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The “Other-Words”: Connecting Integrity, Respect, and Responsible Disagreement
about Science

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Abstract

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In this dissertation, using an assemblage of contemporary moral philosophy, and classical and modern-day rhetorical theory I examine “responsible disagreement” in historical and current contexts of science. Analyzing such texts as Newton’s *Light and Colors*, Darwin’s *Origin of Species*, Kepler’s *Harmices Mundi*, Copernicus’ *De Revolutionibus*, Galileo’s *Dialogue*, and a recent controversial technical scientific manuscript, published in open-access journal *PLoS ONE*, I explore what it means to disagree and argue about science, with respect and integrity. Such terms as *dissoi logoi*, *doxa*, *parrēsia*, *andreia*, and *hyperbaton* are applied to incommensurable views of optics, evolutionary biology, heliocentric astronomy, and anti-vaccination in order to construct a theory for practicing ethical rhetorics of science, which I call the “other-words” approach. Implications for producers and analysts of scientific argument in both online and offline, and public and technical, contexts are discussed.

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DEDICATION

To my family.

Chapter 1. INTRODUCTION

The good thing about science is that it's true whether or not you believe in it.

—Dr. Neil deGrasse Tyson, Astrophysicist, American Museum of Natural History

Close your eyes and imagine that you are sitting in a parlor with the officers of the Flat Earth Society. Now try to imagine what you would talk about. Would you talk to them about their “science”? If so, what would you say? Would you try to convince them that the Earth is, in fact, not flat? How would you do that? Here in this dissertation, I will argue that a tricky (and potentially troubling) thing happens when we disagree about science: we can treat the objects of science as things that do not need to be treated persuasively—the “facts” can “speak for themselves.” “The Earth is round!” you might shout repeatedly. *Why would I entertain the belief structures of someone who obviously does not understand the science?* The resultant discourses we get from this question are often unpersuasive and, as it turns out, they tend to treat people as something other than the persons they are. As much as I hate to, I have to say that Dr. deGrasse Tyson, for this very reason, is wrong. Science cannot be true to someone who does not believe it.¹

Distinguishing between incommensurability (the lack of shared measure for the same scientific object) and disagreement (the behaviors we exercise when approaching topics of incommensurable status), however, helps show that the “correctness” of one’s science has little

¹ Important to note: I do not mean that just because Flat Earthers believe this way that it in fact reflects reality. I am making an argument from “scientific realism” (Pavitt, 1990), meaning that physical phenomena, especially those best investigated by the scientific method, exist outside of our perception, and even outside of our interpretation. So, the earth *is* round. No matter what the Flat Earthers argue, if they keep traveling west they will eventually end up right where they started. However, despite the reality, they do not see it the same way. So, if we are ever going to convince them of that in our discourse, we have to recognize that we cannot simply proclaim, “The earth is round!” If we are going to convince them, we have to recognize their epistemologies, and their proclivities of expression amidst those epistemologies, in order to build arguments that are persuasive. As we will find later in the argument of this dissertation, not only is that a more effective tack than the ostensibly justifiable “writing off” of seemingly ridiculous counterpublics of science, which lurks in Tyson’s statement, but, it is also the more ethical thing to do.

to do with the ethics² of one's discourses about that science. With this distinction, we can better practice "responsible disagreement" about incommensurable views of science.³ I will develop responsible disagreement here in this work as communicative behaviors productive for scientific conclusion making *and* for relational being together regarding incommensurable topics of science. In the theory, we will find that being responsible in our disagreement does not necessarily require being "civil," which usually designates being "nice" at a stylistic level in our talk. Being responsible, however, does require that we recognize our opposition as reason-givers when we disagree—to invent our arguments with regard for our opposition's needs of reasoning, even if we want to doggedly proclaim, "I've already explained the science!" We now move to a story about the contemporary anti-vaccination movement in order to illustrate the problem of confusing incommensurability with disagreement.

1.1 INCOMMENSURABILITY AND DISAGREEMENT: A DIFFERENCE THAT MAKES A DIFFERENCE

Pronounced "eliminated in the United States in 2000" (CNN, 2015), reported cases of measles fell dramatically from thousands a year to approximately one hundred per year for nearly fifteen years. Then, in 2014 that number multiplied to six hundred reported cases. Many pointed to the U.S. "anti-vaccination" movement as the culprit for the skyrocketing number of cases. A professor of bioengineering at Johns Hopkins University's School of Medicine, for

² Here, by "ethics," I mean kinds of behaviors we might consider more appropriate for a given social situation, which is different from "morals," the kinds of principles that individuals choose to live by. My morals are different than yours (even if only slightly). However, if we share a particular social context, the ethical requirements imposed on us would be the same. Scientists are real people with their own moral codes, but they all, nonetheless, fall roughly under the same purview of a scientific code of ethics.

³ These ideas of responsible disagreement are meant to apply to both "internal," and "external" communications of science. The theory is meant not only to help scientists argue with each other more ethically in the technical sphere (e.g., Newton and the Royal Society), but to argue from the technical sphere to the public sphere with more integrity too (e.g., many pro-vaccination arguments), or to create spaces where citizens can more ethically engage one another in either the technical or public sphere about scientific topics (e.g., over the implications of a primate skeleton regarding explanations of human origins). While each of these endeavors might require different specific rhetorical strategies, each one nonetheless requires that individuals address their opposition's arguments, no matter how much they might disagree.

instance, stated: “For years, scientists (including me) have warned that the anti-vaccination movement was going to cause epidemics of disease... And now it’s happening with measles” (Salzburg, 2015).⁴

Some others even began to make public refutations of the anti-vaccination movement’s main premise by attacking what they perceived to be the underlying (and misleading) values keeping people from seeing the “truth” about why vaccinations (like the Measles, Mumps, and Rubella vaccination) are necessary. For instance:

We told them this would happen.

We told them that it was only a matter of time before a childhood disease that had nearly been eliminated from the US would come roaring back if they failed to vaccinate their children. And that’s precisely what has happened.... We patiently explained herd immunity, debunked claims of an association between vaccines and autism, demolished accusations of “toxins” in vaccines, but they didn’t listen. Why? Because we thought the problem was that anti-vax parents didn’t understand science. That’s undoubtedly true, but the anti-vax movement is NOT about science and never was. ...[it is] about... privilege... unreflective defiance of authority... the need to feel “empowered.” (Tuteur, 2015)

This response, from a rhetoric of science perspective at least, is refreshing. The author is clearly attempting to parse out the value commitments that underlie the epistemological framework of the “anti-vax movement,” in a way that tries to show that one’s scientific “facts” can be shaped (or steered, rather) by seemingly less “objective” commitments—science can be

⁴ In efforts to support their position, members of the anti-vaccine movement cite, among other things, such reasons as “vaccines don’t work,” “vaccines have never been proven safe,” “the first vaccine was a complete failure, which the industry tried to cover up,” “vaccines are highly profitable for drug companies, which aren’t held liable for damages,” “all vaccines contain deadly chemical additives,” “vaccines cause lifelong, incurable diseases in some children [like autism],” “vaccines kill children and adults,” “natural exposure to disease is the best vaccine” (Huff, 2014).

permeated by values, and transfigured by rhetoric. Science can have a language problem that has nothing to do with how “clearly” one conveys the science. This is a view rhetoricians of science have been working to substantiate for nearly the last half century. To see it informing critiques in the general public calls for a small moment of rejoice. However, I am afraid the response above is also deeply troubling on two accounts: the instrumental and the ethical.

First, the instrumental: While it is revitalizing to see rhetorical sensibilities informing this response, instrumentally speaking who is this supposed to persuade? One could surely say this is an epideictic piece, meant to reaffirm believers by talking about those “privileged,” “unreflectively anti-authoritarian” others who need to feel “empowered.” But, even if it does reaffirm the already-believing anti-anti-vaccination movement, what do we get past that? The answer, unfortunately, is not very much. Nowhere in this message is a reason aimed at getting “anti-vax parents” to vaccinate their children. In every aspect of this message, however, is an argument to keep ignoring them, looking at them as trivial—“writing them off,” unsympathetically.⁵

This is problematic, as the message seems to schism regarding its purpose. If one’s aim is to hold back the threat of disease by getting individuals to vaccinate their children, why ignore the audience that refuses to do so? Better yet, why equip those already in one’s “camp” with an argument that, foreseeably, will only further polarize persons? After all, if “anti-vax parents” are “privileged,” “unreflective,” and falsely “empowered,” telling them this would hardly snap them out of their false dream-like state. With respect to carrying out its apparent purpose, this message fails horribly as it overlooks the need to adapt one’s message to audience needs. It treats science

⁵ Some social science research has shown that this approach is particularly ineffective. For instance, one study demonstrates that individuals given information aimed at debunking the myths about influenza vaccinations “decreased vaccination intent among the high side effects concern group despite reducing misperceptions” (Nyhan & Reifler, 2015, p. 463). These conclusions are consistent with other findings from studies of the MMR vaccine, wherein it was shown that, even if parents were made to understand that MMR does not cause autism, they nonetheless further polarized along the axis of previously existing attitudes toward vaccination (Nyhan, Reifler, Richey, & Freed, 2014).

as if it should change minds on its own, without persuasion, and is outraged into making *ad hominem* attacks when it does not.

Failing to adapt one's message to an audience is a classically sophomoric mistake; we all have done it, and will continue to do it. What is interesting about the anti-anti-vax message is it is about *science*, something that for many is just "correct." To explain, let us visit the March 2015 "War on Science" issue of *National Geographic*. Inside is an article titled "Why Do Many Reasonable People Doubt Science?" An illustrative excerpt from the article:

It's their [scientists'] very detachment, what you might call the cold-bloodedness of science, that makes science the killer app. It's the way science tells us the truth rather than what we'd like the truth to be. Scientists can be as dogmatic as anyone else—but their dogma is always wilting in the hot glare of new research. In science it's not a sin to change your mind when the evidence demands it. For some people, the tribe is more important than the truth; for the best scientists, the truth is more important than the tribe. (Achenbach, 2015)

In this excerpt, the writer is essentially making the claim that scientists can be dogmatic, because the process of science will correct itself. "Science tells us the truth rather than what we'd like the truth to be." What is interesting about this is the ethic of communication that undergirds such a statement. Where someone might say, "Oh, I didn't realize the audience was having trouble making sense of my message," and adjust it to better meet the needs of their audience, some arguers of science (e.g., the writer of the above excerpt) do not feel the burden of proof is on them to do so.⁶ "The science is right, and they're wrong!" one might proclaim, refusing to revise

⁶ Such responses are representative of the "deficit" model of communication about science. This model operates under the assumption that the more people understand the science, the more they will agree with it. The statements given here are examples of instrumental concerns of understanding not well served by such an assumption, as some beliefs about science have less to do with understanding the science, and more to do with previous value and identity commitments (e.g., see Hart & Nisbet, 2012). Thus, audiences might understand the science, but nonetheless reject it because it goes against their established commitments. Past these instrumental concerns, regarding the deficit model, is the notion that

their message to the needs of their audience, because that would be to concede too much of the science to the other point of view. The interesting irony here is yes, if scientists do not adapt their (technical) message to their (public) audience, not just with respect to the technical aspects but the valuative too, the science will less likely achieve acceptance, at least by those who oppose the science. So, instrumentally, to stand for what we consider to be better scientific truths, perhaps we should be trying to build bridges between differing epistemologies (at least in our talk) that help better fit the needs of our fellow persons, as opposed to perpetuating ineffectual arguments that polarize individuals, demonstrating an apparent prioritization of being “right,” over being persuasive.

In this vein, and as pledged earlier, the second account on which the anti-anti-vax message fails is not instrumental, but ethical. Quite blatantly, the message devalues the people it is talking about. Granted, not vaccinating children presents a weighty threat for a society that fears epidemic. But, where in this equation is the jump to ignoring the arguments of those individuals who make this choice? Are they not persons? As I will argue later, they are. And, not only is it more effective to recognize that point—in instrumental terms—it is also our ethical duty to recognize the basic respect demonstrated by acknowledging our opposition’s needs of reasoning, no matter how correct we think we are. To fail to give recognition respect, by visiting the “other-words” of one’s opposition, would be an ethical error, because it overlooks the fact that a person is, in fact, a person. Further, to revoke this basic respect is not a matter of being confused about what it means to be “justifiably indignant,” but rather a deeper problem of assumption. Stemming from a confusion of incommensurability (the lack of a shared measure for making meaning of an object) and the necessity for a responsible disagreeableness (how we

treating persons as something other than reason-givers (as individuals with their own commitments) is to revoke a basic respect for those persons. Just “explaining” the science is ineffective with respect to achieving acceptance regarding controversial science, but it is also unethical as it does so while treating people as something other than the persons they are.

decide to express that lack of shared measure), such actions are instances that might look justifiable *prima facie*, but under further inspection seem less so.

1.1.1 *Being Correct and Doing Right—Not the Same*

Incommensurability has to do with instances where meaning making is different for two or more parties discussing the same object (such as with Creationists and Evolutionists as they might discuss, and make meaning of a primate skeleton). Harris (2005), in his edited volume *Rhetoric and Incommensurability*, defines incommensurability as "the lack of a common standard for taking the measure of two systems with respect to each other" (p. 3). This definition infers that in order for rhetoric to remedy problems of incommensurability, it has to go beyond the traditional definition of rhetoric as "persuasion" in the public sphere into a realm in which to be rhetorical is epistemological, or tied to "knowing" (p. 7), at least if it is to be a remedy to incommensurability. "There is always room for creative maneuvering to bring things together, or to take them apart, for assimilating them to the same context or for distinguishing them with respect to different contexts. In that light, incommensurability just doesn't obtain. But there are disagreements, sometimes violent ones, which can be traced to semantic and pragmatic misalignments, the best label for whose problem field, because of its history and its ubiquity, is probably incommensurability" (p. 117). In short, incommensurability exists where two parties differ in sharing *intellectual understanding* because the structures of belief they have at their disposal to grasp a given object do not match in a way that permits them to draw the same conclusions—take the “anti-vaccine” and “anti-anti-vax” debate for instance. This usually involves “instrumental” questions about the rhetoric of science concerned with understanding how rhetoric shapes people’s understandings of science, in an epistemic sense.

Disagreement, or what I will attempt to develop as “responsible disagreement,” on the other hand, has to do with *what we do* with our lack of shared meaning, behaviorally, in an ethical sense. What might be instrumentally effective (or not) regarding the *correctness* (in terms of the facts) of science might not match up with whether or not one is *right* (in terms of the ethical implications) in attempts to communicate science. What is interesting about this is sometimes we treat incommensurability—differences of meaning-making around facts—like disagreement—the ideas of our duties and obligations, not only to speak truth, but to be ethical in our doing so. To conflate incommensurability with disagreement allows space for interlocutors to proclaim, “Oh well, I guess we can't respect them—they've got a different mode of meaning making!” Alternatively, “It only looks unethical because they don't understand the science!” This is neither productive for conclusion making, nor good for relational being together. Hence, we need better ways of dealing with disagreement around issues of incommensurability—I will call this responsible disagreement.

1.1.2 *A Responsible Disagreement of Science and Technology*

The ethical in rhetorics of science and technology spurs from the notion that people have a responsibility to know what is true about their world, whilst simultaneously acknowledging that that world must pass through a highly influential and powerful gamut of values, histories, and symbols before it can ever be known. Grafted to this is the notion that people have a duty to share their truths responsibly—“to give truth effective advocacy” (Campbell, 1989, p. 85). Here in this work it will be shown that rhetoric, both in its analysis and its practice is not merely an instrumental pursuit, but also a highly ethical one, wherein actors can explore, identify, and check the symbolic and material elements that interact with one another to become what we “know” about our world. “Rhetoric can participate centrally in the reconstruction of the moral

order” (Gross, 1994, p. 20). To practice and analyze rhetorics of science and technology is to enact a responsibility to truth, and to fulfill a duty to our fellow persons by respecting the prospect of better truths not originally in our possession, but in others’.

Coming to know the truths of the world is something that we *must do*, and doing our best to help others do the same is something that we *should do*. By contrast, as Weaver (1953) will declare, we have to order “our own minds and our own passions” so as to check that which sounds to be the “gospel of one’s society” (p. 232). Amidst a 21st century public sphere where science (and the practices and tools of our technologies) constitute so much of what we have at our disposal to make sense of policies and culture (Latour & Woolgar, 1979), we should focus on how to do so responsibly. For no other reason than it helps us as consumers and producers of technoscientific discourses to identify moments where we might confuse what constitutes correct science with what constitutes right action, we should think about the ethical implications of persuasion in science. This work is not the first to recognize this.

Walter Fisher (1994) for instance, has already made an extended argument that shows stark differences between questions of *what* science and technology (or rhetoric) do and questions of *whether* persons should be doing that. In fact, in his words, scientists and engineers (and rhetoricians) who ignore the ethical implications of communication “cannot do so without denying their own humanity” (p. 25) in that to do so is to subvert the inescapably valuative nature of human existence in an effort to fulfill some sort of commitment to “objectivity.” Surprisingly though, despite Fisher’s contributions, much of the current rhetoric of science and technology literature is *descriptively* ethical, not *prescriptive*. It seems to be focused on describing instances of (in)commensurability, while largely leaving questions of responsible disagreement at the level of assumption, or inference, leaving a gap that requires more work.

For instance, consider Katz' (1992) ethical analysis of Nazi technological discourses, in which he describes an "ethic of expediency" used by Nazis to dehumanize holocaust victims, enhancing a moral logic that allowed the extermination of "subhuman" subjects to be entertained as "objectively" just. In this study, Katz describes the "ethic of expediency" as a means of understanding the atrocities of the Holocaust, and way to explain a certain way of understanding science that, to many (including you and I) is incommensurable with responsible social living. Left implied here are lessons for ethical behavior; even when he argues, "in the gruesome light of the holocaust, then, we should question whether expediency should be the primary ethical standard in deliberative discourse" (p. 272), he does not prescribe a way to do that. Katz' study describes an incommensurable phenomenon of understanding, and absolutely raises a question of responsible disagreement, but leaves the answer inferred. While this may not be a large problem in this particular case (as it is fairly easy to imagine ways to communicate more responsibly than the Nazis), in others, the solution to ethical error is not so obvious.

Kelly & Hoerl (2012), for example, investigate the "pseudo-science" of the Answers in Genesis Creation Museum and how the museum imitates the authoritative stylistics of natural history museums, which are filled with artifacts and exhibits produced by experts in technical spheres of science. In this study the authors are pointing to an instrumental effort of Creationists to overcome barriers of incommensurability with the rhetorical move of "simulacra," or simulating the genre of a given social phenomena, like a natural history museum. Inferred in Kelly & Hoerl's conclusions is a notion of responsible disagreement, which envisions the responsible disagreeant as one that does not legitimize oneself as a scientific authority, by "appropriating the authoritative signifiers of scientific expertise to visually craft the appearance of ongoing debate over evolution between equally legitimate scientific experts when there is, in

fact, an overwhelming scientific consensus” (p. 138). What I wish to point out is that this *is* responsible disagreement, not without its own problems of course. While it is, as the authors note in the title of their piece, “disingenuous” to purport a debate in the technical sphere, where in fact there is none, the act of attempting to fashion one’s own views of science in ways that are at least comfortable, if not appealing to, the “other side,” is to approach that audience with a basic respect for them as reason-givers. The Creation museum might have an incommensurable kind of science, but at least they are *trying* to be (rhetorically) responsible about it, at least in the sense of treating science as something persuadable, and, in turn, treating their opposition as persons who can, and do have reasons by trying to meet the “other-words” of their disagreeants.

Solomon (1985) concludes very similarly in her study of the reports of the Tuskegee experiments wherein she finds that treating science as if it were something not shaped by rhetoric can obscure ethics and science, resulting in horrifying versions of both. To engage science responsibly in her vision is to view it as rhetorical, and to be mindful of that rhetoricity. Though she is very heavily inferring a better way to communicate about science, it remains inferred, inexplicit. Campbell (1994) in describing the “tragi-comic” frame of Charles Darwin’s rhetorical obfuscation of the theological implications of his theory of natural selection concludes a bit more explicitly. In Campbell’s words: we as rhetoricians of science should be “friendly to science yet absolutely hostile to equating any one theory, hero—or metaphysic—with the ‘human epistemic project” (p. 50). Even so, this conclusion is explicitly crafted for rhetoricians, leaving out rhetors of science broadly. So, he suggests a way we might more responsibly analyze incommensurable rhetorics of science, but for practicing ways to engage responsible disagreements about that incommensurability, alas, we are still left wanting. Buehl (2014), on the other hand, suggests Perelman and Obrechts-Tyteca’s model of argument as a means both for analyzing, and being

mindful of, the ethicality of one's rhetorical choices in using Photoshop to present scientific findings. Buehl surely describes a model for thinking not only about analysis, but about invention too. However, Buehl centers his study on the idea of "manipulation" of images, more so than what it means to approach an incommensurable instance of science, and disagree about it responsibly.

The current literature does an exceptional job of unearthing important ethical issues in the public communication of science, and raising important questions about what it means to be ethically upright in the context of techno-scientific discourses. Answering these questions, however, is another story altogether. While wonderfully *descriptive*, rhetoric of science and technology is still in need of further *prescriptive* frameworks for informing ethical rhetorical action alongside evaluations of incommensurability between the technical sphere and counterpublics of science in order to "broaden," "deepen," and "limit" our techno-scientific discourse (Fuller & Collier, 2004, p. 283). We need more to move forward from descriptions of *why and how* rhetoric in incommensurable discourses about science and technology functions the way it does toward prescriptions of *what to do about it*, responsibly. The "other words" orientation is one such prescription.

1.2 THE "OTHER-WORDS" (P)RECAPITULATED

The Basic Premise: To have integrity is dependent on standing for something while meeting one's obligation to recognize other persons as living, breathing, reason-giving persons, and to demonstrate instances of appraisal respect that are harmonious with one's own moral commitments. An in depth espousal of this theory (what I am calling the "other-words orientation") as well as four case studies to illustrate its efficacy will compose this dissertation. I

have chosen the case studies and arranged them in order to (1) equip the reader with a new way of thinking about persuasion, respectfully, and (2) then move into analyses of responsible disagreement that show how specific contexts, or one's perceived possession of "truth," can influence a person to act in ways misleadingly, and problematically (dis)respectful; (3) after the reader has been equipped, and shown the difficulties of negotiating one's science respectfully with the paradigm(s) he or she inhabits, I will delineate a mode of thinking about the construction of venues that ease that difficulty in a 21st century, new media public sphere by encouraging respectful engagements with science. Finally, (4) I give an example of an "advocative" analysis, coupled with a discussion of two ethical approaches to analyzing rhetoric of science, afforded by the other-words orientation's ethic of respect.

Chapter Two: "The 'Other-Words': Two Kinds of Respect and Having Integrity in Disagreement about Science": In the second chapter I will introduce and example the theory, which is an ethic of respect, built around the idea of *dissoi logoi*, the "other-words." I will discuss persuading with integrity making a helpful distinction between two different kinds of respect, which enhance moral and ethical integrity in different ways. Then, I posit double argument as a useful act for actualizing moral integrity while attempting to persuade others, respectfully. This assemblage, the "other-words" orientation, will then inform an analysis of Newton's *Opticks* in contrast to an earlier draft of the theory: *Light and Colors*. The example will draw heavily from Alan Gross' (1988) study of Newton's *Opticks*, and endeavor to show the analytic usefulness of the other-words orientation for teasing out notions of respectful communication in scientific discourse. The case, we find, gives a stark illustration of how

incommensurable science can present difficulties for rhetors to appropriately demonstrate respect, but can, nonetheless, be overcome by rhetorical means.

Chapter Three: “Saving (Public) Face: Self-Integrity, Public Character, and the Problem of Paradigms for Respectful Talk about Science”: In the third chapter I will develop the idea of *doxa*, “popular opinion,” and how sometimes our cultural commitments can influence us to unnecessarily pander to, or needlessly withhold respect from, audiences we do not agree with. Through a comparison of the public discourses of evolutionary theorists Charles Darwin’s *Origin of Species* and Richard Dawkins’ *The Greatest Show on Earth*, I will show that efforts to save “face” from within a particular situation might sometimes influence us to show more respect than we think is owed, or, possibly even unnecessarily withhold basic respect for our fellow persons. The stark differences in context for each rhetor is meant to illustrate that our moral commitments can be in tension with one another, creating dilemmas, and resulting in discourses that might diminish integrity.

Chapter Four: “Speaking Truth: Problem of Dark *Parrēsia* and the Copernican Thesis”: This fourth chapter takes this notion and extends it to the idea of *parrēsia*, “speaking truth to power,” to show how we might try to justify “dark” discourses with the idea that we have the “truest science.” In chapter four, I compare Copernicus’ *De Revolutionibus*, Keplers’ *Harmices Mundi*, and Galileo’s *Dialogue* to show that rhetorical choices, made in the spirit of being truthful, can actually clear space for ethically questionable actions. And acts of listening justified by appeals to “civility” can sometimes exhibit darker traits as well. The repudiations forwarded by the rhetors, especially Galileo, are telling of moments where scientists might fashion ethics that

either deny shouts of truth with appeals to “civility,” or attempt to justify disrespectful discourse with appeals to being “right.”

Chapter Five: “New Media Science Communication and the Problem of Courageously ‘Standing’”: In the fifth chapter, I take lessons learned from preceding chapters to develop a new vision of *andreia*, the Aristotelian mean of “courage,” wherein, occasionally when talking about science (online) it is more courageous to “sit” and listen, than to “stand” and speak. Retracing a controversial technical journal article across such online venues as *PLoS ONE*, *Popular Science*, and *The Guardian*, this chapter develops a new kind of courage useful for thinking about the construction of online space for responsible science communication. The particular case highlights the needs of designers of venues for scientific deliberation (both for scientists and the general public) to be aware that not just discourses, but the very places to meet to share those discourses, require designs that demand respect for persons as persons.

Conclusion: The conclusion ruminates on what an ethical transformation of incommensurability might look like. I argue for courage to “sit” in rhetoric of science, and offer an example by comparing 20th century and 21st century anti-vaccination discourses, using *hyperbaton*, the inversion of a normal word order. Finally, the dissertation closes with a brief discussion of the implications of the other-words to the field of rhetoric of science, both in practice, and as a field of study. This case is meant to be a timely example of an advocative analysis in that it forwards tools useful for individuals interested in persuading anti-vaccinators, the “other-words” approach offers analysts an ethical response to the question of whether one can be “partial” or not in their analyses.

Chapter 2. THE “OTHER-WORDS”: TWO KINDS OF RESPECT AND HAVING INTEGRITY IN DISAGREEMENT ABOUT SCIENCE

Intuition tells us respect and integrity are congruent, at least within ethically upright communication. To have integrity is to speak with respect, and to speak with respect is to have integrity. Despite the intuitive congruence between respect and integrity, there still remain instances of public discussion in which adherents to competing views believe that entertaining the reasons of one’s opposition would show concession to ideas that injuriously counter one’s own projects—to corrupt one’s own integrity. In an effort to better approach integrity and respect in such disputes, I propose an “other-words orientation” to communication. The other-words orientation places the ancient art of double argument (*dissoi logoi*) as a central component necessary for showing one’s interlocutors respect while maintaining moral integrity, especially in instances of communication where interlocutors deeply disagree with one another about particular beliefs. This, in turn, takes *dissoi logoi* from a merely instrumental status (as it has been treated most traditionally in the literature) and assigns it ethical and moral significance. As will be explained in greater detail, to have integrity is dependent on standing for something while recognizing other persons as living, breathing, reason-giving persons, and to demonstrate appraisals of other projects that sincerely represent one’s own commitments.

A preview of this chapter’s contents: First, I discuss integrity with a helpful distinction between two different kinds of respect, which enhance integrity in different ways. Second, double argument is posited as a requisite act for actualizing integrity while attempting to persuade others, respectfully. Third, working from research done by rhetorician of science, Alan

Gross, the public discourses of famous physicist, Isaac Newton, I demonstrate the efficacy of the other-words approach. We now move to a discussion of integrity, respect, and persuasion.

2.1 PERSUADING WITH INTEGRITY: USING TWO DIFFERENT KINDS OF RESPECT

In Stephen Darwall's (1977) conception, there are two different kinds of respect. On the one hand is *appraisal respect*, a variable respect, assigned to persons out of a positive appraisal of their abilities to be "engaged in some particular pursuit" (Darwall 1977, 38). This is what we commonly mean when we say someone respects another. Being engaged in the pursuit of believing about evolution or creationism, for instance, might, or might not be, met with appraisal respect from a creationist or evolutionist. These appraisals are born out of a negotiation of our own commitments, and the reasons of others. It is not obligatory that one communicate in unconditionally positive or negative ways with regard to demonstrating appraisal respect.⁷ It is required, however, that a person communicates in such a way as to be true to his or her own moral commitments. If a person were to demonstrate appraisal respect for an idea, belief, or action he or she *does not* actually have faith in, that person would be disingenuously expressing appraisal respect. Equally so, if one were to express a lack of respect for an idea, belief, or action he or she actually *does* have faith in, he or she would be equally disingenuous. As will be discussed, double argument (testing the arguments of one's opposition against one's own) provides a means for persons to check their beliefs before they speak to demonstrate appraisals of others' pursuits.

Recognition respect, on the other hand, is a less common way to envision respect. Instead of tying it to our praise of specific projects, it is found wound up in our obligations to regard the

⁷ Appraisal respect is based out of a negotiation of our own moral commitments and our perceptions of others. To revoke appraisal respect (to call a Flat Earther an "idiot," for instance) would not be an ethical error if one really felt that way, simply because it is to maintain consistency in our moral commitments, and those expressed in our talk. In this scheme we are not required to feign appreciation of our opposition's projects, in fact if we were to do that, we would diminish our own integrity through an inconsistency of moral commitment and the actions of talk we live by.

dignity of fellow persons as the thing that they are. A person, by sheer virtue of being a person, should be assigned recognition respect. To fail to give recognition respect would be an ethical error, because it overlooks the fact that a person is, in fact, a person.⁸ Though what constitutes demonstrations of recognition respect is hotly contested and constantly under debate, in this work, it is assumed that persons should be recognized as reason-givers, deserving of life and access to legitimate truth. To exhibit recognition respect, one must exercise certain behavioral imperatives. For instance, lying and killing are behaviors that run against these imperatives in that they go against the idea that all persons, based out of nothing more than the fact that they are persons, deserve to be given the truth and to live. Equally so, one would not treat another person as an entity that cannot, or does not, provide reasons by acting as if that person does not have any—“writing-off” that person, in simpler terms. To act this way would be to express a confused lack of recognition respect for one’s fellow persons. Later, I will propose double argument as a tool for demonstrating appropriate recognition for one’s fellow persons.

Having integrity infers a kind of “wholeness” of character. To err in one’s ethical action is to lose a piece of this wholeness by diminishing *arête* of character. Being disrespectful, or cowardly, for instance, is to lack integrity. Thickening the traditional conceptualization of integrity, which tends to be at the individual level, and passive, as opposed to active, Cheshire Calhoun (1995) argues, “standing for something” is central to moral integrity. One cannot give quiet compliance to beliefs that are wrong. Equally so, persons cannot give confident pronouncement to beliefs they do not feel to be right. One has to “stand up” for what one believes in by attempting to persuade others, but do so in ways that correspond to having integrity. Moreover, as Calhoun puts it, “standing for something puts one’s own and others’

⁸ Recognition respect is not about negotiating our moral commitments with others. It is about meeting an ethical obligation to make sure that when argue for our own projects, even when we feel compelled to be “mean,” to do so with a recognition of the needs of reasoning of our opposition. To be “uncivil” is not necessarily to revoke recognition respect. But to “write off” our opposition, is. Being on point is to meet one’s ethical obligations—to be responsible. Being “kind” is not.

integrity at risk—one’s own because of the temptation to supplement ‘standing for’ with coercive pressure, and others’ because coercion may work” (1995, p. 260).⁹ Therefore, we have two obligations in tension: our duty to represent what we believe and a duty to respect others as reason-givers. This is an interdependent ethic, for if I am to stand for what I believe, I am moving toward “wholeness.” However, I cannot do so rashly by “writing off” the other-words of my opposition for that it is to diminish integrity by denying one’s fellow human the recognition deserved. Therefore, one’s “wholeness” is dependent not only on standing for what one believes, but on respecting the other; not being “nice” to that person, mind you, but rather respecting them at the basic level of a reason-giver.¹⁰ We must stand by our projects and attempt to represent them effectively while respecting the dignity of other persons.

Before moving further, it is important to distinguish *coercion*, as Calhoun means it, from *persuasion*. Persuasion is the thoughtful and creative use of symbols, to introduce, and move people toward the adoption of a particular project. Coercion, on the other hand, would involve communicative behaviors designed to close-off alternative routes to truth via trickery, or lies, or violence. We can use persuasion for opening up new routes to truth via discourses that recognize the dignity of the other. Close-mindedly arguing from a dogmatic platform, uninterested in the perspectives and viewpoints of other persons—to show a lack of recognition respect—when arguing, is coercive in that it forces only one side of the argument, without acknowledging the other. On this view, while coercion is obviously ethically detestable, strategic persuasion remains

⁹ Browne (2007), building on the idea of Henry Johnstone’s “bilateral argument,” states with regard to ethical engagement of the opposition, there is always risk of failure. “Precisely because we seek not to control but to induce, to secure assent to one’s argument rather than command it, we must always accept the possibility that we will fail to do so” (110). To not visit the reasons of the other might ostensibly provide a means of avoiding risking the failure of one’s own projects. To engage, however, is to risk failure in the face of potential success for one’s project.

¹⁰ Such a move is representative of Buber’s (1970) notion of “I-Thou,” in that to recognize another as a reason-giver is to act in a way as to be aware that we, our wholeness of character—our very existence as individuals—is dependent on the other, and the relationships between. We cannot exist as whole without them (the others, or the relationships born of the alterity between others). To show recognition respect is to treat others as “Thou,” instead of “It,” to favor dialogue that faces our others, as opposed to monologically “writing them off” as lifeless obstacles. In short, when we argue within the purview of our opposition’s “other-words,” we are respecting the relationship as one between persons, not objects. Further, when we honestly demonstrate appraisal respect for someone else’s projects (either negatively or positively) we are celebrating our distinctness as individuals, which is, of course, owed to the very same opposition from which we stand. Both are ways of respecting both “I” and “Thou,” in ways that attempt to avoid negating the importance of one’s own individual projects, or the relational responsibilities we have as persons, owing that very project to the other with whom we might disagree.

as a means of “standing for something,” bringing one’s own commitments to the public forum, without unjustifiably ignoring the dignity of others, or one’s own dignity, by arguing inflexibly. As will be discussed, double argument (momentarily visiting the reasons of others as potentially valid) acts as a means of avoiding unjustified threats to one’s own integrity, and the integrity of others.

In sum, having integrity is dependent on standing for something while meeting one’s obligation to recognize the dignity of other persons as living, breathing, reason-giving persons, and to demonstrate instances of appraisal respect that are harmonious with one’s own commitments. To have integrity is to attempt to convince others, respectfully. Double argument is an act useful for negotiating respectful persuasion for one’s projects in the public fore.

2.2 USING THE OTHER-WORDS TO “STAND FOR SOMETHING”

Dissoi logoi, or “double argument,” is a powerful tool for “tempering” one’s own views to show fellow persons the recognition respect they deserve while attempting to advance one’s own grounding projects effectively. While the Protagorean concept that “on every issue there are two arguments opposite each other” is certainly not a new one, explicitly talking about *dissoi logoi* as a useful act for demonstrating respect, is (Poulakos 1995, p. 58; Anonymous 2001). *Dissoi logoi* has been implicitly linked to integrity in that it can “aid in the making of sound decisions by ensuring that all points of view are considered before accepting one or coming up with a new and more agreeable alternative” (Crick 2005, p. 343). In this more traditional view of *dissoi logoi*, integrity of judgment—*phronesis*—is central. In my framework, while *phronesis* is still important, it is integrity of character—*arête*—that is made more central. Sound decision-making is necessary, but nonetheless, secondary to the integrity of a given character. This is the

other-words orientation to communication. In order to have integrity one must demonstrate recognition respect for one's fellow persons by acknowledging the reasons of those persons before bringing one's own projects to the public forum. This treats as ethical the use of *dissoi logoi* to communicate, as opposed to treating it merely as an instrumental tool for making effective choices while building an argumentative case.¹¹ This approach is a dialogic approach, but one that makes distinctive room for disagreement in that one is not required to agree, or even to communicate with prospect of agreement (though that would be nice). Rather, the approach of the other-words is concerned less with commiserating with others by coming to "know" them (Code 1995, p. 84) and much more concerned with how persons can respectfully acknowledge others' reasons before attempting to sway them.

Dialogic theories of ethics, though they may differ in scope or emphasis, tend to be concerned with negotiating between individual projects to reach better conclusions through openness to learning (for a review, see Arnett, Arneson, & Bell, 2006). The results are often "procedures" for individuals to exchange, interpret, and/or revise their ground projects with other people. Mark Kingwell (1995), for instance, in *A Civil Tongue*, spends many pages visiting the work of such minds as John Rawls, Jurgen Habermas, Richard Rorty, and Alasdair MacIntyre, to give a kind of "rules of engagement." Borrowing piecemeal from these theorists Kingwell extends an argument, pointing to things like "politeness" and "tact" as ways to cultivate discourse that "finds the arguments and statements of every interlocutor worthy of some sensitive appreciation" (p. 230) in order to reach "collective goals only by allowing individuals and groups to pursue theirs" (p. 230). Unequivocally, I agree that this flavor of dialogic theorization is a fruitful and productive avenue for relating to one another in ethically upright

¹¹ In an Isocroean vein of thought, an ethical rhetor stands for a project with respect for others by "self-consciously and without false modesty [arguing] their theses, holding them up for applause and revision" (Jarratt 1991, 28).

ways. In fact, this is a kind of end the other-words orientation is positioned to move toward. However, the types of procedures that Kingwell reviews and suggests are most relevant to a stage of argument making that happens *after* that about which the other-words orientation is concerned. The other-words gives a procedure for enhancing the integrity of interlocutors, *before they open their mouths, or put pen to paper*, so that when they do, it is done with recognition of others' reasons, as well as sincere appraisals of those reasons. It also gives a procedure for rhetorical analysts to evaluate discourses and the degree to which those discourses might demonstrate recognition and/or appraisal respect. For instance, by discerning the connections rhetors are able to make between their projects and the projects of others—not bending one's own projects, but, rather, respectfully shaping those projects to be relevant to others' proclivities of belief and talk. We can have integrity, by standing for the projects we favor, but respectfully.

With regard to integrity, it is not by yielding our projects to the wills of others that we achieve goodness—that is nonsense. In fact, Bernard Williams (1981) would go as far to argue that asking one to ignore his or her projects is to ask that person to give up a part of what makes that person's life meaningful in the first place. We should stand for our projects. But we should also respect others' rights to have their own. We need not simply be respectful of others' *ideas* by showing appraisal respect (though we should be honest about the ideas we agree and disagree with), but of other persons' capacity to have *reasons* in the first place. To engage *dissoi logoi* in the other-words orientation is not necessarily an obligation to reaching a common conclusion, but rather a mode of respectfully regarding the other as we attempt to persuade.

Arthur Walzer (1997) helps us get closer to what distinguishes the other-words from more traditionally dialogic models of rhetorical ethics. He argues that “respect for the person qua person, the integrity of the individual voice, and the cooperation as an end in itself” championed

in most dialogic theories of ethical rhetoric, have a propensity to emphasize the “democratic ideal of maximizing participation in the deliberation” over more Aristotelian things, like the “aristocratic ideal of excellence” (p. 52)—*arête*. The other-words, we find, is about *arête* in that it is not as much about *inviting the opposition to share* their points of view for conversation as much as *being ethical in our presentations of arguments to others*.

The other-words approach fits what John Poulakos (2006) terms “agonistic” (p. 172) or competitive rhetoric. The other-words is a mode of respectfully competing with others, or as Poulakos puts it quite eloquently, it is a “testing and contesting rhetoric, a rhetoric that disallows complicity and repose, a rhetoric that compels us to tell what must be told, to retell what needs to be retold, to search for the words that will make our day and the day of others” (p. 175). The other-words is an approach that does not just allow for agonism, but requires it. After all, standing for our projects is a moral obligation itself. But, then again, we are reminded once more, so is being respectful.

Thus, *dissoi logoi* allows us to engage what Michael Kelly (1989) calls a “self-dialogue,” or an imaginary debate of sorts, wherein “even if the individual does not engage in an actual dialogue with other people, he must take their desires, interests, rights, etc. into account” (p. 179). To do this is not necessarily to maximize *participation* of other people in a process of conclusion making. Instead, it maximizes *excellence of character* when one stands to be persuasive about the validity and significance of his or her ground projects by first respecting the prospects of others’ oppositional views.

The other-words orientation can be useful to both the speaker and the audience with regards to integrity. On the part of the audience member, if one performs a double argument, before conceding to the speech of another, he or she will have been better informed on the issue

under deliberation. And, the more informed one is, the harder it is for that person to be deceived by means of coercion or trickery. In this way, one upholds his or her moral integrity by practicing behaviors that express recognition respect for one's self as a person who deserves access to legitimate truths—like informing one's self on the issue.

Thomas Sloane shares the assumption that contrarianism is productive and argues that rhetorical invention can serve a mediating function between debaters who strongly disagree in a process he calls discursive "midwifery" (1997). He goes on to argue that *dissoi logoi* can act as a tool for agents to search for inventional resources to meet the valuative needs of one's opposition. For Sloane this is discussed as a means to richer, more productive "critical thinking," which is a utility of the concept I do not deny. However, in the other-words orientation, *dissoi logoi* is conceived not only as a means to push past stalemate arguments toward better ideas, but as a means to allow others and one's self to be good people while doing so. A viable end of the other-words orientation could certainly involve what Gordon Mitchell articulates as "finding meaning in inverted rhetorical situations characterized by an endemic surplus of heterogeneous content" (2010, p. 112), but ultimately it is about being a *good rhetor*, someone who can effectively represent his or her project, while being respectful. In the other-words it is not ethically imperative that a *concordia* be reached; we can disagree, and continue to do so (even if that means that one's project is not necessarily effectively stood for). What is ethically imperative is that we visit the words of our opposition beforehand. Sloane is concerned more squarely with a kind of dialectical problem solving, whereas I am concerned more centrally with rhetors, standing for their projects while having regard for the dignity of their fellow persons.

In a similarly dialectical vein to Sloane, Leah Ceccarelli has revived the Ciceronian idea of *controversia* to argue that incommensurable beliefs can be better approached through "give

and take, revision and defense, accommodation" (2005, p. 276)—communication that focuses on connections more than differences. In my view, while I agree that connections are more valuable than disconnections, *dissoi logoi* remains not just a tool for effectively exchanging ideas toward a conclusion, but as innately ethical, for with it, respect is demonstrated, and integrity enhanced. To follow in line with Bruce Kimball, the current project presupposes that “elevating and emphasizing the study of expression, rhetoric, and the textual tradition of the community” (1986, p. 240) will result not just in oratorical goodness, but in philosophical goodness too. Cicero’s *controversia* also does this (Buckley 1970), but with more of an emphasis on exchanging ideas toward a synthesis, rather than being respectful when endeavoring to argue for one’s own projects.

The room cleared for agonism in the other-words approach might raise an issue for some. In Calhoun’s words, “arrogance, pomposity, bullying, haranguing, defensiveness, incivility, close-mindedness, deafness to criticism (traits particularly connected with fanaticism) all seem incompatible with integrity” (1995, p. 260). What complicates this is the fact that individuals who are fanatics are seldom aware of it. They often argue from a self-concept not of a “fanatic” but of people who possesses the “most right” view and have a moral duty to spread that view; they are uninterested in the other viewpoints. This is unfortunate, because fanatical close-mindedness causes one to overlook the reasons of one’s fellow persons, which demonstrates a kind of self-righteously charged lack of recognition respect for those persons. Moreover, fanatics think that they are doing moral good by ignoring other viewpoints, by maintaining “purity of thought,” which in turn, fails to show recognition respect to others by viewing them as something other than reason-givers. Thus, within fanaticism is a confused idea of integrity that assumes that lacking recognition respect is to have integrity. Closed-mindedness as a less than

productive orientation to communication makes intuitive sense, but to be on our way to elaborating the role of *dissoi logoi* in the other-words orientation, we will briefly visit some words often attributed to Aristotle: “It is the mark of an educated mind to entertain a thought without accepting it.” Within our current frame, one can simply supplant the word “educated” for “ethically just.” In the other-words orientation even if one is not required to show those reasons appraisal respect, they should, even if only for a brief moment, visit the *dissoi logoi* of others and entertain them as potentially valid. It is by doing this that we enhance our integrity by checking fanaticism and thwarting coercion while competitively standing for our projects.

The other-words is an ethical approach that is similar to Wayne Booth’s idea of “listening rhetoric” (2004). Booth’s vision is rightly founded on the assumption that rhetoric aimed at mutual understanding enacted through a kind of “dialogic” (Buber 2002) finding and utilizing of common ground is a means to constructing ethical rhetoric. However, the other-words remains distinct from this kind of dialogic approach in that the other-words is not aimed at reducing competition, it is aimed at making sure that we compete respectfully. Such an approach is worlds apart from Foss and Griffin’s “invitational rhetoric,” in that while demonstrating respect for others is imperative, doing so does not necessarily require that interlocutors avoid “changing another” (1995, p. 3). Indeed, in the other-words, it is not only one’s duty to recognize the dignity of his or her fellow persons, but also to “stand for something,” which is to rather blatantly require that agents move their projects forward, which, in turn, calls upon interlocutors to use rhetoric strategically in efforts to change the beliefs of others. To respect others is to allow for “freedom of choice” to be “made available to audiences,” but it is also to acknowledge that sometimes good truths should be saved from ignorance and misunderstanding, and that rhetors

should care whether or not an audience “lack[s]...acceptance of or adherence to the perspective[s]” they have articulated (Foss and Griffin 1995, p. 12).

Though it has been highly implied up to this point, it is probably still advantageous to note that the other-words orientation is only meant to deal with things in the discursive, publicly attestable realm.¹² On par, the other-words is meant to account for rhetorical character—the habitual rhetorical styles from which the “commitments” of a given rhetor emerge (Booth 1983, p. 71), not actual character.¹³ It would not be prudent to assume that one could counter systematic genocide, or child abuse, or spousal abuse, by sitting down and performing a quick double argument. Nor would it be useful to attempt to understand a rhetor’s actual moral states and traits via his or her strategically crafted discourse. In this sense, there are certainly topics and issues that the other-words orientation is not fit to deal with.¹⁴ The other-words orientation, nevertheless, is very useful for agonistically approaching public discussions of symbolic, yet weighty beliefs, like those of creationism and evolutionism.¹⁵ This is to extend a competitively charged answer to Jeffrey Murray's statement that "an appreciation of our dialogical being-

¹² Though by “publicly attestable realm” I do mean to invoke a Rawlsian sense of “public reason” in which interlocutors have a duty (when speaking on public matters) to find more generally accessible terms to frame their arguments in the service of democratic decision making, this is not exactly what I mean. The current project is concerned less with a good, “well ordered constitutional democratic society” and its inherent usefulness for policy making, and much more concerned with good people relating well, which can involve not only matters of policy, but, more importantly of basic belief (Rawls 1997, 764). Regardless of governmental system, people need to find a way to negotiate their projects with others, even if they are not required to make a decision together, because that is the respectful, dignified, ethically integral thing to do. Some Communists are also Catholics, and they need to find a way to respect the projects of their fellow Communists who are staunch atheists, for no other reason than to appropriately recognize their dignity as fellow persons. The Communist atheists should do the same.

¹³ A rhetorical critic can never know a rhetor’s actual character. All he or she can examine is that rhetor’s public character as situated in a “rhetorical stance” (Booth 1963, 141). One’s public *ethos* is an image that emerges in the minds of hearers and readers, invited into existence from choices made more privately.

¹⁴ The other-words perspective would maintain that with any effort to change the minds of those we disagree with, even those with the disease of bigotry (like racists or misogynists), we need to demonstrate recognition respect. Exceptions to the rule include moments where expediency is necessary (usually brought about by democratically decided coercion, like in speed-limits, for instance), the other-words is less appropriate, as it is an ethic of respectful persuasion—in cases like this, where majority rules. The other-words might be appropriate for deciding what the thing is to be voted on (e.g., vaccination) but ultimately it is not what gets the remaining counterpublics who refuse to participate (that requires methods more coercive). The other-words is also more appropriate for explaining after the fact (or for repealing the coercive measure voted on). For cases like “Is Pluto a planet?” or “Should we create a policy of compulsory vaccination?” the other-words is very well suited.

¹⁵ Scientific skeptics such as publics that question global warming, argue for intelligent design, or question the health effects of vaccines, raise questions about the applicability of the other-words in our modern public sphere. To answer such questions we can visit the works of scholars like Leah Ceccarelli (2011), who show that manufactured controversies—or “eidolons” of science—gain footing when public representatives of scientific orthodoxy (e.g., secular evolution, global warming) ignore, or “write off” their opposition. The scientific skeptic can make use of appeals to democracy and free speech to argue they are being ignored by dogmatic (sometimes conspiratorial) institutions of illegitimate power; thus, undermining the scientific project anyway. So, showing recognition respect (via *dissoi logoi*), at the very least, is the instrumentally effective thing to do in that it heads off problems of our modern public sphere, but, as the other-words conceives, it is also the ethically upright thing to do.

together means that an appropriate ethical response is one that both maintains our relationships and continues our dialogue” (2000, 149). The other-words approach views continuation of discussion as an important end, but it is not the only one, for we still have our own commitments to stand for. *Dissoi logoi*, consequently, becomes a means to enhance integrity in that it promotes conditions for respectful persuasion.

If moral and ethical integrity depend on actively standing for something while also showing one’s fellow persons the recognition respect they deserve as reason-giving persons, then an other-words orientation becomes necessary. Speakers can be said to have integrity while attempting to engage agonistic persuasion if they: (1) demonstrate a recognition of their opposition as persons who can, and do, possess, at least potentially valid, reasons; (2) they do not coerce their audiences with unfair, untruthful, or shoddy arguments; (3) they do not allow themselves to be coerced; and, (4) they are honest about the alignments of their projects and their demonstrated appraisals of others’ as they attempt to competitively stand for what they believe. To lack one of these criteria would be to be lacking integrity, to be less than a whole rhetor.¹⁶

To give a brief example of how respect and integrity might relate, the public discourses of Isaac Newton’s *Light and Colors* and *Opticks* will be comparatively analyzed using the abovementioned criteria, while borrowing heavily from Alan Gross’ (1988) study of Newton’s discourses.

2.2.1 *Newton: Letting the Evidence “Speak for Itself”*

Sir Isaac Newton needs little introduction. Having done a prolific amount of work with mathematics and physics, he is often heralded as one of the founding minds of modern science.

¹⁶ Important to note here: No one can ever be completely “whole.” Rather, wholeness is the ideal for which ethical rhetors can strive toward the good.

Not surprisingly, as it was the norm of the day, he was also a highly spiritual man who wrote on topics of theology (e.g., Newton, [1785] 1841). Though he shared a kind of spiritualized understanding of science with his own “living tradition” (MacIntyre, 2011), his moral framework was wed to an epistemology that differed greatly from that tradition. Newton believed that it is by experimental methods that the truths of the world are best sought; that one should rely more heavily on one’s empirical evidence than on one’s philosophical assumptions about that evidence. It would be wrongheaded—misguided—to speak of science any other way. See his words on the matter from his private notes: “Tell me your experiments {;} if not, your opinion is Reasoning without experience is very slippery.... And therefore to affirm any thing more then I know by experience & good reasoning upon it is precarious” (Newton, [1672] 2013, p. 619r). This belief created a problem for Newton in that he had to advance his project amongst audiences who had “proclivities” (Black, 1978) for arguments that explicitly recognized, and qualitatively treated, Cartesian axioms of physics. As such, Newton required an argument that did not rely too heavily on the value of his own experimental induction, nor too heavily on a rhetorical style that would give too radical a break from the Cartesian field of argument he was arguing in (Gross, 1988, p. 10). He had to invent an argument that could simultaneously advance a theory that called for drastic epistemological revisions whilst respecting the seemingly non-complementary predilections of expression valued by his living tradition.

After failing once with *Light and Colors*, Newton later employed rhetorical skill in *Opticks* to transgress epistemological difference and craft an argument that simultaneously showed his Cartesian audiences the recognition respect they deserved while still remaining true to his own communication ethic, which envisions a natural philosopher’s responsibility to record his or her observations and experiments—to let the evidence “speak for itself.” As put by

Newton, in the *Opticks*, “to communicate what I have tried, and leave the rest to others for further Enquiry, is all my Design in publishing these papers” (Newton, [1704] 2013, p. ii). The following will compare Newton’s earlier discourses of optical theory with his *Opticks*, to show that his earlier iteration of the theory lacked recognition respect for his Cartesian audiences by moving forward from inferred assumptions of the value of inductive experiment, whereas, his later iteration, through a Euclidean¹⁷ structure and copious style, was able to achieve a larger demonstration of recognition respect for his audience’s beliefs in reason over experiment.

In his early optical work, *Light and Colors*, Newton (1671/2) fails instrumentally by openly prioritizing experimental evidence over Cartesian philosophical reasoning to argue that white light is not a pure, singular substance—as is the view in Cartesian optics—but rather a mixed, composite of all colors. In *Light and Colors* Newton very strongly highlights “the discontinuities between his theories and the optical past” so highly regarded among his more reluctant audiences (Gross, 1988, p. 13). In his later *Opticks*, on the other hand, Newton ([1704] 2013) rhetorically groomed his theories to represent a commonsensical extension of that past, as opposed to a radical break from it, rendering his case more convincing. Ultimately, Gross concludes, “the rhetoric of the *Opticks* concealed his radical intent; it was designed to convince, *even at the expense of perfect frankness*” (p. 2, emphasis added).

Gross’ conclusion raises an interesting question: Was it right of Newton to take the originally open, candid versions of his theories and make them more abstruse, simply for the sake of instrumental persuasion? Better worded, did Newton express his scientific theory in an ethically upright way? An analysis, informed by the other-words orientation to communication will answer with a textured yes. Newton was able to maintain integrity in *Opticks*, and his

¹⁷ Euclidean structure designates the style of Euclid’s writings on mathematics, wherein he explicitly outlines his set of axioms and then systematically moves forward from them with the remainder of his treatise. This is distinctive from Newton’s first attempt in *Light and Colors*, in which he does not set out his axioms, instead leaving them inferred as he moves through his argument.

abstruseness was merely the rhetorical means by which he was able to demonstrate recognition respect to his Cartesian audiences. Though Gross does not directly call it being ethical, he does allude to Newton's integrity of communication: "the caution Newton exhibits and the limits he honors in the scientific portion of the *Opticks* are not inadvertent, but principled" (Gross, 1988, p. 13). Newton was able to advance his own scientific project and, at the same time, treat his Cartesian audiences as the living, breathing, reason-giving persons they were.

For example, in his earlier essay, *Light and Colors*, Newton demonstrates an apparent lack of recognition respect for the philosophic precepts already in place for a Cartesian audience. His argument does not move forward from Cartesian axioms of physics, which are more comfortable with qualitative arguments. Rather, it moves forward from Newtonian assumptions of experimental (empirical) induction and repetitions, which remain inferred, not explicitly stated. He basically argues as if the "other words" of a Cartesian audience do not deserve to be addressed. Evidence of this lack of sufficient *dissoi logoi* for Cartesian optics can be seen in the reception of the piece. Famous figures of science expressed dissatisfaction, manifest by such famous characters of the Royal Society as Robert Hooke (1757) who disapproved of Newton's dismissal of the way "Descartes explicates the reason of the refraction" of colored light not as particles but as pressure waves (p. 15), or Christiaan Huygens (1673) who had qualms with Newton's non-Cartesian "accident" in which he interpreted the composition of "*White* [light as] made by all the Colors together" (p. 6086, emphasis in original). While it is very likely that Newton was familiar with Cartesian optics, and the "proper" modes of doing science, he does not incorporate such understanding into his discourse. The result is an obviously unsuccessful case, but past this, is the lack of recognition respect for the needs of reasoning had by his Cartesian audiences.

In his later *Opticks*, however, Newton does address the qualms of his Cartesian audiences, who felt the evidence presented in *Light and Colors* lacked the weight needed to offset Cartesian optics. A Cartesian physics envisions light as a set of pressure waves moving in straight lines as singular distinct colors, not as a bendable current of infinitesimal bits composed of all the colors of the rainbow, as it is in Newton's vision. According to Gross (1988):

In the *Opticks*, in the exposition of this theory, Newton employed a Euclidean arrangement to create an impression of historical continuity and logical inevitability. In addition, by piling experiment on experiment, and, in each experiment, detail on detail, he created in this work an overwhelming presence for his experimental method. (p. 10).

In *Opticks*, Newton's public persona does not attempt to break from tradition. Instead, working within his tradition (one that valued arguments that move forward from axiomatic principles such as that found in Euclidean arrangement) he gives his eight axioms at the outset, unlike in *Light and Colors*, where his axioms remain as inferred assumptions. Much like a gentleman might choose words like "please" and "thank you"—culturally imbedded formalities—Newton's public persona shows respect by recognizing the structures of reasoning that his audience holds central. Coupled to this are Newton's numerous experiments, examples, and details, which cumulatively give the impression that he does not expect the reader to take him at his word, but, rather, to take his dedication to painstaking description and careful documentation as a gesture of good faith. Newton, at least in the public persona he creates in the text, gives to the reader a means by which to "check his work." If the readers do not believe his theory, they have but to recreate the conditions and see for themselves that the conclusions Newton draws are true. This gesture forwards an indirect speech act that says: "I know that my

argument is difficult to swallow, I'll do everything I can to make it easy for you." Newton directly addresses the *dissoi logoi*, the "other words," of his Cartesian audience by way of a rebuttal spoken through *copia*. This allows for his "reasoning" Cartesian audience to take Newton's conclusions with a grain of curious salt, for if this much evidence says otherwise, then perhaps there is something of rational merit within it.

Light and Colors lacked this type of thoughtful recognition respect for Cartesian optics, moving forward instead from the assumption that the Cartesian model is innately flawed. But this is not surprising as Gross (1988) notes, "the rhetoric of Newton's first paper...was that of youth: brash and brilliant, relying for its persuasive effect on a clash of principles, a decisive confrontation" (p. 10). It was Newton's second piece, *Opticks*, which would wind up being a "canny and successful attempt to transform a youthful invention into a durable inheritance" (p. 10). Instrumentally speaking, the *copia* of details and evidence coupled with a Euclidean form helped to make use of the tenets of Newton's living tradition in order to amplify his theory of *Opticks* into a forceful case for modern physics without jeopardizing Newton's own moral commitments. He still allowed the "evidence to speak for itself," he just did so with great abundance, not contradicting his own communication ethic, but enhancing it in a form that appreciated his Cartesian audiences.

Light and Colors also has some persuasive appeal, for a smaller sect of Newton's audience albeit, but persuasive appeal nonetheless. Ethically though, we find that while Newton is of high integrity concerning his demonstrations of recognition and appraisal respect in his *Opticks*, his *Light and Colors* fails at showing proper recognition respect for his Cartesian audiences. It seems that even for a genius like Newton, respecting one's audience as the reason givers they are, despite their differences in belief, might require multiple attempts. His earlier

attempt, that is, was an ethical failure. He needlessly, and counterproductively, “wrote off” his audiences, speaking not with respect, but with dogmatic assertion, even if he did so genuinely. His later attempt, however, demonstrates a thoughtful recognition of his audience’s sense-making structures, coupled with a genuine expression of his own beliefs. In the final analysis, Newton was a respectful, ethically upright, rhetor, who crafted a case that did not shut down routes to discussion, but alternatively opened up new ones.

Chapter 3. SAVING (PUBLIC) FACE: SELF-INTEGRITY, PUBLIC CHARACTER, AND THE PROBLEM OF PARADIGMS FOR RESPECTFUL TALK ABOUT SCIENCE

No culture freely chooses its history, but rather it faces many restraints. The cultural realm of moral “rights” is therefore objectively constrained, and yet not objectively determined, in all cases, to ‘be right.’

The realm of the individual ‘ought’ is created, in part, by this gap. Because governments can be wrong, individuals and the religious institutions within which they gather in our time have a separate moral obligation that may require them to act against social prescriptions. Moreover, because cultures can be wrong, they may choose not to prescribe all behaviors (even if they could). Individuals thus have the option to choose to violate cultural prescriptions (accepting social penalties) or, they may feel they have a moral obligation (that they ‘ought’) to do more than is required by the society. —Celeste Condit (1987, p. 87)

Maintaining public characters that fall in line with the cultural norms of the day, recognizing the “social penalties” that Condit so poignantly alludes to above—what I will later call threats to “social face”—can sometimes cause us to act in ways that counter the commitments we actually believe in, to disrespect ourselves. However, at least in the realm of scientific discourse, our paradigms of thought might also influence us to feel that we can save face, while needlessly disrespecting others. Drawing from a comparative case study of Charles Darwin’s ostensibly respectful *Origin of Species* and Richard Dawkins’ blatantly disrespectful

Greatest Show on Earth we find that perhaps because so much of what we do is based in securing face in a social setting, our instincts can lead us to believe (wrongly) that *doxa*, or popular opinion, should steer who and how we respect, when, in fact, recognizing ourselves, and our fellow persons, as living, breathing, reason-giving persons is the better compass.

To support this thesis, the chapter will develop the problem of scientific paradigms with regard to public characters, and self-integrity. The dissertation will then draw out this discussion further by examining Darwin's "cautious humility," and Dawkins' "intellectual courage" manifesting both successes and failures of negotiating private moral commitments with the tradition (*nomos*) of particular scientific and social paradigms.

3.1 RESPECTFUL PUBLIC CHARACTERS: THE PROBLEM OF PARADIGMS

In popular thought, the enterprise of science is one that produces objective facts. However, as Thomas Kuhn (2012) famously averred, those objective facts are actually born of arguments, situated within cultures of valuative commitments. Paradigm, he explains, is:

a term that relates closely to 'normal science.' By choosing it, I mean to suggest that some accepted examples of actual scientific practice—examples which include law, theory, application, and instrumentation together provide models from which spring particular coherent traditions of scientific research...that commitment and the apparent consensus it produces are prerequisite for normal science, i.e., for the genesis and continuation of a particular research tradition. (p. 11).

Not only did Kuhn reconstitute the definition of the word "paradigm" to now represent the notion of contextually bound ideas of scientifically defensible truth, he also sparked nearly a half

century of debate, arguably giving rhetoricians of science a workable foundation from which to examine scientific knowing as discursively shaped and/or constituted. Kuhn seems more explicitly occupied with the practices of science itself as an enterprise of truth making, and the complications of incommensurability in scientific understandings, but he indirectly raises an interesting question, especially for the current project. If our paradigms of thought offer visions of what defensible science is, does that not also influence visions of what respectful talk about that science might be? Here, I will argue that yes, they do. In fact, sometimes when arguing about science, those arguing in line with the scientific orthodoxy might feel justified in assembling public characters that are disrespectful of their opposition, by treating them as something other than reason-givers. On the converse, if one perceives his or her case as going against that orthodoxy, they might feel obligated to construct a public character that demonstrates respect for ideas they do not actually venerate. In both cases, their actions are ethically suspect.

3.1.1 *Saving Face: Why We Might (Dis)Respect*

According to the social scientific work of communication researcher Stella Ting-Toomey (1998), face—social dignity—is important to people, especially when involved in conflict. This is because when raising controversy, one's face is rendered vulnerable. This is why we have such concepts of action as “politeness,” “complimenting,” and “embarrassment,” social constructs that help motivate and describe behaviors involved in “face work,” or protecting one's own social dignity as well as being aware of others trying to do the same. Consequently, out of a kind of appeal to symmetry and reciprocation, when one critiques, or disagrees with another—attacking the integrity of another's public character—one simultaneously invites those others to critique their own public character. To attack the projects represented by the public character of

another is to attack some version of that person's self-integrity. Our commitments are wed to our "self-identity" as well as the public "face" through which we perform their validity. Despite the tendencies of some wishing to proclaim that reputation—the status of social dignity—should not be of consequence in matters of truth making and goodness, it nonetheless remains a very real force that can mislead us from appropriately respecting our opposition in public controversy.

Within science discourse, the old Athenian vein of thought that envisions "honor and shame" as "the normative poles" (Cohen, 1991, p. 183) between which we try to navigate a "public face" is still with us today. One's public character, the amalgam of stylistic habits cultivated from a petry dish of individual choices and culturally encouraged habits of thought and talk, when considered within a particular paradigm, is characterized by what Debra Hawhee (2002) might call a *kreitton logos* emphasis on *nomos*, tradition. In efforts to save and have face, rhetors of science might employ respect (or not) in their discourses by falling back on the *nomos* of a particular paradigmatic moment. Or, put differently, he or she might attempt to argue "with the current" of thought to avoid risking face, resulting in feigned demonstrations of respect for projects one does not truly believe should be appraised respectfully. Or, if one is arguing "with the current" of thought, he or she might perceive more justifiable license for which to disregard the dignity of individuals within counterpublics of a given paradigm, because less face is risked. Either case diminishes integrity. In the former, it might create a disingenuous character for the rhetor. In the latter, it might create conditions for oppositional audiences to be wrongly disrespected.

Some important definitions for the reader before moving forward:

1. *Self-integrity*: Wholeness of the self as a real, private amalgam of moral, political, scientific, and spiritual commitments.

2. *Public character*: Discursive construction of self, born from negotiations of self-integrity and perceptions of community *nomos*: laws, norms, conventions—the “common sense” of a paradigmatic moment.

3. *Paradigmatic moment*: Tendencies of value characteristic of a specific context, wherein public meaning simultaneously defines the social system and the ways in which that system is customarily articulated. This includes epistemological assumptions.

According to Michael Halloran’s (1982) rereading of Aristotelian character, public habits of discourse are not merely a “public self,” disjoint from a private self. While playing off of Quintilian’s notion of a good person speaking goodness, Halloran defines a public self as an assemblage of habits of discourse, forming a public persona, born of, and constantly reflecting back on, a private persona, attempting to negotiate its private commitments with the public norms of the day in ways that uphold self-integrity. In fact, rhetorical habits “enable” a person “to assume the rhetorical postures of virtue” helping him or her “grow toward the goodness of the ideal citizen-orator” (p. 61). Though I concede this claim, I argue slightly differently, and perhaps less graciously. Public characters, in the way I discuss them here, designate the outcome of persons’ attempts to prudently negotiate their personal commitments with the propensities of thought and talk embedded in their paradigmatic moment—the rhetorical constraints of tradition and personal value that bear down on a moment of scientific discourse. From a non-static, tumultuously assembled, mangle of battling commitments to self-integrity and perceptions of the *nomos* of a given paradigmatic moment, is birthed a public character. An *eidolon*, floating somewhere between what an individual believes to be true, and what an individual perceives he

or she *can* express as true, public character simultaneously represents an abstract persona that has repercussions for real persons, with genuine social dignities at stake.

Stepping outside of norms is simultaneously the mode to novel thought as well as a mode to social snubbing, disdain, and misunderstanding. Stay too far within the norms, one is likely to say the “same old thing.” Step out too far, and one runs the risk of constructing an abominable public character—one risks losing face. Randy Allan Harris (2009) might call this (a more broadly scoped) “Max Planck effect,” wherein, out of previously established investments of value, new science is harder to pass for old scientists. As Harris puts it: “young Turks propose some conceptual reorganization of their field, and Old Dogs repress that reorganization” (p. 85). Here, however, I wish to broaden this phenomenon from specific scientific disciplines, to whole scientific paradigms, and include not just the experts, but the wider public too. The *nomos* of a given paradigmatic moment carries rhetorical weight and a scarily threatening force to one’s security of social face. Depending on the implications of one’s scientific findings one might simply lose credibility or be shamed by one’s peers (e.g., scientists who investigate “bigfoot” or “ghosts”) or suffer more serious consequences (e.g., Galileo’s house-arrest).

Past the *nomos* of a given paradigmatic moment are also, seemingly smaller, but equally powerful influences. Our own personal moral commitments, what we envision to be “right” regarding our actions and the actions of others, influence the constructions of public characters. Flowing from a confluence of the perceived *nomos* of a given paradigmatic moment as negotiated with the personal commitments of an individual private persona is a public character. And, the respect (or lack thereof) demonstrated by that public character for his or her reluctant and/or sympathetic audiences is produced out of a tug-of-war between a drive to have self-integrity (to be true to one’s own beliefs of the good) and securing face amidst a particular

paradigmatic moment, permeated by tradition, and rampant with threats to social dignity. To put it in terms of the “other-words,” we might have moral commitments that are in paradox with what we perceive to be our duties within a particular paradigm. The result, we find occasionally, are moments where interlocutors might think it is their duty to show feigned appraisal respect—to be “nice”—which, at least within the other-words perspective, is not a requirement to having integrity. On the contrary, interlocutors might also interpret a duty to completely deny recognition respect because they perceive that to show any respect is to diminish integrity, which in actuality, is not so, for recognizing our opposition is a necessity.

Sometimes, as we will see from Darwin and Dawkins in the following sections, our respective paradigmatic moments, or rather, *nomos* (and the threat to face that going against that *nomos* represents) in combination with our personal commitments can influence the ways we might show respect for those audiences with whom we disagree. In some moments, like that of Darwin, one might show respect for pursuits of thought he or she really does not believe in, resulting in diminishment of one’s self-integrity in apparent efforts to secure face amidst a paradigmatic moment, where *nomos* was not in one’s favor. In other moments, one might withhold respect, as does Dawkins, because within his paradigmatic moment he is arguing with the grain, not against it, as such face is not un-risked, it is just much less risky to argue as Dawkins does than it might have been for Darwin. In the final analysis, Darwin recognizes his audiences as reason-givers, and demonstrates vast amounts of respect for the pursuit of Creationist thinking, which he does not seem to genuinely believe, at least in his private persona. Dawkins, on the other hand, fails to recognize his audience as reason-givers, but is able to demonstrate a seemingly genuine representation of his own beliefs, again, based on the private persona he constructs.

To provide an example of how respect and integrity can be discomfited, the other-words orientation will be applied to the public discourses of Charles Darwin and Richard Dawkins on the topic of evolution.

3.1.1.1 The “Cautious Humility” of Darwin¹⁸

Despite the heavy opposition of many to the idea of natural selection described in *Origin of Species*, Darwin, according to Campbell (1975), nonetheless “makes an eloquent and moving plea,” guided by his “moral aim” (pp. 389-90). This work will argue that Darwin, at least in his constructed persona in *Origin of Species*, approached his audience by way of an other-words orientation, which not only gave recognition respect to his audience, but also gave his oppositional audience a great deal of appraisal respect.

Darwin’s ground project involved commitments not easily accommodated by the paradigm he was arguing within, which involved a “cultural grammar” (Campbell, 1986) punctuated by the belief in “special creation” to which Darwin needed to respond by constructing an appealing public persona (Depew, 2009, p. 247). Special creation, while amenable to “evolutionary” theories of speciation, tended to operate from the assumption that species were created “specially,” distinctly, separate from one another. Darwin’s natural selection, alternatively, operated on the assumption that species were not separate, but related, not built with a purpose, but rather the results of chance happening. The result was a clash of paradigms: Darwin’s, which could entertain the idea of nonspecial creation, and a dominantly more popular one, favored by “theistic evolutionists” who were amenable to explanations of speciation by transmutation over time, but still had penchants for conceiving of them as interwoven with special creation, a vision that can harmonize well with divine design (Numbers, 1992, p. 4).

¹⁸ This section is based off of unpublished research done prior in my Master’s thesis, which investigates the narrative structures of Darwin’s *Origin of Species* (Coleman, 2011).

Before Darwin's famous voyage aboard the HMS Beagle to South America, where he collected biological specimens and surveyed geological phenomena, he was a believing Christian. While on the trip, his faith "crumble[d]" (Ruse, 1990, p. 180). For Darwin, this was the beginning of a lifetime of collecting support for ideas that contradicted the Old Testament, for instance, through arguments that the earth is much older than six thousand years, and that species are related, not distinct (Darwin, 1887). He later rejected Christianity, and special creation generally. Despite this, Darwin was intimately familiar with the belief structures of his special creation audiences.

As Darwin said famously of theologian William Paley's *Evidences of Christianity* and *Moral Philosophy*: it "gave me as much delight as did Euclid" (1887, p. 47). Darwin's familiarity with, and understanding of, Christianity and special creation gave him a sympathetic ear to those who had qualms with natural selection. Darwin's views on speciation by theistic design can be seen in the following letter he wrote to his friend Asa Gray, who, by today's terminology might be considered a "design theorist," in that while he received Darwin's theory positively, Gray did so with an emphasis on the idea that speciation was a process born of God's plan and purpose. Darwin seems to disagree with Gray.

I own that I cannot see, as plainly as others do, & as I shd wish to do, evidence of design & beneficence on all sides of us....I am inclined to look at everything as resulting from designed laws, with the details, whether good or bad, left to the working out of what we may call chance. (2014a)

Important to note is that religious qualms were not the only exigencies in Darwin's rhetorical situation, for there were explanations more squarely scientific as well, such as that of Charles Lyell, an influential geological thinker and friend to Darwin, who, in his *Principles of*

Geology, wrote on “uniformitarianism”: the idea that the natural environment of today is the result of forces of nature, operating slowly over time. Later, in *Origin*, Darwin extrapolated this idea to species, arguing that from the chance happenings of environments changing over time, so too do species transmute and become distinct from their shared ancestors. Lyell, while not a “creationist” in his public persona, still maintained that species did not arise from a single, shared ancestor, but rather from distinctly created ones (Hodge, 1982, p. 93). It was these kinds of “common sense” understandings of special creation to which Darwin endeavored (both consciously and unconsciously) to respond rhetorically. Darwin’s articulation of this rhetorical response is:

I am a strong advocate for free thought on all subjects, yet it appears to me (whether rightly or wrongly) that direct arguments against Christianity & theism produce hardly any effect on the public; & freedom of thought is best promoted by the gradual illumination of men's minds, which follows from the advance of science. It has, therefore, been always my object to avoid writing on religion, & I have confined myself to science. I may, however, have been unduly biased by the pain, which it would give some members of my family, if I aided in any way direct attacks on religion. (2014b)

Darwin had a moral commitment to expressing the tenets of his theory gingerly, especially because it dealt with religion. So, for Darwin, one who speaks gently about other peoples’ beliefs (especially those one disagrees with), is one speaking from self-integrity. Interestingly though, it also seems that Darwin (possibly because of his familial situation) is a proponent of strategic arguments against one’s opposition. He elaborates this perspective further

in a letter to the theological author Francis Abbot, wherein he indicates his commitments regarding discussions of religion and science in the public:

I think that you will agree with me that anything which is to be given to the public ought to be maturely weighed & cautiously put...I feel in some degree unwilling to express myself publicly on religious subjects. (2014c)

From the passage above we see that Darwin was thinking strategically about his communication about science (e.g., that it “ought to be maturely weighed & cautiously put”), which shows conscientiousness about his expression of controversial ideas. We also find that Darwin’s particular ethic of public communication of controversial science was one that was much more comfortable with erring on the side of showing an audience feigned appraisal respect, than to risk revoking recognition respect. He was doing “facework” for his audience, not just himself.

In Darwin's view, to engage upright communication about science in the public, recognition respect is necessary, but so is an erring on the side of over-affording appraisal respect. After all, “we all may be netted together” (1960, p. 280). It seems that to Darwin, it is “doubtful policy to speak too positively on any complex subject however much a man may feel convinced of the truth of his own conclusions” for Darwin was committed to an intellectual humility, manifested through gentle discussions of others’ beliefs (2014d), facilitated by *dissoi logoi*, and motivated by his perceived duty to family. But, as we will find below, Darwin was also conceivably motivated by a desire to avoid arguing too virulently against the dominant paradigm of the day. Darwin practiced rhetorical restraint, instrumentally mitigating his beliefs, by showing his audience appraisal respect, born of recognition respect demonstrated for his special creationist audiences.

Darwin's respectful consideration of his opposition can be found in the contrast between *Origin of Species*, and his original drafts of work on natural selection, which were never intended to be published, but nonetheless were, after being discovered by his son in his study. In his *Two Essays Written in 1842 and 1844* he directly addresses "creation" more than he does in *Origin of Species*.¹⁹

Darwin used terminology that was more comfortable for his special creation audience. Instead of putting himself into the position of having to directly refute *creationists*, he instead frames his idea alongside the opposition, opting out of arguments directly aimed at them. In fact, the way he addressed his audience was gentle, allowing space for an audience who believed in theistic special *creation*, laid out by a *creator*, to maintain their own beliefs in the face of Darwin's non-theistic mechanism of natural selection. That is instead of the process of "natural selection" he speaks of *creation*; instead of "species" he speaks of *creations*. Such a gentle framing can also be illustrated in differences of explicitness regarding his disagreement with special creation between his private writings and public espousal of his theory. His private writings about the validity of special creation accounts of origins showed he thought them insufficient:

Looking further backwards we see that the past geographical distribution of organic beings was different from the present; and indeed, considering that geology shows that all our land was once under water, and that where water now extends land is forming, the reverse could hardly have been possible. Now these several facts, though evidently all more or less connected together, must by the *creationist* (though the geologist may explain some of the anomalies) be

¹⁹ Darwin uses the word "creations" 14 times in *Two Essays*, and only 2 times in *Origin of Species*. He uses "creator" 25 times in *Two Essays*, and only 7 times in *Origin of Species*. Finally, he uses "creationists" 10 times in *Two Essays*, but the term is absent altogether from *Origin of Species*. Such a difference is not only illustrative of his strategic thinking about arguing for his idea, but also his efforts to demonstrate appraisal respect for his special creation audiences.

considered as so many ultimate facts. He can only say, that it so pleased the Creator that the organic beings of the plains, deserts, mountains, tropical and temperature forests, of S. America, should all have some affinity together... But it is absolutely opposed to every analogy, drawn from the laws imposed by the Creator on inorganic matter, that facts, when connected, should be considered as ultimate and not the direct consequences of more general laws. (1909, p. 182, emphasis added)

In Darwin's *Two Essays*, as excerpted above, he argues that the special creation description of origins is inconsistent, untenable. In indirect terms he seems to ask, "How can we have so many contradictions to special creation and still heed it as true?" In his *Origin of Species*, however, Darwin lets the assumption dangle more vaguely:

During early periods of the earth's history, when the forms of life were probably fewer and simpler, the rate of change was probably slower; and at the first dawn of life, when very few forms of the simplest structure existed, the rate of change may have been slow in an extreme degree. The whole history of the world, as at present known, although of a length quite incomprehensible by us, will hereafter be recognised as a mere fragment of time, compared with the ages which have elapsed since the first creature, the progenitor of innumerable extinct and living descendants, was *created*. (1859, p. 488, emphasis mine)

Darwin's public persona is asserting that life is speciated via nonspecial means, but he points to the products of natural selection as "created," allowing his audience leeway to interpret purpose into Darwin's otherwise purposeless model of speciation.

The gentle framing of natural selection demonstrates Darwin's other-words orientation. He, in his private persona, was not only aware of the *dissoi logoi* to his theory (as evidenced by biographical data and his correspondence) but in *Origin* he also visited the reasons of those that believed in special creation, and, as such, through humility in his public persona, we can see his recognition respect. It is from these same acts of humble omission, that Darwin demonstrates a quiet, but potent, appraisal respect for his special creationist audiences' beliefs, by treating them gingerly.

Perhaps because Darwin was standing for a project largely unpopular in his contemporary paradigm of thought, he seems to have (at least in his public rhetorical character) felt that to have integrity—to represent his projects—he needed to bend his own beliefs some. Regarding a check for alignment of his projects with his more oppositional audiences, this resulted in demonstrations of appraisal respect, while instrumentally effective for approaching believers of special creation, which still might have been insincere demonstrations of appraisal respect for his opposition. In the wisdom of hindsight, Darwin, after the publication of *Origin*, would later speak with a pang of guilt: “I have long regretted that I truckled to public opinion & used the Pentateuchal term of creation, by which I really meant ‘appeared’ by some wholly unknown process” (Darwin, 2011d). And, thus, we catch a glimpse at how one's private situation (i.e., Darwin's family's beliefs), in conjuncture to one's larger public paradigm (i.e., the dominant beliefs of his living tradition), might influence that person to over-afford an insincere appraisal respect for the sake of having integrity.

3.1.1.2 Dawkins' “Intellectual Courage”

Since Darwin's day, the dominance of paradigms has become inverted. Nonspecial (atheistic) speciation slowly became the orthodoxy in the biological academy, making special

creation a less defensible, oft-named “fringe” viewpoint. Dawkins’ *The Greatest Show on Earth* is a treatise aimed at espousing “the evidence for evolution itself” (2009, p. vii). Similar to Darwin’s *Origin*, *The Greatest Show on Earth* is an apologetic meant to “demonstrate that evolution is an inescapable fact” (2009, p. 18). Based on this premise it would be reasonable to assume that Dawkins’ rhetorical purpose is to advance the project of natural selection, which Darwin built the foundations for 150 years earlier. As will be shown in the coming pages, Dawkins’ public character is trying to “rally the troops” of natural selection against views of evolution that tend to champion theological explanations over scientific ones. But in so doing, Dawkins fails to demonstrate recognition respect for special creationists in his actions. Consequently, his integrity is complicatedly enhanced as well as potentially diminished. By being unabashedly honest about the misalignment of his project and those of special creationists Dawkins presents a sincere case. But, out of the same logic of “intellectual courage,” he problematically conflates appraisal respect with recognition respect, allowing for a withholding of recognition respect in the service of honorably representing his project. That is, in order to preserve his integrity as a “stander” for his ground project, he seems to act in ways that deny recognition respect for his audience.

It is important to note, that recognition respect does not require “being nice,” but rather being on point. Table 1, which compares word choice in Darwin’s *Origin of Species*, and Dawkins’ *Greatest Show on Earth*, demonstrates a manifestation of Dawkins’ honesty regarding his own moral commitments.

Table 1. Word Use in *Origin* and *Greatest Show*.

Term used	<i>Origin of Species</i> (1st ed.)	<i>Greatest Show on Earth</i>
Creations	2 occurrences	5 occurrences
Creator	7 occurrences	12 occurrences
Creationist(s)	0 occurrences	55 occurrences

What is particularly interesting about the differences in word choice here is one of tone. Darwin is using these terms, sparingly, to make more comfortable his claims for special creation audiences. Dawkins, on the other hand, is using the terms, not to make his audience more comfortable, but to rail against them, virulently. Take the following quote, which looks very much akin to Darwin's privately written *Two Essays*, which later attenuated its virulence when published in *Origin*. The fact that Dawkins perceives license to publicize such virulence is, I think, telling of the *doxa* of the day. Dawkins is amidst a sphere in which atheistic evolution is the norm in the biological academy (whereas this was not the case for Darwin), and so he feels that to save face, to have integrity, does not require "being nice," but rather "being mean," but with principle.

Why would an all-powerful creator decide to plant his carefully crafted species on islands and continents in exactly the appropriate pattern to suggest, irresistibly, that they had evolved and dispersed from the site of their evolution? Why would he put lemurs in Madagascar and nowhere else? (Dawkins, 2009, 270).

Dawkins' withering tone is not sufficient for faulting Dawkins' integrity. We are not just allowed to stand for our projects, but required to do so. We are also required to do so in ways that demonstrate appraisals of others projects in honest ways. So, Dawkins' "being mean," represents appropriate appraisal respect. As we will see below, this integrity regarding his moral commitments is enhanced, but perhaps at the expense of treating those with whom he vehemently disagrees ethically, by treating them as something other than reason-givers. Moreover, if Dawkins was merely inciting *ad hominem*, but doing so by connecting to the *dissoi logoi* of his opposition, his integrity would still be enhanced—he's being a "jerk" but honestly so, and while staying on point. However, he seems to construct a straw man of their arguments

instead, which only *seems* like he is meeting them on their terms, but, alas is not; he is not arguing *to them*, but rather *past them*.

According to Biochemistry Professor, Douglas Theobald (2014), *The Greatest Show* parallels Darwin's *Origin* quite closely in that they both have thirteen chapters and a preface, and follow very similar outlines. They both start by treating artificial selection (e.g., dog breeding) and then move into arguments for non-artificial natural selection. However, there are stark and weighty differences between Darwin's soft framing of special creation and Dawkins' added emphasis on human evolution in the seventh chapter and his direct arguments against "unintelligent" design in chapter eleven (2009, p. 356). On its face, this seems to show that because Dawkins is directly addressing creationists and design theorists', he is showing these audiences recognition respect by visiting, or at least arguing against, their reasons for believing in creationism or intelligent design. But as design theorist, Sean McDowell, writes in a review of Dawson's *Greatest Show*, this is not the case. "Dawkins utterly refuses to engage with any serious evolution skeptics....The charitable response would be to assume that he's simply unaware of the revolution in Christian philosophy, and the intelligent design movement. But this is hard to believe....his case is remarkably one-sided" (McDowell, 2014).

To illustrate this point, fellow design theorist, Johathan Under (2011), points to Dawkins' use of vertebrate retinas as illustrations of "bad design" to refute intelligent design theory, illustrated by Dawkins' public persona below:

We might expect unfortunate mistakes as in the spherical aberration of the Hubble mirror, but we do not expect obvious stupidity, as in the retina being installed back to front. Blunders of this kind come not from poor design but from *history*. (Dawkins, 2009, p. 356)

Among many others, Under (2011) cites the work of design theorist and biologist, George Ayoub, to argue that “recently identified functional reasons for the design of [the retina] challenge the old Darwinian claim” in that it provides “an excellent example of what engineers call constrained optimization, in which several competing design objectives are elegantly balanced to achieve an optimal overall design.” Although works like Ayoub’s exploration of the vertebrate retina do not appear in the same places as more traditional (secularly argued) science might appear, like the journals *Science*, or *Nature*, for instance, if it were Dawkins’ point to stand for evolution by natural selection—to advance his project—among those with whom he already finds disagreement, visiting their reasons and crafting arguments to recognize those reasons, would have helped to garner a more persuasive case, on both instrumental and ethical grounds.²⁰

Dawkins’ public persona lacks awareness for the reasons of his special creationist audiences by not arguing within the purview of evidence and argument they value. Such a move enhances integrity in that Dawkins’ is unequivocally honest about what he values and believes. However, does his argument really have integrity? From the other-words orientation one could answer, yes and no. Yes in that he is honest and upstanding—he is not trying to trick or coerce. However, one could also answer, no, in that he is deflating the persuasive force of his project by failing to recognize his disagreeants as reason-givers.

In his book, *A Devil’s Chaplain: Reflections on Hope, Lies, Science, and Love*, Dawkins champions what he calls “intellectual courage: the courage to stick by your intellectual

²⁰ Some might object, arguing that Dawkins is in fact attempting to engage an “atheistic voice,” which Rhodes (2014) describes as a mode of rhetoric that is both “speaking *against*, [and] it strives to speak *for* nothing and no one” (p. 326). And, *prima facie*, it might look as if this is what Dawkins is trying to do, to “transform a culture’s god-terms into objects which are silly” (p. 326) by engaging mockery, ridicule, and *ad hominem*. Firstly, however, Dawkins is not arguing for “nothing,” he is arguing for the validity of evolution. Further, even if he was, if we were to stay in line with Rhodes’ description of the atheistic voice, we would find that one is required, nonetheless to focus on the other-words of his or her opposition, in that “the atheistic voice...uses double-voicing to anticipate the words of its priestly and bardic opponents and in so doing, mocks and ridicules them with their own words, making their god-terms look laughable” (p. 333). How else would those god terms, and the specific ways those audiences understand them, be effectively transformed into something silly? Here as we can see from Dawkins’ lack of recognition respect for his chief opposition, not only does he fail at arguing for something in that evolution is not very well stood for in these discourses, but perhaps he also fails at arguing for nothing, as his discourses fall short in recognizing the other words, which he wishes to transform.

principles, even when in extremis and sorely tempted by the easy solace that a betrayal might seem to offer” (2004, p. 179). One should not attenuate his or her beliefs with rhetorical restraint, for the “false hopes” not checked by such communication could “actually be damaging” to one’s own projects (p. 180).

The consistency between this commitment and Dawkins’ public messaging demonstrates an instance of appraisal respect, high in integrity in that it shows sincere consistency between his self-proclaimed private commitments and the ones demonstrated by his public persona in *Greatest Show*:

Creationists are deeply enamored of the fossil record, because they have taught (by each other) to repeat, over and over, the mantra that it is full of “gaps”: “Show me your ‘intermediates’!” They fondly (very fondly) imagine that these “gaps” are an embarrassment to evolutionists. (2009, p. 145)

As honest and candid as Dawkins’ public communication style is, he is still lacking recognition respect. In the above argument, he overlooks the fact that for many creationists and design theorists the fossil record is the crux of the evolutionist project. Without fossils, there is no evolution; thus, it has become a central point for creationists and design theorists. To simply say, “we don’t *need* fossils—the case for evolution is watertight without them” (2009, p. 146, emphasis his) is to “write off” the reasoning and belief structures of these audiences.

Apparently, as a response to his paradigmatic moment, Dawkins’ public persona argues as if recognizing the reasons of his opposition would be to show positive appraisal respect for them. Ostensibly from a mixture of personal belief and historical situation, we find the moment of Dawkins’ rhetorical stance as it converges on the public character he constructs in *Greatest*

Show—one in which recognition respect should be withheld from the opposition, for this is how integrity is had.

Demonstrated through a comparison of the public discourses of evolutionary theorists Charles Darwin and Richard Dawkins, is the idea that “face” within a particular paradigmatic situation might sometimes influence us to show more respect than we think is owed, or, possibly even unnecessarily withhold respect for audiences whom, at their most basic status as a person, deserve to be treated like reason-givers. Consequently, we find, perhaps demonstrating a basic respect for others as reason-givers, is a better compass for respectful persuasion than what might be publicly defensible, or at least in-line with the *doxa* of a given paradigmatic moment.

Chapter 4. SPEAKING TRUTH: THE COPERNICAN THESIS AND THE PROBLEM OF DARK *PARRĒSIA*

Rhetoric is useful...because things that are true and things that are just have a natural tendency to prevail over their opposites, so that if the decisions of judges are not what they ought to be, the defeat must be due to the speakers themselves, and they must be blamed accordingly. –

Aristotle, *The Rhetoric*

Parrēsia—to speak boldly and without constraint in the face of power—is a manner of talk that has maintained quiet admiration since its inception in the two millennia old speeches that remain of our ever so venerable Greeks. Standing in the face of power, unbound by decorum, unencumbered by the norms of tact, and at the risk of very real threats to social face, physical body, and psychic wellbeing, a person willing to speak the truth can be regarded as courageous, unafraid to help an audience realize the truth they knew all along—or, in short, we might call that person a “*parrēsiastēs*.” Here I will argue that *parrēsia*—regardless if one actually possesses even the truest of truths—is an act that also has a “dark” counterpart, which often looks like *parrēsia*, but is much more akin to narcissistic, psychopathic, or Machiavellian discourse in that it agues past, or around those for whom that *parrēsia* was formulated to reproach. A means to avoiding the darker ways of speaking and listening that can be involved with *parrēsia*, can be found in a respectful (rhetorical) vision of *parrēsia*, that speaks truth to power, but not without regard for the “other-words” of one’s opposition.

Respectful *parrēsia* recognizes speaking truth as not *being right* about what is true, but rather about *doing the right thing* with that truth. To example respectful *parrēsia*, and some

darker instances of listening to and speaking *parrēsia*, I will trace the Copernican thesis, a highly controversial claim of astronomical truth during (and after) the Renaissance period. From Copernicus' *De Revolutionibus*, to Kepler's *Harmices Mundi*, to Galileo's *Dialogue* we will find examples of discourse that at first seem to be mere pandering to the powers that be, but in fact represent respectful *parrēsia* (*parrēsia* that addresses the "other-words" of one's opposition). I will then contrast these examples against discourses that look courageous, but are actually dark rhetoric (in that they "write off" the "other-words"). I will also example dark listening (problematic assumptions as applied to the *parrēsiastic* discourses of another). Before this, we will distinguish between respectful *parrēsia* and its dark counterpart.

4.1 *PARRĒSIA* AND ITS "DARK" COUNTERPART

Parrēsia, in the Greek, to "speak everything boldly," is described by Foucault (1983), in his famous lectures on the concept, as an act of discourse in which an interlocutor, who possesses less power than those with whom he or she disagrees, says so. Very important to Foucault's definition of *parrēsia* is the notion of courage in the face of risk to self in order "to improve or help other people (as well as himself)" wherein the interlocutor "chooses frankness instead of persuasion, truth instead of falsehood or silence, the risk of death instead of life and security, criticism instead of flattery, and moral duty instead of self-interest and moral apathy" (Foucault, 1999, p. 6). Basically, in Foucault's point of view, the *parrēsiastēs* is one who does not practice rhetoric (Walzer, 2013, p. 2). The *parrēsiastēs* is one who recognizes the cowardice of succumbing to propriety, and instead chooses to courageously stand for the truth, and the others to whom that truth will be a benefit.

While it is very easy to see the virtue in *parrēsia* (namely the altruistic self-sacrifice presented in risking oneself for others), I wish to point out that sometimes there can be acts of *parrēsia* that only appear virtuous because the interlocutor was “right,” but in fact demonstrate something that is not *parrēsia* at all, what I will later call “dark *parrēsia*.” Such confusion, I will argue further, allows for a version of truth speaking that very directly champions possession of the truth over publicly sharing that truth with others, sanctioning much space for interlocutors to engage irresponsible acts of talk, while remaining less culpable because they were nonetheless “right” about their science.²¹ Dark *parrēsia*, moreover, is an act of public truth speaking, but one in which that truth is spoken in ways that might assume the truth can speak for itself, failing to connect a necessary truth to another by “writing off” the very belief structures one is repudiating.

4.1.1 *Dark Parrēsia and the Need for Respect*

The “dark triad”—narcissism, psychopathy, and Machiavellianism—is commonly associated with “self-promotion, emotional coldness, duplicity, and aggressiveness” (Paulus & Williams, 2002, p. 557). While I think it important to take a moment to say that sometimes truths should be blurted past barriers of disbelief, it is not merely the truth that prevails, it is the rhetorical effect of the blurring, coupled with the truth that the blurring is meant to represent. Sometimes persons need to scold others, admonish them, put them in their place, “call them out”—this much I am sure of, and consequently the virtuousness of *parrēsia* is easy to recognize. What worries me, is when, out of a perceived duty to truth, interlocutors commit themselves to a

²¹ The passing of time usually sorts the commendable *parrēsiastēs*—“truth speaker”—from the deplorable. We almost always view pandering to the powerful as hollow, shameful communicative behavior, representing smallness of spirit (e.g., see the disparagement of many Sophistical orators)—the opposite of what we might call *parrēsia*. But standing in the face of power, to criticize, is seen as a full, admirable pursuit. For instance, with the power of hindsight, many regard Galileo’s *parrēsia* as righteous indignation—“good” *parrēsia*. His science was correct and he stood against the Inquisition at real risk to self. However, I will argue here that despite the common admiration of Galileo’s stand against the Inquisition, his discourses also had in them “darker” characteristics. Further, I will argue that no matter how correct one might believe his or her science to be, or how courageous one might envision a lack of propriety to be, or how sincere one thinks one’s representations of truth are, or how powerless one perceives him or herself to be, *parrēsia*—truth speaking—without restraint is less admirable than truth-speaking that prioritizes respect for the audience with whom one disagrees.

frank scolding of those in power, in turn forgetting their duties to show a basic respect for others as reason-givers, in turn creating discourses that argue past, or around the very persons they wish to admonish. Being courageous is good, but aimless courage is actually rashness, no matter how “right” we might think we are. Speaking truth without regard for the dignity of others as reason-givers, manifested through lack of empathy for one’s opponent’s structures of belief, self-interestedness in one’s own projects, and/or manipulation of one’s true motives might appear to be *parrēsia* because these behaviors too are often bold and risky, but they are bold and risky without representing the thing that makes *parrēsia* admirable in the first place: the promotion of others’ wellbeing at the risk of one’s own. Thus, *dark parrēsia* is characterized as discourse that promotes one’s own wellbeing over others, while speaking boldly, and without constraint.

To draw out further the problem of dark *parrēsia* let us briefly visit the *Rhetoric Society Quarterly* forum responding to Arthur Walzer’s (2013a), “*Parrēsia*, Foucault, and the Classical Rhetorical Tradition,” wherein Bradford Vivian (2013) gives this definition of the “fearless speaker”:

The fearless speaker is a figure, a form, of ethical practice: a subject compelled to speak what he or she understands as true irrespective of majority opinion—to speak it, in the relevant episteme, without adapting words for the sake of hearers, propriety, or situation. Such is a figure of moral, and not rhetorical, instruction in situ. This *parrēsia* requires the prime virtue of courage, not technique. (Vivian, 2013, p. 370)

In Vivian’s emphasis on the moral duty of individuals to speak “without adapting words for the sake of hearers” is a vision of *parrēsia* I call *parrēsia* as “breaching,” which, is similar to what Kelly Happe (In-Press) calls, “ethical *parrēsia*,” which “not only demands of us the ability to

recognize and perform otherwise unrecognizable political speech, it demands that we confront what will be lost in the recognizing” (p. 14); it is an exploration of possibilities, by rupturing the status quo of thinking to find “openings” toward new truths, previously rendered inaccessible by established social structures, or to overcome those structures. To be sure, Vivian and Happe diverge in their own respective visions of the ethical in *parrēsia*. Vivian’s vision is one in which the rhetor already has “in hand” knowledge that he or she must share, irrespective of the propriety of the moment—to breach the impediments to truth. And, the ethical in Happe’s *parrēsia* is one centered on *finding* truth by breaking norms, when we do not yet know what the truth is, or what it should be—to open up new ways to understand truth. By contrast, the ethic of respectful *parrēsia* I am attempting to articulate here is an “in between,” centered in *connecting* the truth to our opposition when we think we know what that truth is, or what it should be.

Moreover, the ethic in my *parrēsia* is a rhetorical one, aimed not at shouting the truth for the truth’s sake, nor at searching for truth by exploring ways to express/perceive it, but rather aimed at respecting our duties to truth, without foregoing our duties to recognize the dignity of other persons as reason-givers, deserving of truth. Similar to Walzer (2013) in his response to Vivian’s (2013) critique of his article on *parrēsia*, I agree that sometimes speaking truth to power poses “an ethical test of the speaker: does the speaker have the requisite courage to speak the truth in a situation of risk” (Walzer, 2013b, p. 377)? But attempting to avoid the stamp of coward can sometimes lead us to an expedited stamp of rashness, or even a distorted version of cowardice that only merely looks courageous—this is the mark of dark *parrēsia*.

The reason we need a respectful *parrēsia* is that being truthful is important, but so is being a responsible inhabitant of the public sphere. Attempting to strike a mean between the two can help interlocutors avoid dark *parrēsia*, or the revoking of basic respect for our fellow persons

as persons, even if we vigorously despise their position. Certainly, in some cases, *parrēsia* for “opening” and “breaching” are necessary. We need persons to be brave enough to explore, to test, and to go past the boundaries of social structure to find new truths not yet articulated, or to give truth voice. But *parrēsia* in the service of signifying the truth one thinks he or she possess with someone else “without adapting words for the sake of hearers,” sounds very self-centered (Vivian, 2013, p. 370), as if one is trying to “get it off one’s chest” and not trying to represent a truth to those who might need to hear it. Perhaps this upholds some sort of duty to the self, but as far as enacting a duty to others, it fails. “I don’t need to regard you, I have a duty to stand (search) for what is true.” And thus, we are presented with the problem of dark *parrēsia*: discourses of truth that do not connect with those who should hear rebuke, because we think the truth should speak for itself. Respectful *parrēsia*, on the other hand, is not an attempt to *find* the truth, or to let the truth speak for itself—but rather an attempt to *connect* that truth with others, which requires a reprioritization of respectful rhetoric—discourse that acknowledges propriety and the recognition of the belief structures of our opposition demonstrated through such recognition.

Respectful *parrēsia*, moreover, is ever vigilant of the fact that courage exists on a continuum between rashness and cowardice. To say nothing is cowardice (that is why we admire *parrēsia*) but to say what one feels is most true without regard for one’s hearer is rashness (the reason we disdain dogmatists). We admire those who speak the truth. We also admire those brave enough to search for truths yet unarticulated. Is there not a way to recognize the requisite propriety for responsibly standing for one’s projects while simultaneously acknowledging a duty to boldly stand for the truths one holds to be true? Locating *parrēsia* in respect for the other is one such way to do this, upholding the virtues of *parrēsia* we value without succumbing to its

darker counterpart.

Ultimately, the problem of dark *parrēsia* has to do with the idea that naked exclamations of the truth (while admirable in their own right) can often overlook others as reason-givers, deserving of truth too. This neither serves the public, nor anyone past those who might feel better after letting a bout of energy from their lungs. Surely the fearlessness of such persons might be given positive regard—but fearless to what ends? Is this not the mark of someone who has constructed an ethic that justifies disregard for the others they are to be serving well with their truth?

As Walzer (2013a) has sharply pointed out in the philosophy of Plutarch, a productive means to approach the tension between self and others would be to locate *parrēsia* in friendship (a give and take of criticism from care, and an emphasis on relational being together). For instance, we talk to our friends very differently than those with whom we have less prospects of relational history. So, it makes sense that in order to remind interlocutors to value the relationships between individuals, the metaphor of friendship is useful. Walzer (2013a) further elaborates: “a bond of friendship also requires the parties to an exchange to attempt to walk in the other’s shoes, which is the paradigmatic rhetorical thought experiment, and to shape the presentation of advice prudently” (p. 18). But, not everyone we would like to correct or criticize is our *friend*; more likely far from it. So, I would like to adapt this metaphor slightly with the idea of a *person*, but in the Kantian sense: someone who should be respected as an end in and of themselves, not as means. Within this adaptation we are not required to pacify the other by pandering to their needs to be affirmed (as we might with friends). As the other-words approach would have it, we are, nevertheless, still required to show a basic respect for the *dissoi logoi* of our fellow persons by respecting them as the living, breathing, reason-giving persons they are,

and demonstrating recognition of their reasons in our discourse. And so, it is in demonstrating this basic respect that we find an additional duty alongside our obligation to speak the truth: to practice propriety, to be rhetorically conscientious, to respect connections of our truths to the projects of others—to avoid dark *parrēsia*.

Ivie (2002) in his vision of a “rhetorical deliberation,” agrees with the presumption that standing for our projects requires respect for person *as persons*: “rhetorical advocacy turns dark and cynical only when competing perspectives and interests are ignored or suppressed rather than engaged and bridged sufficiently to muddle through the moment” (p. 278). As we will see in the coming analysis, some reception evidence that details the responses of Galileo’s critics will show that persons can also be dark “hearers” of *parrēsia*. That is, receivers of *parrēsia* might ask too much of the speaker by requiring that in order for a speaker to be persuasive, they should abandon the very project for which they stand. Some readers of Galileo, for example, felt he was being unethical in his talk for no other reason than the content he was arguing for contravened their preferred conclusions. A productive way to approach such problems, we might find in Ivie’s “rowdy’ [agonistic] deliberation,” wherein “a productive tension between cooperation and competition and not privileging any single perspective to the exclusion of others...increases the potential of preventing adversaries from being transformed into scapegoats and enemies” (p. 279)—to avoid treating persons as *means* to being correct instead of *ends* deserving of better conclusions. To do so requires being “on point,” because persons, even those whose positions we fervently spurn, are still persons; they deserve not to be ignored, or spoken past. Thus, *parrēsia* without recognition for the “other-words” is less likely to be *parrēsia* all, and listening to *parrēsia* in ways that require the *parrēsiastēs* to relinquish the project he or she is attempting to stand for in order to be heard, has a similarly dark implications. Such moves neither serve

conclusion making, nor responsible public being-together. Thus, a respectful *parrēsia* becomes important.

It is important to note that the “respectful” view of engaging and deliberating different points of view in what I am calling respectful *parrēsia* is distinctive from Rood’s (2013) concept of “rhetorical civility.” His rhetorical civility places respect as central, but does so with a broader definition of respect, and a softer version of agonism (competitiveness in argument). He writes, “respect, in this context [of civility]...requires that rhetors and audiences acknowledge each other as a person—one who hold their beliefs for a reason and is *capable of deciding their own best future*” (p. 344, emphasis mine). This view of a respectful rhetoric, at least with regard to *parrēsia*, is a bit soft. One often speaks truth to power because those in power have demonstrated their capabilities of decision making are flawed, broken, or in need of reconstruction. To engage *parrēsia* is most emphatically to ask an individual to confront the capabilities of those in power, which might require tactics often thought of as “uncivil” (e.g., defamation). To be respectful in one’s *parrēsia* does not require being “nice,” but rather, aware of, and engaged with, the *dissoi logoi* of one’s opposition. While we should not overlook that our opposition are persons, with belief structures that should be acknowledged, we should not be required to be “civil” to our opposition, or treat them like “friends.”

Sharing my suspicion of the problems of a “civil” *parrēsia*, is Cloud (2015), who retraces the case of a professor being denied employment by administrators under the argument that his political views regarding Israel’s war on Gaza, as expressed on the social media site, *Twitter*, were “uncivil.” Working from this case, Cloud argues, appeals to “civility” can be invoked to silence, or oust, the *parrēsiastēs*, arming those in power with a means by which to silence the

voices they do not wish to listen to.²² One might respond: “This person is being unethical in their talk, because they were too ‘mean,’ and so we should not have to listen to them.” Such responses irresponsibly confuse form with content, and thus result in inappropriate rejections of the claims, and rights to speak, of others. My construction of respectful *parrēsia* is an answer to Cloud’s call for analysts to “explore modes of resistance to the fantasy of democratic national citizenship and belonging” (p. 15) in that it does not require the speaker of truth to power to be “civil”; it requires them to show only a basic respect for others, by being on point, and aware of the belief structures of their opposition. Such a configuration of *parrēsia* is meant to uphold the things we value about public outcry—namely, saying what needs to be said—without abandoning the value of being on point in the service of being a responsible inhabitant of the public sphere. While it is more ideal to avoid the derision of one’s opponents, this is not a requirement for the respectful *parrēsiastēs*. It would be inappropriate to include a criteria that asks that advocates sacrifice the integrity of their projects for the sake of keeping things “civil”—that would actually be what I will call “dark listening,” or responses to *parrēsia* that inappropriately require that others abandon their original claims because they are “uncivil,” or do not forward an ideal claim, as opposed to requiring that the *parrēsia* of others be connected to the other-words they are addressing.

To illustrate respectful *parrēsia* (as well as some “darker” instances) the Copernican thesis will be visited in the works of Renaissance era natural philosophers. From the analysis, we find that despite demonstrating characteristics of *parrēsia*, some discourses can show “darker” characteristics. Similarly discourses that initially appear to be pandering might actually be demonstrations of respectful *parrēsia*. And, finally, we will find that some hearers of *parrēsia* can demonstrate responses to truth speaking characterized by darker traits.

²² This is a move I would call dark listening.

4.2 THE COPERNICAN THESIS: THE IDEA, AND ITS TRUTH SPEAKERS

In the renaissance, naked eye astronomers (the cutting edge thinkers of the day mind you) looked up to the night-sky and saw evidence in favor of the Ptolemaic and Tyconic models of the universe—a sky that revolves around the earth—countering the idea that the Earth itself was moving at all or that the Earth was not the center of the cosmos.²³ The Copernican, “sun-centered,” model, on the other hand, depended on additional mathematical abstractions of those sights to argue that, in fact, the Earth moved, and the Sun, not Earth, was the center. For many, based on the conventions of practicing astronomy at this time it would not have been very sensible to present Copernicanism as more valid than the Earth-centered models simply because it lacked the evidence achievable by the naked-eye astronomy, normative to the era. To argue during this period that the Copernican thesis was superior would have been to ignore what one saw in front of him or her every night, like the sky revolving around Earth, or the static feeling of the Earth under one’s feet. As will come to be explained, those arguing for the Copernican thesis could use *hypothetical* accounts of heliocentrism that acknowledged the geocentric model of the universe as more demonstrably *valid* in order to publicize their ideas. To argue for *probable* accounts of heliocentrism, on the other hand, was to engage in an unpopular, and potentially dangerous argument. Copernicus and Kepler, we will find, display this unpopular claim forwarded with a respectful *parrēsia*, and so does Galileo. However, as will be shown in a few examples from Galileo’s *Dialogue*, he also some brief flashes of dark *parrēsia*. Using reports written by consultants of the Church during his 1633 trial as a proxy to the “other-words” of

²³ After a close reading of Galileo’s *Letter to the Grand Duchess Christina of Lorraine* and *Dialogue*, Finocchiaro (2010) argues that, in hindsight, Galileo faced a burden of proof ever entwined with methodology, and not unpopular during his time on solely scriptural grounds. Today, we know that Galileo was not merely “right for the wrong reasons,” but that, in fact, his astronomical viewpoints (and much of the evidence used to support it) were “essentially correct” (p. 249). So, it would be reasonable to argue that navigating this type of methodological barrier is largely what required rhetorical prudence on the part of Galileo’s *Dialogue*. His methods were introduced at a time when they were not yet seen as valid, and therefore required a hypothetical frame that allowed “new methods” to be pondered, especially when those methods lead one to conclusions that countered the scriptural readings of the day.

Galileo's geocentric opposition, we find a response to Galileo's *Dialogue* not only telling perhaps of the darker characteristics of Galileo's talk to which they are responding, but also some instances of darker listening that they exhibit.²⁴

4.2.1 *An Empathetic, but Bold Copernicus*

When Copernicus published his *Six Books on the Revolutions of the Heavenly Spheres* in 1543 (in Nuremberg Germany), which advanced the heliocentric thesis, the book was prefaced with a forward written by a Lutheran theologian named Andreas Osiander, who oversaw the publication of *Revolutions* (Westman, 2011). Osiander, apparently against Copernicus' wishes, alluded that Copernicus' proposed system was more a mathematical tool for understanding God's cosmos, than a factual description of their occurrence.²⁵ He directly says this in the Latin, which is translated by Stimson (1917): "for it is not necessary that these hypotheses be true, nor even probable, but this alone is sufficient, if they show reasoning fitting the observations" (p. 29).²⁶ Despite Copernicus and Osiander's apparently competing intents on representing the heliocentric thesis, the hypothetical framing of *Revolutions* helped its thesis to avoid an "adverse reaction from the conventionally minded" (Glass, 2006, p. 13).

To be sure, Osiander's preface seems to be pandering, or even blatant recantation of the very idea it was supposed to be prefacing; not what we might call *parrēsia*. However, Copernicus' preface is a much different story:

²⁴ As Black (1978) would say, Galileo failed to tap into the Church's "stylistic proclivities and the qualities of mental life of which those proclivities are tokens" (p. 85). One could speculate also, in light of Kuhn's (2003) work on *Revolutions*, that this framing, in conjuncture to the complexity of his calculations, was to the detriment of Copernicus' central thesis (that the heavenly spheres are situated heliocentricly), and that thesis being ignored by many astronomers, even though many of them adopted his models and appreciated his calculations.

²⁵ According to Moss (1993), based on an examination of the extant correspondence between Copernicus and Osiander, and a later comment from Johannes Kepler, "the astronomer had no intention of complying with these instructions but had decided to maintain his own opinion" (p. 39).

²⁶ Literally, "*nequium necesse est eas hypothesis esse versa, imo ne versimiles quidem, sed sufficit hoc unum, si calculum observationibus congruentem exhibeant*" (Copernicus, 1543, p. 3).

Those who know that the consensus of many centuries has sanctioned the conception that the earth remains at rest in the middle of the heaven as its center would, I reflected, regard it as an insane pronouncement if I made the opposite assertion that the earth moves. Therefore I debated with myself for a long time whether to publish this volume.... And even though the idea seemed absurd, nevertheless I knew that others before me had been granted the freedom to imagine any circles whatever for the purpose of explaining the heavenly phenomena. Hence I thought that I too would be readily permitted to ascertain whether explanations sounder than those of my predecessors could be found for the revolution of the celestial spheres on the assumption of some motion of the earth. (Copernicus, 1992, p. 3; p. 5)

Copernicus, in contrast to Osiander, is stating that the Earth does move, and is perhaps not the “middle of the heaven as its center.” His qualifications of language do not undermine the validity of what he believes to be true, but instead show shared understanding with his audience. He knows the “idea seems absurd,” even “insane,” but that does not keep him from appealing to the idea that he should have the “freedom” necessary for the “explanation of heavenly phenomena”. Despite Osiander’s preface, which appears to be a Machiavellian (“dark”) attempt at slipping the thesis of heliocentric past its critics, we nonetheless find that Copernicus’ *De Revolutionibus* (at least in his specific writings) is more representative of respectful *parrēsia*. He is speaking for the truth. He is taking a risk. And, he is practicing rhetorical restraint, demonstrated by a regard for the belief structures of his more reluctant audiences—namely for those to whom the notion of an Earth that actually moves, might seem “insane.” Osiander also seems to be practicing rhetorical consciousness, only his exercise of that consciousness is toward ends that soften the profundity

of the truth, ostensibly for preservation of the self (and perhaps an admirable preservation of Copernicus too). Thus, Osiander's preface is instrumentally effective, but at the price of treating persons as ends, not means. Conversely, Copernicus' discourse seems to be forwarding a respectful *parrēsia*, interested in connecting to his audience, instead of stepping around them.

4.2.2 *Kepler and his Selfless Paths*

Following Copernicus was Kepler, a contemporary of Galileo's, who also included a hypothetical framing in his discussions of the movement of the heavenly bodies (like Osiander's), only his framing is less suspiciously dark *parrēsia*, and more likely respectful *parrēsia*. Kepler wrote a number of books including *Mysterium Cosmographicum* (published 1595) and *Astronomia Nova* (published 1609). The content of these two books coalesced in Kepler's *Harmonice Mundi* (published 1619, in Linz, Austria), which proposed that to better contemplate God's design one can use Copernican astronomy as a tool. For instance, take Kepler's (1997) own words:

Mental endeavor is the preparation for theology. For those features which to the uninitiated in the truth of divine matters seem difficult to grasp and lofty are by mathematical reasoning shown to be trustworthy, manifest and uncontroversial, by means of certain images. For they show proof of the supernatural properties in numbers; and they make clear the powers of the intelligible forms in reasoning (p. 127).

In Kepler's scheme, it is by an implementation of the Copernican system in conjuncture to mathematical calculation that one can better exercise good thinking, a necessary step in achieving understandings of the unfathomable essence of God, and his cosmos.

Kepler does not claim that the Copernican system is the *necessary conclusion* to be derived as much as it is a *useful means* to be considered in a search for theological truth. In Kepler's vision, before probable conclusions about the cosmos can be reached, one must first traverse the hypothetical, potentially conjectural paths of thinking that could lead one to those conclusions. For it is the "mental endeavor" that "is the preparation for theology"—one does not embark on a search for truth with one's conclusions in hand; rather, one strikes out with a rough map of potential paths that could lead to those conclusions. And, in Kepler's framing, Copernicus' thesis could be one of these paths. Despite the hypothetical framing of Kepler's book, *Harmonice Mundi*, he was nonetheless worried about its content being read unfavorably by the Church (Aiton, Duncan, & Field, 1997, p. xxiv). His anxieties are not surprising.²⁷ Even with the distance between Linz and Rome considered, the atmosphere that surrounded the Copernican thesis in Catholic Rome was quite a turbulent one.²⁸ Kepler's framing of heliocentrism as a tool for understanding God might appear to be pandering to the thought of his day. However, within this very same framing we see his risk to speak the truth, and if he really believed what he says about theological exploration, perhaps his discourse is not pandering, but rather truth speaking, with a respect for his audiences' needs of reasoning²⁹—namely astronomers and theologians trying to make sense of the apparent gaps between naked-eye astronomy, and the mathematical abstractions necessary to prove the Copernican thesis.

²⁷ The fact that the reformation and the counter reformation were taking place during both Kepler and Galileo's time did not help, for "the church could not afford to tolerate the sophisticated defense of a dangerous theory put forward by Galileo" (Finocchiaro, 1989, p. 117).

²⁸ Galileo had already been put on trial for the content of his *Starry Messenger*, and as a consequence of that trial, a decree stating that the Copernican hypothesis could not be "defended or held" (Finocchiaro, 1989, p. 153) was issued. Put differently, the Copernican hypothesis could not be advanced as probable.

²⁹ Though, we can never truly know that for certain.

4.2.3 Galileo's Parrēsia, its Respondents, and its Darker Moments

The skepticism of a probable account of the Copernican system was not attenuated by the decade that passed between the publication of Kepler's *Harmonice Mundi* in 1619, and Galileo's *Dialogue* in 1632. The format of Galileo's *Dialogue* resembles that of a Platonic dialogue.³⁰ This format can be used to represent a well-reasoned case by allowing a dialogue between informed parties to test, refute, and synthesize a conclusion before a reader. The use of the format of a dialogue gives the appearance that all points of view are being weighed in. While *prima facie* this might seem so, this is not the case upon further inspection. In the book, three characters engage a discussion of both Ptolemaic and Copernican systems of astronomy over the span of four days (see Table 2).

Table 2. *The Astronomical Views of the Characters in Dialogue*

Salvati	A proponent of the Copernican system
Sagredo	A "neutral" discussant
Simplicio	A proponent of the Ptolemaic system

The three characters each represent a different perspective on the astronomical ideas under scrutiny. The book's dialogic format allows for the assignment of distinct worldviews to each character, which helps to dichotomize Copernican and Ptolemaic astronomical viewpoints so that they may be set apart from one another. This permits the constant juxtaposition of the Copernican system with that of the Ptolemaic. In *Dialogue*, this juxtaposition is used to portray the Ptolemaic system as being ill-equipped as compared to the Copernican system for dealing with the true complexities of astronomy.

³⁰ Morvillo (2010) explains that "Galileo might have written *Dialogue* in dialogic form to appease the Pope's wishes and make it clear that the book was hypothetical" (p. 63).

The inferiority of the Ptolemaic stance is referred to plainly in a comment by Sagredo, the seemingly “objective” discussion participant, to Simplicio, the proponent of the Ptolemaic system: “Sagredo: Simplicio, if what Salvati is telling us here is true (and it would be improper for us to doubt his word), the Ptolemaics and the Aristotelians will need most solid arguments, great theories, and sound experiments to offset so weighty a discovery and to save their opinions from ultimate defeat” (p. 352). Here not just Simplicio, but quite possibly anyone who adheres to the Ptolemaic system, is depicted as lacking the tools, intellectual capacity, and necessary strength to contest the Copernican system. This itself is not sufficient for dark *parrēsia*, for perhaps in some case this was the rhetorical dressing needed to get those others to recognize the truth they had previously been missing. Remember, a respectful *parrēsia* is not interested in “being friends,” but rather, doing the right thing with the truth one feels he or she should stand for.

Conversely, if we juxtapose the dialogic format Galileo’s public persona chose, and the content, we find that perhaps Galileo was attempting to “put one over” on his audience, by creating a book that looks at the outset to be a balanced *Dialogue on Two Chief World Systems: Ptolemaic and Copernican*, but in fact only puts forth one point of view. If this was a strategic move for Galileo to mitigate risk to the self, this is dark *parrēsia* as it is manipulative, and self-promoting—Machiavellian—treating his oppositional audiences not as ends (deserving of the truth), but rather straw men, who exist only to demonstrate the validity of his science.

Talking about the idiocy of Simplicio to Salvati, the character Sagredo states in *Dialogue*: even “with all the proofs in the world what would you expect to accomplish in the minds of people who are too stupid to recognize their own limitations” (Galilei, 1967, p. 327). In

other words, Sagredo describes Simplicio's character as being that of a simpleton, unwilling to check his beliefs, opting instead to act from mindless impulses prescribed by dogma.³¹ "Salvatti: Silence would indeed be the most appropriate reprimand for...the hypocrisy of the learned toward the trifling of opponents of this stripe in matters which they do not understand. Sagredo: I could not ask for a better example of their [the Ptolemaics] petulance...the carping of those who do not understand even the rudiments of the position against which they have declared war" (p. 325). What is interesting is that even when Galileo calls out his opposition's "petulance" for "not understand[ing] even the rudiments of the position against which they have declared war," hinting at their lack of ethic in recognizing their opposition as reason givers, he simultaneously does the same in building a case dependent on quantitative, as opposed to qualitative reasoning.

In early seventeenth-century Rome, the tradition of practicing science was one wrought with assumptions, principles, and norms that might seem unfamiliar or strange when considered alongside the modern tradition of doing science. Galileo, in both the form and content of his *Dialogue*, although sharing some basic assumptions with his Aristotelian contemporaries, evidences a shift away from the prevailing tradition of scientific pursuit present in his era.

Galileo's *scientia mediae* or "mixed sciences" approach to the astronomical content of *Dialogue* transgressed the traditional boundaries of doing science in his day. During Galileo's epoch, there was a clear demarcation between "mathematical astronomy and philosophical astronomy" (Jardine, 1991, p. 102). Just as Jardine's terms might indicate, the prior set of astronomers were occupied with the mathematical calculations necessary for predicting where astronomical bodies might lie more so than the material reality of those bodies' arrangement. Conversely, philosophical astronomers based their questions in qualitative assessments of the natural world without mathematics, which would just further abstract and obfuscate their

³¹ Simplicio was a name "Galileo chose carefully to imply that he [Pope Urban VIII] was a simpleton" (Leverington, 2003, p. 90).

observations of the heavens and the subsequent metaphysical conclusions that they would derive from those observations. It was uncommon for one to engage astronomy like Galileo (1967) does in *Dialogue* by applying geometric principles to the order and motion of the earth with respect to the sun, exemplified here:

If it is the earth, Simplicio, which moves upon itself every twenty-four hours, then in it are poles, in it is the axis, in it is the equatorial plane (that is, the great circle passing through the points which are equidistant from the poles), and in it are the infinite other parallels....All these things are in the earth, and not in the stellar sphere....it is only in imagination that they can be pictured there by prolonging the axis of the earth to where its termination would designate two points placed over our poles, and extending the equatorial plane so that there would appear to be a circle in the sky corresponding to it. (p. 374)

While it might have been commonplace for a metaphysician to deliberate on the nature of the Earth and its motions relative to the sun, which at this point in scientific history was still largely an intellectual pursuit into the metaphysical, it was atypical for such an approach to be coupled with mathematic astronomy.³² Moreover, Galileo's attempt to make claims about the Earth and its motions based out of mathematics, as opposed to solely qualitative observation, went against the conventions of the time.

To be sure, according to Hald (2003) the Church was certainly at a point historically in which it could entertain mathematical explanations of natural phenomena, as long as they did not contravene its doctrines and dogmas. However, because Galileo is advancing claims that counter the Holy Scriptures, the lingual manifestations of the Holy Office's dogmas, his use of

³² To be sure Galileo was not the original pioneer of such methods. "Tartaglia, Benedetti and others had pursued a mixed mathematics of terrestrial motion. And, Copernicus, praised in the *Dialogue* as a 'philosopher astronomer' as opposed to 'mere calculator astronomers,' had combined mathematical considerations of predictive adequacy with natural philosophical arguments; so too had Tycho Brahe, Christoph Clavius and Johann Kepler, astronomers whose works Galileo was conversant" (Jardine, 1991, p. 103).

mathematics to support his natural philosophy might not have been presented “on point” to his opposition. That is, generally speaking, people might have been reluctant to change their worldview, especially a worldview as deeply imbedded as the Aristotelian cosmology so pervasive in Galileo’s day. To reevaluate this deep-rooted system might have been an endeavor difficult in and of itself for the Holy Office. Supporting such a reevaluation through the employment of a questionably novel method of blending natural philosophy with mathematics would only add to the Church’s difficulties with such an endeavor, since not only must they entertain a claim that contravenes their beliefs, but they must also learn new methods for doing that. In turn, Galileo may have pressed a character of *parrēsiastēs* on the content of *Dialogue*, but perhaps rashly, as his public persona seems to have presented a disconnect between the project of heliocentrism and the projects of his opposition.

Agostino Oreggi, a consultant brought in to give a brief evaluation of Galileo’s book during the 1633 trial, concludes that, in *Dialogue*, “the opinion is held and defended which teaches that the earth moves and the sun stands still, as one gathers from the whole thrust of the work” (Finocchiaro, 1989, p. 262). According to Oreggi’s report, Galileo not only “held” the opinion of Copernicanism, but he “defended” it. The second theologian commissioned by the Church to evaluate the contents of *Dialogue*, Melchior Inchofer, responded similarly to Galileo’s book: “In discussing the passages from Scripture, especially those about the sun’s motion, he [Galileo] did his best to show that Scripture speaks with a meaning adapted to popular opinion and that in reality the sun does not move. Then he ridiculed those who are strongly committed to the common scriptural interpretation of the sun’s motion as if they were small-minded, unable to penetrate the depth of the issue, half-witted, and almost idiotic” (Finocchiaro, 1989, p. 263). Here, in Inchofer’s account of *Dialogue*, Galileo not only “holds” and “defends” Copernicanism

but he is arguing “for nothing more than to establish the doctrine of the Earth’s turning and to thoroughly defeat the contrary doctrine” (Inchofer, in Finocchiaro, 1989, p. 264)—he is making a *probable* claim, not a *hypothetical* one. What is interesting about these responses is that Galileo’s critics are finding his case untenable, not because his methods were flawed, but because he is forwarding a claim they do not prefer. Such a move is a moment of dark listening, which is similar to dark *parrēsia* in that it does not attempt to connect to one’s opposition. Moreover, invoking the notion that Galileo’s science is incorrect because he forwards a claim that is “ridiculing” his opposition is to disconnect from the *parrēsiastēs* in that it discounts the others claims on the grounds of not being “nice,” instead of demanding that the speaker be on point. That is, while ad hominem might look like a poor way to argue, this does not necessarily mean the *parrēsiastēs* is ignoring the *dissoi logoi* of their hearers; thus, the argument that the *parrēsiastēs* does not raise a valid point does not necessarily hold. Straw man, on the other hand, would be a more appropriate reason for discounting an instance of *parrēsia*, as such a fallacy fails to meet the other words by constructing the argument of one’s opponent, as opposed to addressing their needs of reasoning directly. If one wishes to claim that a *parrēsiastēs*’ argument does not hold because that person has built a straw man, this is less likely dark *parrēsia*, as it is a response that simply demands recognition respect from the *parrēsiastēs*. If a hearer claims, on the other hand, that a *parrēsiastēs*’ argument fails because that speaker was “uncivil,” this is more likely dark listening to *parrēsia* as it seems to think that if the *parrēsiastēs* does not praise an opposition’s original position that this is a denial of recognition respect, in turn, the hearer is inappropriately asking the *parrēsiastēs* to give up his or her attempts to stand for a project, under the premise of seeking “good talk.” In the current case, this means that, according to the consultants at least, in order to make any claim at all, Galileo should have made a “hypothetical”

one, not a “probable” one, asking him to give up the very project for which he was attempting to stand. Consequently, their problematic denials of the truth spoken by another reveal a moment of dark listening.

Expressing a similar reading, albeit in less emotionally charged language, is the third consultant, Zaccaria Pasqualigo, a Clerk Regular of the Church, who supports Inchofer. Pasqualigo concludes that in *Dialogue*, Galileo is attempting to prescribe an astronomical doctrine: “Though he [Galileo] claims to be speaking hypothetically, nevertheless, in supporting his opinion he excludes hypotheses, because from premises which are absolute and (at least for him) de facto true, he draws an absolute conclusion. . . .that, assuming the earth’s motion, he judged that certain specific properties should be detected in the motion of sunspots and that then, having made the observations, he found the occurrences to be such that they must correspond to the earth’s motion” (Finocchiaro, 1989, p. 275). To ask one’s opponent to draw a preferred conclusion is dark listening with regard to *parrēsia*, as it does not treat the other as a reason-giver, choosing to ignore the “other-words” of one’s opposition for the sake of preserving one’s previous viewpoint.

To Inchofer and Pasqualigo, Galileo is attempting to derive probable conclusions (instead of “hypothetical”) that contradict Scripture (an account of the metaphysical heavens) by inconsistently mixing mathematic calculations and qualitative observations. While, Inchofer and the other consultants were asking too much from Galileo, in requiring that Galileo should have *only* spoken hypothetically—that would require that Galileo give up his project in the first place—we do get a very brief, and specific instance of what might be constituted as dark *parrēsia* in Galileo’s astronomical arguments. That is, Galileo, at least ostensibly, is making

claims and supporting them with evidence seen by his opposition as inappropriate.³³ Moreover, Galileo was making a case that, at least for “other-words” of geocentrists, needed qualitative evidence, but he instead gave mathematical explanations. Galileo’s claims of heliocentrism, were (as many would argue) righteously standing for science amidst a paradigm that made it difficult for his truths to be heard—his claims were *parrēsia*. Further, he stood for the truth and attempted to do so with rhetorical effect by demonstrating an understanding of his audience’s belief structures—respectful *parrēsia*. But at some points, his rhetorical inflections look more like dark *parrēsia* in that they may have rashly spoken the truth in ways less intelligible to an opposition entrenched in a paradigm unfamiliar with his science.

4.3 (DARK) *PARRĒSIA* AND THE 21ST CENTURY

From the analysis above, we find, at least within a “rhetorical *parrēsia*” (Walzer, 2013a, p. 13) as opposed to an “unvarnished *parrēsia*” (p. 3) we can speak truth to power, and we can do so rhetorically, without necessarily being “civil.” Respectful *parrēsia*, and dark *parrēsia*, are not only useful for rhetorical analysts wishing to learn more about the relationship between truth and ethical responsibility amidst debates of incommensurable goods, but as guides for truth speaking itself. In a public sphere, permeated by new media technologies that make it increasingly possible to access and proliferate messages as well as corporate, governmental, and cultural centers of power that must be questioned, the importance of *parrēsia* has remained from ancient Rome, to Renaissance Rome, to Rome today. But, we realize, while standing for the truth amidst threat to self is always admirable, doing so while being authentic, but aware of the “other-words,” is even more so.

³³ Natural philosophy was occupied with finding “the general philosophy of nature and thus fit into the picture as particularizing elements of an all-embracing view of physical reality....mathematics” on the other hand, because it abstracted “from [the] sensible qualities so important in the study of nature, the Aristotelians minimized its importance in the study of physical reality;” and finally, “metaphysics” studied “the general notion of...a human understanding of” the “omnipotence, eternity, immutability, and unicity” of God (Langford, 2001, p. 165).

Chapter 5. NEW MEDIA SCIENCE COMMUNICATION AND THE PROBLEM OF COURAGEOUSLY “STANDING”

The potentially beautiful world-wide-web of forums, discussion boards, comment boxes, and photo feeds we use to find and make science are overrun by petty, spiteful, nonsensical talk. Be it from the disinhibitions associated with the invisibility and anonymity of the internet (Suler, 2004) or from less obvious things like lack of eye-contact (Lapidot-Lefier & Barak, 2012), persons online have less motivation to be respectful of one another (Foxman & Macmillan, 2013). People are braver, bolder, and brasher in ways that transgress the bounds of decorum regarding more traditional venues of communication, raising special alarm regarding public understandings of science.³⁴ So when we are met with statements like, “Comments can be bad for science. That's why, here at Popularscience.com, we're shutting them off” (LaBarre, 2013) or, from *Pacific Standard*, “comments can change the perception readers have of not just the stories themselves, but the facts and figures covered in the stories that often shouldn't be open to interpretation” (Jackson, 2014), we might be inclined to agree. For some, this looks like a courageous stand for science, protecting it from the ugliness of the web. Here, I wish to identify and illustrate a kind of courage that exists in the act of inviting commentary, despite the ugliness of people online. Further, I will argue that in recognizing this new courage—the courage to “sit”—and being mindful of the distinction between “technical deliberations” and “public deliberations,” we can responsibly approach constructions of online space that simultaneously uphold the integrity of the scientific knowledge we wish to defend as well as maintain the kinds

³⁴ Encouraging individuals to publicly comment on science, when ostensibly they are befuddling the science, or distracting from the real issue at hand, with shoddy non-sequiturs, *ad hominem*, red herring, or outright hate speech, seems problematic. This is especially so in light of research that shows such comments to further polarizing individuals reading about, and discussing, science (Anderson, Brossard, Scheufele, Xenos, & Ladwig, 2013).

of public discussions we value. In the preceding chapters of the dissertation we have explored what it might mean to be respectful in our discourses (as producers and analysts of scientific discourse) by sourcing historical examples. Here, we will explore a contemporary phenomenon with respect to how we might think about building spaces for encouraging respectful discourse (for ourselves, for members of the technical sphere, and for the general public).

To example what it means to demonstrate courage to sit in new media contexts of both technical and public science deliberations, I will draw a “digital rhetoric” of science and technology (Zappen, 2005) from the discourses surrounding “Ida”—the skeleton of a controversial transitional species (a purported “missing link”) discovered in 2009. This analysis will follow Ida across such venues as the open access research journal, *PLoS ONE.org.*, and other, less technical, online publications such as *PopularScience.com* and *TheGuardian.com*. At the culmination of this analysis, a firmer understanding will be achieved for the reader of what it means to craft online spaces that do not demonstrate cowardice, or rashness, but rather the courage to sit, and the prudence to do so in a way that demands respect on the part of active discussion participants. Though this analysis will focus chiefly on *anonymous* commentary, some remarks will be made on the implications of non-anonymous or “transparent” commentary for respectful public online discussion. But first, we will equip ourselves with an understanding of courage and the import of rhetorical theory as particularly suited for investigating the ethics of new media spaces.

5.1 RHETORICAL CHOICE AND COURAGE IN ONLINE SPACE

Aristotle, writing in his *Eudemian Ethics* over two thousand years ago, noted that prudently navigating “excess and deficiency” to strike a “mean in relation to us is the best, for

that is as knowledge and reason bid” (Aristotle, 1952, p. 1220b20-25). “Courage,” he goes on to illustrate, lies between “cowardice” and “rashness” (pp. 1220b3-1221a10). One does not act with reckless abandon for the wellbeing of one’s self, or others’ selfhood, under the guise of being bold—that would be rash. Nor does one fail to act at all—that would be cowardice. Rather, courage is demonstrated when one enacts his or her duty to uphold the true, the beautiful, and the good while also practicing a mindfulness of one’s duty to self and others’ selfhood.

Some may argue that in Aristotle’s day, “everyone...knew who the virtuous citizens were; everyone could recognize courage” (Putnam, 1988, p. 380). I argue that this is harder to do today, in online spaces for discussing science anyway. Our foes are more anonymous. Our sense of “face” has shifted in contexts where our selfhood is less directly bound to a “real” person. And specifically, as I will argue later, in this context, sometimes the moral intuitions we ascribe to ideas of inclusion and exclusion regarding communication about science can present situations where rashness looks courageous. Or, courage looks cowardly.

Rhetorical theory, and its two-millennia old tradition of dealing with situated meanings, and the subtext of communicative action, is a particularly rich source of terms and concepts useful for interrogating the values and ethics we embed in our new media spaces. Embodied in the server stacks, wires, software, and settings of a webpage are *choices* that create spaces, which either do or do not demonstrate courageous recognitions of the dignity of persons. This is something that rhetorical theory, and its obsession with the particular, is well suited to help us recognize.

Rhetorical theory and new media are similar in that they both help humans excel in some particular pursuit—to enhance agency—but the obvious truth is, a webpage would not complete the same function if it were created merely out of non-material symbols and ideas. Consequently,

new media as tools are different than say, rhetorical devices as tools, or scientific knowledge as tool, in that they are also distinctly material, tangible, and corporeal (Lynch & Kinsella, 2013; Miller, 1994). Thus, new media spaces present a unique object of study, juxtaposed against the more traditional texts of rhetoric of science and technology.

Just as the burgeoning field of rhetoric of science did when it joined arms with sociologists in the 1970s and 80s to investigate scientific reports (e.g., Campbell, 1975; Halloran, 1984), rhetorical scholars today can put their analytic toolset to use on nontraditional texts like those of online spaces of discussion, and the choices of invention employed to craft those spaces. For instance, here in this work I will not only pursue the discourses *around* a technology but also the “figural logic” (Fahnestock, 1999) embedded *in* the material situation of new media technologies, and how those choices interact with a particular historical, cultural, and social situation (e.g., see Bazerman’s, 1999 examination of Edison’s light bulb) to animate, or create, rhetorical spaces that either hinder or help demonstrations of courage. Namely, in this case I will pursue figures of speech (like *anacoenosis*³⁵) as they might be implanted in the choices that create an online space, and examine the discourses such choices nurture into existence.

Technology helps people better enact their agency— to “extend human faculties” (Lawson, 2010, p. 208). In the case of new media tools, they can be used for making scientific knowledge socially in/significant by opening up or constraining affordances to conversation between the technical and public spheres. For example, *Popular Science* writes articles that provide “readers the information and tools to improve their technology and their world,” (Jannot, 2010, p. 1) by sourcing the findings of scientific experts, and making them culturally accessible and relevant.

³⁵ Burton (2007) defines *anacoenosis* as “asking the opinion or judgment of the judges or audience, usually implying their common interest with the speaker in the matter.” To perform *anacoenosis* with respect to technological choices might be done subtly through the act of “turning on the comments,” or as explicit as outright requests for oppositional input. Thus, *anacoenosis* can foreseeably demonstrate courageous respect for one’s audience via rhetorical acts embedded in the construction of an online, digital space.

The idea that *Popular Science* acts as an intermediary between the technical and public sphere raises questions of ethical consideration. Namely, in our new media age, how and when should “outside” voices be invited into the discussion about science? When should they be excluded? As it happens to turn out, answers to these questions differ based on whether the discussion is taking place in the technical sphere, or in the broader public.

5.2 TOWARDS GOOD TECHNICAL AND PUBLIC DELIBERATIONS OF SCIENCE

Originally described to rhetoricians by Goodnight (1982) there are three spheres of discourse: the private sphere, where opinions are made; the technical sphere, where knowledge (science) is produced; and, the public sphere, where social (political) knowledge is created (Schiappa, 1989). Most studies that use these distinctions tend to focus on the confusion of content of discussion appropriate to each sphere. For instance, Rowland’s (1986) investigation of the Challenger disaster focused on the problems of letting politicians try to do science. While I agree that unqualified politicians should not be allowed to engage in producing technical knowledge, and that scientists who purport to be sharing technical knowledge with the public sphere should be held accountable for the political implications of what they say, I think within our new media landscape, and with its ease in broaching technical and public discussions of science, there is another dimension to be aware of regarding the technical and public spheres: how to allow those broaches to happen in ways that make discussion richer and science more responsible.

As we slip back and forth between the technical and public spheres and blend them in our relatively newborn dialogic web we should be vigilant of how we are *constructing venues of deliberation, and whether those venues foster respect*. In fact, as I will argue later in this

dissertation, the choices we make when constructing online spaces can be praiseworthy courageous if they open the venue for others to stand for what they believe in. However, if disrespectful talk is allowed in that venue, it turns from a courageous act to rash one, as disrespectful talk can shut out participants just as easily as turning off the comments. In both technical deliberation and public deliberation there are different expectations of inclusion and exclusion. And, so, we find that being courageous, and fostering respect in our construction of digital spaces, looks different for the pursuits of producing technical knowledge (like in scientific journals) and figuring out what to do with that knowledge as a public (like in assemblies), respectively.

5.2.1 *Technical Deliberation*

We have good reasons to believe that the act of deliberating science—producing technical knowledge—should be left to the experts, requiring exclusivity, and remaining difficult for the uninitiated to enter the conversation. For example, salespeople touted the most common profession in the U.S. by *The Atlantic* (Thompson, 2013) who do not have a record of participation in the scientific enterprise, likely do not possess the knowledge base (e.g., genres, topical information, *et cetera*) required to gain publication within the technical sphere. Because of this, it makes sense that many venues constructed for technical deliberations, inadvertently exclude most of the U.S. population from the enterprise of physical science. The expectation that it is ethically permissible to exclude, save for a few, individuals from the conversation is one we can ascribe to appropriate venues for *technical deliberation*: the ethical obligations we ascribe to good technical communication.

Other expectations, closely aligned with the idea of exclusivity, are the need to control for expertise, contribution, accuracy, and objectivity with methods like peer-review. Even if a

journal is “open-access” and solely based online, contributions are still sent out for peer review, proofed, and edited heavily before being published. In a like manner, the comments features attached to these kinds of journals are often strictly moderated and monitored by a journal’s editorial staff (e.g., see “Comments,” n.d.). Though some individuals might be suspicious of the exclusivity of such venues, most would be hard-pressed to find a case where a “regular Joe,” untrained in the scientific process, would have much to add to technical knowledge production. Because journals of science and engineering are engaged in technical deliberation, these kinds of exclusory technological choices, and the spaces they create, seem reasonable. This is nearly opposite our intuitions regarding public deliberation.

5.2.2 *Public Deliberation*

While the inadvertent exclusion of non-expert discourse from the conversation that produces technical knowledge might make reasonable sense, *what we do with that knowledge*, is another story. Today we find legislation that allows grocery stores to stock genetically modified organisms (GMOs), policies that restrict our carbon emissions, laws which define what is safe, and what is not, concerning pharmaceutical drugs, and even what explanation of human origins should be taught in the classroom. *Public deliberations* of how to use technical knowledge, at least in our general intuition about the ethical obligations ascribed to the pursuit, should include everyone’s perspective, especially the “regular Joes.”

It is an easy case to make in saying that one does not require a doctorate to be allowed into discussion that can have an impact on them in the public sphere they inhabit. John Dewey (2012/1927), for instance, argued nearly a century ago, that all individuals, so long as they are on-point, should be afforded entrance into political discussion. By contrast, a technical journal, espousing the composition of a new chemical compound should be allowed to create a space that

can exclude “non-experts” from the pursuit of *technical* deliberations. In *public* deliberations though, regardless of expert or layman status, persons should be afforded the opportunity to discuss the environmental implications of producing that chemical in one’s hometown—they should be allowed to publicly deliberate the use of that science. To confuse technical deliberations with public deliberations can lead to the construction of venues of discussion that foster neither the production of reliable technical knowledge, nor the appropriate use of that knowledge in the public sphere. As we will find in the next section, there are productive ways to permeate traditional boundaries (and our intuitions of inclusion and exclusion) regarding technical and public spheres, in turn demonstrating courageous acknowledgement of “outsiders” without being foolhardy.

5.2.3 *When Public and Technical Deliberations are Smashed Together*

New media technologies present exciting modes of deliberating science in that they push on conventional boundaries of entrance to technical deliberations by opening them to more rapid inspection than older messaging modes (like print, or convention presentations). For instance, Sidler (Forthcoming) exemplifies this in her study of an article published in the *Journal of the American Chemical Society*, which was later withdrawn, not after a submitted and peer-reviewed response, but rather after a “liveblogging” event wherein a chemist, Paul Docherty, replicated the study while publishing counterpropositional photos and study data straight to his weblog.

New media technologies do not just present prospects for accelerating technical deliberations. They also present rousing prospects for public deliberations too. Finland’s “open ministry” system, as per the “Finnish Citizen’s Initiative Act,” for example, uses Internet communication technologies to allow for citizens to propose, draft, and petition for Parliament to vote on legislation (“Open Ministry,” 2014). Famously, through this mode, citizens were able to

successfully petition to keep a gay marriage bill on the docket for discussion, after Parliament voted it out (“Petitioners,” 2013). Though this specific example has less to do with public deliberations of science, and more to do with public deliberations of cultural value, it is not hard to take from this example the profound implications of new media for public deliberations of scientific knowledge. Comments features attached to online venues for public deliberations of science (like those attached to articles in *The Guardian*) are examples of smaller scale public deliberations. Individuals can have a say in what to think, believe, or do about scientific knowledge.³⁶ The prospects of new media to better engage discussions of science via the permeation of traditional boundaries between technical and public deliberations are exciting. However, these prospects also present new difficulties for making sense of who should, or should not, be included in public and technical deliberations respectively. That is, is it okay to “turn off the comments”? As we will find, it is okay to turn off the comments. It is just more praiseworthy to leave them on, with respect for persons as reason-givers, because it demonstrates a new kind of courage.

5.3 THE COURAGE TO “SIT DOWN”

As Cheshire Calhoun (1995) observes, “the courageous” are those who “provide spectacular displays of integrity by withstanding social incredulity, ostracism, contempt” (p. 259). Calhoun is arguing that the “wholeness” of an individual’s moral composition is lost when he or she does not “stand” for what is right—integrity is lost. However, Calhoun is unconsciously hinting at a second means by which persons can maintain “wholeness”: allowing others the opportunity to stand for their own projects, even in the face of that respect not being

³⁶ Some might think this line of argument myopic in that it overlooks the “digital divide” or the restriction of access to internet technology (usually privileging access to those who have statuses of wealth or fields of technological experience) in effect, silencing, or at least quieting underrepresented voices (Norris, 2003). While I do not wish to deny the existence of the digital divide here, I do wish to investigate new media as those that are rapidly changing the ways that we technically and publicly deliberate science.

reciprocated. “Integrity calls us simultaneously to stand behind our convictions and to *take seriously others’ doubts about them*” (Calhoun, 1995, p. 260, emphasis added). Calhoun appears to be carefully qualifying her argument about “standing for something” by recognizing the responsibilities persons have to one another *as persons*, for sometimes we find discourses that treat others disrespectfully in the name of being courageous.³⁷ In new media environments—webpages, discussion boards, blogs—ethical communication of science can demonstrate courage by inviting interlocutors to share their “other-words”—to sit and listen.

To “sit,” to show respect—recognition of others’ dignity—even in the face of the very real possibility of that respect not being reciprocated, is to be just as courageous as the person taking a “stand.” To “stand” is to represent one’s beliefs, even in the face of social stigma, ousting, ridicule, or even violence; it is the courage to take control. “Sitting,” on the flipside, is to allow others the chance to represent their beliefs—the courage to give up control. Both are requisite to respectful communication. Surely, someone who is unwilling to stand up for what one believes in can be said to lack integrity—they are cowardly. But, in the same sense, a person who refuses to hear others out, to respect their existence as reason-giving persons, is someone we can point to as lacking integrity of thought (by rejecting potentially valid points of view) as well as integrity of ethical spirit (by failing to show respect for a fellow person). These persons are often being rash. Thus, to have the courage to sit is just as important to ethical discussion as having the courage to stand. Both are important ways to have integrity in that together they help us toggle between cowardice and rashness toward courage. Both are necessary with regard to communication in new media environments where it is all too easy to simply switch the comments on or off.

³⁷ Matthew Pianalto (2012) gives a like-minded treatment of courage: “One cannot count as taking a moral stand unless one is facing other moral agents, *and facing them as such*” (p. 173, emphasis in original). To not face one’s opposition as individuals as agents with their own moral obligations (i.e., to stand for, and represent, their own respective projects) is to enact a category error by treating those agents as moral means, instead of moral ends. To do so is to “be involved in both a kind of recklessness and a kind of cowardice” (p. 171).

While sitting necessitates listening to the other, we also have obligations to stand for our own projects, and so the only reasonable answer to negotiating the tension between these responsibilities requires we “offer our hospitality to the other and the world” (p. 240), but, most emphatically, “forgetting the self” is not a requirement (Lipari, 2012, p. 241). In fact, Bernard (1981) argues that it would be unreasonable to ask a person, regardless of expert or lay status, to put the flourishing of the whole above his own “ground projects,” for to do so is to ask that person to ignore “something which is a condition of his having any interest in being around in that world at all” (p. 14). Moreover, while we are required to respect others’ reasons, or capacity to have reasons, rather, we are not required to act as if our reasons are the same. To treat others as reason givers is to engage their reasoning, which requires that individuals are on-point and help to cultivate what will describe in the following sections as “healthy debate.” Less desirable behaviors tend to look like engagement of the other—words on their face, but alas are actually only fallacious engagements of the other. *Ad hominem*, straw man, red herring—these are arguments that may seem like they are engaged in some sort of conversation with the other, *prima facie*, but are actually means of excluding others from that very conversation via alienation, triviality, or abhorrence. These are cowardly acts that, to some, can seem like courageous stands against authority or power, but under further scrutiny turn out to be cowardly refusals to sit for the other.

The courage to sit for others is demonstrated when we create a symbolic atmosphere, what I will call a digital *oikos*—“house”—that respects the opposition as persons with reasons, by affording that opposition the chance to also stand for something. While turning off the comments is not necessarily unethical, it does remain a less praiseworthy act than turning on the comments. Conversely, turning on the comments, courageous as it might be, can quickly turn

into act of rashness when it is done without proper acknowledgement of persons as reason givers, as it creates a space that allows persons to be treated as something other—to allow for foolishness to spill into one’s *oikos*, despite the courageous act to open its doors. Thus, spaces that do not require participants to act with respect (by treating others as reason givers via *dissoi logoi*, which is to recognize their dignity as persons) are more rash than courageous. Just as we might find in everyday talk, respect for persons *as persons* is a wonderful compass for pointing our energies in productive, positive, and ethical directions. Courage without regard for the dignity of others is no courage at all. And as brave as it may seem on its face, turning on the comments in and of itself is not a sufficient act for demonstrating courage.

Building *oikoi* for technical deliberations and public deliberations each require different versions of respect. Put tersely, in new media environments, it still remains that technical deliberations of science should be left to the experts. But this can be done while sitting courageously for the other, by recognizing that nonexperts are reason-givers too, and respecting them as such. This is especially so with regard to a vision like that of Habermas’ (2006) who describes the cultivation of healthy, effective, and ethical discourse as relying on the following criteria:

- a. *Inclusivity*: No one who could make a relevant contribution may be prevented from participating.
- b. *Equal distribution of communicative freedoms*: Everyone has an equal opportunity to make contributions.
- c. *Truthfulness*: The participants must mean what they say; and
- d. *Absence of contingent external constraints or constraints inherent to the structure of communication*: The yes/no positions of participants on criticizable

validity claims should be motivated only by the power of cogent reasons. (p. 89, emphasis mine)

In the following section we will find that the online science journal *PLoS ONE* is able to do this without ignoring the needs of exclusion endemic to technical deliberations by creating a “public lab.” Conversely, and perhaps slightly counter to Habermas’ claims about equal contribution, public deliberations of science, as much as one might want to believe that everyone should have a say, can be inundated with hateful, caustic, unproductive talk in new media environments. To simply allow everyone to have a say may seem courageous, but is actually rash as it allows disrespect for the very persons one may be attempting to build an *oikos* with; *Popular Science* exemplified this in their “party house” version of a comments page. *The Guardian*, on the contrary, seems to be attempting to build an *oikos* that not only invites participation, but participation that has regard for the dignity of other persons as reason-givers, thus, including a check and balance system to avoid rash talk, moving closer to something of a courageous “town hall” meeting.

5.4 BUILDING AN *OIKOS*: INVITING THE “MISSING LINK” FOR A RESPECTFUL CHAT

As an illustrative case of how technology might be, or might not be, employed in the service of building an *oikos* we will track, over a number of different venues, the case of “Ida” (*Darwinius Masillae*). The primate skeleton was dubbed the “missing link” of human lineage with the lower animals by a small group of scientists in 2009, which, in turn, spawned much controversy amongst evolutionists and creationists. The centrality of conflicting versions of “science” makes this case a rich site for investigating technical deliberations of scientific

knowledge as well as public deliberations of that knowledge. The fact that it is a case that exists in a number of online media spaces, each varying in the configurations of affordances offered to potential discussants, as well as the modes in which those discussant's contributions have been moderated (or not), makes it useful for comparative analyses of digital spaces, and the discourses they foster.

The Ida skeleton was initially described in the peer-reviewed, open-access, internet-based science journal, *PLoS ONE*, written by Jens L. Franzen, Philip D. Gingerich, Jörg Habersetzer, Jørn H. Hurum, Wighart von Koenigswald, & B. Holly Smith. In the article, as would be expected from a group of fairly well known scholars of paleobiology, a very typical looking scientific species description takes place. Technical language is employed to discuss how the skeleton exhibits characteristics like those of modern lemurs—“strepsirrhine”—and characteristics of modern apes, and humans—“haplorhine” (Franzen et al, 2009, p. 19); thus, as they state in a professionally restrained way, it “could represent a stem group from which later anthropoid primates evolved” (p. 24). This qualified claim made in the article would later be amplified into the claim that the Ida skeleton is evidence that humans (who evolved from the haplorhine line) are linked to other mammals (via an intermediary with the strepsirrhine line), therefore it is “a discovery of great significance” showing “our connection with all the mammals” (Attenborough, 2009, 0:02-12), and corroborating the validity of evolution over other explanations of human origins, like creationism. The *PLoS ONE* article was cited as evidence for this viewpoint in a documentary film, a book, and a website—all sharing the same title: *The Link*.

Such interpretations of the *PLoS ONE* technical journal article became the centerpiece of much discussion and debate at other (less technical) online publications such as *Popular*

Science.com and *The Guardian.com*. Interestingly, each of the publications mentioned here—*PLoS ONE*, *Popular Science*, and *The Guardian*—creates a different digital space for the very same debate. And, each space brings its own respective ethical problems and goods regarding the act of technical deliberation or public deliberation.

5.4.1 PLoS ONE, *The “Public Lab”*

PLoS ONE, the dedicated online publication of the Public Library of Science is a technical journal published solely online. The publication attempts to speed up peer review by asking that reviewers focus their concerns of validity and significance to questions of data accuracy and methodological rigor, instead of questions of scholarly contribution or impact (see “Guide for Reviewers,” n.d.). While the journal is a bit non-traditional regarding requirements to publish impactful scientific contributions, the journal is still very traditional in other ways. The articles published are still peer reviewed with regard to accuracy, and veracity, of data collected and reported. Submitted articles are required to follow the classic introduction, methods, results, and discussion organizational pattern characteristic of many scientific publications (see “Manuscript Guidelines,” n.d.).

An interesting step away from traditional scientific publishing exhibited in the journal is its inclusion of both a “corrections” section attached directly to the article itself, as well as “reader comments” presented alongside the article. For instance, on the original *Ida* article as it is published on *PLoS ONE*, are two corrections posted in a stark grey box at the top of the article, just after the title. Both are dated for late July 2009 (either directly on, or up to three days after, the article’s initial publication). They include links to elaborations of the corrections, both of which regard changes to the “Nomenclatural acts” of the authors (i.e., naming the skeleton

Darwinius Masillae), and how they do not fall in line with the International Code of Zoological Nomenclature (Franzen, et al., 2009), most likely prompted by a comment from a reader asking about what the authors might be doing to rectify the fact that “publication of the names ‘Darwinius’ and ‘Darwinius masillae’ does not meet ICZN standards” (keesey, 2009). Here, discussions that normally take place between scientists in letters to the editor, responses, rejoinders, and addendums, usually exclusive to individuals with access to technical journals or in attendance at technical conferences, are included with the original text. On the open-source platform of *PLoS ONE*, persons in the general public sphere can gain access not only to technical deliberations, but a glimpse into that process. Moreover, when one picks up a hard copy scientific journal, or even a solely online journal that does not include such “corrections” or “reader comments” they just get the content selected for printing, largely hiding the deliberative process by which the findings in that journal were arrived at. *PLoS ONE*, to some extent, puts this process on display in a kind of *anacoenosis*, performing truthfulness through choices of design embedded in the affordances built into the *PLoS ONE* webpage.

PLoS ONE leaves its comments open to the general public, requiring that users share their address, full name, and email address. In conjuncture to the seemingly “informed” public that likely composes most of the technical journal *PLoS ONE*’s readership, the editorial staff mediates the comments and corrections, requiring that comments not be insulting, off topic, or assertions that do not also provide evidence (see “Good Practice,” n.d). The commentary and corrections posted to the Ida article bear this out; while some are grammatically broken or informal in tone, they are still on point and, at least ostensibly, productive. While affording users glimpses into the process of technical deliberations demonstrates *prima facie* a courage to “sit,” the mediation by the editorial staff, while in line with what one would expect in a venue of

technical deliberations, might run against our intuitions of public deliberations slightly. That is, cogent reasoning seems to be the main objective of the commentary in this space, but to achieve that, *PLoS ONE* uses means that might raise concerns about the implications of “gatekeeping” to equal distribution of access to the forum. But perhaps that is a necessary outcome in order to preserve the integrity of discussion on matters technically scientific.

The *oikos* constructed at *PLoS ONE* is one of a public lab. While certainly not revealed in its entirety, the process of technical deliberations is opened up to the public, allowing inhabitants of the grander public sphere to catch peeks at how scientific findings are negotiated within the technical community. The reason this is important can be elucidated by the controversy over whether or not a group of scientists should have published the results of a study in the journal *Science* in which they genetically modified avian flu to be an airborne illness (as opposed to requiring direct fluid contact with birds). Many critics of the publication argued that the scientists were merely attempting to see if they could make the strain (for publicity) as opposed to taking into account the potential harms doing such research, or publishing such information might pose to public health. In fact, Condit concludes in her analysis of this particular case, as it existed on the web, “the internet now provides a tool for improving decision processes for global health concerns” (p. 2), in that technical deliberations that happen in “small closed-door meetings for decision-making” can be established “via the internet” (p. 21).

The very real and immanent threats that can exist, or be created, behind “closed doors,” slaps the reader with the realization that sometimes in the technical sphere there can be happenings that should be questioned. Requisite to allowing for such questions is a kind of transparency regarding what happens behind the membrane of the technical sphere. To permeate this membrane—to allow inhabitants of the public sphere access to the goings-on of the technical

sphere—is to create a space that affords *dissoi logoi*. This is to create a space that attempts to respect the integrity of technical deliberations by keeping the conversation focused, while also attempting to respect public deliberations by affording transparency and including members of the general public in that discourse. The act of inviting “outsiders” to view, and comment on, technical deliberations, demonstrates a courageous “sitting down” on the part of *PLoS ONE*, which attempts to avoid the rashness of allowing non-experts directly into technical deliberations (via heavy editorship aimed at reducing off-topic comments, or ones full of invective), while nonetheless respecting them as reason-givers.

Inhabitants of the public sphere broadly, while not necessarily engaging in technical deliberations, can look in on the process of producing technical knowledge. For example, in the reader comments there are questions to the authors regarding technical aspects of the study’s methodology and reporting of data as well as more social commentaries.³⁸ While one reader asks, “How come the relative positions of the head and hindleg are different in Plate A and Plate B?” (coblo, 2009), another, in the very same venue, declares, “I think the media hype surrounding this is a little over the top” (bperki8, 2009). Not only do passive users get a bit of discussion they can take in alongside the content of the article, thickening their understanding of how that knowledge might have been argued for, or accomplished, active users (even if they are “outsiders” to the technical sphere) can make commentary. The choices to create such a space forwards not only a literal invitation for feedback, but also an indirect *anacoenosis*, speaking respect to one’s audience by acknowledging their relevance to the discussion. Members of the general public can question the motives of the scientists, and whether or not the technical deliberations they are engaging are actually aimed at the ends they claim to be pursuing. Non-expert audiences are afforded a venue by which to stand for what they believe, but in a way that

³⁸ As of 31 May 2015, there were 13 total comments, and 137,606 views of the article.

attempts to also respect the integrity of technical findings, for they are engaging *public* deliberations of science alongside the *technical* deliberations. Not only do we see a venue that emphasizes the need for persons to stand courageously, it also recognizes the need to sit, by trying to allow for equal distribution of commentary.

This realization rears an interesting question: What happens in digital spaces where readership is wider, and potentially less “informed,” and we might have the notion that *everyone* should have a say? In the following, we find that, despite our purest of intentions regarding public deliberations, and our potentials to show courage by “sitting” to allow others to stand for their projects, there are certain discursive moves that should be favored over others in order to foster integrity of public deliberations of science.

5.4.2 Popular Science, *The “Party House”*

Popular Science, at least in 2009, before its famous “turning off the comments” in 2013, had its “comments on,” which demonstrates a tremendous amount of respect for persons’ rights to be included in public deliberations of science by unequivocally “leaving the door open,” requiring only that users register with an email address before commenting. Congruent with this, there is no evidence of mediation of the comments other than a brief statement that says *Popular Science* has the right to monitor comments, demonstrating an unrestrainedly equal distribution of access. At first glance, this demonstrates a large amount of courage to sit, allowing others the chance to stand. At the same time, some of the comments that make it through the door are full of curses and *ad hominem*, or even solely comprised of antagonistic gibberish, like “Inga binga binga, inga binga, binga buuunnnnnnga,” (Cowboy82, 2009). The only route to reporting poor use of the comments is an email for reporting infringements of “copyright, trademark or other intellectual property rights” (“Terms of Use,” 2014). Transgressions of discourse, outside of

those that infringe on property rights, like *ad hominem*, non-sequitor, begging the question, or other inappropriate kinds of discourse, while identified as unacceptable for post, are not accompanied by a mode by which to enforce such a rule (such as that which accompanies the rule about copyright). Thus, because inclusivity and equal distribution do not depend on cogent reasoning in this space, it actually lends itself to being a breeding ground of discourse that excludes or demonstrates inequitable opportunities to speak and to listen.

The digital *oikos* of *Popular Science* in 2009 forwards a mixed version of respect. On the one hand is a willingness to allow others the space to stand for what they believe in—a regard for the dignity of the inhabitants of the public sphere. On the other hand, camouflaged by the technological choices that respect individuals' rights to engage in public deliberations of science, is a kind of rashness, quietly spoken through the choice to leave comments unchecked.

Popular Science was throwing a party, and everyone was invited. However, because they were the hosts, it was also up to them to make sure that the guests they invited behaved themselves. After all, some types of discourse can construct barriers, equally as powerful as the actual technological choices that go into constructing an online venue of discussion. To allow participants to speak maliciously, irrelevantly, or falsely can smother, squash, or smear tamer, more civilized attempts at rational argument, in turn, creating conditions that actually act to exclude persons from participating in public deliberations, at least in the same sense that a red herring can act as a barrier to productive argument.

For instance, read a post from the comment thread of a *Popular Science* article responding to the publicity of the Ida skeleton:

Another missing kink, I mean link.

Please, skip the hype, and I'll pass on the bullshit. If I hear another story about how "they" have discovered the missing link to...I think I will scream, but only in space where no one will hear me. "The latest monkey find"? So what. The latest evidence tells us that humans evolved from a different gene strand than did the chimpanzee. If some still think that the chimpanzee is one of our ancestors I say, he might be yours, but he sure as Hell isn't mine.

P.S. I used "Hell" as a metaphor. (syzguy111888, 2009)

Instrumentally speaking, comments like these are a waste of time as they are obviously not engaged in the conversation at hand, simply moving forward from assertions. Ethically, these comments do not demonstrate respect for other inhabitants of the public sphere attempting to deliberate science, as they are often off-topic, hurtful, or just plain nonsense. This example manifests the need for technological choices made in constructing online spaces for science communication to invite the *dissoi logoi* of individuals wishing to stand for what they believe in, which *Popular Science* does. Individuals have to overcome very few barriers to put in their "two cents." Despite this, however, the example also manifests the need for designers of digital spaces to be mindful of ways to construct those spaces in ways that will prioritize respectful discussions *between* individuals, engaging one another with *dissoi logoi* in mind. Moreover, in a digital *oikos*, positioned more squarely in the public sphere, self-centric, monologic, dogmatic, or hateful talk should be excluded as it neither shows respect for the integrity of public deliberations of science, nor for the other inhabitants for which that endeavor is meant to be available. Such talk discounts the need for participants to say what they mean. It seems as though *Popular Science*'s "turning off the comments" in 2013 was an attempt to shut the door on a party, overcome with the rowdy and chaotic, though, as Walsh (2015) notes, "there certainly exist other

and perhaps better ways to scaffold online deliberation [outside of completely turning off the comments], as some Popsoci.com commenters pointed out after the fact” (p. 9)

“The essential need” then, as John Dewey will have us remember, “is the improvement of the methods and conditions of debate, discussion, and persuasion. That is *the* problem of the public” (2012, p. 155, emphasis in original). Inhabitants of the public sphere should be allowed to engage public makings of science, no matter who they are. All that should be asked of them is that they are respectful of other persons by recognizing them as living, breathing, reason-giving persons, and nothing other. A venue attempting to achieve this is exemplified in the next section.

5.4.3 The Guardian, A “Town Hall”

The Guardian is a publication with an audience even broader than *Popular Science*.³⁹ *The Guardian* has its comments on, but “moderates” them by including an option for readers to “report” comments that do not correspond to “community standards.” For example, located on each comment entry is an icon, which a user can select in order to “report” comments to the editors. With the “report” feature, users can point to a specific comment and select a specific problematic to report, including, among others, “hate speech,” “trolling,” “off topic,” “copyright,” or “personal abuse” as well as a text box for describing the problem in more detail (e.g., see texmc, 2009). Coupled with this reporting feature, is a community voting system, wherein users can “recommend” comments that they think are worthwhile, well-written, insightful *et cetera* (e.g., see texmc, 2009). These features directly correspond with the “Community Standards” outlined by *The Guardian*, and shared with users when registering to comment on the webpage (“Community Standards,” 2009). A list of ten principles that drive the moderation of comments on the website are explicated. Generally speaking, the principles stated

³⁹ As of 31 May 2015, there are 396 comments, and 114 shares on the *Guardian*’s Darwinius article, compared to the 0 shares at *Popular Science*.

require that users do not engage *ad hominem*, red herring, libel, defamation, hate speech, spamming, or non sequitur type discourse, placing cogent argument as a requirement to maintaining inclusion and equal access to discussion. The standards explanation concludes:

- If you act with **maturity and consideration** for other users, you should have no problems.
- **Don't be unpleasant.** Demonstrate and share the intelligence, wisdom and humour we know you possess.
- **Take some responsibility for the quality of the conversations in which you're participating.** Help make this an intelligent place for discussion and it will be.

(“Community Standards,” 2009, emphasis in original)

At the core of these standards is the notion that all persons should be treated with regard for their inherent dignity as persons in the public sphere: they should be invited to speak, and be engaged as reason-givers. As we have found in the prior section from *Popular Science*, this requires not only affordances that allow individuals to participate in public discussions, but also conditions for discussion that do not create discursive barriers to communication, such as hate speech, red herring, *et cetera*. *The Guardian* attempts to respect inhabitants of the public sphere by affording all interested users entrance to public deliberations, while also constructing a space that requires respectful talk between actors. To do this *The Guardian* allows all comments “through the door,” into the town hall. After this is made sufficient, the responsibility of persons to be mindful of the *dissoi logoi* regarding their particular point of view is made central with the promise of principled ejection; thus, the integrity of public deliberations of science are enhanced not only by inviting response—including others, recognizing their right to “stand”—but for asking that those others recognize their need to sit, by constructing a space in which that very

inclusion is dependent on respectfully, and cogently reasoned discourses among disagreeants. Some examples of the comments encouraged by such a configuration of media space are here (see Figure 1).

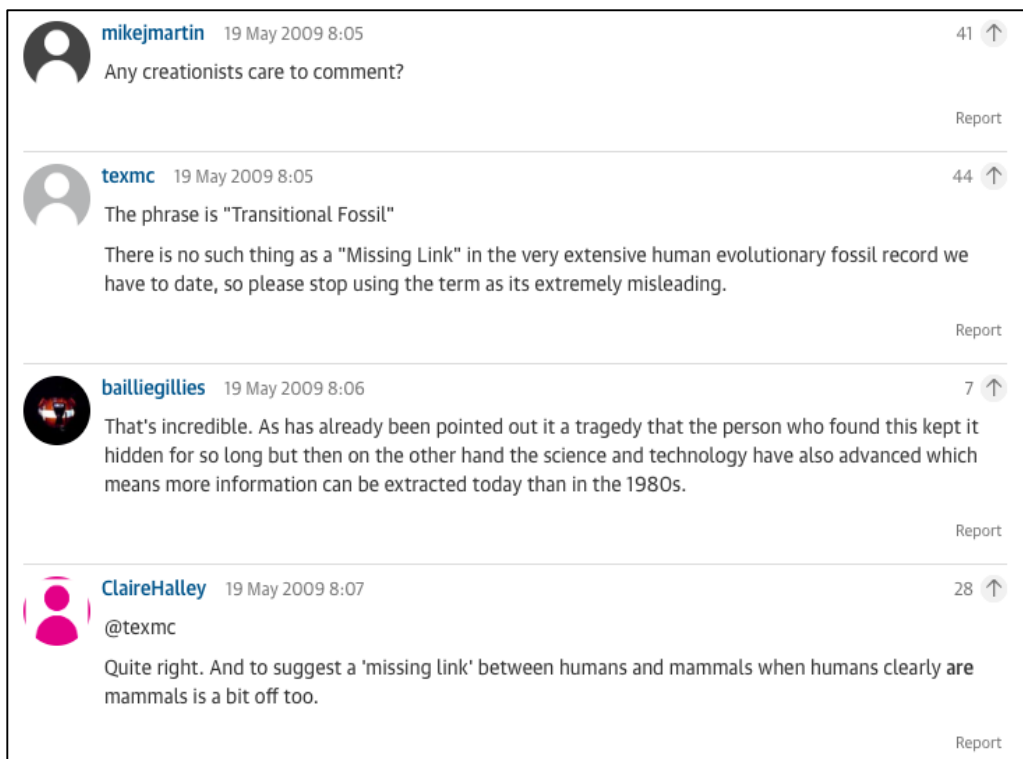


Figure 1. Comments from *The Guardian*, (“Guardian Comments,” 2009)

Notice that the comments are not only directed at one another (e.g., correcting one another’s understandings of “missing links”) but are actually asking for the “other-words” of one’s opposition by asking “Any creationists care to comment?”. To which we receive a, rather thorough, reply:

This article is not science, it is news, meant to excite. But when looked at from a scientific perspective, there is still work to be done, How can we prove Ida is not simply a mutation of a known lemur species? How do we know she didn't suffer from marfan syndrome, or a calcium deficiency that would have rendered her joints more malliable (less calciated bones would also explain the break in her

wrist)? How can we be sure of Ida's age when it is not reported HOW that age was ascertained? Was it carbon dating, a notoriously hit-or-miss test? Everyone who has posted a comment is so unbelievably gullible to not even ask these questions. If Ida is the missing link, then it's extremely exciting, but simply saying SHE'S THE MISSING LINK! doesn't make it true, no matter how large your typefont is. Science will continue to persue [sic] this lead, and others, but I pray that we do not go down this path alone, rejecting all other theories because this one fits for now. Every time science takes a decade long leap in the wrong direction, it takes us half that to recover the work that we discarded when we thought we knew it all.

Please put skepticism before audacity here, friends. You've known of this monkey for one day, but you've known of humans for a lifetime. The way we got here, and the future of our race is extremely interesting, and it will still be so if Ida isn't a great, dogmatic answer. If you want to take that leap of faith, go ahead, but understand that this is the behavior you redicule [sic] others for. Hold your excitement for more tangible evidence, and do not trust a scientist you've never met, simply because he wears a lab coat and holds a doctorate. Ask yourself why we have no more information than we do. Then ask yourself what a scientist could gain by presenting a malformed lemur as the end-all be-all of darwinian humanity.

Think with your heads, not with your hearts.

-Roo (janicesparty, 2009)

From the convergence of community “up-voting” and community enforced “rules of engagement,” is born a much more respectful discourse. Although, it might not look like it at first blush, the above comment is exhibiting recognition respect, by being on point to ask questions about the validity of such evidence for evolution: “How can we be sure of Ida's age when it is not reported HOW that age was ascertained? Was it carbon dating, a notoriously hit-or-miss test?” It is denying the point of view that carbon dating (and the implications of its use) is a valid way of determining the age of fossils. But, it the commenter is doing so while attempting to argue within the purview of evidence, and the structures of belief in which that evidence is given weight. The commenter does not seem to be bending his or her own beliefs for his or her opposition, but is making sure they are on point.⁴⁰

While community reporting seems to be an easy fix for indecorous or off-topic comments without bringing worries of gatekeeping by publishers, it nonetheless brings questions about privileged points of view, and what it means to the enterprise of science for “popular votes” to govern who gets to speak, and in what way they are allowed to speak.

5.5 WHICH IS THE HOUSE OF *HOMO SAPIENS* THEN?

Answering this question is not an easy task, for there are many potential answers. In this chapter I have attempted to focus on commentary systems that are “anonymous” or “pseudonymous,” as these kinds of interactions not only comprise much of online interaction, but are arguably what make online interactions unique in contrast to other communication contexts. Past this, I have focused on venues of scientific deliberation, wherein courageous

⁴⁰ Of note is the fact that this comment, although largely in the minority view of comments attached to the article, nonetheless achieved 187 “upvotes,” out of a pool of comments averaging around 15 “upvotes,” meaning that even though most disagreed with this point of view—as gleaned from the comments—this less popular point of view was still treated as something that should be engaged. I take this to be an indicator of the kind of deliberative community that can emerge from a venue-space that not only demands respect on the part of its members, but also recognizes the difference between doing so without cowardice, or without falling prey to rashness.

action regarding comments, and turning them on or off can be ascertained by referencing the norms of exclusion and inclusion we attribute to technical and public deliberations respectively. Given some rather recent research on anonymity and civility (Santana, 2014), there might be good reasons to approach the cultivation of respectful communication online in different ways than “monitoring,” or “community reporting,” like reducing the anonymity of users. Some publications have already moved to this model because other modes can be unsustainably expensive. For instance, the *LA Times* is embedding secondary platforms like Facebook comments (Sonderman, 2014), which require more “transparency” regarding one’s true (non-pseudonym) identity (boyd, 2010) when they comment. Even if someone is able to make a pseudonym on Facebook, anonymity broadly is still reduced, and foreseeably so will uncivil comments.

Similarly, venues like YouTube have begun to implement new technologies which presort comments based on what we (both as viewers and as video owners) might most prefer to see. For example, on *YouTube*, comments from people with whom an individual already interacts directly via social media sites like Google+ get moved to the top of the comments list, leaving anonymous comments farther down the list. And, added to this, video owners can review and block commentary they do not want displayed on their webpages (Janakiram & Zunger 2013), affording individual users with their own personal gatekeeping, raising questions about what it means for individuals to lock themselves into a “filter bubble” (Pariser, 2011) wherein users can simply choose to visit information they already prefer. Other venues, like *re/code* have completely removed their commenting features and are encouraging discussion via other “offsite” means like Twitter and Facebook (Mossberg & Swisher, 2014), platforms that have been built solely for discussion.

Venues that remove their comments features are not unethical. Sometimes the necessary resources to properly monitor, or regulate, user contributions do not practically exist. As we have found above, to have unmonitored or unregulated comments can be just as bad (maybe even worse) than having none at all. However, venues that make some effort toward allowing inhabitants of the public sphere to respectfully engage (either technical or public) deliberations of science are those we can consider ethically admirable, for they are showing a new kind of courage, even if that means sending deliberations “offsite,” rather than having them “onsite,” or by requiring “transparency,” in lieu of allowing “anonymity.”

By investigating the discussions and debates on *PLoS ONE*, *Popular Science*, and *The Guardian*, respectful configurations of technical deliberations and public deliberations have been investigated as they might occur in a new media landscape. From the analysis we find that while the integrity of the technical sphere requires procedures that result in exclusion, it is not always rash to include “outside eyes and voices.” In fact, to do so is highly courageous, for doing so in a well-managed way openly invites criticism from those “outside voices,” without rashly handing over the conversation to those who are non-experts. Similarly, while the integrity of the public sphere depends on inclusion, public deliberations might benefit from some level of exclusion. Creating space that does not have checks and repercussions for hate speech and mindless gibberish could be called just as disrespectful (if not more) than spaces that simply turn off their comments. These checks and balances can take the form of community reporting, editorial monitoring, or even requiring user “transparency.” Being courageous in new media spaces of science requires that we are mindful of the spheres we occupy, and while we surely are required to stand for what we believe in, sometimes it is just as courageous to respectfully sit and listen.

Chapter 6. CONCLUSION

This dissertation has spent many pages trying to espouse means by which people can use respect to come together, despite the incommensurability of their views on science—to disagree competitively, but responsibly. And so, I think it fitting to close with a meditation on what it might look like to take it a step past engaging in disagreement ethically, and move to an analysis of what an ethical attempt at transformation of incommensurability might look like. As we learned in the previous chapter, the courage to “sit” means engaging others *on their terms*, and to construct spaces for encouraging “healthy” public discussions of science. Here, I will apply the courage to “sit” not to the construction of online space, but rather the specific discourses we formulate in attempts to appeal to the “other side.” From the application, we find that practicing rhetorical moves like *hyperbaton*, or “an inversion of normal word order” (Burton, 2007, p. 1) can be a useful move for transforming incommensurability, not just engaging with it responsibly, but responsibly crafting discourses toward the ends of changing others’ minds about science, by recognizing that occasionally in order to do the right thing with our science, we should not treat the science like “science.”

In the spirit of this ethical approach to incommensurability, the dissertation will close with an analysis a cause and effect *topos* used by 20th century “anti-vaxer” James A. Loyster’s *Vaccination Results in New York State in 1914*. The document is a pamphlet Loyster circulated to members of the state assembly, and later described as “ultimately successful to overhaul the state’s compulsory vaccination law for students in public schools” (Colgrove, 2005, p. 167). The analysis of Loyster’s work is meant to act as a *dissoi logoi* to inform approaches to the analysis of more modern anti-vaxers, ultimately in the service of identifying a major *topos*, and

formulating a responsible refutation that plays off that *topos*. Finally, I discuss the implications of this kind of “advocative analysis” for both producers and analysts of rhetoric of science.

6.1 INCOMMENSURABILITY REQUIRES COURAGE TO “STAND,” AND COURAGE TO “SIT”

Leah Ceccarelli (2002), in her *Shaping Science with Rhetoric*, shows that with *chiasmus*, or using the inverse terms to relate to the opposite, we can use rhetoric to overcome incommensurable versions of science. Specifically, she shows that Theodosius Dobzhansky was able to help achieve the “modern synthesis” of evolutionary biology, bringing Mendelians and Darwinians together through *chiasmus*, explaining Mendelian evolution in Darwinian terms, and vice versa. Further, Ceccarelli (2002) concludes, Dobzhansky was able to transform seemingly incommensurable versions of the same science into a singular one, not only bringing individuals together with regard to responsible disagreement, but through a transformation of meanings regarding the very object of that incommensurability. Rhetoric, in other words, can be used to make the incommensurable, commensurable. But here in this example, I do not believe that Dobzhansky was practicing a discourse that was taking a courageous “stand” (denial of the opposition’s terms) as much as a discourse willing to “sit” for the other, willing to find the shared terms of disagreement.

To transform incommensurable discourse one is surely required to practice “social tolerance” (Hikins & Zagacki, 1993) about the *actions* which one can tolerate in a given social context. This is what visions of responsible disagreement that champion courage to “stand” tend to focus on (e.g. what we have been calling here, the “other-words”), wherein individuals are asked to exercise their bravery, but in ways that nonetheless respect the person(s) they are

standing to persuade. To transform incommensurability, however, has an additional requirement: to practice “intellectual tolerance” (Hikins & Zagacki, 1993) about the *ideas* one is willing to entertain or concede.

To practice intellectual tolerance requires the courage to “sit,” for it brings together individuals, not through a respect for the other’s projects, but rather, a sharing of that project by finding the most “becoming” of terms that can be had by both parties. Giving up one’s preferred modes of expression and persuasion is not a courageous “stand,” but rather a courageous relinquishing of control to the other—it is the courage to “sit” for them. Quintilian (1993) speaks directly to this in *De Institutio Oratoria*:

Too much insistence cannot be laid upon the point that no one can be said to speak appropriately who has not considered not merely what it is expedient, but also what it is becoming to say. I am well aware that these two considerations generally go hand in hand. For whatever is becoming is, as a rule, useful, and there is nothing that does more to conciliate the good-will of the judge than the observance or to alienate it than the disregard of these considerations. (p. 159-11.1.8).

Courage is often associated with strength, not just mindless strength (that is rashness) or lack of strength (that is cowardice), but a principled rejection of terms from the other—this is the courage to “stand.” Thus, discourses that are courageously “standing” can sometimes seem to exhibit *activity* by “sticking to one’s guns” refusing to revise one’s terms, to tell them “how it is”—to stand for the “most expedient” science. We saw this in the example of the anti-anti-vax message excerpted in the introduction. Whereas, discourses practicing courage to “sit”—or discourses that attempt to exercise a sharing of terms—might seem to be *inactive*, as they are

involved with identifying, understanding, and revising one's terms to find "also what is becoming to say," instead of asserting the best science. In some cases too much "sitting" might represent an instance where a particular rhetor is not effectively "standing for what they believe." However, too much "standing," can represent someone inappropriately overlooking others as reason-givers with the right to be heard and to be engaged on the "most becoming of terms."

To sum it, to practice a courageous "stand" in one's discourse is to demonstrate strength when it is needed for oneself and/or others; and, practicing courage to "sit" is to demonstrate one's willingness to brave the harsh elements cast down from the need to reformulate expression and epistemology for others and/or for one's self. As Quintilian notes above, there is "nothing that does more to conciliate the good-will of the judge than the observance" of "what is most becoming to say" (p. 159-11.1.8) regarding the beliefs, historical situations, and values of the other.

When we favor courage to "stand" as the guiding virtue of our discourse (instead of also recognizing the import of courage to "sit"), the result, at least in technoscientific discourses, is one that tends to champion one's own epistemology over the other (e.g., see Tuteur's 2015 anti-anti-vax message cited at the beginning of this work). If we were to also practice the courage to "sit" in our discourse, the result might be one in which an interlocutor champions the shared terms, over the unshared terms. And it is from here that we can perhaps extend Quintilian (who seems to be speaking in mostly instrumental terms) to the idea of a necessary antecedent for ethical transformational rhetorics aimed at overcoming incommensurability: one should stand for something, but not without regard for the most becoming of terms. A viable means of practicing courage to "sit" in our discourse can be through rhetorical devices that champion revision, and in

fact, play off of that revision to transform two ideas into one. One such idea is that of *hyperbaton*.

Hyperbaton is the rhetorical device of taking a common word order, and re-ordering it to make a point. For instance, we will find a re-ordering below in the contrast between early 20th anti-vaccination rhetorics of James Loyster, and the early 21st century pro-vaccination rhetorics of the television show *Law & Order*. The common word order, or line of argument, we find from Loyster is: My son/daughter was taken ill/passed away because administering vaccines is dangerous. The inversion *Law & Order* presents is: Not taking vaccines is dangerous, because my son/daughter was taken ill/passed away. In this kind of inversion of the line of argument an opponent presents, we are not only working (both literally and figuratively) within the realm of the “other-words,” but we are creating conditions for overcoming incommensurability. Henry Johnstone (1959) elaborates on why this is so in his discussion of focusing on the “*specific motive*” of one’s opponent in an instance of incommensurability: “one such purpose might be the specific motive to condemn a certain kind of error [needlessly making children sick]. A position dedicated to a purpose of this kind would defeat its own purpose if it chanced to commit the same error it aimed to abolish” (p. 89).

Imagine then, the specific purpose of the anti-vaccination common word order—to protect children. Then, imagine, a scenario where that very same line of argument is presented, only in reverse order—the purpose (to protect children) remains—but it seems inconsistent with the rest of the clause. As we will see later, *Law & Order* is able to construct a rhetoric, using means we would not consider “technical,” wherein the anti-vaccination purpose—to protect children—is shown to be contradictory to its central claim. Thus, the anti-vaccination movement is not only presented as “inconsistent,” but in ways that represent the “most becoming of terms”

(e.g., anecdotal evidence, emotionally charged imagery and narrative). Moreover, as we will see *Law & Order* does not treat science like “science,” instead it treats the show as the anti-vaccination movement does, to simultaneously stand for their science (i.e., that vaccines do not cause autism) while sitting for their audience (by reformulating the means by which pro-vaccination views are expressed).

Though we tend to champion courageous “stands” in our discourse over courageous “sitting,” especially in discourses where one might feel the need to be expedient, like in those of “pro-vaccinators” and “anti-vaccinators,” such a prioritization of “standing” over “sitting” can be counterproductive, resulting in discourses that would rather demonstrate one’s strength than “suffer fools.” Such cases, we find, are not only unpersuasive as they tend to only focus on one’s own point of view instead of connecting it to one’s opposition, but they are also misleadingly selfish for the very same reason. Thus, a responsible transformation of incommensurable goods is one that realizes that our line’s of argument are not the same as our opposition’s, and is willing to recognize that fact to forward a real engagement with others’ lines of reasoning, even if we plan to invert the very terms they use in that argument through something like *hyperbaton*. We now move to an analysis that compares anti-vaccination discourses from the early 20th century and early 21st century in order to find the most becoming of terms available to those wishing to responsibly approach transformations of incommensurability with such audiences.

6.1.1 *Anti-Vaccination in the 20th Century*

Our story starts in 1796 with Edward Jenner, a number of milk-farm workers, and a young boy named James Phipps. Edward Jenner, often credited as the discoverer of a means by which to vaccinate against smallpox, noticed that individuals who worked with cattle, and were exposed to cowpox, a less aggressive, but nonetheless related cousin to Smallpox, tended to be

immune to the disease. So, in light of this observation, and as most Victorian scientists might have done, Jenner commissioned his gardener's son, James Phipps, for a test of the theory. First he scraped Phipps' arm with a metal instrument and squeezed a cowpox pustule into it. Then, after young Phipps recovered from the milder version of Pox, Jenner performed another procedure. Once again, he scraped Phipps' arm, but this time he squeezed a smallpox pustule into it—and no disease, cowpox, smallpox, or otherwise came as a consequence. (Though many might thank Jenner for subsequently ridding much of the world of the scourge of smallpox, I think it more fitting to thank Mr. Phipps.)

Flash forward past nearly one hundred years of smallpox eradication via cowpox vaccination: 1893, Brooklyn, New York, a time and place that James Colgrove (2006) describes as a time in which “public attitudes about smallpox were a mixture of complacency and dread” (p. 18). Despite smallpox being such a horrible ailment, “it had long ceased to be a major source of either sickness or death in the United States and elsewhere in the Western world” (p. 18). Perhaps as a result of complacency, there was an outbreak of smallpox in Brooklyn. To control the outbreak, city officials began more strictly enforcing the previously laxly enforced compulsory vaccination laws that applied to Brooklyn's residents. It is at this time that we get one of the first anti-vaccinationist groups, the “Brooklyn Anti-Vaccinationist League” (BAVL), who proclaimed that the methods of forced vaccination were putting people at harm more than helping them. Over the next twenty years, groups like the BAVL as well as individual persons, would argue against compulsory vaccination laws. It was not until nearly twenty years later in 1915 that anti-vaccinators achieved a revision of the compulsory vaccination, which allowed “exemption.” Specifically, one anti-vaccinator, James A. Loyster, in a pamphlet privately researched, written, printed, and distributed, was able to make a case that many look at as

inspiring the changes in legislation that many contemporary pro-vaccination advocates point to as a problematic “hole” in the legislation, as it allows legal room for individuals to “opt out” of vaccination. From this case (and its apparent persuasiveness) we get insights from reading it as a *dissoi logoi* to inform rhetorical approaches for appealing to, and refuting, modern vaccination movements. To start, let us visit the words of a mourning father, suspicious that his son was taken from him by a state-mandated vaccination. James Loyster, in the introduction to his pamphlet:

My immediate personal interest in the subject is due to the death of my only son as a result of vaccination. I have been a believer in and advocate of vaccination. I was myself vaccinated in childhood by the arm-to-arm method without ill effects. It was in accordance with this belief and in an honest effort to comply with the law that I had my son vaccinated. Even his death did not entirely shake my faith in the practice, but it led me to make an investigation of the results of vaccination in New York State. (Loyster, 1915, p. 5)

Passing out five hundred mailer surveys, asking about “fatal and serious cases” (p. 7), Loyster, received two hundred and thirty responses. “The replies gave the names of twenty-seven children who had died subsequent to vaccination, also the names of nearly a hundred who had been seriously ill” (p. 7). Loyster, with these replies in hand, informs the reader at the outset of his privately published and distributed pamphlet: “It should be understood that I am not a physician. This leaves me free to write with greater frankness in certain instances than would be permitted to a doctor by the ethics of his [or her] profession” (p. 5). “The reader is invited to go over the facts as presented and draw his [or her] own conclusions to the accuracy of the

deductions made” (p. 5). And, thus, a grieving father shares the stories of dozens of child deaths, starting with “CASE No. 1,” Olive Cramer (see Figure 2), and moving case by case.

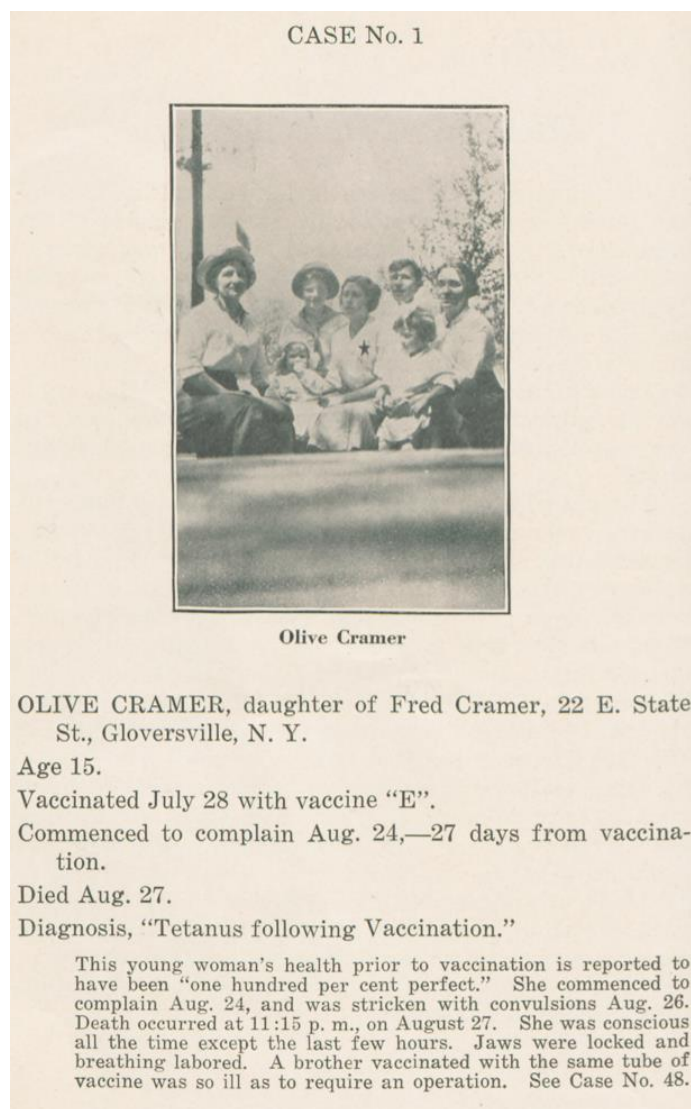


Figure 2. Olive Cramer, Vaccination Death “Case No. 1”, From *Vaccination Results*

Each of the fifty-one entries follows the same pattern (though some are without photos, most have them, designating the deceased, or taken ill, with a star if in a group photo). Each case includes a number, name, residence, age, date of vaccination, type of vaccination, date of death, recovery status (if any) and a brief description of ailment between vaccination and death or

illness. Between the seventeenth and eighteenth entry, there is an interjected copy of the language of the compulsory vaccination law (see Figure 3).

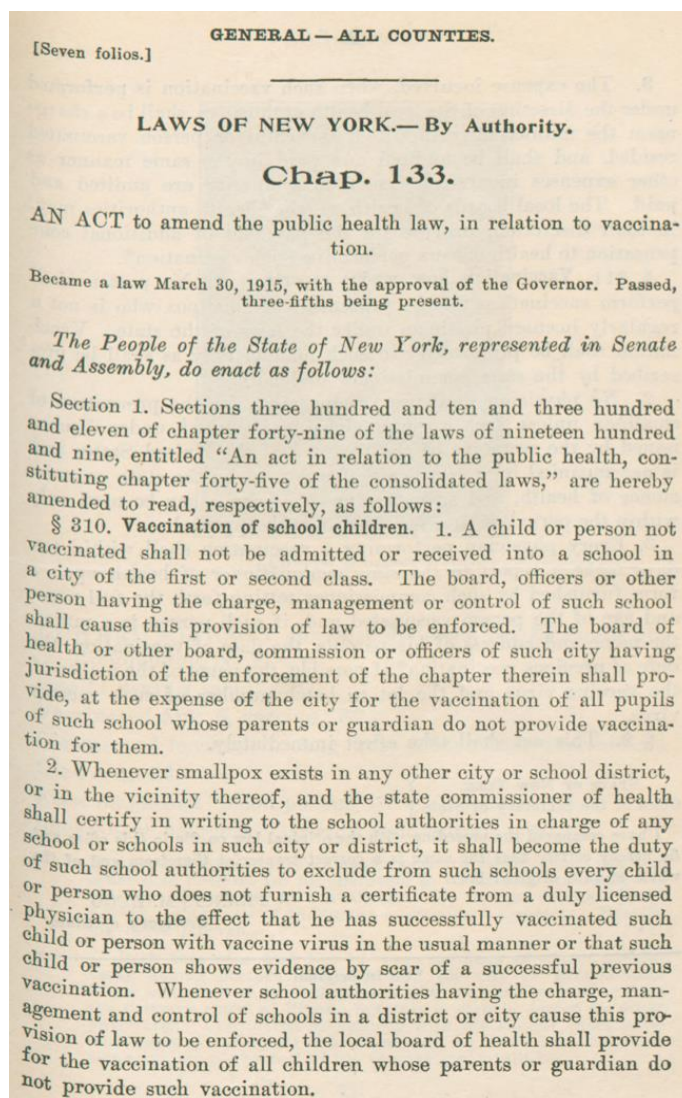


Figure 3. Chapter 133, Health Law, From *Vaccination Results*

The excerpt of the law focuses specifically on the "vaccination of school children." The effect of interspersing it in with the cases of child death has an effect on the reader as they make their way linearly through the pamphlet. The effect is one born of reiteration (fifty-one times, in fact). Name, cause of death, description of symptoms; the pattern established is this: otherwise healthy → vaccine introduced → now unhealthy, or deceased. After the reader has made his or

her way through seventeen cases of this (replete with photos of those suffering such outcomes), he or she is then confronted (albeit implicitly) with a means to disrupting the pattern: to discount the current compulsory vaccination law. Then the pattern resumes, thirty-four more times as if, just as the reader discovers the solution, the reader is buried in the pattern, cementing it over their head, resulting in the creation of a kind of panicked grasping for what to do next. After the case-by-case reiteration, is the conclusion to the pamphlet:

We believe that no unprejudiced person can read the foregoing list of cases and escape the conclusion that vaccination is in some way, possibly not well understood, responsible for most of the fatalities and illnesses there recorded. It matters but little to the dead children or their stricken parents whether the germs of disease were introduced with the vaccine virus, or subsequently through the open vaccine wound. The awful fact remains that had none of them been vaccinated all would probably have remained alive and in good health. (Loyster, 1915, p. 34)

From the case-by-case pattern, and cementing-like effect the fifty-one iterations has, the pamphlet is able to construct a vision of doubt for the amenable reader, and coupled to this is a reason for that doubt:

Section 310 of the Public Health law should be repealed because it is a failure, if for no other reason. No matter how rigidly it is enforced it can never attain the end sought. The large and growing Roman Catholic population is exempt through the parochial schools. The children of the wealthy who are privately taught are likewise on so that a relatively large unvaccinated element in population must always exist. The material for an epidemic will always be present, and final

recourse in controlling the disease must remain in the future as the past mainly dependent upon quarantine, sanitation, isolation, and surveillance of contacts, rather than vaccination. (Loyster, 1915, p. 41)

Though there were many different reasons for vaccine skepticism during the early 1900s (e.g., spiritual purity, libertarian ideals of medical choice and body), they all revolved around the idea of risk to self, and one's children. The remarkable thing about the anti-vaccinationist argument, regardless of one's stated motivation (or era in which that argument is taking place) is that it has built into it a very powerful weapon of persuasion: appeals to autonomy. The very idea that someone who wishes to argue against another's ability to make choices, especially choices about the wellbeing of one's self and children, already puts the pro-vaccinator in a difficult position.

Appealing to the version of altruism built into an idea like compulsory vaccination requires that individuals comply with a publicly mandated version of coercion. "I will do the right thing, and agree to being forced to, so long as everyone else is too." This is a difficult road to tread if one's audience already does not recognize coercion as an acceptable option, especially if that option does not apply to other persons like "Roman Catholics," or "children of the wealthy." Such a social contract of altruism requires that everyone be vaccinated. So, compulsory vaccination policies that require children to be vaccinated before they can attend public school actually *forces* choices upon persons; it looks coercive. Should I allow my son or daughter to gain a public education or not? At its most fundamental level, the anti-vaccination/pro-vaccination debate is about interpretations of how audiences perceive the fairness of coercion, or the appropriateness of persuasion.

To some, coercion is a *necessary force* (i.e., to those who vaccinate); to others, it is an *unwarranted one* (i.e., to those who refuse vaccination). To pro-vaccination audiences, coercion (or publicly agreed upon coercion, at least) is a necessity constituent of public life regarding the implementation of medical science. Whereas, the anti-vaccination movement seems to view vaccination as justifiable only through persuasive means, leaving the ultimate choice to the individual. Within the philosophies of appropriate communication about public health issues of the anti/pro-vaccination debate is a conundrum. We require publicly decided coercion to implement vaccination in an expedient enough manner to be effective. But, as James Colgrove (2006) in his *State of Immunity*, has pointed out, the preference for persuasion is “rooted partly in respect for the principles of liberty and autonomy that have occupied a central position in American civic and political life” (p. 11). The expediency required to effectively implement vaccination is the very thing that creates discourses that are ineffective at appealing to anti-vaccinationists. To put this in terms of the current study, the very nature of vaccination seems to require a courageous discourse, choosing to “stand” for the science, letting it “speak for itself,” lending itself to being rashly presented as something that does not need to be treated as persuadable. In this context, revising the way science is expressed, not only seems less necessary, but perhaps even inappropriate, as it might “muddy” the issue. But, we find, this kind of approach, might be less than effective at persuading anti-vaccinators, and presents a moment where those audiences are not respected as reason-givers.

What we learn from early 20th century anti-vaccination discourse is that anti-vaccination is about a fundamental problem of communication. Each party not only has a different idea of what makes for trustworthy, reliable science, but of what makes for appropriate communication of that science in the first place. If we are to move forward past our barriers of

incommensurability in the anti/pro-vaccination debate, we need to first search for a discourse that can resituate the purpose for vaccination, but in terms that appeal to autonomy, not necessarily altruism. To restructure our discourse in this way we can practice *hyperbaton* that helps reposition the purpose of anti-vaccination arguments (to protect children), using an inverted version of the common line of argument (otherwise healthy → vaccine introduced → now unhealthy, or deceased). We will see this exemplified in the coming *Law & Order* analysis. Before this though, we will visit the contemporary discourses of 21st century anti-vaccinationists and pro-vaccinationists.

6.1.2 *Anti-Vaccination in the 21st Century*

Sure enough, after various evolutions and reformulations, the anti-vaccination movement carried up through time to the early 21st century. And, as Kata (2009) studied in her investigation of anti-vaccination information on the Internet, many of these groups trade misinformation regarding understandings of the science, using the internet to come together around their cause. Many concerned groups initial reaction was to better inform these publics, but, as Kata finds, “more consideration must be given to the social discourse underlying anti-vaccinationists—reasons for refusing vaccines may involve alternative understandings of health, different perspectives of parental responsibility, or questioning the legitimacy of traditional authorities” (p. 1715). I could not agree more. This is what it means to practice the courage to “sit” in a rhetoric of science—to better understand the epistemological situation of one’s opposition to find out what they consider facts in the first place, *before* giving them “the facts.” Kata, in the conclusion to her study, ultimately claims, “greater appreciation of the discourses underlying anti-vaccinationism is needed in order to understand the ideologies that support such beliefs” (p. 1715). I believe one such means to doing this, as we learned from the previous section on the

early 20th century anti-vaccinationist discourses, is to approach vaccination discourses with an eye for the fact that many anti-vaccinationists, for various reasons, do not believe coercion is a viable route to implementing public health (even publicly decided versions of compulsory vaccination). In order for vaccination to work, with regard to things like “herd-immunity,” a large majority of the population must be vaccinated; thus, the requirement of coercive types of policies regarding compulsory vaccination. In light of Kata’s study, and the current project’s main thesis, we find a tricky question: How do we give anti-vaccinationists a persuasive case to “buy into” a (principled) version of coercion? An answer we find below, perhaps surprisingly from the television show, *Law & Order*, is a deceptively simple one that taps into the appeals to freedom of choice many anti-vaccinationists appeal to, and reframe those appeals, in order to reclaim them toward the ends of pro-vaccination.

Recognizing the “other-words” of one’s opposition in the context of pro/anti-vaccination disagreement inevitably requires nontraditional treatments of the science, for instance, fictive narrative and drama—means of expression normally conveyed as inappropriate to scientific discussion. Thus, with respect to some audiences, it seems, in order to persuade them of the science, we need to treat science differently.

6.1.3 *Using the Most Becoming of Terms: Not Treating Science Like Science*

The ways in which we argue are dependent on the sphere in which we are arguing (Goodnight, 1982): the private, the technical, and the public. In the private sphere, we make our opinions. In the technical sphere, we make scientific knowledge. In the public sphere, we make social knowledge. Past this, we find that there are ethical ways to engage in discourses that make these respective ends. For instance, it is okay to exclude persons based on failure to demonstrate expertise from technical discussions, while such exclusion is largely inappropriate for discourses

in the public sphere (as we learned in Chapter Three). Here, I wish to argue that some agents might feel that to treat science appropriately (even when it is in the public sphere) one is required to treat it as if it were in the technical sphere by “explaining the facts,” while, in fact some audiences in the public sphere do not operate under the same assumptions that run through the technical sphere. If we have learned anything from the last half-century of rhetoric of science literature it is that even the technical sphere is permeated by political and cultural value, shaping the ways in which we understand facts. The idea that the public sphere, a place where freedom of expression tends to be championed over correctness of claims, would be just as receptive of “explaining the facts” is baffling. But, troublingly, this is how we tend to approach public arguments about vaccination. And, the result is a case that looks obviously like a case of coercion backed up by the “other person’s facts,” rather than a case of persuasion backed up by facts both parties can recognize.

6.1.4 *Practicing Courage to “Sit” in Science: Treating Science Rhetorically*

In an episode of the show *Law & Order: SVU*, an NBC procedural work-place crime-drama, entitled “Granting Immunity,” (2015) the issue of anti-vaccination is taken head-on. But, instead of systematically listing the arguments of anti-vaccinationists and one-by-one discounting them to explain the facts, the show uses a narrative structure to add an aesthetical charge to dramatize and to add gravity to the need for anti-vaccination.

As noted earlier, regarding early anti-vaccinationists, many believed that complacency regarding the horrific effects of widespread disease spawned by years of successful vaccination against smallpox, was in large part responsible for the epidemic in Brooklyn in 1893. Similarly, many amidst the 21st century anti-vaccinationist movement, point to a similar complacency. And, coupled to this is a more recent argument concerning the history of anti-vaccination movements:

that vaccines can cause autism. Specifically, the Measles, Mumps, and Rubella (MMR) vaccine is thought to have this effect; a claim set in motion by a study headed by a scientist, Andrew Wakefield et al. (1998), and published in the British medical journal *The Lancet*. Although the academy has roundly dismissed the verity of the study, as Wakefield was found to have falsified and manipulated data to support the claim that the MMR vaccine caused autism, many anti-vaccinationists continue to cite the study as proof that vaccines are harmful. Interestingly, as Kolodziejcki (2014) found in her study of the Wakefield MMR study, the discursive moves that are employed in the technical sphere (e.g., “hedging,” “passive voice”) can be exploited by those who wish to “manipulate the authority of scientific ethos for personal or political gain” (p. 181). What we gain from Kolodziejcki is not just a warning to scientists who wish to present technical projects within the grander public sphere without having them run away on them, but also a very real example of the fact that arguing about science in the public sphere requires a different tact than does arguing “objectively” and with appropriate “qualification” in the technical sphere.

One such tact might be the one employed by *Law & Order*. In the show after an outbreak of measles at a New York City elementary school (already similar to the case of the Brooklyn epidemic, no?), detectives discover a family physician has been falsifying vaccination records for parents who do not wish to vaccinate their children. “Patient zero,” a young boy named Gabriel Malko, is pointed to by the city medical examiner, who cites his lack of vaccination as directly responsible for the outbreak. Later, the New York City court puts the boy’s mother, Trudy Malko, on trial for lying about her son’s vaccination, and subsequently endangering others who were exposed to him. Cue the following scene. Ms. Malko is on the stand, being questioned by district attorney Rafael Barba.

Barba: Have you personally experienced the harmful effects vaccines can have?

Malko: Yes. My nephew, Braedon, is 18. Around his first birthday, after he received the 23 doses of vaccinations recommended by his pediatrician, he regressed into autism.

Barba: And how do you know his autism was caused by vaccines?

Malko: A few days after his first MMR vaccination, Braedon changed. He had been such a bright, lively, engaged little boy. And then, suddenly, he wasn't. My sister and I saw the light disappearing from his eyes. My own son was born a year later, and I swore I would do anything to protect him from what had happened to my nephew.

Barba: So everything you have done has been in the spirit of saving children, not endangering them?

Malko: Yes. Absolutely. Vaccines are potentially harmful, and once they're administered, they can't be reversed. All I'm advocating for is the right of every parent to weigh the risks and make that decision for their own child.

Barba: Thank you, Ms. Malko. Ms. Malko, did you know that the Institute for Medicine, the CDC, and numerous other research groups have found no links between vaccines and autism?

Malko: I don't trust the CDC or Big Pharma. There's overwhelming evidence that thimerosal was a causal agent of autism.

Barba: That theory's been refuted, and thimerosal was removed from vaccines in 2001. Are you aware of that?

Malko: I am aware of every argument used to ostracize and vilify the so-called anti-vaxxers. Again, I'm not anti-science. I'm not against vaccines. I just believe it should be a choice made by individual families, not imposed by bureaucrats.

Barba: Bureaucrats like the CDC and the Department of Education?

Malko: That's right. ("Law & Order," 2015).

What we get from this dialogue is nothing much different from the attempts at courageous "stands" for vaccination characteristic of many anti-anti-vaccinationists who wish to point out the anti-vaccinationists terms, and discount them. To which Ms. Malko simply replies, "I just believe it should be a choice made by individual families, not imposed by bureaucrats." And, Barba, retorts, "like the CDC and the Department of Education?" In this particular scene the viewer is still presented with a courageously "standing" discourse—"no links between autism and vaccines," "thimerosal was removed from vaccines"—in which Mr. Barba simply reiterates terms already supported by the pro-vaccination side of the debate. It is not until the second half of this exchange that the viewer is presented with the courageous "sitting":

Barba: Okay. New York City also mandates that students not be allowed to bring weapons such as knives or guns to school. Do you agree with that policy?

Malko: Yes.

Barba: What about, say, not sending children to school with so much as a single peanut to protect anyone with allergies. Do you agree with that?

Malko: Of course.

Barba: Okay. So if a mother wanted to make her child a peanut butter sandwich for lunch, you would deny her that choice because it might endanger other children.

Malko: Yes. But denying a child peanut butter for lunch causes no harm.

Vaccines are harmful.

Barba: Not according to medical science. But, *as we've seen, not vaccinating children causes serious medical harm, not just in your son's school.* All over the city. At last count, 5,500 people have been exposed to this virus. Who knows how many more will get sick?

Malko: It's my child. My right. My decision.

Barba: But you didn't just make a decision for yourself, did you? You made a decision that endangered everyone else. (“Law & Order,” 2015, emphasis added)

It is here in this excerpt that we see an instance of *hyperbaton*. District Attorney Barba inverts Ms. Malko’s argument that the key decision is about her child, and it is a choice that she made to protect him. An argument that her choice was made for the sake of upholding individual autonomy is presented as actually jeopardizing that autonomy for the other individuals with whom she shares community. Barba does not make the claim “nicely,” but rather, in a way that shows recognition of the other-words of an anti-vaccination position. That is, although Barba is attempting to make Malko, and by proxy, the anti-vaccination position, out to be “silly” or “confused,” he does so while working squarely with a *topos* common to arguments for anti-vaccination.

Not only is a *hyperbaton* of Ms. Malko’s *topos* given discursively in District Attorney Barba’s cross-examination, it is shown less discursively elsewhere in the show. Most blatantly this is illustrated by following the story of a young child falling ill from being exposed to Ms. Malko’s son. Throughout the show, one of the Detectives, Detective Bennet, and her nephew, Noah, are shown moving from happy conversations among healthy persons to eventual

conversations between a healthy adult and very sick child. Despite his being vaccinated, Noah falls ill with measles, and progressively it gets worse ultimately leaving him in the hospital with pneumonia. In a kind of “inverted narrative,” the viewer experiences the same experience described by Ms. Malko that she articulates in court for not vaccinating in her son, only instead of a child falling ill from a parent’s choice to vaccinate his or her child, he is struck ill by a parent’s choice *not* to vaccinate. In conjuncture to this, various other characters outside of Detective Bennet’s nephew are taken ill, including adults, and other members of the community. It is not through the abstract explanation of herd immunity, or grand claims of threat to our populations if a parent does not vaccinate that a persuasive case is made, it is through a side-story, a sub-plot that the viewer is shown the reason to vaccinate. What is truly profound about this is that through a fictive visualization—the “non-technical” dramatization—the consequences of not vaccinating are given gravity.

The enforcement of compulsory vaccination, if the reader will remember, was reinvigorated by an actual epidemic in Brooklyn. In this *Law & Order* episode, through a fictive dramatization, the aesthetic urgency of vaccination is played up, constructing a *kairotic* moment of vaccination, without having to rely on a real world epidemic. Von Burg’s (2012) study of dramatization of scientific risk in climate change debates, specifically how proponents of climate change policy were able to use the film *The Day After Tomorrow* as an inventional resource to add urgency to something inherently out of grasp conceptually to some audiences, is similar. Only, instead of showing the science as “not untrue,” within the fictive piece, as do Von Burg’s climate change proponents in an effort to avoid the counterarguments of “pseudoscience” endemic to using fiction in arguments about science, *Law & Order* crafts a narrative *hyperbaton*, which actually sources a common *topos* (the story of a loved one becoming ill from vaccination)

within the anti-vaccinationist movement to reframe vaccination. Here, the nouns of healthful freedom and the verb of vaccinating are inverted, sourcing the most becoming of terms, to practice a rhetoric that courageously “sits” for the other by restructuring the means by which one might speak, understand, and believe, about vaccination in the first place. It is rhetoric of science that treats its opposition as persons, not only by choosing terms relevant to them, but in fact, attempting to share those terms by practicing an epistemology and the discursive proclivities of that very epistemology.

6.2 THE “OTHER-WORDS,” RESPONSIBLE DISAGREEMENT, INCOMMENSURABILITY AND LIVING A GOOD-LIFE

When Linnaeus decided to name us, no reservations were held. He chose *homo sapiens*—the “wise” ones. He probably did so because we like to think that it is wisdom, or the ability to possess wisdom, rather, that sets us apart from the lower animals. Involved in this is the idea that our wisdom is collective and cumulative. We continue to learn and pass on our knowledge, which makes our form of communication not only unique to *homo sapiens*, but central to our identity. Despite our affinity for wisdom, we *homo sapiens* do not always act as the wise beings we would like to be. In fact, sometimes we are so untrue to the concept of *homo sapiens* we would be better named, *homo dogmaticus*, in that sometimes persons can find themselves less occupied with building collective and cumulative wisdom than with advancing their own “superior” views through a priori argument. The other-words orientation to communication has been formulated as a means by which persons can uphold their own integrity, and the integrity of other *homo sapiens*. It is through wholehearted double argument that one can show respect not only for his or her fellow persons, but also him or herself. By relegating persons in the family of

homo dogmaticus to those of unethical status, the goodness of persons that live in the house of *homo sapiens* can be better appreciated. Achieving and maintaining one's integrity as a member of *homo sapiens*—showing other persons respect—is paramount to effective, ethical communication.

Supporting this view is Hyde (2010), who states with regard to ethical rhetoric, “we are saved from an all-encompassing violence by our ability to attune our consciousness toward things and others so that they can be acknowledged and respected for what, who, and how they are” (p. 41). In other words, it is by our ability to strategically communicate through the thoughtful and creative use of symbols—to persuade—that persons can forward their own grounding projects while simultaneously showing respect for other persons. Hyde does not reference the terms explicitly, but he is referring to recognition and appraisal respect here. He goes on to say that in order to fully enact respect for the “other” we must constantly be open to a deconstruction of our worldview—to scrutinize, and if warranted, reformulate how we make sense of the world. While I will maintain that one's grounding projects should remain a bit harder to reformulate than his statement implies, Hyde's work and the current project harmonize well with regard to the centrality of respect to ethical communication. Moreover, while our grounding projects might be very hard to reshape, the forms in which we express those grounding projects, on the other hand, are much easier to influence. It is because of this that we have a communicative obligation to seek out and acknowledge the available means of persuasion (to show recognition respect through *dissoi logoi*) that will allow us to communicatively negotiate our projects with the projects of others in ways that fit with our own ethical commitments.

In the case of Newton for instance, we find that he was able to meet the argumentative and valutive needs of his Cartesian audience through a Euclidean form and a copious style that framed his theory as “evolutionary” as opposed to “revolutionary,” (Gross, 1988) all the while maintaining a commitment to an epistemology that valued experimental induction and “letting the evidence speak for itself.” Newton showed us that we can stand for our projects, respectfully. By contrast, Darwin’s “cautious humility” and Dawkins’ “intellectual courage” gave us stark reasons for attempting to be mindful of why and how our paradigmatic moments might shape who, or how, we might respect our fellow persons. Copernicus, Kepler, and Galileo showed us that even when we attempt to speak out against our paradigmatic moment to do the right thing, to “speak truth to power,” we might want to err on the side of the respectful more than the scientifically correct in our discourses. And finally, we learned that not only in our discourses, but also in the very venues we construct for having those discourses, we have responsibilities to respect our fellow persons as persons, without unnecessarily sacrificing the integrity of the scientific enterprise. In all of these cases we learn that it is a good thing to stand for what we believe to be scientifically true. Past this, we find doing so with recognition respect for the dignity of our fellow persons an even better one.

Standing for something while showing recognition respect for others is ethically fulfilling and communicatively effective in that it helps to perpetuate increasingly ethical communication. As Wieman & Walter (1957) say, the person who is willing to listen to others is one of persuasively “good character” (p. 269). In the current frame, a person of good character—of high integrity—is one who approaches communication from the other-words perspective. The other-words orientation to communication can be said to perpetuate the “promise of creating those kinds of communication which can help save the human being from disintegration, nourish him

[or her] in his growth toward uniquely human goals, and eventually transform him [or her] into the best that he [or she] can become” (p. 270). Communicating from an other-words orientation, in different terms, is not only an ethically upright way to communicate, but it is also an effective way to inspire interlocutors, advance public discussions of knowledge, and, of course, advance and evolve one’s own grounding projects. Through its provision of a check against “uncritical absolutism,” and simultaneously, a process for crystalizing one’s own convictions, *dissoi logoi* can enhance productive communication (Harrigan, 2008). As Johnstone (1980) has noted, “we do more than attempt to influence when we seek the assent of others for our conclusions; we seek, because of the uncertainty that must attend our thinking, confirmation of our own minds” (p. 16). As we learned from the conclusion, in practicing respectful discourses that courageously “sit” for others, we can even move toward making the incommensurable, commensurable, in ways ethical as well as instrumentally effective.

In a model such as the other-words, the room cleared for individuals to protect and stand for their own projects in the face of others’, raises questions about how an analyst should treat his or her own projects, in the face of publics that might believe counterpositionally. So to close this dissertation will be a brief discussion of whether it is okay to argue for a particular version of the science or to build research projects that substantially support one view of science. As we will find below, there are a few approaches to this question, each having to do with one’s perceived duty to the projects of “mainstream” science or the “underdog” counterpublics of science or to helping provide tools for opposing publics to better understand one each other.

6.2.1 *Practicing a Prescriptive Rhetoric of Science*

In every rhetorical situation there are social and institutional features that precede the discourse, inviting it into existence. These features can be figurative, like in metaphors of DNA

(Ceccarelli, 2004) or mythological, like in the myth of “evolutionism” (Lessl, 2012). Whether or not scientific rhetorical inventions are legitimate persuasive strategies, or fabrications built from “bad science,” is specific to the communicative site(s) it might occupy for a given audience (Lyne & Howe, 1986). As Bazerman (1999) would put it, “communication” is not monolithic, but rather “heterogeneous,” (p. 334) inhabiting many different “discursive frames” at once (Lyne & Howe, 1990). One person’s disingenuous use of rhetoric could be another person’s persuasively effective strategy of imagining true science. This creates a hefty problem for students of rhetorical criticism. How do we (rhetoricians) make claims about what is “scientific” and what is “inventive” as we interrogate scientific discourses situated in the public sphere (a sphere that seemingly lacks the explicit checks and balances of the technical)? A good start would be to suggest that rhetoricians take extra measure to incorporate and account for the complexities of artistic and inartistic resources available (Ceccarelli, 2001b) within a given network of agents, conventions, and values to appreciate more fully the “rhetorical consciousness” (Crick, 2005) that might have brought a text into existence. There are two different approaches for rhetoricians to treat science amidst disagreement. The first is advocative analysis, where a version of “right” science is committed to, operationalized, and incorporated into a rhetorician’s analysis of (a) public discourse(s). The second is pluralistic analysis, in which a rhetorician does not move forward from assumptions of “right” science, instead the rhetorician explores the multiple epistemological frameworks that might bear down on a scientific discourse in a public sphere.

6.2.2 *The Other-Words, Advocacy, and Plurality*

Sometimes an analyst perceives a real threat to his or her community, and decides to bring his or her skillset to bear on solving that threat, requiring not that an analyst can suspend

his or her projects, but rather that they bring them directly into their work. This is the productivity of advocative analysis. For instance, Ceccarelli (2011) takes what Fuller (2013) describes as an "American 'liberal' sensibility" and uses it to inform her analyses of "manufactured controversies," wherein misleading argument tactics are shown to be used as a way to justify space for minority scientific views to be acknowledged on the public fore. Using as examples cases like that of South African President Thabo Mbeki's public denial of HIV research, global warming skepticism in the U.S., and the intelligent design movement, Ceccarelli shows that illegitimate science—not hard won through debate—can be cheated into legitimacy by way of inventing discourses from the democratic appeals and balancing norms that exist in a contemporary U.S. living tradition. Fuller (2013) takes issue with this approach in that he disapproves of Ceccarelli's assumptions of what is "true" in science, arguing that manufactured controversies are not merely scientific cheats, but rather instrumental tools, useful for inciting scientific revolutions. Ceccarelli's use of "scientific consensus" to found her analysis is wrongheaded for Fuller, who suggests instead that "one would be wise to err in the direction of open-mindedness in research and educational policy" (Fuller, 2013, p. 6). Nevertheless, with regard to practicing a respectful rumination on the other, while also adhering to one's own projects, Ceccarelli is absolutely doing so. The majority of Ceccarelli's study has to do with discovering the *topoi* used by counterpublics of science in order to equip proponents of scientific policy with the means to meet those audiences on their own terms. This is what Boltanski & Chiapello (2005) would call a "corrective" criticism of the "tests" of legitimacy (p. 174) in that advocative analysis is not as interested in exploring new options, as much as making sure that the truth is fairly stood for and represented—to make sure the "test is rooted in widely accepted conventions" (p. 174), like scientific consensus, coupled with an awareness of the other-words.

Fuller, it seems, would rather not take a side, and instead attempt a pluralistic analysis that opens other avenues to truth, even if those avenues are not supported by the scientific norms of the day. While it might seem that Fuller is taking a side, it is not to do with the “right science” *per se*, but rather with helping the “underdogs” get their voices recognized. In the pluralistic approach, allowing space for all sides to be considered seems to be most obviously applicable to meta-considerations of a debate and the plurality of epistemological possibilities that might exist therein—learning how to become aware of other points of view. This would be nearer to Boltanski & Chiapello’s (2005) “radical method” of criticism, whereby “the challenge is no longer to correct the test so as to make it fairer but to eliminate and possibly replace it with another one....it is the validity of the test [of truth] itself (and thus the factor that conditions its very existence) that is being contested” (p. 174). Put tersely, within the pluralistic approach it would be a perfectly ethical venture to attempt to tear down the very “norms” of scientific orthodoxy in order to allow for other points of view to be considered.

In either approach, advocative or pluralistic, it is important for rhetoricians to acknowledge (as Ceccarelli and Fuller do) that scientific discourses, like other genres of talk, are the results of punctuated sets of rhetorical transactions, undergirded, guided, and steered by “values,” which act to constitute “the compelling force” of scientific findings (Fisher, 1994, p. 29). Because both Ceccarelli and Fuller’s respective approaches show an awareness of the role of values in scientific deliberations, they both prove to be productive, but in very different ways. The advocative approach is a means by which to build stance-specific communicative tools for advocates to make use of the cultural mores of their intentional networks and argue for what they might consider to be “right” versions of science amidst incommensurable debates—to “even the playing field.” Pluralistic analysis, however, offers additional sense-making frameworks to

those interested in expanding their epistemological repertoire—to check what they might consider "right" as they think about, or engage in debates of incommensurable character—to check if the playing field needs scraping. Thus, both of these approaches are useful, but for different reasons. One builds *dissoi logoi* for standing for a particular project. And, the other builds *dissoi logoi* for checking one's own projects in the first place.

The pluralistic approach is very much in line with earlier rhetoric of science studies that attempt to show the faults of overly positivistic thinking by running texts through a gamut of postmodern questioning, and with great effect in showing the indeterminacy of language. Overington (1977) argued that science is actually the product of communal agreement and argument, not merely the regurgitation of the realities of the world. Farrell & Goodnight (1981) make similar arguments in their analyses of scientific disaster rhetoric and the uses of appeals to "certainty," in the face of uncertainty. Ceccarelli (2001a) in *Shaping Science with Rhetoric* moves forward from the pluralistic view that science can be socially constructed, but positions understandings of such social construction as useful means by which to approach scientific arguments pragmatically. The indeterminism of language, in other words, can be exploited by skillful rhetors to shape how scientific findings are interpreted, at least within disciplinary bounds. Instead of allowing considerations of "rightness" or "wrongness" into her analysis, Ceccarelli (2001a) is concerned with the instrumental uses of rhetoric to answer scientific exigencies of incommensurability. Where previously "softer" versions of dialogic ethics in rhetoric (e.g., Foss & Griffin, 1995) are in line with pluralistic approaches to rhetoric of science and their reluctance to "change the other," the other-words approach clears much room for critics and analysts to be reassured about their commitments to particular projects, and their drive to stand for those projects. After all, it is an ethical duty to be respectful of other points of view, but

it is also an ethical obligation to stand for what we believe to be most true, especially if that means persuasion will result in the betterment of our fellow persons.

Be it by practicing respectful discourses, mindful of the *doxa* of our particular paradigmatic moments, by being wary of the dark counterpart of *parrēsia*, by avoiding the pitfalls of being rash or cowardly in ways that might initially appear courageous, we can practice responsible *andreia* regarding disagreement over incommensurable goods. By practicing the courage to “sit” we might even find ethical ways to approach transformations of incommensurability itself in our rhetoric, via tools of talk like *hyperbaton*. Further, as analysts, we can contribute to responsible disagreements over incommensurability by practicing advocative or pluralistic analysis. It is within the other-words approach that we can advance our projects—we can have integrity—without “writing off” the words of other persons, by showing them the respect they deserve.

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