.

With the fabric of racial bias so deeply rooted in American history, the presentation of such a history lends itself to biased representation. Some would say that contemporary America is more aware and politically conscious of the misrepresentation of black identity and history through the media. They may argue that as a collective white America has recognized the nation’s inability to remedy the failure of Reconstruction. However, by listening to the rhetoric of nearly every politician since Nixon, it is clear that there has not yet been an attempt to rectify that failure. How does one put a racially progressive present in conversation with a blatantly racist past? To

answer this question, one must consider how power informs the execution of political policy. As criminalization denies blacks the physical freedom of participating in politics, intellectual freedom provides a more visible platform for demonstrating opposition.

Pierce claims that the intent of public schools in black communities was to control the developmental and intellectual growth of black students, i.e., to keep the black population in a state of intellectual ignorance. His study exposes a system that “works” by “crystalizing of caste destinies of students of color while teaching the white world to protect the privileges such an arrangement produces” (Pierce, 37). This desire to preserve ‘caste destiny’ persists to this day; the narrative of forced repression of blacks in a white political realm has not ended. It has simply taken on a new, less recognizable form. DuVernay’s *13<sup>th</sup>* makes this point clear toward the end of the documentary by splicing footage of a black man being pushed by a white mob in between clips from a Trump rally, where black protesters undergo the same treatment (01:20:24-01:22:10). The section begins with the then-presidential candidate Trump leading the crowd with a chant, creating an image of national solidarity. The film immediately cuts to footage of the crowd, where white men spit in the faces of black men and a mob forcefully pushes a black girl with a voice-over of Trump saying “get them outta here.” Each shot exposes the crowd’s perception of black “otherness” as something that does not have a place in white America.

Following this scene, footage from the beginning returns, showing a black man resigned to the forceful and violent attacks of a white mob. The audio track continues to play a recording of Trump boasting of America’s “golden era,” when blacks would not protest for the fear of what would happen to them. Clips of modern racial violence alternate with clips from the 60s, as Trump’s audio track

continues to praise the degradation and violent effects of racism. These images and videos counteract the image of blacks as violent and criminalized. Instead, the viewer witnesses the violence of the “non-savage” white men. This juxtaposition of violent image and false assumption reveals the way the imposition of race misidentifies black identity.

Through this montage, it becomes evident to the viewer that racial caste has not been abolished, but rather hidden beneath a veil of racially divisive social politics. As Alexander writes, “Conservative whites began, once again, to search for a new racial order that would conform to the needs of the time” (Alexander, 40). In a time when the political climate is wrought with racial tension, the physical and behavioral reversion to explicit racial violence further demonstrates the repetition of historical narrative. The history of racial violence is not over, as a white conservative telling of history might suggest. In 13<sup>th</sup> the scene concludes with Trump identifying himself as the “law and order” candidate, just as Nixon, Reagan, and Clinton were. This position explicitly connects these politicians to one another. By flagging it, the documentary exposes a white narrative that preaches the preservation of “law and justice” through strict rhetoric at the expense of the rights granted marginalized black populations after Emancipation, Reconstruction, and the Civil Rights Act. The documentary thus frames a forgotten history alongside a linear history that presents itself as “having to do with real events, signaling objectivity, its seriousness, and its realism” (White, 27). By neglecting the historical, political, economic, and social factors that complicate—and connect—the histories of race, crime and caste in America, the linear history dismisses the black narrative of oppression altogether.

The narrative transformation of black identity, from doomed victim of racial caste to challenger, makes use of a recognizable underdog narrative that is considered a part of

the American fabric. The black community has reclaimed its ability to construct its own narrative and redefine the discourse surrounding racial caste by linking historic examples to contemporary examples. The legitimization of oppression cannot be allowed to continue. *13<sup>th</sup>*'s presentation of the history of criminalization and sociopolitical oppression of the black community demonstrates that biases within an institution cannot be easily located in one particular moment in history. The power differentials that preserve racial caste were established and rebranded over time, rooting themselves within various aspects of society. Consequently, they are nearly impossible to destroy. DuVernay's documentary nonetheless makes way for hopeful action by calling upon viewers to actively recognize racial caste's persistence in contemporary American politics and society.

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***Cleaving Consciousness: Reflections of Genre in the  
Contemporary Horror Film  
Jake Levine (CLA 2019)***

**Abstract**

The emergence of the horror film genre in Depression-era America made visible certain genre-specific conventions that remain central in the genre's contemporary form. This essay considers the linkage between the classical and contemporary forms of horror films, illuminating the violation of sexual and moral norms in these films as indicative of the genre's continued emphasis on the violation of intimacy as the principle element of horror. Focusing on the prominence of female protagonists as the conduit through which this violation of intimacy is felt, the discussion focuses on three films: *The Mummy* (1932), *It Follows* (2014), and *The Witch* (2016). It concludes by noting the continued ability of horror films to visually represent its audience's deepest and darkest fears, to "cleave consciousness," and expose those vulnerabilities for all to see.

In the early 1930s, Universal Pictures experienced immediate success with the releases of successive horror films - *Dracula* (1931), *Frankenstein* (1931), and *Murders in the Rue Morgue* (1932) - establishing a new genre of film that was to “consist of pictures with sensationalist subject matter, socially taboo themes, and sadistic and grotesque characters.”<sup>1</sup> The popularity of such films has persisted over time, with film scholar Bruce Kavin attributing this endurance to the genre’s function as “a unique juncture of personal, social, and mythic structure.”<sup>2</sup> Depravity and fear sell, and there is something intrinsically appealing about horror films and their ability to force us to confront our greatest fears. This essay considers the linkage between the classical horror film (films of the early 1930s) and its contemporary form, noting the reflection of genre-specific conventions in the contemporary horror film and the manner in which these films depart from such conventions. Focusing on the violation of intimacy as the principle element of horror in the genre, this essay will examine the manner in which *The Mummy* (1932), *It Follows* (2014), and *The Witch* (2016) present their female protagonists in relation to sexuality and intimacy, and deviate from the classical conventions of the genre through the expression of that horror.

In fact, the classical conventions of the horror film are centered around the sexual threat presented by the monster, as the creature’s usual amorous intentions for the female protagonist endangers the genre’s characteristic heterosexual couple. Other features of the genre – a confrontation between science and superstition and German

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<sup>1</sup>Kyle Edwards. “Morals, Markets, and ‘Horror Pictures’: The Rise of Universal Pictures and the Hollywood Production Code.” *Film & History* 42 (2): 24 (2012). *ProQuest*. Web. Accessed February 11, 2018. <http://ezproxy.drew.edu/login?url=https://search-proquest-com.ezproxy.drew.edu/docview/1746489956?accountid=10558>.

<sup>2</sup>Bruce Kavin. “The Mummy’s Pool.” In *Planks of Reason: Essays on the Horror Film*, edited by Barry Keith Grant and Christopher Sharrett. Oxford: The Scarecrow Press, Inc. (2004), 5.

expressionist film techniques (mainly the expressive use of distorted camera angles and light-and-dark) – express the repugnancy of such a violation to the intimate bond of sexuality. The genre's typical ending, in which the monster is defeated through science and reason and the heterosexual couple is reunited, demonstrates an expunging of this affront and a return to normalcy.

It is through a consideration of these classical conventions that this essay will use the representation of female protagonists in relation to the violation of intimacy to examine the manner in which the genre's contemporary form adheres to, and deviates from the classical conventions. The contemporary horror film still presents a threat to sexual and societal boundaries, but alters what this threat entails and how, or *if*, this threat is defeated. Moreover, this threat no longer exclusively pertains to the genre's characteristic heterosexual couple, with horrors associated with the violations of intimacy shifting towards the familial unit and other close social bonds. Detailing the emergence of the horror film during the Great Depression and early sound era in Hollywood, and later analyzing one classical era film and two contemporary horror films, this essay will demonstrate how the horror genre has staged the endangerment of sex and gender – extremely private components of personhood – throughout its history as a means of expressing the horror of having all the intangibles of a person opened up for all to see.

It is not surprising that films focusing on depraved, abhorrent subjects – namely the violations of societal and moral norms were popularized during the early years of the Great Depression. Nightmares portrayed on screen reflected the frightful reality of the most profound circumstance of economic destitution in American history. By 1932, three years after the Stock Market Crash of 1929 and during arguably the worst year of the depression, the American economy was at its lowest. Unemployment had



risen to nearly 23.6 percent,<sup>3</sup> industry operated at less than half of its capacity, and “business losses were reported up to \$6 billion.”<sup>4</sup> The sense of optimism that coincided with economic prosperity had died with the jazz age. There seemed to be no perceptible alleviation to the cycle of economic woe brought on by the depression, and with each year passed, hard times were only exacerbated. “The early thirties were a certainly a time of uncertainty and fear,”<sup>5</sup> and the horror genre proved to be the perfect cinematic expression of the fears and anxieties of a nation facing a societal crisis.

Furthermore, the classical horror film’s emergence in the early 1930s coincided with developments within the film industry. It was during this period that the fully modulated sound track became well-established, with “the [full] possibilities of sound...[being] realized in Hollywood.”<sup>6</sup> The fully modulated sound track offered an amalgamation of diegetic sound (speaking and on-screen noises) and non-diegetic sound (usually off-screen music) that, for the classical horror film, meant an ability to fully immerse its audience in the horrific stories portrayed on screen. The use of genre defining elements like “voice intonation and off-screen sound effects [to] evoke mood, communicate information, and structure narrative space,” allowed these films to deeply resonate with their depression-hit audiences.<sup>7</sup> Through horror films, these audiences found something new and authentic, yet familiar in the newly-emerging genre. The horror presented on-

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<sup>3</sup>Gene Smiley. “Recent Unemployment Rate Estimates for the 1920s and 1930s.” *The Journal of Economic History* 43, no.2 (1983): 488. <http://www.jstor.org/stable/2120839>.

<sup>4</sup>David Lugowski. “1932: Movies and Transgressions.” In *American Cinema of the 1930s: Themes and Variations*, edited by Ina Rae Hark. New Brunswick: Rutgers University Press (2007), 69.

<sup>5</sup>Ina Rae Hark. “Introduction: Movies and the 1930s.” In *American Cinema of the 1930s: Themes and Variations*, edited by Ina Rae Hark. New Brunswick: Rutgers University Press (2007), 13.

<sup>6</sup>David Lugowski. “1932: Movies and Transgressions.” In *American Cinema of the 1930s: Themes and Variations*, 70.

<sup>7</sup>Kyle Edwards. “Morals, Markets, and ‘Horror Pictures,’” 34.

screen was amplified by the use of the “affective capabilities of sound-design techniques” and the screams, cries, and groans of characters and creatures alike seemed to capture the sense of dread pertinent to situations on and off-screen.<sup>8</sup>

Karl Freund’s *The Mummy* (1932) serves as a prominent example of the horror film in its classical form. As the first film considered, *The Mummy* acts as a basis for comparing the differences seen in the presentation of sex and the violation of intimacy in the contemporary horror film. It tells the story of the undead, ancient Egyptian priest Imhotep, who has been resurrected by the cursed Scroll of Thoth. Buried alive for trying to bring his love Ankh-es-en-amon back from the dead, Imhotep has returned to the world of the living to find her reincarnated soul. Posing as a man named Ardeth Bey, Imhotep attempts to revive her mummified corpse, but is stopped when Helen Grosvenor finds herself telepathically drawn to him. Realizing that she is the reincarnation of his love, Imhotep attempts to draw her away from Frank Whemple and other “learned” men. Inducing Helen with his spell, Imhotep reveals that she is the reincarnated soul of his love and that they are meant to be together. In order to achieve this, he plans to kill and mummify her. Frank Whemple, who has professed his love to Helen, comes to rescue her, but finds himself powerless before Imhotep’s magic. Helen, in a moment of consciousness, begs the goddess Isis for help and watches as Imhotep crumbles to dust and the Scroll of Thoth burns in a fire. The film ends with Frank and Helen reunited by love, and the threat of the undead Imhotep vanquished.<sup>9</sup>

Freund’s direction serves as a notable component of the film, as he constantly places an emphasis around Helen. Throughout the film, Freund invokes an eerie, otherworldly

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<sup>8</sup>Ibid, 34.

<sup>9</sup>“The Mummy.” *American Film Institute*.

<https://catalog.afi.com/Catalog/MovieDetails/6319?ext=filmography>

feel that is largely induced by the film's score, which has a creeping and mysterious quality to it. The film unfolds in an episodic manner, with fade-to-blacks indicating either a passage of time or a progression of narrative sequencing that emphasizes a dreamlike mood. Freund does this to blur the distinction between reality and the subconscious, with this obscuration of cognizance reflective of Helen's plight in the film as the conduit through which Imhotep sexually threatens societal and moral norms.

The scene in which she first meets Imhotep serves as perfect example of this. Drawn to Imhotep's location by an ethereal force, Helen finds him attempting to revive the mummified corpse of his long-dead love, Ankh-es-en-amon. Frank Whemple and his father then discover her passed out in front of the museum, and which is when they take her to their home to call for a doctor. Flitting in and out of consciousness, Helen mumbles ancient Egyptian to herself in-between feverish conversations with an alarmed Frank. At the arrival of Ardeth Bey (Imhotep), Helen immediately springs to life at the sight of him, as if possessed. Helen is utterly mesmerized by the presence of Ardeth Bey, whom she immediately understands is the long-dead Imhotep. She meets his imposing gaze, and the two lock eyes, sharing a deep and knowing glance. Imhotep seems overcome with emotion, as tenderness in both appearance and demeanor replaces his usually cold, glassy stare. Both figures stand extremely close to one another, while the rest of the company—Frank Whemple, his father, and Dr. Miller—all appear deeply concerned and disturbed by the scene before them. Moreover, Freund physically separates the characters in this scene, placing Ardeth Bey and Helen in the middle of the room and relegating the other characters to the corner. A couch acts as a further barrier that isolates the monster and the female protagonists, further emphasizing the perverted sense of intimacy between Helen and Imhotep in this scene.

Helen's sexual nature is quite noticeable in this scene, as Freund highlights this to exacerbate the sense of discomfort that is elicited by an implicit understanding that there is something fundamentally wrong in the encounter between Helen and Imhotep. Helen falls into what film theorist Robert Haas describes as the typical characterization of female horror characters as "usually [portrayed as] helpless victims in the...genre," as Freund presents her in this scene, and in the entirety of the movie, as a submissive and hypnotized individual that has easily succumbed to the unnatural powers of Imhotep and is utterly unable to facilitate her own rescue from such evil.<sup>10</sup> In fact, it is innately understood by the audience that it is Frank Whemple that must save her from the clutches of the monster. The love that Frank holds for Helen – a love that the audience deems as appropriate and suitable – is blighted by the abnormal obsession that Imhotep has with Helen, and that it must be through Frank's actions that this righteous love will be restored. It is only must be through Frank's actions that this righteous love will be restored.

The horror related to the violation of intimacy here, is thus understood in regards to the threat that the monster poses to the Frank and Helen, the film's heterosexual couple. The undead Imhotep functions as an aberration that threatens their "normal" romance, and by extension, normal societal and moral boundaries. Sexuality and deviance is consequently articulated through Helen's personage, with the film's distinction as a "pre-code" film, – referring to "the brief period between 1930, when the Hollywood Production Code was formally introduced...and 1934, when those guidelines were enforced" – serving as a means

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<sup>10</sup> Robert Haas. "Men, Women, and Chain Saws: Gender in the Modern Horror Film." *Film Criticism (ARCHIVE)* 18 (2): 67-71 (1994). *ProQuest*. Web. Accessed February 11, 2018.  
<http://search.proquest.com.ezproxy.drew.edu/fii/docview/222722582/8F3DFB20D1C74319PQ/10?accountid=10558>

for Freund to amplify Helen's seductiveness.<sup>11</sup> In the concluding scene, in which Imhotep is to kill and revive Helen so that she is ultimately bound to him for eternity, Helen is dressed in a highly-revealing garb and placed in a sacrificial, yet vulnerable position, as if suggesting that she is not only submitting to Imhotep's magical abilities, but also his sexual forcefulness.

With that in mind, *The Mummy* is demonstrative of the classical horror film's "[carrying of] the prescriptive codes of modern Western sexual behavior," with the film reflecting ideals and attitudes of the period in which it came out.<sup>12</sup> The conservative culture that pervaded Depression-era America would certainly have found the violation of the intimacy of relationships terrifying, and the eventual restoration of Helen and Frank's relationship from the ghastly clutches of Imhotep would have been seen as an end to the possibility of sexual transgression and an affirmation of acceptable societal norms.

Having established the classic horror film's conventions and provided an example of the manner in which sexuality and the violation of intimacy are presented through the female character, this essay will now begin to examine the contemporary horror film. Directed by David Robert Mitchell, *It Follows* (2014) follows a teenage girl named Jay, who has recently contracted a demonic sexually transmitted disease. This disease entails that a formless monster will relentlessly follow her until she passes the disease on to someone else, or otherwise be killed by the creature. If the person she passes the disease on to is killed,

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<sup>11</sup>Kyle Edwards. "Morals, Markets, and 'Horror Pictures,'" 25.

<sup>12</sup>Will H. Rockett. "Review of 'Dreadful Pleasures: An Anatomy of Modern Horror/Planks of Reason: Essays on the Horror Film.'" In *Journal of Film and Video (ARCHIVE)* 38.2, edited by Don Fredericksen (1986): 89-90. *ProQuest*. Web. Accessed February 11, 2018.  
<http://search.proquest.com.ezproxy.drew.edu/afi/docview/224639472/5F75173CFB7548A5PQ/3?accountid=10558>

the monster will resume stalking Jay and so on. Enlisting a group of friends to help her flee from the monster and ultimately defeat it, Jay runs from one place to the next, desperately hoping to shake the creature off of her scent. Her efforts do not work, and with each successive place she runs to, the creature inevitably follows. After Jay attempts to kill the creature in a pool, it is unclear whether or not Jay has succeeded in completely vanquishing the monster. The film ends with Jay in a relationship with Paul, one of her friends who joined her in the attempt to kill the monster. They walk hand-in hand down the street, as someone - or perhaps *something* - follows closely behind.

Throughout the film, David Robert Mitchell's direction places emphasis on Jay as the female protagonist, allowing the female character in his film to actively participate in the attempt to destroy the supernatural, undead monster and restore normalcy. *It Follows* demonstrates a sharp departure from the role of the female in *The Mummy* and other classic horror films, where sexuality and submissiveness are interchangeable in the presentation of a helpless and easily subdued female character. Though the film certainly emphasizes Jay's sexual nature, it is done to stress the sense of horror that the violation of intimacy induces. The film's final scene highlights this focus. Mitchell places Jay and Paul at the center of the frame as they slowly walk through their neighborhood holding hands. The camera directly faces them, slowly panning away and matching their pace. Focus is placed on the pair, as the settings around them appear slightly out-of-focus. Mitchell also subdues the color here, making it gloomy and reflective of the somber and vacant expressions on each character's face. Sound is also important here, as it is completely subdued, except for some quiet and eerie music that almost acts as ambient noise. There are also faint traces of noise from neighborhood activities – the slight sound of children

screaming, leaf-blowers roaring, and cars moving, but a sense of quietness pervades the scene, evoking a feeling of dread. Jay and Paul slowly face each other, their pace not hesitating, as they exchange a loving, yet knowing glance. Behind them, a figure appears to be slowly following them in the distance, but it is unclear if it is the film's monster or just a random neighbor. The camera then shifts to follow the pair from behind at a distance, and the viewer sees their backs as they continue to walk without hesitation. They continue on for a moment, until the film cuts to black. Here, *It Follows* demonstrates its deviation from the classical horror film, as Jay is given a central role in defeating the threat the monster poses. Though Jay as a female character still acts as the conduit through which the monster's influence is felt, she is not resigned to being helpless or overtly sexualized.

This is not to suggest that there is not a sexual focus with Jay in the film, but rather that Mitchell gives her the ability to break notions of helplessness and instead presents her in a greater manner than her male counterpart. In this scene, it is understood that Jay is the one who exudes control over the situation and has an understanding of how to defeat - or in this case, *avoid* - the creature. In doing so, Mitchell deeply explores the vulnerability that comes with sex and the nature in which people regard sex. There is certainly a sense of power and privacy associated with sexual activity and sex is perhaps one of the most intimate things that a person can do with someone else. David Roberts Mitchell himself actually articulates this relationship between sex and intimacy, stating that "sex connects people physically and emotionally...that people have physical and emotional connections to people that they have slept with."<sup>13</sup> The film's violation of that

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<sup>13</sup>Chris Kaye. "Follow the Bleeder." *Newsweek Global* 164, no.5: 64-67. *Academic Search Premier*. EBSCOhost. Accessed February 11, 2018.

intimacy, in which the sexual actions of its characters become exposed for all to see in the horrific form of a shapeless monster, is understood as the transgression of boundaries, as opposed to the act of sex itself.

Instead, sex is understood as a natural thing that does not warrant degradation. In that manner, Jay's treatment as a strong, central character relates to the lack of need for her to atone for her sexual actions. Mitchell further states that "Jay is strong, and [has] done nothing wrong. She slept with someone that she liked, and that's OK."<sup>14</sup> The film's dark and ambiguous ending, in which the heterosexual couple – Jay and Paul – is intact and the monster remains (most likely) alive and intent on harming the characters, reflects that the fact that the contemporary horror film does not have to unquestionably end transgressional behavior or reaffirm certain societal norms. Instead, *It Follows* demonstrates that the contemporary horror film uses genre-specific conventions established during the classical period of the genre to explore different methods of storytelling. Violations of intimacy and social norms by the supernatural, undead monster are evident in the film and the female character continues to play an important role in the genre, especially in regards to sexuality, but the creature's slow methodical pace and unquenchable bloodlust represents the manner in which sexual stigma follows the individual once revealed. Jay has had perhaps the most confidential aspect of her private life – her sexual activity – revealed for all to see. The ultimate horror of *It Follows*, is that once that intimacy is broken, it is impossible to restore.

*The Witch* (2016), the final film that this essay will look at, deals with sexual themes in a manner similar to *It Follows*, but constitutes a more complex deviation from the

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<http://web.a.ebscohost.com.ezproxy.drew.edu/ehost/pdfviewer/pdfviewer?sid=09101767-abfd-4592-87a5-5a4c0cd7948a%40sessionmgr4010&vid=1&hid=4101>

<sup>14</sup>Ibid, 67.



classical horror film, as it uses a focus on the sexuality of its female protagonist, Thomasin, to display the complete disintegration of the nuclear family. Directed by Robert Eggers, *The Witch* tells the story of a Puritan family that faces an unseen and unspeakable evil in the woods. Banished from a Puritan settlement due to his extreme religious fundamentalism, William sets up a home for his family in the middle of a clearing surrounded by a deep, dark forest. The family's daily routine consists of tending to their home and various farm animals (including the goat Black Phillip) – as well as a near constant utterance of prayers and biblical verses. However, things begin to go terribly wrong for the family when their infant son disappears and is promptly crushed to a bloody pulp by a witch in the woods. This disturbing scene only begins the misery for the family, as event after event – including the horrific, almost satanic death of Caleb, the family's son – slowly tears the family apart. Thomasin, the family's young adolescent daughter, is blamed for these happenings throughout the film, and her family begins to turn on her. The film ends with stunning violence, as the family's twins are killed by the witch, William is gored to death by Black Phillip, and Thomasin is forced to brutally kill her mother in self-defense. The end reveals Black Phillip to be an incarnation of Lucifer himself, and Thomasin ends up joining a coven of witches in the woods, succumbing to the evil that destroyed her family.

Throughout the film, Robert Eggers focuses on slowly and methodically building tension, paranoia, and fear in the disintegration of the family unit. Thomasin, as a member of that family, is almost immediately made distinct. Each moment of terror, from the disappearance of their infant son, to the death of Caleb, to the deaths of the twins, and lastly to the deaths of William and his wife Katherine, relates itself back to Thomasin. The scene in which Katherine interrogates Thomasin after the

disappearance of the baby serves as a notable example of the creeping hysteria that Eggers establishes in the film. With Robert and Caleb hunting in the forest and the twins asleep, the only characters around in the dark and confined house are Katherine and Thomasin. A lull in action is abruptly interrupted by Katherine violently grabbing Thomasin and throwing her to the ground. Eggers brings the camera close to both their faces, as the hot, fervent anger of Katherine is juxtaposed against the panic in Thomasin's eyes. The lighting in the scene is minimal, with a few candles glowing in the background. Shadows are abundant in the image, almost engulfing the two figures as Katherine hysterically blames Thomasin for the family's woes and their apparent affront to God. She hisses scripture at her, tightening her grip around her hair, bending lower and lower to force Thomasin against the ground. The camera offers no sense of privacy for the characters, as it captures their most vulnerable emotions and facial expressions. Puberty reveals the basis for Katherine's insistence on Thomasin's guilt, as she notes that Thomasin has had her period and is reaching womanhood. Eggers prolongs the scene after this reveal, drawing emphasis to the manner in which Thomasin's mother associates her sexual maturation as a transgressional action that has brought evil upon their family.

*The Witch* is particularly interesting in the manner in which it deals with the genre's signature horrific element: the supernatural, undead creature. For the most part, the actual *witch* appears on-screen less than a handful of times and mostly manipulates things from behind the scenes. Moreover, each time we see her, she appears in a different form: when she murders the family's baby, the viewer only sees her white and cackled wrists; later in the film, she appears before Caleb in the forest as a gorgeous naked woman; she appears before the twins as a pale, haggardly, and wrinkled figure that cackles maniacally. Her

absence gives her a sense of omnipresence that allows her to slowly bring the family's tension and paranoia to fevered heights without directly confronting them. The complete splintering of the family unit that occurs in the film, is thus directed at Thomasin, rather than the actual monster facilitating it. Thomasin, as the developing woman entering sexuality and adulthood, is deemed the "unholy" one who is drawing the wrath of God and the effort at extinguishing the threat to the familial norms – in this case fundamental Puritanism— centers around punishing Thomasin for her sexual development. In that sense, Eggers pairs Thomasin with the witch, using her sexuality to explore gender roles and the presumed sanctity of the family unit.

The familial obsession with Thomasin's menarche as blasphemous demonstrates a two-fold violation of intimacy, on a familial and individual level. In fact, the violation of Thomasin's intimacy in regards to puberty and sexuality can be understood as indicative of the violation of the family unit by the witch. Film critic James Hoberman notes this connection, as he argues that "the film is founded on the more contemporary notion that the Witch idea might be rooted in anxieties regarding female sexuality."<sup>15</sup> *The Witch* plays on notions of loss of innocence and capitulation to impurity that has been linked to sexual maturation in women throughout history. There is something inherently difficult about confronting puberty for girls that makes parents react differently than they do for boys. Usually rooted in the power dynamics of gender roles, this double standard is intensified in *The Witch*. Thomasin beginning her menstrual cycle indicates a slip into depravity, as the literal blood flow on-screen represents a turning away from God and purity. *The Witch*

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<sup>15</sup>James Hoberman. "'The Witch' and Five Hedy Lamarr Films Come to Disc, Casting Spells." *The New York Times*. The New York Times Company (2016). Accessed February 11, 2018. [https://www.nytimes.com/2016/06/12/movies/the-witch-and-five-hedy-lamarr-films-come-to-disc-casting-spells.html?\\_r=0](https://www.nytimes.com/2016/06/12/movies/the-witch-and-five-hedy-lamarr-films-come-to-disc-casting-spells.html?_r=0)

amplifies and abstracts the fears of losing one's own family members into a manifestation of the on-screen family's worst possible nightmare, as the witch functions as an expression of the devil's influence over Thomasin's family. Her sexuality is thus seen as an indication of this influence and explanation for the horrors plaguing the family.

Moreover, Thomasin becoming a witch in the final scene of the film serves as an indication that the film does not punish Thomasin for her sexuality. Just as she is blameless for the horrific actions that have engulfed her family, Thomasin is not at fault for entering adulthood. She maintains a sense of individuality at the end of the film that seems suggestive of the film's focus on familial fears concerning sexuality, rather than simply Thomasin's sexuality. The film shows an outside force – the witch in the woods – entering the intimate confines of the family, and tearing it apart. Sexuality and the violation of intimacy are thus seen here as the manner through which the supernatural, undead monster is able to erode trust and love among Thomasin's family through the sexuality of the female protagonist. Thomasin's sexual maturation is equated to something monstrous and unholy, and is considered, by her family, an invitation for evil to befall them. That evil, the supernatural, undead witch, is thus largely reduced to a secondary role, where her actions constitute the actual violation and destruction of the nuclear family but are overlooked by the familial violation of intimacy, i.e., Thomasin's journey into sexual adulthood.

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Throughout its history, the horror film has been a particularly resonant genre. There is something about horror that captures our imaginations and transfixes us to the screen, in both awe and apprehension, in a manner unlike any other genre. Films in general have an ability to reflect societal components and ideals, but this essay has argued that horror films are exemplary at doing so. The genre is special in its ability to "[work its way] through the manipulation of our dreams, our memory, our consciousness itself," to "become a repository for our entire mythos."<sup>16</sup> Human experience – who we are, what we value, and how we react to the threat of order and understanding – is articulated through the horror film. Whether produced during the heights of the Great Depression in the early 1930s or in the midst of the Great Recession of the late-noughties, horror films have used genre-specific conventions to articulate terrors associated with sexuality and the violation of intimacy.

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<sup>16</sup>Will H. Rockett. "Review of 'Dreadful Pleasures: An Anatomy of Modern Horror/Planks of Reason: Essays on the Horror Film,'" 89-90.

The genre of horror film “[cleaves] to the medium’s capacity for transcending our nominal bounds of consciousness,” exploring the consequences that such violations and deviances incur.<sup>17</sup> This is seen through the supernatural, undead creature that either overtly or latently elicits some sense of sexual ambiguity, in which the film’s characters and viewer feel a sense of discomfort until things are returned to what they should be. Though contemporary horror films no longer assure the restitution and reaffirmation of the correct order of things, or strictly focus on a heterosexual couple, these films still force viewers to confront murder, torture, and other abominable subject matter.

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<sup>17</sup> Ibid, 89-90.

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The genre of horror film “[cleaves] to the medium’s capacity for transcending our nominal bounds of consciousness,” exploring the consequences that such violations and deviances incur.<sup>19</sup> This is seen through the supernatural, undead creature that either overtly or latently elicits some sense of sexual ambiguity, in which the film’s characters and viewer feel a sense of discomfort until things are returned to what they should be. Though contemporary horror films no longer assure the restitution and reaffirmation of the correct order of things, or strictly focus on a heterosexual couple, these films still force viewers to confront murder, torture, and other abominable subject matter. In that regard, horror films have the ability to *cleave consciousness*, to force open the contents of the human mind and lay it bare for all to see. Using the classical conventions of the genre to do so, contemporary horror films are able to articulate this terror of intimacy for the contemporary viewer in a manner similar to the effectiveness of the original horror films of the 1930s. It seems that throughout its history, the horror film’s popularity and resonance has been largely related to its ability to reveal the terror of being exposed to our own vulnerabilities, and having our deepest, darkest fears made real before our very eyes.

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<sup>19</sup> Ibid, 89-90.

**Postmodernism on Trial:  
Investigating the Relationship Between Self-Uncertainty  
and Technology Use  
João Pedro Martins Pinheiro (CLA 2019)**

**Abstract**

Kenneth Gergen's (1991) saturated-self thesis proposes that the contemporary individual's increased contact with different social worlds through advanced communication and transportation technologies, such as air travel, television, social media, leads to a fragmentation and, ultimately, the loss of a coherent self. However, there is virtually no empirical support for this controversial postmodernist claim in the current literature. The present correlational study hereby addresses this knowledge gap by testing the hypothesis that if transportation and communications technology mediate the process of social saturation, then those who use such technologies more frequently will report more self-uncertainty. Undergraduates reported their use of transportation and communication technologies and their self-concept clarity. Analyses indicated that the use of internet-based technologies was associated with higher levels of self-uncertainty, whereas other types of advanced technologies were not.



Kenneth Gergen's (1991) "saturated self" thesis proposes that individuals' increased social contact with different social worlds through advanced communication and transportation technologies (e.g., air travel, television, and social media) leads to a fragmentation and, ultimately, a saturation of the self. This "process of social saturation" culminates in the loss of a coherent self, as multiple, often-competing attitudes, values, and social roles erode a unified self-concept. Ultimately, Gergen argues, "[t]he fully saturated self becomes no self at all." (Gergen, 1991, p. 7)

However, there is virtually no empirical support for this provocative postmodernist claim in the current social-psychological literature. Therefore, this study is an attempt to begin filling the gap in empirical knowledge concerning postmodernist theories of social psychology in general and Gergen's thesis in particular. Additionally, because accounts like the saturated self can help people to understand and cope with negative social experiences such as divorce (Lyle & Gehart-Brooks, 1999), another impetus here is to enhance the knowledge surrounding the saturated self in order to increase its clinical value.

Echoing G.H. Mead (1968), Gergen (1991) builds on the notion that the self is inherently social. In the Meadian tradition, people's selves are mediators between the individual and the "generalized other" (Mead, 1968, p. 57), i.e., society. As such, the self arises during one's psychophysiological development as a function of increasingly complex, frequent, and demanding social interactions - a process wherein the internalization of not only norms, but observable modes of thought and behavior as well, are central to the formation of selfhood (Mead, 1968). A fully formed self-concept is hence a combination of reflected appraisals and social roles that one internalizes as s/he matures (Burke, 1980; Mead, 1968). Such a notion of the self as a means of responding to and effectively interacting with one's social world is axiomatic

in Gergen (1991). More importantly, if social interactions are the catalysts for self-concept development, then the saturated-self argument is at least plausible. An increase in the frequency and depth of social interactions could, as Gergen suggests, eventually bring enough social information to disrupt the self-concept. Finally, Gergen envisions postmodern society as one that features increasingly entropic social environments wherein individuals have large and diverse social networks and internalize even larger and more diverse self-concepts. In order to give Gergen's postmodernist claims about the self a positivist, testable orientation - a controversial enterprise, some assert (see Cresswell, 2011; Gergen, 1994; Mascolo & Dalto, 1995a; Ovadia, 2003; Smith, 1994; Wood, 1992) -, certain conceptual and terminological bridging was necessary. This study employs the self-concept clarity construct developed by Campbell and associates (Campbell, 1990; Campbell et al., 1996) as a means of measuring a fundamental element of the saturated self: self-uncertainty or self-doubt (more on this later). Moreover, in the sections below, the saturated self thesis will be summarized with an emphasis on the self-uncertainty and technology use components of Gergen's argument, and the self-concept clarity construct will be framed within the objective of the current research.

### **Towards a Postmodernist Iteration of the Self**

Before discussing the conceptual pillars of the saturated-self thesis, it is important to consider that Gergen's version of constructivist psychology heavily relies on the assumption that reality is constructed through language (Cresswell, 2011; Gergen, 1973, 1991). Under this light, Gergen (1991) proposed that, for the past two centuries, people have employed romantic and modernist vocabularies (e.g., the soul, religion, and morality in

romanticism or science, rationality, and machine-like predictability in modernism) to refer to the self. In the romantic and modern periods (i.e., during the Enlightenment and the centuries that followed it up to the late twentieth century), artists, poets, writers, and psychologists<sup>20</sup> alike believed that there was an essence, a dispositional thread, rather than a situational one, which, once identified through faith, art, or science, could illuminate the mystery of consciousness and the self (Burke, 1980; Gergen, 1991; Hertler, Krauss, & Ward, 2015). But upon the transition from a romantic-modern social order to a postmodern one in the last decades of the twentieth century, Gergen (1991) argues, the human self underwent a fundamental change. That is, reality and, consequently, the self, once based on romantic and modernist ideas/vocabularies of reliability, conciseness, and predictability, began losing all their connecting threads.

This historical transition was caused by the rise of communication and transportation technologies (CTTs), or “technologies of social saturation” (Gergen, 1991, p. 49), which placed the individual in an increasingly small world. In other words, upon moving from face-to-face communities (where one could count how many relationships one had) to global communities in the span of one-to-two generations, people began to find themselves interacting with innumerable individuals and cultures through these CTTs. Such exposure, according to Gergen (1991), provided to the postmodern individual a historically unprecedented array of relationships to which the self had to adequate. Postmodernity is therefore defined as the

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<sup>1</sup>Pioneer contributors to psychological thought such as Freud (1965), Jung (1955), Erikson (1980), and James (1968) either alluded to or explicitly referenced (especially in James’s case) an organized, chronically and situationally consistent self. Indeed, even when James (1968) suggested that the self matures over time, he also insisted that there was a hierarchy of selves within the individual wherein the bottom or base could be identified as the common thread that gives consistency to the overall or “global” self, as Burke (1980, p. 18) put it, throughout one’s biography.

antithesis of all that is constant: the postmodern, saturated self is a collage of innumerable and often conflicting roles, views, and values.

### **The Technologies of Social Saturation**

As described above, the thesis of the saturated self proposes that advancements in CTTs or technologies of social saturation of the past one-hundred years have immersed contemporary individuals in seemingly infinite social worlds (both electronic and physical) (Gergen, 1991). Such social immersion is the catalyst for the process of social saturation from which the saturated self results. Gergen (1991) lists eleven CTTs as the main technologies of social saturation: railroad, public postal services, automobile, telephone, radio, movie theaters, printed books, air travel, television, and electronic communication. The current study focused on the last three types of technologies listed above (air travel, television, and electronic communication) because Gergen explains that these were the creations that gave “untold potential for relatedness” (Gergen, 1991, p. 53) and truly catalyzed the process of social saturation.

Air travel is the transportation technology that allows people to circle the globe in a matter of hours hence facilitating contact between all peoples and cultures. Television brings news, TV shows, and movies (which are all vehicles for relatedness according to Gergen’s framework) into the privacy of the home. In the current study, more recent advancements in streaming services (e.g., Netflix) were added to the umbrella category of television. Finally, electronic communication encompasses everything from e-mail to social media and games, i.e.: all electronic means of communication wherein a relationship can be started and/or maintained. These technologies of

social saturation put the postmodern individual into contact with seemingly infinite social relationships.

### **Self-Concept Clarity (or the Lack Thereof)**

The postmodern individual is metacognitively incapable of defining her/himself. This self-doubt or self-uncertainty is caused by the “many voices” (Gergen, 1991, p. 83) possessed by the saturated self. That is, as the process of social saturation of the self ensues, the competing values and modes of behavior available to and internalized by the postmodern CTT user disrupt (1) not only her/his self-consistency but also, as a consequence of that first disruption, (2) her/his perception of her/his own consistency. Further, this key feature of the saturated self is equated to the lack of self-concept clarity.

Contrary to Gergen’s controversial postmodernist claim, many publications about the self-concept clarity construct have been added to the literature since Campbell (1990). Self-concept clarity (SCC) is defined as “the extent to which the contents of an individual’s self-concept [...] are clearly and confidently defined, internally consistent, and temporally stable.” (Campbell et al., 1996, p. 141) Therefore, the lack of self-concept clarity, i.e., self-uncertainty, is characterized by inconsistency, self-questioning, and unstableness in one’s self-definition. SCC refers to the structural cohesiveness of people’s self-concept, not the content. It has also been supported several times as a valid and reliable measure (e.g., Campbell, 1990; Campbell et al., 1996; Destin, Rheinschmidt-Same, & Richeson, 2017; Hohman, Gaffney, & Hogg, 2017; Lodi-Smith & Spain, 2017; Steiner, 2017).

## **Hypothesis**

In light of the description of the process of social saturation described above, the present research tests the hypothesis that if the use of CTTs leads to a social saturation of the self, then the more someone uses CTTs, the more s/he will report self-uncertainty. In other words, the frequency of use of CTTs/technologies of social saturation positively correlates with self-uncertainty/lack of self-concept clarity.

## **Methods**

### ***Participants and Design***

A total of 59 undergraduate students (14 male, 44 female, and 1 nonbinary) from a small liberal arts college adjacent to a large metropolitan US city participated in the present research in exchange for academic credit. The sample age range was 18 – 30 ( $M=19.2$ ) and it consisted of 61% white, 15% biracial, 8% Latino(a)/Hispanic, 8% were unable to report racial and/or ethnic identity, 5% Asian, and 2% Palestinian. The key statistical analysis of the present study is a correlational analysis where the two variables are 1) self-uncertainty score and 2) CTT-use score.

### ***Measures***

#### ***Self-concept clarity scale:***

The SCC scale (Campbell, 1990; Campbell et al., 1996) measures the degree to which a participant's self is conflicted. Participants rated themselves from 1 to 5 (Strongly disagree to Strongly agree) in 12 items that assess how clear, situationally and temporally stable, and consistent the participant perceives her/his self-identity to be. The Likert-scale format of rating, which immediately places all of the participants' responses on the same

standardized scale (i.e., from 1 to 5), allows for a direct analysis of how the data yielded by both surveys change relative to each other. In other words, the odd-numbered Likert scale permits the research to extract easily comparable scores from each survey by averaging out the responses (which were all between 1 and 5) given to the items.

*Communication and Transportation Technologies  
Questionnaire:*

The CTT questionnaire assesses how frequently the participants use various forms of what Gergen calls technologies of social saturation. These technologies include air travel; television; movies; text, audio, and video communication, and social media. In 16 of the 18 items, the participants were asked to rate themselves from 1 to 5 (Never to Very frequently, Strongly disagree to Strongly agree, or Very unlikely to Very likely depending on the item). Items 1 and 10, however, do not follow the scale format because they ask what electronic devices the participants use and how many hours per day they usually spend on social media, respectively. Therefore, participants' CTT use score was calculated only with the 16 items that employ a Likert scale. In other words, from the overall 18-item questionnaire, items 1 and 10 were excluded from the main correlational analysis.

***Procedure***

The participants were recruited from an introductory psychology course in exchange for academic credit in said class. The data collection took place over the span of 16 days (from November 5<sup>th</sup> to the 21<sup>st</sup> of 2017). Participants were allowed access to the survey via a link on their course webpage. The consent form stated that the current research was about "technology use and the self,"

that it provided little-to-no risks, and that s/he could exit the survey at any time. The instructions before beginning the battery of questions asked the participant to take their time to think about each item and to consider the last year of their lives when responding to the surveys. The first survey was the SCC scale, followed by the CTT scale, and the third and last one was a demographics questionnaire inquiring the participant's age, race and/or ethnic identity, and gender identity.

## **Results**

Items 6 and 11 of the SCC scale were reverse coded in order for the higher values to mean higher self-uncertainty. In the CTT scale's item 11, participants whose entry contained more than one number (thereby suggesting a range), to represent the amount of hours they spend on social media, were recoded so that the two numbers were averaged out into a single entry.

In the analysis, self-uncertainty and CTT use were not correlated in any significant way (Pearson's  $r=.099$ ,  $p=.458$ ), as indicated in Figure 1 (below). However, other calculations yielded statistically significant results.



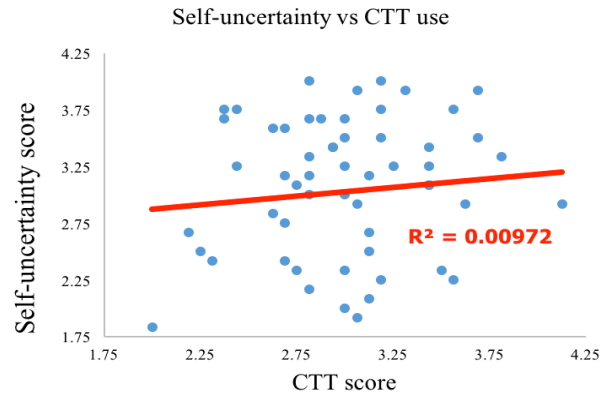


Figure 1: Participants' responses to the SCC and CTT scales were averaged into an SCC and a CTT use score, respectively. Here, one can see that both scores were not significantly correlated – thereby repudiating this study's main hypothesis.

Item 1 from the SCC scale, the variable BELIEFS (“My beliefs about myself often conflict with one another”), and Item 2 from the CTT questionnaire, WEBSITES (“How frequently do you access websites in an average day?”), had a weak, positive correlation ( $r=.27$ ,  $p=.04$ ). Similarly, variable SMHOURS (“In total, how many hours per day do you usually spend on social media?”), i.e., item 11 in the CTT questionnaire, was positively correlated with the SCC score ( $r=.27$ ,  $p=.04$ ). (Before computing SMHOURS, a single datapoint had to be excluded because the participant typed an invalid entry (i.e., “Too many”) for the amount of hours spent on social media.) Finally, responses to the two items in the CTT questionnaire pertaining to the use of air travel technology (items 14, “How frequently do you airplane travel?”, and 15, “I am used to air travel”) were averaged into an AIRTRAVEL score. This score was insignificantly negatively correlated with participants' level of self-uncertainty ( $r=-.09$ ,  $p=.51$ ).

On a different note, consistent with previous administrations of the SCC scale (Campbell et al., 1996), male participants reported slightly less self-uncertainty than female ones (male SCC score  $M= 2.86$ , female SCC score  $M= 3.06$ ). Age and SCC score were insignificantly negatively correlated ( $r= -.24$ ,  $p= .854$ ), which is also consistent with previous research with the SCC scale (Campbell et al., 1996).

## **Discussion**

This study aimed to test a hypothesis derived directly from Kenneth Gergen's saturated self-thesis – namely that an individual's (a) level of self-uncertainty and (b) frequency of advanced communication and transportation technologies use are positively correlated. If said relationship between the two variables was true, then the saturated-self thesis would gain more scientific and clinical value and thus become a candidate for further empirical exploration. In order to test the hypothesis stated above, two separate scales measured the 59 participants' self-uncertainty level and frequency of CTT use. Their scores for both scales were the input for this study's main correlational analysis, but ancillary analyses also utilized either responses to individual items and a subscore pertaining to the air travel component of CTT use as input variables.

The hypothesis that frequency of CTT use would be positively correlated with self-uncertainty level was not supported by the main correlational analysis of the self-uncertainty and the CTT scores. Nonetheless, narrower ancillary analyses, such as assessing the relationship between individual items from each scale, elicited more promising results. The discussion below will first address the main analysis and the study design flaws and then move

to a more theoretical elaboration in light of all the correlations analyzed in this study.

The study design employed here contained elements that could have contributed to the repudiation of the main hypothesis. First, the SCC scale, as a measure of self-schema cohesion, was developed based on the assumption that individuals can, and thus at least some will, know themselves well. The saturated-self thesis, however, relies on the notion that a postmodern consciousness is the opposite of a modern consciousness. As mentioned previously, modernist vocabularies of the self, according to Gergen (1991), imply cohesion: the modern self is rational and consistent throughout time and situations. Hence, the postmodern self is anything BUT rational and consistent – i.e., as a postmodern consciousness takes over through the process of social saturation, Gergen (1991) proposes, the language behind the notion of cohesiveness begins to lose meaning. In other words, the modernist-scientific paradigm behind the SCC scale (one which exists within a vocabulary that allows for cohesiveness to exist) is arguably incompatible with the postmodernist paradigm (one in which cohesiveness or the lack thereof has no meaning) behind the saturated self. This speaks to the ongoing debate of whether postmodernist theories can be researched in the same positivistic manner that modernist theories are (see Gergen, 1994; Smith, 1994; and Ovadia, 2003).

Second, the CTT questionnaire, which was created for this study, strived to measure the participants' subjective frequency of CTT use. That is, the CTT items required the participant to report how frequently they felt they use CTTs. Hence, each person could have their own conceptualization of what it means to, say, frequently access Facebook: one might think that ten times per day is very frequent whereas another might see it as only somewhat frequent. The fact that frequency of CTT use

was not correlated with self-uncertainty might suggest that this study was in need of a standardized CTT questionnaire with a quantification of frequency (e.g., “very frequently” could have been substituted by “more than 10 times per day” and so on). However, one could also argue that the saturated-self thesis deals with the inherently subjective, i.e., case-specific, psychological mechanisms. In other words, Gergen (1991) never quantified the frequency of CTT use required for one to experience social saturation; each person might have their own social cognitive threshold that determines the amount of social information needed to trigger the social saturation of the self.

Continuing with the limitations of the study design, it must be emphasized that the survey was taken online. Although participants were instructed to think about the answers and reminded of the importance of this research, the environment in which they completed the survey was entirely uncontrolled. A self-report measure in an uncontrolled environment can be a recipe for a skewed data collection procedure.

### ***Implications for the Saturated Self Thesis***

The current study has highlighted the weaknesses and strengths of Gergen’s argument. In terms of weaknesses, the results suggest that there could be more to the process of social saturation of the self than just CTT use. The investigation of the relationship between CTT use and self-uncertainty was based on the assumption that these technologies entail social contact. Air travel takes people to all parts of the world, television and films bring different cultures and ways of being into the proverbial living room, and social media and other forms of electronic communication connect individuals with a variety of cultural and personal backgrounds. Under this light, it should be emphasized that the results presented here do not

speak to Gergen's original axiom that overwhelming amounts of social contact saturate the self, but this study nonetheless casts doubt on the role of CTTs as fundamental mediators of social interaction and, consequently, social saturation of the self.

However, in terms of strengths in Gergen's thesis, one should not invalidate all CTTs as possible candidates for technologies of social saturation. That is, some types of CTTs were associated with self-uncertainty. For example, responses to item 1 ("My beliefs about myself often conflict with one another") in the SCC scale were positively correlated with responses to item 2 ("How frequently do you access websites in an average day?") in the CTT questionnaire. Similarly, the number of hours that participants reportedly spend on social media was positively correlated with their self-uncertainty. These results suggest that there could be a stronger relationship between self-uncertainty and frequency of internet use than other types of CTTs. To further this point, the frequency of air travel and self-uncertainty were not correlated at all (i.e., they were *insignificantly* negatively correlated), underlining the chance some CTTs (e.g., e-communication) saturate the self more than others (e.g., air travel).

On a different note, one can discuss the saturated self thesis in terms of an overall theory of the self. First, in narrating the rise of the saturated self as a function of the rise of advanced CTTs, Gergen contributed to the larger canon of the psychology of globalization. In many ways, albeit implicitly, his thesis can be seen as a response to globalization. Second, because the main hypothesis of this study was not supported, it is possible that Gergen's omission of physicality as a component of self-development resulted in limitations in his theoretical argument. The saturated self is believed to contain a multitude of selves (i.e., roles, modes of behavior, and often-conflicting opinions) proportional to the amount of

social worlds one is exposed to on a regular basis. However, there is a significant materialist part of the self that remains unchanged through social situations, namely the body. In other words, the human psyche, bound to a human body, bound to a specific time-space location and a specific anatomy, arguably has a biological constraint on the scope of self-plurality that it can undertake and sustain. Gergen (1991) implied a social cognitive constraint on the amount of social information that an individual can internalize, but he never discussed neurobiological implications for such a constraint (if it in fact exists). Therefore, a more inclusive theory of the self, i.e., one that addresses the psychic consequences of embodiment, would arguably suggest that social saturation can only go so far. Future research and theorizing on the self-concept could incorporate this embodied-self component in their accounts in order to achieve a more inclusive view of the factors that shape the self-concept.

Said critique, however, is not intended to propose a resurrection of the old academic debates on the mind-body dichotomy and nurture vs nature controversy. Instead, it calls for a revisit to epigenetic and biopsychosocial models of self-development (see Mascolo and Dalto, 1995). The endless interactions between 1) the many components of the organism (e.g., genes, epigenes, cells, and organs) and 2) the organism and its environment (e.g., other people), as epigenetic models posit (Mascolo and Dalto, 1995), have shown to be responsible for many processes of self-development. People, in fact, seem to have a limited array of ways in which social cognition can affect their psyche – hence, for example, the continued existence of personality psychology. In other words, if biology, a structure that spawns from the unchanging agent that is the gene, is tied to how people respond to their social environments, then how can an individual contain the infinite potentials of being that Gergen suggests? To put it simply, each human

only has one body and this should provide a decisive cue to the spectrum of possible selves that they can undertake.

Finally, memory also provides an important cue to who one is: “the internalization of external events requires assimilation to existing structures; others (or fragments of others) are never simply introjected into the self.” (Mascolo and Dalto, 1995, p. 189). The postmodern consciousness might not care for consistency in the presentation of self, but the same social cognitive process of socialization and assimilation of others’ modes of thought and behavior that is repeatedly referenced by Gergen (1991) always builds upon the memory of past self-presentations.

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**All Roads Lead to Rome:  
Defining success in art through aesthetic theories  
Camille Berger (CLA 2018)**

**Abstract**

The question of what makes art successful is one for the ages and one that has not yet been answered to satisfaction. Objective measures such as monetary value or public opinion might be applied to the question. In this paper, I propose another objective measure for establishing the success of a work of art. This measure requires the use of an interdisciplinary approach. Gardner's Multiple Intelligences Theory lays down the groundwork for an "all roads lead to Rome" approach to defining success. I transfer the premise of this theory to the discipline of the philosophy of aesthetics, using it to examine different interpretation theories. I argue that for a work to be considered a success, all interpretations must lead the audience to the same conclusion. I then apply this approach to two case studies: Dr. Seuss' Yertle the Turtle and A.E. Housman's poem "1887," one of which is deemed successful and the other not.

## Introduction

Two questions that can be posed when looking at art are: 1) *What makes a piece of work good?* and 2) *What makes it successful?* The former is more abstract and subjective to the viewer. The latter is more concrete. People assess the success of art based on factors such as its monetary value and the opinions of the public and critics. However, there are more objective means to analyze art using an interdisciplinary approach from the fields of aesthetics and education. The proposed method of measurement uses interpretation theories from the philosophy of aesthetics.

Given the dearth of prior research on this proposed measurement, we will build the theoretical foundation of the proposed definition using Howard Gardner's Multiple Intelligences Theory (Gardner's MIT) from the education field. We will also adapt the definition to art through the use of aesthetic theories from the art philosophy field. The definition of success will be illustrated through the use of two case studies: Yertle the Turtle, a short story by Theodore Seuss Geisel and "1887," a poem by A.E. Housman. While this paper will focus on the art of literature, there is the possibility of applying it to other art forms in future discussion.

The definition is intended to give art viewers a tool to be used in assessing the success of a work. The question of who has control over the meaning of art is an important one. However, for this proposed definition, the assumption will be made that the artist's intention is crucial. Since artists are the creators of the artwork, to take control of meaning away from them is to say that their intentions are irrelevant. The intention of the artist is the genesis of their work, so to cast it aside is to ignore the origin of the work, which is to ignore a crucial element of the context in which the art was created. As we will see, to take art out of its

context is to devalue the art. In this paper an artist's successful intention will be used synonymously with a successful work of art.

### **Theoretical Framework and Proposed Definition of Success**

#### ***Howard Gardner's Multiple Intelligences Theory***

As mentioned in the introduction, the proposed definition of success for a work of art is derived from a theory in the field of education. The art of teaching involves teachers transferring knowledge through lessons to their students, just as the act of creating art involves artists conveying a message through their art to their audience. The theory used as the theoretical foundation for this paper is Gardner's Multiple Intelligences Theory (MIT).

Gardner's MIT, "[Challenged] the traditional concept of general intelligence as a single entity... he described an individual's cognitive abilities in terms of seven relatively independent but interacting intelligences... later he added the eighth... and considered the possibility of including existential one as a ninth" (Elena, 2016, p.58). Applied to education, this means that any given student will learn primarily through the categories intelligence in which they are strongest. As stated by an education field practitioner and researcher, Gardner's MIT "provides an avenue for accomplishing what good teachers have always done: Reach beyond the text to provide varied opportunities for students to learn and show evidence of learning" (Stanford, 2003, p. 82). In other words, in a classroom, different students are interacting with the material being presented through different avenues of interpretation. Possible avenues of interpretation include the *linguistic avenue*, which, "Involves having a mastery of language... [and] allows one to use language as a means to remember information" (Brualdi, 1996, p.2), the *musical avenue*,

which, “Encompasses the capability to recognize and compose musical pitches, tones, and rhythms...” (Brualdi, 1992, p.2), and the *bodily-kinesthetic avenue*, which, “Is the ability to use one’s mental abilities to coordinate one’s own bodily movements.”

Gardner’s nine intelligences provide nine different avenues of interpretation through which, if teachers are successful in creating and delivering their lesson plans, will lead all students to acquire the same understanding of the subject taught regardless of which one they primarily interact with the material through. This is the essence of the definition of success I propose to be used to assess artwork: an objective measure of success for a work of art is that all interpretation avenues lead to the same final interpretation. In other words, an artist is like a teacher. If a teacher’s lesson plan is successful, all students, no matter their primary type of intelligence, will gain an understanding of the knowledge the teacher intended to pass along. Likewise, if an artist’s work of art is successful according to this paper’s proposed definition, all viewers, no matter their chosen interpretation avenue, will arrive at the same interpretation of the work.

### ***Aesthetic Theories***

While the theoretical foundation for the proposed definition of success is Gardner’s MIT, in order to apply it to works of art rather than school lessons, it is necessary to define relevant avenues of interpretation other than the nine human intelligences. Four aesthetic theories will fulfill this purpose: the actual intentionalism theory, the hypothetical intentionalism theory, the value maximization theory, and the theory-driven theory.

These four aesthetic theories are generally accepted theories used in the fields of art and aesthetics. They are used for the purpose of providing the audience with the tools necessary to understand the meaning of the art that is

being viewed. More developed descriptions of the theories will be given throughout the first case study. The actual intentionalism and hypothetical intentionalism theories address the artist's intention behind a work. The value maximization theory seeks to establish the interpretation that leads to the greatest artistic value. Finally, the theory-driven theory involves relating the art to theories in other fields and disciplines. The definitions of each theory will be expanded over the course of the first case study presented in this paper. To reiterate, it is important to note that these theories serve the same function in this paper's proposed definition that the nine human intelligences serve in Gardner's MIT.

When observing art, be it visual, literary, or musical, the work's interpretation can be seen as the end goal, and different interpretation theories as the avenues of an "all roads lead to Rome" definition of success. It should not matter if the viewer of the art uses the actual or intentionalism theory, intentionalism theory, value maximization theory, or theory-driven theory interpretation avenues, because if the work is successful, each interpretation avenue will lead to the same conclusion – Rome.

### **Contextualism versus Formalism**

It is important to note the difference between using contextualism rather than formalism in the interpretation of art, and to highlight that the working assumption for the rest of this paper will be that contextualism is the correct approach to use to achieve its aim. Contextualism is an approach that takes into account relevant artistic and contextual properties in addition to the aesthetic properties of a work. Some of these relevant artistic and contextual properties can include historical context, the artist's life story, or relation to other works. On the other hand,

formalism is an approach through which “the correct assessment of... a work of art is had when the agent restricts her attention to the formal properties of the object, properties that are broadly accessible through the senses...” (Fenner, 2008, p. 111). In other words, this approach assumes that everything necessary to interpret a work of art is contained within that work and does not allow for the use of any outside information in its analysis.

Two reasons to consider contextualism to be the superior approach is that not only does it add value to a work of art, but also it is extremely difficult to look at art purely through the formalist lens. First, contextualism adds value to the work in that it uses relevant information about a work of art to enhance the viewer’s experience. As a brief illustration, the artist James Turrell uses light and space to create his art with a specific time of day in mind. If viewers of Turrell’s art take a strictly formalist approach and thus are not aware of this context, they may look at his art at the wrong time of the day, and in doing so, miss the opportunity to fully understand and appreciate it. On the other hand, if the viewers are aware of this context and therefore view the art at the appropriate time, there is a better chance that they will be able to fully appreciate it. It is reasonable to conclude that if gaining a better understanding of a piece of art is the desired outcome, then contextualism is the better approach to use. Second, as David Fenner argues, “...even the enlightened formalist will recognize that some contextual aspects are unavoidable; she cannot maintain her position in its purest form” (Fenner, 2008, p. 155). For example, “One can know that... individuals who move scenery on stage as the curtain is up and the play’s action is proceeding, are not a part of the play, not a part of the world of the play” (Fenner, 2008, p. 155). This shows how contextual aspects will find a way into the audience’s interpretation so a purely formalist view is not possible.



Specifically, with respect to this paper, it is necessary to use the contextualism approach in order to be able to apply the aesthetic theories mentioned in the prior section. Each theory relies on contextual information outside of a work of art, and thus would be impossible to apply if the interpretation of art were restricted to a formalist approach. Therefore, in the following case studies of Geisel's Yertle the Turtle and Housman's "1887," historical and political contexts and the authors' lives and conversations will be taken into account rather than restricting their analysis to the literal words on the page.

### **Case Studies**

The application of the proposed definition of success will be illustrated through two case studies, both literary works. The first, Dr. Seuss' short story entitled Yertle the Turtle, was written in 1958. The second, Housman's poem entitled "1887," was published in 1896 as part of A Shropshire Lad. A more developed description of each aesthetic theory will be provided throughout the first case study.

The subject of artistic interpretation is a complex one made clear from the fact that there are several different theories with none being indisputably considered the best. When discussing a complicated subject, it is best first to try to understand it through a simplified example. For example, when children learn to count, they start with counting by ones before skip counting by twos or fives. The same principle can be applied to interpretation. In order to demonstrate that a successful work of art will have the same interpretation no matter which theory is used, it makes more sense to start with simple case studies before applying the proposed definition to more difficult, highly debated works.

Thus, the rationale for selecting these two works is two-fold: first, both works lead to clear interpretations when using the different aesthetic theories, and second, reliable information about the authors and their intentions for their respective works is readily available in addition to other contextual information.

### ***Theodore Seuss Geisel's Yertle the Turtle***

Yertle the Turtle is the story of Yertle, the king of the turtles, who sees his position as king being dependent on how much he can see. As the story progresses, Yertle uses the other turtles to get higher and higher by stepping on them in order to see further and further, and in doing so becomes king of, "...a cow... a mule... a house... a bush...the trees...the birds...the bees...the butterflies...the air..." (Geisel, 2008, pgs. 12&15). His reign ends when the turtle at the bottom of the stack lets out a burp, and the whole stack of turtles he was standing on comes tumbling down. The story ends with Dr. Seuss stating, "And the turtles, of course... all the turtles are free as turtles and, maybe, all creatures should be" (Geisel, 2008, p. 28).

At first glance, there are two common ways of interpreting this short story. The first interpretation leads to the conclusion that it is exactly what it seems to be: a children's short story about bullying through the use of turtles. The second interpretation leads to the conclusion that Yertle represents Hitler and his rise to and fall from power. These two interpretations will be considered in the analysis of Yertle the Turtle through the different interpretation theories.

### ***Actual Intentionalism Theory***

Gary Iseminger, a well-known American philosophy educator, defines actual intentionalism this way: "If exactly one of two interpretive statements about a

poem, each of which is compatible with its text, is true, then the true one is the one that applies to the meaning intended by the author” (Iseminger, 1996, p. 320). This is to say that if there are two interpretations, Interpretation A and Interpretation B, and both seem plausible, but the author of the work has stated that Interpretation B is consistent with the meaning he had intended to convey through the work, it should be the one that is used. In the case of Yertle the Turtle, this would mean that the final interpretation should defer to what Dr. Seuss actually intended. Judith Morgan, who was a friend to Dr. Seuss and later wrote a book about his life, stated that, “in his early drawings for the book, Ted did draw the turtle with a [Hitler] mustache. Yertle was definitely Hitler” (Gritz, 2013).

It is fair to question the use of a one-degree removed source as proof of an author’s intention. However, when direct quotes or personal journals are not available, it is appropriate to consider the remarks of those very close to the author. While Dr. Seuss is a well-known figure, through much research it has not been possible to locate a direct quote from him on this matter. Therefore, it is reasonable to consider Morgan’s statements and assess whether she was close enough to Dr. Seuss to take them into account for the purpose of this analysis. Morgan was not only a neighbor and a friend to Dr. Seuss, but she also co-authored his biography. Through her personal relationship with Dr. Seuss, it is safe to assume she had an insider’s perspective into his life and thoughts that the public did not. Based on this evidence, it is reasonable to conclude that Morgan’s word is trustworthy in providing truthful information about Dr. Seuss and his actual intention behind Yertle the Turtle. Thus, the use of the actual intentionalism theory leads to the interpretation that this short story is in fact a symbolic portrayal of Hitler.

### *Hypothetical Intentionalism Theory*

Iseminger defines hypothetical intentionalism as, "... if exactly one of two interpretive statements about a poem, each of which is compatible with its text, is true, then the true one is the one that applies to the meaning *an ideal reader would rationally believe to be intended* by the author" (Iseminger, 1996, p. 320). This means that the reader is to use public knowledge about Dr. Seuss in order to select the best interpretation. Another way to think of this is that, "...the core meaning of a literary work is given by the best hypothesis, from the position of an appropriately informed, sympathetic, and discriminating reader..." (Levinson, 2006, p. 302). In this paper, an ideal reader will be defined as one characterized by these three qualities.

In the case of Dr. Seuss and Yertle the Turtle, an ideal reader would consider whether it would be out of character for Dr. Seuss to make political statements in his work. To answer this question, not only did Dr. Seuss start his career out as a political cartoonist, but he also wrote other children's stories containing political messages. For example, "The Butter Battle Book" is a story about the Cold War where, "Each side will stop at nothing to see that their own way of life prevails. Written at the height of the Cold War..." (Patricia, 2009, p. 374). An ideal reader would also consider Dr. Seuss' relationship to Germany and Hitler. Dr. Seuss was a descendent of German immigrants and during his childhood he was, "...subjected to verbal abuse and threats of physical violence ... Schoolmates yelled, 'Hun!' 'Drunken Kaiser!' ..., 'Kill the Kaiser's Kid!'" (Pease, 2010, p. 14). This put Dr. Seuss and his family in a position of trying to prove their loyalty and love for the United States. When the rise of Nazism occurred, he "...wanted to prove how strongly he felt about America" (Gritz, 2013). Finally, an ideal reader would consider the fact that Dr. Seuss was not shy when it came

to showing his hatred of Hitler by depicting him in various forms including, "...a mad scientist amputating limbs, a bureaucrat giving orders to the devil, a trophy hunter trying to add a Russian bear to his taxidermy collection" (Gritz, 2013). Combining the role politics played in Dr. Seuss' career, his desire to distance himself from Germany, and the fact that he had no issue letting his disgust of Hitler be known, imagining him representing Hitler by an angry, power-hungry turtle is not a far reach. Therefore, the use of the hypothetical intentionalism theory logically leads to the conclusion that the second interpretation is the correct one.

In the case of Yertle the Turtle, it is clear that both the actual and hypothetical intentionalism theories lead to the same interpretation. The fact that these two theories come to the same conclusion is not very surprising since for the most part, "...the ideal reader's rational belief about the author's intentions works just as well as those intentions themselves" (Iseminger, 1996, p. 320).

#### *Value Maximization Theory*

The value maximization theory "...sees the point of interpretation as concerned with *maximizing* the work's artistic value" (Davies, 2016, p. 119). This means that if there are two interpretations, Interpretation A and Interpretation B, then the viewer of the art should choose the one that makes the art most valuable. In the case of Yertle the Turtle, the reader must decide which of the two creates the most value by considering what the audience will get out of the story.

According to the first interpretation, the audience will learn that bullying is bad and will get you nowhere. Yertle takes advantage of the other turtles in order to get what he wants. The story shows the one brave turtle, Mack, deciding that, "...he'd taken enough. And he had. And that plain little lad got a little bit mad and that plain little Mack did a plain little thing. *He burped!* And his burp shook the

throne of the king!” (Geisel, 2008, p. 24). The story teaches children to stick up for themselves and others when a situation calls for action. To say that this is not a valuable lesson would be false. In fact, this is an extremely valuable lesson that all children must learn. The value maximization theory, however, is not about determining whether or not an interpretation is valuable but instead whether or not it is the *most* valuable.

The second interpretation is essentially an enhanced version of the first one. Through this lens, not only does the story teach children that it is important to stand up for themselves against the big bad guy, but it also adds a historical element. The short story is transformed into more than just a story about a fictional turtle. It becomes a child-friendly way to teach children about Hitler, a way to teach children about this important time in history when a terrible man used and killed very large groups of people just like him, for his own personal gain.

It is difficult to argue, when using the value maximization theory, that the second interpretation, in which Yertle is symbolic of Hitler, is not the interpretation that adds the most value to the short story. In fact, it includes everything that is important and valuable in the first interpretation and then adds an additional aspect that enhances the story even further. Therefore, the value maximization theory leads to the same interpretation as both the actual and hypothetical interpretation theories. As an additional note, in the case of Yertle the Turtle, the two interpretations can be seen as similar since one seems to build off of the other. This compilation of ideas to create the superior interpretation is not something that happens with all interpretations, it just happened to work out this way in this case.

### *Theory-Driven Interpretation*

The theory-driven interpretation theory uses theories such as, "...Marxist, psychoanalytic, and feminist approaches to art's interpretation...plainly it's legitimate to invoke such theories in interpreting works of these kinds" (Davies, 2016, p. 122-123). These theories can add to the overall work, but are not necessarily the main source for interpretation. In terms of Yertle the Turtle, one can argue that the ideas of Hitler's *Lebensraum*, dictatorial governments, absolute power, and civic engagement are all present in the short story but there is no way to argue that the short story is only about one of these theories.

"The theory provides one lens among many possible others to scrutinize the piece. And if in the process the artist's work slips from view... then so be it" (Davies, 2016, p. 124). This fluidity of theories is seen in Yertle the Turtle. While it is not long, different parts of the short story highlight the ideas behind different theories. The fact that Yertle wants to go higher and higher because he is the king of all that he can see, and he wants to see more, can mirror the ideological principle of Nazism, *Lebensraum*. Hitler used *lebensraum*, "living space," as the reason Germany needed to expand its territory. He wrote that Germany needed to, "[concentrate] all of its strength on marking out a way of life for our people through the allocation of adequate *Lebensraum* for the next one hundred years." (Lebensraum, n.d.) Yertle does not build his turtle throne higher and higher with the pretense that it is for the needs of the other turtles so it is not a perfect match to the *Lebensraum* theory, but the idea of needing to expand his rule is the part that is similar to *Lebensraum*.

The short story also shows the idea of dictatorial government, which includes the idea of absolute power. When Yertle demanded to go higher, "...the turtles 'way down in the pond were afraid. They trembled. They shook. But they came. They obeyed" (Geisel, 2008, p. 14). The

turtles did not want to give in to the demands of their ruler, but they were forced to by the fear of what would happen if they did not obey him. Yertle did not care about his fellow turtles. He only cared about ruling more and more territory. The idea of civic engagement is also illustrated when, due to Yertle's unrealistic demands and their own suffering, the turtles started to second-guess what is happening. The turtle at the bottom of the stack, Mack, tries to let Yertle know about the suffering of the other turtles, "...down here below, we are feeling great pains... down at the bottom we, too, should have rights... Our shells will all crack! Besides, we need food. We are starving!" (Geisel, 2008, p. 18). When Mack's request is rejected and ignored, he decides that he has had enough and lets out a burp. This burp shakes the stack of turtles and all the turtles come tumbling down. While in the real world no burp would bring about social change, this is a way to introduce the idea of civic engagement to children. Mack saw what was happening, did not think it was fair and decided to do something to help ameliorate his life and the life of his fellow turtles. This shows children that in order to bring about change you must do something. It does not have to be anything huge or extraordinary but it has to be something.

#### *A Successful Work*

It is clear that the use of all four aesthetic theories lead to the single interpretation that Yertle the Turtle is a symbolic depiction of Hitler rather than a simple fictional short story designed to teach children about bullying and standing up for themselves. This means that, according to the proposed definition of success, Yertle the Turtle is, in fact, a successful work of art just as Dr. Seuss was successful in his intention for the story.



### **A.E. Housman's "1887"**

Housman's poem, "1887" is, at first glance, a poem about the celebration of Queen Victoria's 50 years of reign, stating that, "God has saved the Queen" (Housman, 1990, 8). The poem mentions the soldiers who died while fighting in order to save the reign of the monarchy and characterizes them as "friends of ours/Who shared the work with God." (Housman, 1990, 11-12) It concludes with Housman declaring, "Oh, God will save her, fear you not...Get you the sons your fathers got,/ and God will save the Queen" (Housman, 1990, 31-32).

There are two common ways to interpret this poem: literally and ironically. A literal interpretation leads to the conclusion that this work is a poem celebrating the Queen and her reign. An ironic interpretation leads to the conclusion that the poem is actually a mockery of the patriotism felt by the men who died so that the Queen's reign could continue. Just as was done in the prior case study, these two interpretations will be considered in the analysis of "1887" through the different interpretation theories.

#### ***Actual Intentionalism Theory***

The actual intentionalism theory, as mentioned earlier, primarily considers the author's intent. In the case of "1887," Housman insisted that his work was truly what he had intended it to be, which was a heart-felt commemoration of Queen Victoria's reign. When his intentions were questioned, he stated, "I never intended to poke fun, as you call it, at patriotism, and I can find nothing in the sentiment to make mockery of: I meant it sincerely; If Englishmen breed as good men as their fathers, then God will save their Queen." (Holden, 2000, p. 157) The actual intention of the author, as stated by him, was to create a poem that would communicate the true patriotism he felt so

strongly for the British Monarchy. Therefore, the use of the actual intentionalism theory leads to the literal interpretation of the poem.

### ***Hypothetical Intentionalism Theory***

In interpreting “1887” through the hypothetical intentionalism theory, the focus is on what an ideal reader, again defined as “appropriately informed, sympathetic, and discriminating,” (Levinson, 2006, p. 302) would conclude. In this case, an ideal reader would consider the political climate at the time the poem was written. It was a time in British history where there were demonstrations turning into riots including the Trafalgar Square riot where, “On 13 November 1887 the Metropolitan Police conducted a savage attack on an unemployment demonstration in London... The episode was immediately dubbed 'Bloody Sunday.'” (Charlton, 1998) Given this context and the bombastic language used in the poem, it would be natural for an ideal reader to conclude that there must be a strong sarcastic or ironic intent behind Housman’s poem.

Frank Harris, an editor and novelist at the time, is an example of an ideal reader. At one point, he, “...quoted the last stanza...in a bitterly sarcastic tone, and praised the poem... ‘You have poked fun at the whole thing and made splendid mockery of it.’” (Goldblatt, *The Intention of the Author*, 2016, para. 17) This shows that as an ideal reader, Harris read this poem as one that mocks the Queen’s reign. Not only did Harris interpret the poem in this fashion, but his friends also truly believed that Housman had created a work of, “mock celebration. What they felt they were appreciating was what they called ‘the bitter sarcasm’ of the poetry.” (Holden, 2000, p. 156) Even though Harris knew Housman, he could still see no way in which Housman would have meant to depict anything other than an exaggerated mockery of the patriotism some felt towards the monarchy. This interpretation led to a clash between

Harris and Housman, which is when Housman defended his work with the words stated above.

Based on the political climate of the time and the example of ideal readers' reactions to the text, it is reasonable to conclude that based on the hypothetical intentionalism theory, the true interpretation of "1887" would be the ironic one. It would appear that Housman had intended to convey a sarcastic and ironic message about the patriotism felt by those who fought for the monarchy.

In this case study, the actual intentionalism theory and the hypothetical intentionalism theory lead to opposing conclusions with respect to the true meaning of the poem. According to the proposed definition of success, this means that Housman's "1887" is not a successful work of art. In practice, there would be no need to continue on to the application of the last two aesthetic theories since there are already two opposing interpretations. However, for the purpose of demonstrating how to use the theories and how the last two interpretations reached interact with the first two, the analysis will continue.

### ***Value Maximization Theory***

The value maximization theory requires that a conclusion be drawn regarding which interpretation – the literal or the ironic – creates greater value for the work. It is important to reiterate that both interpretations are based in contextualism, so neither can gain value from an event that happens after the fact. The value must be present within the context of the creation and initial reception by viewers of the art, or in this case, readers of the poem. Davies is a renowned philosopher primarily focused on the field of aesthetics. In his book, The Philosophy of Art, he discusses Housman's poem and states:

“Approached one way, the poem is shallow and jingoistic, with its comfortable

assumption that God will want to preserve the British sovereign and what she stands for. But it can also be considered to be an ironic rejection of unquestioning claims for the absolute rule and moral integrity of Britain's monarch. The second, subversive interpretation is more subtle and interesting and presents the poem as artistically superior" (Davies, p. 118).

In other words, the poem interpreted literally is almost primitive in what it portrays, while the poem interpreted ironically leads to a much more thought-provoking piece of work. This clearly supports the superiority of the ironic interpretation, which is consistent with the interpretation reached through the use of the hypothetical intentionalism theory.

### ***Theory-driven Theory***

The theory-driven theory is the final interpretation tool. As stated in the previous case study, this theory does not actually play a significant role in establishing the "correct" interpretation, but rather is used to build on the selected interpretation and may even add to the context of the work. In the case of "1887," the prominent theory seen is that of patriotism. This is seen in two different lights depending on which interpretation is used. On one hand, the expression of patriotism is seen as sincere, while on the other hand, it is seen as insincere.

### ***An Unsuccessful Work***

"1887" is an example of a work where all the aesthetic theories do not lead to the same interpretation. The interpretation determined through the lens of the value maximization theory aligns with that determined through the hypothetical intentionalism theory, and both lie

squarely in opposition to the interpretation established through the actual intentionalism theory. A.E. Housman wrote the poem with the intention of commemorating Queen Victoria's 50 years of reign and this intention was never fulfilled. This misalignment in interpretations is a counterexample to the definition of success proposed in this paper.

## **Discussion**

### ***Conclusion***

To review, this paper proposes a succinct and concrete definition of success in assessing a work of art. Derived from Garner's MIT from the education field and applied through well-known aesthetic theories from the philosophy of art field, the proposed definition considers a work of art a success when all interpretation theories lead to the same conclusion being drawn by the viewer. Foundational to this definition is the artist's intention, emphasized by the actual intentionalism theory. The other relevant aesthetic theories include the hypothetical intentionalism theory, the value maximization theory, and the theory-driven theory. The analysis of art through the lens of this definition assumes the use of a contextualism approach.

In Dr. Seuss' Yertle the Turtle all of the theories coincide and, by the proposed definition of success the work, the short story can clearly be considered a success. Dr. Seuss intended to make the short story symbolically represent Hitler and there is no aesthetic theory that will lead the viewer to believe otherwise. The same cannot be said for Housman's "1887." Housman intended to create a celebratory poem for Queen Victoria's reign, but instead created a work that would be concluded to be ironic through the use of the majority of the aesthetic theories. This lack of consistency throughout the aesthetic theories demonstrates that the work was not a success.

### ***Opportunities for further research***

The proposed definition of success for art is a valuable tool for assessing art and, while it is not the only tool available, it is a straightforward one. This is not to say that there are no limitations to the definition, but rather that these potential limitations create opportunities for further discussion or research building off of the work completed in this paper. This section will highlight three further opportunities to continue this discussion.

One limitation of this definition would be the natural difficulties in applying it that would arise with works of art where there is no way to know the author's or artist's intentions. This could happen in cases where the artist has been private and unwilling to share the intention, or in other cases where the art was created at a point in time when there is less documentation available. Another case in which this limitation could cause an issue would be when there is an anonymous or unknown author or artist. This limitation would be difficult to circumvent since it would make it impossible to apply the actual intentionalism theory. It would be worth engaging in further research to see if the proposed definition could be adapted in how it is applied for situations like these.

Another limitation would be if the artist explicitly states that there was no actual intention in creating the art. An example of this would be from The Surrealist poets in the 1920s. They employed a method called Exquisite Corpse which consisted of, "The first person [composing] part of a sentence or drawing, fold over the paper so that his contribution would be concealed from the next person, who would add onto it, until all were finished and the paper was unfolded." (de Fren, 2008, p.174) This would also render it impossible to apply the actual intentionalism theory. This scenario leads to an interesting discussion about whether or not an artist can create successful art without an intention, or if they forfeit the possibility to

create successful art when they decide to create a work with no intention.

Finally, it would be fascinating to explore whether or not this definition of success could be brought into the broader discussion mentioned in the introduction of what makes a work of art good, rather than just successful. Would it be possible for this concrete, straightforward tool that defines success to play a role in answering the more complex question of “What is good art?”

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