Deconstructing Free Enterprise and Reconstructing for Sustainability: Cultural-Ecological Propaganda Analysis for Educators

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Abstract: In the spring of 2017, a conservative think tank mailed 300,000 copies of a book to US teachers and college faculty to encourage widespread uncertainty about climate change and promote neoliberal, free enterprise discourse in US schools. Teachers have been targets of free enterprise propaganda campaigns throughout the last century. This most recent event stresses the need for critical media literacy in teacher preparation programs and throughout the US education system. From an EcoJustice Education perspective, this paper demonstrates how to perform a cultural-ecological propaganda analysis to assess the power-knowledge relations that circulate within a text's discourse. A Foucauldian approach to discourse analysis allows readers to draw conclusions about texts without requiring background information about the texts' authors. Even when information about an author is available, as it was in this case, grounding evidence of intent and effect within the discourse itself strengthens conclusions by challenging the author's arguments rather than the author's self. Along with an overview of common propaganda techniques, a thematic analysis identifies the main messages of the text and a rhetorical analysis explains how the messages are delivered and to what effect. Rhetorical devices, fallacies, contradictions, formatting, and hierarchized thinking are deconstructed to highlight flaws in the logic and reasoning of arguments. Educators must find opportunities to disrupt dominant discourses that perpetuate the unsustainable model of free enterprise and reconstruct community from an ecologically sustainable perspective. Humanity can no longer afford to prioritize fiscal economy over ecology. This paper concludes by sharing an alternative resource that educators can use in preparation for teaching about global warming and climate change. The two guides offer opposite lenses for understanding global warming and could be used in classroom activities with students as sample texts for critical analysis.

Keywords: ecomedia literacy; fake news, news literacy and climate crisis; consumption and sustainability; ecojustice education; sustainability and teacher education; propaganda analysis

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In the spring of 2017, a conservative think tank sent 300,000 copies of a book to teachers and college faculty across the US to encourage widespread uncertainty about climate change and to promote neoliberal, free enterprise discourse in US schools. *The Heartland Institute* paid for the publishing and distribution costs of the book titled *Why Scientists Disagree About Global Warming: The NIPCC Report on Scientific Consensus* (*WSD*) (Idso, Carter, & Singer, 2016). NIPCC are the initials for the Nongovernmental International Panel on Climate Change, which opposes government regulations and denies the findings of the IPCC (Intergovernmental Panel on Climate Change).

Propaganda can be analyzed structurally and discursively. Having background knowledge of authors and funding sources is helpful in establishing credibility and discovering threads of discursive and linguistic patterns; although it can also lead to preconceived reader biases toward the author. This paper was inspired by Foucault's (1984) essay, "What is an Author?" His work challenges readers to focus on how power and knowledge relate and circulate within the text itself. A Foucauldian analytical approach examines what discourses in a text give power, and how discourses become powerful, regardless of what is known about a text's author or creator. To check personal biases toward the *Heartland Institute* and the authors of *WSD*, it was necessary to ask: Can intent be deciphered directly from discourse itself? Yes, uncovering intent is possible through cultural-ecological deconstruction and asking questions such as: Who/what is the message meant to benefit and who/what may suffer as a result of the messages?

Cultural-Ecological Propaganda Analysis and Defining Propaganda

Working from an EcoJustice Education framework, this paper demonstrates how to produce a cultural-ecological propaganda analysis of a text. Cultural-ecological analyses explore and disrupt the underlying assumptions and hierarchized thinking that are the cultural root of our society's social and environmental injustices (Martusewicz, Edmundson, & Lupinacci, 2015, pp. 10-12). This project grew from the questions: Can teachers identify and properly assess propagandized curricular and professional development literature and multimedia? How can they engage with propaganda? And, how prevalent is propaganda in US school systems?

In the 21st century, the concept of text applies to the written word, audio recordings, videos, social media, and a myriad of art forms. Countless outlets deliver a constant stream of messages to the public. Most US citizens are inundated with texts every day but receive little training in how to consume media responsibly. López (2014) calls for an ecocritical approach to media literacy (p. 6). Education for ecologically sustainable communities must prioritize ecocritical media literacy as a learning outcome. Martusewicz (2019) challenges educators to enact "pedagogies of responsibility" that put democratic and ecological principles into practice. To do so, teachers must become critically *eco*media literate, to avoid unintentionally reproducing harmful discourses in the classroom as well as help youth learn how to engage responsibly with 21st century media.

One of the main purposes of the literature review for this paper was to carefully define the concept of *propaganda*. In a study of teachers' abilities to identify and assess propaganda distributed to schools, Odell (1957) defined propaganda as "a one-sided or slanted presentation of information towards some predetermined end which was favorable to the sponsor of the pamphlet," adding, "that it made no difference whether or not the teacher agreed with the viewpoints expressed" (p. 84). One could argue that an intent to mislead is a defining

characteristic of the concept of propaganda; useful in distinguishing the difference between a mistake (misinformation) and purposeful intent to mislead (disinformation/propaganda). How is intent to be interpreted? Intent is revealed in the discourses circulating within the texts and the effects produced by multimedia. Educators must ask: What does the text give power to? What is prioritized? What is silenced?

Coding Method

This project began, as most do, with a literature review. One of the original goals of the review was to produce a list of criteria for categorizing texts as propaganda, which could be used as codes. Under time constraints, the idea of a list was scrapped and replaced by an approach that allowed themes to emerge from the text, with few preconceived expectations of what would be found. Before reading *WSD*, transcripts of speeches from the three most recent US presidents— George W. Bush, Barack Obama, and Donald Trump—were thematically coded to position the text in relation to the national rhetoric on global warming and climate change policy. Several themes from the speeches became codes for *WSD*, as there were threads of thematic overlap and discord between the different texts.

Layout and Format of WSD

Before further examination of the themes, rhetorical devices, logical fallacies, and contradictions found within *WSD*, attention was given to the layout and formatting of the text. Despite the appearance of a scientific report, much of the necessary substance is missing. A list of the report's "Key Findings" precedes the first chapter (Idso et al., 2016, pp. xix-xxii). These are essentially talking points, presented without reference to sources of evidence-based support. The list is three-and-a-half pages long and bullet-pointed. Because the bullet-points lack immediate evidence, readers may accept and repeat arguments without reading and understanding the supporting data. This tactic is similar to the circulation of talking point memos. "Key Findings" are also listed at the beginning of each chapter, providing an overview of the main points and presenting arguments without immediate supporting evidence. This approach encourages readers to feel comfortable with, and confident about, the arguments without providing the necessary support to validate the text's claims. Readers may, therefore, skim the book and pick-up the talking points, without considering the evidence to go along with the arguments. The technique facilitates repetition and amplification of the messages. Discourses can be reproduced non-consciously through repetition.

Thematic Analysis

What messages are being delivered through *WSD*? The themes of *nationalism*, *uncertainty*, and *free enterprise* (*neoliberal economics*) are present in the presidential speeches and *WSD*. *Natural variability* is a verbatim phrase and sub-code of *uncertainty* that originated from *WSD* and signals the claim that climate change is "naturally" occurring, rather than anthropogenic (caused by humans). A sub-code of *free enterprise*, the theme of *deregulation* encompasses the "state rights" sentiments and "anti-big government" neoliberal attitudes of the right-wing.

Nationalism. Ramsey (2010) describes "cultivating patriotic sentiment" and stirring-up "hysterical patriotic feelings" as common propaganda tactics (p. 144). The theme of *Nationalism,* a discourse of individualism and competition*,* was especially evident in the presidential speeches and the introduction and conclusion of *WSD*. Examples of *Nationalism* in *WSD* appear in the

following passages: "Individual nations should take charge of setting their own climate policies" (Idso et al., 2016, p. 101) and the "idea that there can be a one-size-fits-all global solution to address future climate change, such as recommended by the United Nations in the past, fails to deal with real climate and climate-related hazards" (p. 102). Taking "charge of their own climate policies" implies that nations are responsible for funding their own climate policies and no "one-size-fits-all" suggests that the US should not have to adhere to international agreements on climate policy and regulations. Such a perspective fails to recognize that climate change is a shared, global issue and that all ecological systems are interconnected. Pollution, including greenhouse gases, is not contained within national boundaries. What one nation does can negatively impact other nations. Climate change resulting from anthropogenic global warming is a transnational problem that cannot be resolved through competitive individualism and nationalism.

Free enterprise (Neoliberal Economics) and Deregulation. *Free enterprise* (*neoliberal economics*) is another common theme that appeared throughout *WSD* and the presidential speeches. *The Heartland Institute*, according to *WSD* authors, is "devoted to discovering, developing, and promoting free-market solutions to social and economic problems" (Idso et al., 2016, p. 110). EcoJustice educators argue that social, environmental, and economic problems are rooted in a consumer culture that has created a crisis of overconsumption and commodification, which stems from free-market values and assumptions that ignore ecological limits. Discourse drives policy. *WSD* authors ask, for example, whether "we can afford to radically reduce CO2 emissions" (p. 36). Fiscal affordability is not going to matter to the public, if the planet becomes uninhabitable. We should be asking what we can afford ecologically.

Free enterprise discourse dominates the Foreword of *WSD* with anti-regulatory statements such as: "Sweeping regulations like the Environmental Protection Agency's Clean Power Plan – which will totally transform the way electricity is generated, distributed, and used, and will dramatically increase costs for industry and individuals" (p. xii). Distrust and anti-government sentiments are expressed in passages about "billions of dollars" that have already been spent on policies addressing climate change, threatening that "trillions of dollars more" will be spent if government treaties are enacted (p. xvii). *WSD* authors ask: "Why impose regulations that will cost hundreds of billions of dollars a year, destroy millions of jobs, and condemn millions of people to lives of grinding poverty, if there is virtually no beneficial impact on Earth's climate?" (p. xii). Anti-government sentiment is also expressed in the following statement: "The claim that '97 percent of scientists agree' appears on the websites of government agencies such as the U.S. National Aeronautics and Space Administration (NASA, 2015) and even respected scientific organizations such as the American Association for the Advancement of Science" (p. 1). The words "even respected scientific organizations" imply that NASA, a government organization, is not a respectable scientific organization.

Related to *free enterprise*, *deregulation* is another dominant theme throughout *WSD* and the presidential speeches. *WSD* authors argue that regulatory policies, for instance carbon taxes and the Clean Power Plan, infringe on the freedom of the market. Where do we draw the line on market freedom? How bad do the consequences of a practice or product have to be before citizens and politicians agree that regulation of industry is necessary? What if a practice or product has latent, delayed, long-term consequences and we must act in the present to prevent destruction of the future? *WSD* authors claim: "The formulation of effective public environmental policy must be rooted in evidence-based science, not an over-abundance of precaution," quoted from a presentation to the UK House of Commons Science and Technology

Committee in 2006 (Idso, et al., 2016, p. 59). When is it appropriate to practice precaution? The authors bring up the precautionary principle, only to downplay it as a "sociological precept rather than a scientific one" (p. 59). Apparently, *WSD* authors and climate skeptics want to experiment with our only inhabitable ecosphere. In scientific experiments there is a control group but, in the case of Earth, there is no control planet. Along with the scientific method, they have forgotten the old adage: It is better to be safe, than sorry.

Uncertainty and Natural Variability. The theme of *uncertainty* is summarized in the *WSD* claim that "the truth is we simply don't know if climate change is a problem that needs to be addressed" (p. 104). Words and phrases that promote a theme of *uncertainty* about the IPCC consensus are scattered throughout the text. Some examples include: "Disagreement," "debate," "flawed," "perceived consensus," "no consensus," "not credible," "alleged corruption," "biased," "fundamental uncertainties," "extensive uncertainty," "unreliable circumstantial evidence," "refutable," and "false postulates." Additionally, *uncertainty* is promoted in chapter titles. The header for Chapter 1 is "No Consensus" (p. 7). That entire chapter is dedicated to promoting uncertainty about research supporting the scientific consensus on anthropogenic climate change. The authors challenge the methods of researchers who make claims of such a scientific consensus. The header for Chapter 6 is "Unreliable Circumstantial Evidence."

Referring to a study from medical professor John Ioannidis, *WSD* authors argue that "most published research in the healthcare field cannot be replicated or is likely to be contradicted by later publications" (p. 48). They claim that the same is true about climate science. A lack of complete certainty, however, does not stop doctors from using research to inform practice in the medical field. Certainty is not a goal for science, predictability is. The authors of *WSD* make an unreasonable demand for certainty. By the time enough certainty has been established to please the skeptics, it may be too late to mitigate the problem. In an interview with Liang and Worth (2019), about her book *Why Trust Scienc*e, Oreskes outlines a formula for maximizing the probability of arriving at the truth through science, suggesting that information is trustworthy when 1) there is diversity in the community of expertise, 2) members of the community participate in deliberation on numerous viewpoints, 3) evidence is longitudinal, and 4) a consensus exists within the community of expertise.

Natural variability is a phrase that is repeated to insist that global warming is not caused by human activity. The authors of *WSD* repeat this claim frequently throughout the text. For example, they write, "A warming of 2˚C above today, should it occur, falls within the bounds of natural variability" (p. 3). The authors argue that sea-level rise, drought, and extreme weather events are all naturally occurring (p. 87). Other words and phrases used to indicate naturally occurring global warming include: "Natural causes," "Solar Variations," "natural climate-related variability," "Internal climate oscillations," "solar forcings," "a natural hazard," "cycles," "natural peaks," "typical natural variability," "multidecadal climate rhythmicity," "natural climate variability," and "nothing unusual." The *natural variability* theme is also evident in the subheading: "Modern Warming Is Not Unprecedented" (p. 78).

WSD authors conclude that "neither the rate nor the magnitude of the reported late twentieth century surface warming (1979-2000) lay outside normal natural variability, nor was it in any way unusual compared to earlier episodes in Earth's climatic history" (p. 84). This statement is an example of *cherry picking* data that conveniently fails to account for the increase in temperatures over the last 19 years. At what point would temperatures and climate changes be labeled as unusual or beyond the parameters of natural variability? There is no mention of a benchmark to indicate that threshold. *WSD* authors write, "Though the range of natural variation

has yet to be fully described, evidence is lacking for any recent changes in global ocean circulation that lie outside natural variation or were forced by human CO2 emissions" (p. 92). How can one claim natural variability without being able to define it?

Rhetorical Analysis

A few common propaganda techniques discussed in the literature that appear in *WSD* include: Selecting words with connotations that evoke emotions, using simplistic language to appeal to average people, and appealing to nationalism (Curnalia, 2005, p. 243). Additional common propaganda tactics, according to Jewett (1940), include: Appeals to desire, appeals to fear, misleading language, false authorities, use of vague or abstract language, repetition, vagueness, distortion, suggestion, imperfect analogies, hasty generalizations or overgeneralization, and stereotypes (pp. 111-112). Nearly all of these techniques appear in *WSD*, including stereotyping environmentalists. Persuasion techniques that propel the thematic threads of the text are found throughout *WSD* including rhetorical devices such as *Repetition*, *Weaseling*, and *Downplaying,* as well as fallacies such as *Proof Surrogates, False Dilemmas*, *Appeals to Questionable Authority*, *Tu Quoque*, *Cherry Picking* and *Ad Hominem* attacks.

Weasler. *Weaslers* are words that weaken claims and may indicate misleading information. The first example is: "Many prominent experts and probably most working scientists disagree with the claims made by the United Nations' Intergovernmental Panel on Climate Change (IPCC)" (Idso et al., 2016, p. xix). The key qualifying word here is "probably." Such a qualification indicates that this statement is not a fact; it is a speculation. In another concerning statement the authors write: "A warming of 2°C or more during the twenty-first century would probably not be harmful," (p. 75). How probable is it that their claim is correct? Their data is insufficient and there is no actual evidence to support this claim. However, there is considerable scientific data to suggest that 2°C increase in global temperature will have serious negative effects (Lynas, 2008; McKibben, 2011).

To provide a few more examples: "The parallelism of temperature and CO2 increase between about 1980 and 2000 AD could be due to chance and does not necessarily indicate causation" (p. 4). It could be due to chance or it could be caused by humans. Promoting uncertainty, *WSD* authors suggest that "warming during the second (*prima facie*, similar) period might incorporate a small human-related carbon dioxide effect, but warming might also be inflated by urban heat island effects" (p. 79). Key word: Might. This information was included in the bullet-pointed "Key Facts about Surface Temperature," so additional information about "urban heat island effects" was not included. The reader is expected to just accept this theory without supporting evidence. According to *WSD*: "The Sun may have contributed as much as 66 percent of the observed twentieth century warming, and perhaps more" (Idso et al., 2016, p. 82). Again, there is no accessible data visible within the text to support this claim, so this is also an example of a *proof surrogate* fallacy.

Proof Surrogate. Very little data is included in the report to support reported claims and findings. Throughout the book, readers are referred to external texts, many of which are written by the same authors of *WSD*. Teachers should not be expected to have the time and energy to look through additional external sources to verify the claims made in *WSD*. The *proof surrogate* fallacy also applies when *WSD* authors claim to cite the "[b]est available data" (p. 87), without attributing sources. The authors use a proof surrogate approach to claim that "the best available data show sea-level rise is not accelerating" (p. 90) and that "[t]he best available evidence points in a different direction: The human impact on climate is small relative to natural variability" (p.

104). In another example, the authors argue that "the number and intensity of extreme events vary, and they wax and wane from one place to another and often in parallel with natural decadal or multidecadal climate oscillations" (p. 94). This would be a good place for some supporting data and detailed charts. Instead, authors claim: "Basic meteorological science suggests a warmer world would experience fewer storms and weather extremes, as indeed has been the case in recent years" (p. 94), while again providing no empirical data.

   Appeal to Questionable Authority. Much can be said about the questionable authority of the authors of WSD, but that is for another paper. What can be said here is that *WSD* authors suggest that "arguing from authority" is "the antithesis of the scientific method," (p. 59), yet the authors are sure to announce the credentials and presumed authority of the scientists they cite throughout the text. *WSD* authors frequently cite their own external work as evidence for the claims made in the book and, as previously stated, they refer readers to external sources for more detailed data supporting *WSD* claims. The authors write: "It will eventually revert to the equilibrium values . . . as has been determined by several investigators (Segalstad, 1998)" (p. 80). They claim this was supported by "several investigators," yet only one was cited. Citing Ronald Brunner and Amanda Lynch, without providing any information about who they are, *WSD* authors suggest that a "better path forward" is "to produce response programs that cope with hazardous climate events as they happen" (p. 102). The problem with this short-sighted approach to climate change, which puts all faith in the market, is that by the time climate changes become too extreme to deny, it may be too late to mitigate the damage.

   Downplaying. Downplaying has become a frequently used device in national discourse about global warming and climate change, especially during Trump's presidency. The primary goal of *WSD* is to downplay humanity's role in global warming, so that business can continue as usual. The following language from *WSD* downplays the risk of global warming: "Atmospheric carbon dioxide (CO2) is a mild greenhouse gas that exerts a diminishing warming effect as its concentration increases" (p. 3). Mild compared to what? *WSD* authors also suggest that "many areas of the world would benefit from or adjust to climate change" (p. 75). What about the areas that would not benefit from it? And, in perhaps the most obvious downplay throughout the entire text, the authors call climate activism a "fashionable belief" (p. 107).

   Noon downplays the urgency of climate change and presents a neoliberal view that prioritizes economics over the environment and evokes anger toward the government when she writes:

> The alarmist view, advocated by the Obama administration and environmental extremists, influences virtually every public policy, including the kind of light bulbs we may purchase, the type of cars we may be able to drive, where we live, and the types of jobs we may create or are available for us or our children to perform. (Idso et al., 2016, p. xii)

   Repetition. The most frequently deployed, and effective, rhetorical device in *WSD* is repetition. The Foreword of the book introduces the reader to the term "alarmist," which is repeated frequently throughout the text (p. xii). The use of the terms "alarmists" and "skeptics" creates a false dichotomy that makes it seem like the reader must choose to be one or the other. The term alarmist carries negative connotations and serves as an *ad hominem* attack aimed at people rather than their arguments. One fundamental tactic of propaganda is to identify an enemy and promote an *us vs. them* mentality, through a process of "Othering." For example, dissenters to popular opinion have historically and in recent times been accused of being "un-American" (Ramsey, 2010, p. 142). In a similar manner, anyone concerned about anthropogenic climate change is labelled an "alarmist" in *WSD*. This *ad hominem* attack is repeated throughout the text.

Whole phrases are repeated multiple times in *WSD* including: "The Intergovernmental Panel on Climate Change (IPCC), created to find and disseminate research finding a human impact on global climate, is not a credible source. It is agenda-driven, a political rather than scientific body, and some allege it is corrupt" (pp. xx, 38, & 105). Another example occurs on pages xx, 31, 48, and 105: "Origins of bias include careerism, grant-seeking, political views, and confirmation bias." Almost identical phrases are repeated within two pages of one another: "Climate models fail to incorporate the effects of variations in solar magnetic field or in the flux of cosmic rays, both of which are known to significantly affect climate" (p. 63) and "the models fail to incorporate the effects of variations in the solar magnetic field or in the flux of cosmic rays, both phenomena known to significantly affect climate" (p. 65). The authors accuse the IPCC of ignoring "increases in low-level clouds in response to enhanced atmospheric water vapor, ocean emissions of dimethyl sulfide (DMS), and the presence and total cooling effect of both natural and industrial aerosols" (p. 64) and repeat the same phrase again in the last bullet point on the next page. Another repeated phrase that appears on pages xxii, 101, 102, and 106 claims that "policymakers should seek out advice from independent, non-government organizations and scientists who are free of financial and political conflicts of interest." *The Heartland Institute* is not free from such conflicts, despite repeated claims of objectivity. Attempting to appear objective or neutral is another common propaganda tactic that has been documented in the past. Fones-Wolf (2000) writes, "ACES [Americans for the Competitive Enterprise System] presented itself as a non-partisan, non-political educational association" (2000, p. 273). *The Heartland Institute* takes a similar approach in *WSD* by attempting to position itself as an independent, non-partisan source of information and stressing "uncertainty" and "debate." As Lasswell (1927) explained, "the most subtle propaganda closely resembles disinterested deliberation" (p. 628).

The major themes identified in the text, are propelled throughout the repeated words and phrases. In this small 110 page booklet, the words *uncertain* or *uncertainty* appear 27 times. *Disagreement* appears 25 times. *Disagree* appears on nearly every page, as a header. The words *natural variation* or *natural variability* appear 26 times. *Alarmist* appears 24 times. *Bias* or *biases* appear 37 times. *False postulate* or *false postulates* appear 13 times including a few instances in the page headers and the book index. The use of jargon, including the word postulate, makes the authors' arguments sound scientific. *Circumstantial* appears 19 times including as several headers and in the index. The word *debate* occurs 57 times throughout the text, including several titles of referenced studies. Debate implies uncertainty. *Corrupt, corrupting, corrupts* or *corrupted* appear a total of 14 times throughout the text, including some titles of references. *Decadal* or *multidecadal* appear 19 times. Repetition ensures that regardless of whether the intended audience understands the data supporting the arguments, readers will take away talking points from the text.

Tu Quoque. Tu Quoque fallacies indicate hypocrisy. Several examples of this fallacy were evident throughout *WSD*, for example, the authors write, "Because we do not work for any governments, we are not biased toward the assumption that greater government activity is necessary" (p. 109). They are, however, biased in favor of deregulated free enterprise and corporate interests. The authors assume that free-market solutions to our problems are better than cultural, ecologically sustainable, democratic solutions. That is a bias.

In another example, the first chapter of *WSD* focuses on discrediting the research supporting the scientific consensus on climate change. Taken in the context of the entire *WSD* report, however, *WSD* authors' critiques of other researchers appear to be a tu quoque fallacy,

since they provide very little information about the methods of studies used to support their claims. Some of the studies used to support skepticism appear to be misleading. According to *WSD*: "The American Meteorological Society (AMS) reported in 2013 that only 52 percent of AMS members who responded to its survey reported believing the warming of the past 150 years was man-made (Stenhouse et al., 2014)" (Idso et al., 2016, p. 26). The reader does not know how many meteorologists responded or who financed the survey and how the sample was determined. To those who read through the *WSD* text quickly, the statement may appear to suggest that 52 percent of the entire AMS organization responded skeptically. The authors reveal very little about the methods of research supporting their arguments, while criticizing the methods of those who claim evidence of a scientific consensus. Future research should consider the diversity of IPCC scientists as compared to the scientists cited in support of climate skepticism, as well as the funding sources for scientific studies that promote climate skepticism.

        Ad Hominem. Obama is mentioned five times throughout the text. Scientists do not usually refer to politicians by name, when writing about research. *WSD* ties climate change to Obama, suggesting that readers who do not like Obama should also be skeptical about climate change. In this way, *WSD* authors use an *ad hominem* approach to help persuade readers to become climate skeptics (attacking people rather than their ideas). Similarly, *WSD* authors criticize geography professor Mike Hulme, claiming that "Hulme describes himself as a social-democrat so his needs include sustainable development, income redistribution, population control, and social justice. By focusing on these 'needs,' how can Hulme objectively evaluate the anthropogenic global warming hypothesis?" (Idso et al., 2016, p. 51). Here the authors attack Hulme's political affiliation, rather than his research.

Contradictions

        Besides the use of persuasive rhetorical devices and logical fallacies, authors of *WSD* also contradict themselves throughout the text. In one instance, the authors argue that climate models are not advanced enough to prove evidence of global warming, claiming: "Satellite and airborne geophysical datasets used to quantify the global ice budget are short and the methods involved in their infancy" (p. 89). Despite their own claim, the authors proceed to use climate model datasets to assert that "both the Greenland and Antarctic Ice Caps are close to balance" and within the parameters of natural variability (p. 89). The authors contradict themselves, since the technology is used to support their claims of natural variability, but is deemed insufficient evidence for IPCC claims.

        In another instance of contradiction, the authors argue: "The particular value of 2°C is entirely arbitrary" (p. 83). On the next page though, they claim that "any planetary change of 2°C magnitude in temperature would result in complex local and regional changes, some being of economic or environmental benefit and others being harmful" (p. 84). So, which is it? Is a change of 2°C arbitrary or can it cause complex changes? Yet another example of self-contradiction occurs when the authors claim: "Correlation does not establish causation" (p. 88). The authors make the following claim a few pages later: "Monsoon intensity correlates with variations in solar activity rather than increases in atmospheric CO2" (p. 92). Correlation is useful to the authors when it supports their claims, but not when it supports evidence of anthropogenic climate change.

        Another form of contradiction is over how temperature is defined throughout the text. One chart contains "Monthly Global Mean Lower-troposphere Temperature Anomalies" (p. 69). Atmospheric data is often used as evidence, without including ocean temperature data from the

same period. In a chart that includes "land surface," "ocean," and "atmosphere" temperatures, the most recent data included in the analysis is from 1997 (p. 71). Why include data that is more than 20 years old? Surely there is more recent data that they could have used. Another chart, illustrating the "Mean Relative Temperature History of the Globe," also does not identify the type of temperature measured in the data, which was also published in a decade-old study (p. 76). Readers can view the chart but, if they want more details about the data, they have to find the original source.

Hierarchized Thinking

To truly conduct a cultural-ecological analysis, one must examine the text using EcoJustice Education concepts including hierarchized thinking. Value hierarchies assign greater power and value to one entity or concept over another and are presented as binaries (Martusewicz, Edmundson & Lupinacci, 2015). Hierarchized, or deficit, thinking has implications for policy-making, as what is valued discursively receives more tax dollars and resources materially. Cultural-ecological analyses aim to decenter discourses like nationalism and anthropocentrism that assign power to one group over another. A few examples of value-hierarchies in *WSD* include: Military over ecology (terrorism over climate change), jobs over environment, and economy over ecology. Feindt and Oels (2005) discuss the role of discourse in policy making and suggest that discourse analysis shows how "nature" and "the environment" are socially constructed through policies. Discourse, they write, "allows one to ask if environmental policy is about nature and the environment at all or rather about a redistribution and reconfiguration of power in the name of the 'environment'" (Feindt & Oels, 2005, p. 163). Nature is under erasure throughout *WSD*, as well as in the three presidential speeches. *WSD* authors write that global warming is likely to "cause no net harm to the global environment or to human well-being" (Idso et al., 2016, p. 2) and "no empirical evidence exists to substantiate the claim that 2°C of warming presents a threat to planetary ecologies or human well-being" (p. 83). These statements separate humans from the natural environment, denying interconnectedness. Neoliberalism assumes there are no ecological limits and that technology will always save the day. Technological innovation is promoted instead of conservation. It is unclear whether the authors believe there is any limit to the amount of greenhouse gases that humans can pump into the atmosphere without causing damage. *WSD* authors go as far as to suggest that the cooling effect from industrial aerosol pollution can offset the warming effects of carbon dioxide and other greenhouse gases (p. 64).

In another example of hierarchized thinking, *WSD* authors suggest: "World leaders would do well to turn their attention to the real problems their people and their planet face" (p. 101). The phrase is also repeated again a few pages later. This statement is problematic because it assigns ownership of Earth and its people to world leaders. Whose people and whose planet? Furthermore, people and planet are again separated. The hierarchized thinking in *WSD* presents a neoliberal view of humanity's relationship to the Earth; a perspective that values, above all else, accumulation of capital wealth through the commodification of nature. Throughout *WSD,* the free market economy is assigned power over nature. This sentence is also an example of how the *WSD* authors use language to suggest ideas by what is implied, such as their implication that climate change is *not* a "real" problem.

Implications and Alternatives

WSD promotes neoliberal ideology and a free-market approach to dealing with climate change, in an effort to stall government regulation of harmful industries by attempting to rile up public opposition and disbelief in anthropogenic climate change. It gives power to the economic system while taking away the power of science and nature. Manufacturing uncertainty and encouraging apathy toward a problem with potential consequences as serious and threatening as anthropogenic global warming. On the surface, *WSD* appears to be a text that encourages dialogue and scientific debate about an important issue in our global community. Instead, it actually promotes repetitive talking points defending apathy toward the topic, while spreading nationalism and neoliberal values. Individualism and commodification are two discourses that were prevalent throughout *WSD*. The authors' perspective is anthropocentric, with humans placed at the top of a hierarchy of life and ecosystems under erasure. Propaganda amplifies some content and silences other information. *WSD* is an attempt to silence science by encouraging the public to accept uncertainty as a policy position. This cultural-ecological analysis of *WSD* looks at what that text promotes and what it downplays. Intent becomes clearer through thematic and rhetorical analysis that questions: What is the message and how is it delivered?

WSD is a discursive weapon in a truth regime that values capital gain at the expense of all else. The text promotes the neoliberal fallacy that infinite accumulation of wealth and material ownership is sustainable in a finite ecosphere. Literature reveals that teachers and schools have historically been a target audience for *free enterprise* propaganda campaigns that promote discourses of individualism, competition, consumerism, and commodification. *WSD* is one discursive event in a long tradition of propaganda targeted at teachers. Sponsored curriculum aids serve simultaneously as advertisements and reinforce the taken-for-granted logic of free enterprise and the US economic system. Private companies have attempted to promote free market economics in schools for nearly a century (Fones-Wolf, 2000). The US Advertising Council launched a public relations campaign to promote free enterprise and rally support for the US economic system in 1976 (Beder, 2005, p. 2). According to Beder: "The campaign attempted to educate the public about the benefits of free enterprise, distributing millions of booklets to schools, workplaces and communities" (2005, p. 3). *The Heartland Institute* use the same strategy to promote neoliberal, free enterprise ideology through *WSD*.

Once we understand the ways we are being tricked and can separate propaganda from factual science, then we can enact action for change. Identifying and deconstructing the problems is the first step, followed by imaginative reconstruction. To truly enact a pedagogy of responsibility, teachers must give themselves and their students opportunities to re-envision what it means to be a community and what is necessary for an ethically sustainable future. There are alternative resources available online and lists of useful sites can be shared through email to teachers and other educators. One valuable resource that presents climate change from a more ecologically sustainable perspective is [The Teacher-Friendly Guide™ to Climate Change](#) (*TFG*) published by the *Paleontological Research Institution* (PRI) (Zabel, Duggan-Haas, & Ross, 2017). In the first chapter of the text, the authors warn against treading into "political advocacy," suggesting that "we must communicate to our students that climate change is politically but *not scientifically* controversial" (Zabel et al., 2017, p. 4). The chapter also contains a section explaining biases and logical fallacies (p. 5). Chapter 10 of the text discusses "obstacles to addressing climate change" and includes suggestions for teaching about controversial issues and creating meaningful dialog (pp. 214-218). Zabel et al.'s (2017) approach to teaching about climate change encourages teachers to practice self-reflection and consider the discourses they circulate in classrooms, whereas *WSD* is framed within, and promotes, a specific political agenda

that is introduced in the Foreword and threaded through the conclusion. *TFG* promotes scientific inquiry and understanding, whereas *WSD* promotes a free enterprise political agenda. Chapter by chapter PDFs of the *TFG* can be downloaded for free from the PRI website. Printed copies of the guide can be purchased and PRI is accepting donations through a fundraiser on their site, proceeds of which will help cover costs to distribute printed copies of the guide to schools across the US. This resource is a crowdfunded, alternative to *WSD*.

<div align="center">References</div>

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