

# ISSA Proceedings 2010 - Controversy Over Uncertainty: Argumentation Scholarship And Public Debate About Science



## 1. A rationale for studying “manufactured controversy”

The term “*manufactured controversy*” appears with some frequency in recent scholarship about the public rhetoric of science. But as this paper will show, it tends to be applied in isolated case studies that have not yet been connected with each other into a larger multi-case analysis. As a result, the definitional contours of the term have not been made entirely clear in the rhetoric and argumentation literature. This paper is a first step toward developing a definition of the term.

Scholars in the broader field of science studies have looked at the same phenomenon that rhetoricians have been calling manufactured controversy, but they use a different name for it, calling it the manufacture of public *uncertainty* about science. This paper will argue that the focus of these science studies scholars has been so effectively filtered through the terministic screen of uncertainty production that they miss some important characteristics of the phenomenon that are related to the way in which public *controversy* over scientific claims is constructed in the public sphere. Since one purpose of argumentation scholarship is to engage the theorization of controversy (Goodnight, 1991), argumentation scholars should be especially suited to the study of this aspect of the phenomenon.

To ground a call for scholarship on the argumentative dynamics of the “*manufactured controversy*”, this paper reviews some recent literature on the rhetoric of science and some recent literature from the broader field of science studies that explores cases where public uncertainty is created through the manufacture of scientific controversy in the public sphere. The goal of this paper is to set out a path for scholars of argumentation and rhetoric to make a useful contribution to the study of this phenomenon, and to briefly preview some of my

own findings from a study that I have undertaken along that path, findings that I more fully develop in another longer paper (Ceccarelli, 2011).

## 2. Why call it a “manufactured” controversy?

The common term “*manufactured*” is used by scholars in rhetoric/argumentation studies and science studies to describe this phenomenon because in each case that they identify, they have established that there is little or no controversy among scientific experts about the science itself. Instead, scientific controversy is being *invented* for a public audience, often by special interest groups, in order to achieve certain political goals like delaying the enactment of regulatory public policy, or forcing the teaching of alternatives to the dominant scientific paradigm in public schools. The political motives of those who “manufacture” scientific controversy in the public sphere are most often revealed by scholars through the publication of “smoking gun” documents where rhetors acknowledge, often in private planning reports that have been leaked to the public, that controversy is being used as a tactic to manipulate the public (Luntz, n.d., pp. 137-138; Brown and Williamson, 1969, p. 4; Discovery Institute, n.d., p. 2, 4). Less often, the manufacture of controversy is revealed as a political tactic through statement inconsistencies that suggest the promotion of a controversy is a matter of expediency in a particular case rather than a matter of genuine belief that significant scientific uncertainty exists.[i]

## 3. Recent case studies in rhetoric and argumentation on “manufactured controversy”

In an article in *Communication and Critical/Cultural Studies*, Marlia Banning (2009) describes the public debate over the science behind global warming as a “manufactured – debate” (p. 291), a “‘disingenuous’ or ‘pseudo-controversy,’ in which commercial and political entities labor to generate a perception of widespread debate among a scientific community where instead there is a strong agreement” (pp. 286-287). She argues that commercial and political entities apply this strategy “in order to undermine public opinion and policy” (p. 298).

In addition to using the term “manufactured” to describe this controversy, Banning uses the terms “disingenuous controversy” and “pseudo-controversy.” Because there was no multi-case study of the “manufactured controversy” before Banning wrote her paper, she adopts her terminology from another provocatively named individual case study published in *Argumentation and Advocacy*. However, that article has nothing to do with science and actually reports the opposite of

what Banning describes in her own case study. The article that she cites to give credit for the concept of “disingenuous” or “pseudo-controversy” explores a case where controversy is artificially deployed over the political speech of Ward Churchill to close off debate, to “stifle dissent and ... alternative perspectives” and re-center an orthodoxy by diverting attention from the substance of genuinely controversial claims about politics and violent acts (Fritch, Palczewski, Farrell, & Short, 2006, p. 201). The case that Banning describes of public controversy over climate science is characterized in her article as doing the reverse of this – *inventing* scientific dissent where there is none (not silencing it), and *undermining* a scientific orthodoxy (rather than re-centering it). The term “pseudo-controversy” seems on its face to accurately characterize the political strategies being deployed in Banning’s case study, but the terminological link between her case and the case studied by Fritch et al. leaves readers with little hint about what might constitute the common characteristics of such cases. Given access to a multi-case study that examines the similarity between different instances of manufactured *scientific* controversy, Banning would not be forced to grasp for a theoretical link to another type of disingenuously manufactured controversy with which her case shares little in common.

In another recent study, this one published in *Quarterly Journal of Speech*, Marcus Paroske (2009) describes the case of AIDS dissent in South Africa as a “version of ‘manufactured controversy’” in which “arguments that exploit inherent uncertainty and urge delay” are used to counter the global scientific consensus about the cause of a disease (p. 152). Just as with Banning’s article though, Paroske struggles to ground the term in the literature. The citation he supplies for the term “manufactured controversy” is an essay in which the term itself never appears. The essay he cites, from the field of mass communication research, uses the term “manufacturing *doubt*,” not manufactured controversy (Stocking & Holstein, 2006). As I will demonstrate in the next section of this paper, the focus on controversy that Paroske offers as an argumentation scholar is different from the focus on doubt that has pervaded the literature that he cites as a theoretical ground for his case study. A multi-case study that examines the common argumentative dynamics of manufactured scientific *controversies* would provide a more solid theoretical grounding for future studies like Paroske’s in the field of rhetoric/argumentation studies.

A third example of rhetorical scholarship that introduces the concept of the

“manufactured controversy” is a paper presented by Rachel Avon Whidden at the 2005 Alta conference on Argumentation and published in its proceedings. This paper discusses the “manufacturing of controversy” by intelligent design advocates who create “the illusion of the presence of an actual debate within the scientific literature” (pp. 707-708). Unlike the cases studied by Banning and Paroske, this time a case is described in which controversy is being manufactured not in order to delay public policy, but in order to promote a *new* public policy that requires public schools to teach both sides of the so-called scientific “debate” over evolution. A reader encouraged by Banning and Paroske to think of manufactured scientific controversy as a tactic to *maintain* the status quo by delaying policy change might be surprised to discover the same concept being used to describe a tactic that seeks to *change* the status quo by initiating a new policy. Again, a multi-case study of manufactured scientific controversies would resolve any such potential confusion about the concept by exploring the characteristics that these cases share in common.

The fact that Banning, Paroske, and Whidden never cite each other, but they all use similar language to describe the key argumentative activity explored in their case studies is significant. Rhetoricians are discovering an important phenomenon in contemporary public discourse about science that needs theorizing: the manufactured controversy. A larger multi-case study can help us develop a better understanding of “manufactured controversy,” so that future uses of the concept can inform each other in the scholarly literature on public rhetorics of science. By examining the manufacture of controversy in all three of these cases identified by rhetoricians (global warming skepticism, AIDS dissent, and intelligent design), we can better appreciate the scope of this concept, in which the same types of appeals are deployed by those who would postpone government action (for example, to regulate carbon emissions) *and* by those who would create new government policies (like “teach the controversy” directives about evolution in public school science curricula).

#### *4. The “science studies” literature’s focus on manufactured uncertainty*

So far, I have established that the term “manufactured controversy” is being used by scholars of rhetoric and argumentation, but they have not yet developed a clear cross-citational grounding for the term. When we shift our gaze to the larger scholarly conversation about science policy and public debate, we find that some of the same cases are being studied in other fields, but the central phenomenon

under examination there is called by a different name. Significantly, each of the terms coined for this phenomenon by scholars outside the field of rhetoric and argumentation studies emphasizes the amplification of *uncertainty* by those who deny the scientific consensus.

For example, epidemiologist David Michaels (2008a) details a number of cases where industries have deployed a strategy he calls “manufacturing uncertainty” which entails “preventing or postponing the regulation of hazardous products by questioning the science that reveals the hazards in the first place” (p. x). “Industry has skillfully turned what should be a debate over policy into a debate over science. The retreat from regulation is fueled by the product defense experts who specialize in manufacturing uncertainty and creating not sound science, as they disingenuously claim, but something that sounds like science in order to allow toxic exposures to go unregulated and victims of these chemicals to go uncompensated” (Michaels, 2008a, p. 264).

Michaels (2008b) details numerous “campaigns mounted to question studies documenting the adverse health effects of exposure to beryllium, lead, mercury, vinyl chloride, chromium, benzene, benzinide, nickel, and a long list of other toxic chemicals and pharmaceuticals” (pp. 92-93). He also points to evidence of this strategy being used by the fossil fuel industry when it was “confronted by an overwhelming worldwide scientific consensus” on anthropogenic global warming (p. 92). The title of Michaels’ book, *Doubt is Their Product*, is taken from a tobacco industry internal memo which, when faced with evidence that tobacco causes cancer, candidly admits “Doubt is our product since it is the best means of competing with the ‘body of fact’ that exists in the mind of the general public. It is also the means of establishing a controversy” (Brown & Williamson, 1969, p. 4). Although this memo suggests the manufacture of *controversy* is the purpose of the strategy, Michaels’ terminological focus on the production of *doubt* directs our attention to how “mercenary scientists” (2008a, p. 60) exploit the natural limitations of epidemiological and laboratory studies of human disease to create confusion for the public. This terminological focus turns our attention away from how industry employees exploit fairness norms in the public sphere to effectively seed controversy and thus stall regulatory action.

Historian of science Robert Proctor (2008) likewise turns our attention to the manufacture of *uncertainty* (rather than the manufacture of controversy) with his invention of the term “agnogenesis” as a subarea in the new field of agnotology

(the study of ignorance). Agnogenesis refers to the use of ignorance “as a deliberately engineered and strategic ploy” (p. 3). When we study agnogenesis, says Proctor, we explore “ignorance – or doubt or uncertainty – as something that is made, maintained, and manipulated by means of certain arts and sciences” (p. 8).

Like Michaels, the examples Proctor chooses include global warming denial and the tobacco industry’s response to cancer studies. He says the latter “must rank as one of the greatest triumphs of American corporate connivance” (pp. 19-20) a strategy to question all assertions that we know the cause of cancer and “all efforts to ‘close’ the controversy, as if closure itself were a mark of dogma, the enemy of inquiry” (p. 12). So Proctor too recognizes the production of controversy as key to this rhetorical strategy, but he invents a term that focuses our attention on the creation and maintenance of ignorance as if that were the most significant characteristic of these cases.

Sociologists William Freudenburg, Robert Gramling, and Debra Davidson (2008) make a similar move when they coin the term “Scientific Certainty Argumentation Methods,” or “SCAMs,” to refer to “a clever and surprisingly effective political-economic tactic” that exploits the fact that “most scientific findings are probabilistic and ambiguous” in order to defeat or postpone proposed regulations (p. 2). According to these sociologists, “SCAMs can be remarkably effective even in cases where most scientists see findings as strong or robust – indeed, even in cases where the findings are backed by clear and emphatic statements of scientific consensus from the most prestigious scientific organizations in the world” (p. 5).

Freudenburg et al. describe several cases where controversy is manufactured by politically skilled actors to obscure an existing scientific consensus. But because they look only at how SCAMs manage uncertainty claims, they turn their scholarly gaze away from some of the other rhetorical tools used to invent an ongoing scientific debate in the face of overwhelming scientific consensus.

In studying manufactured *controversy*, scholars of rhetoric and argumentation can examine the same phenomenon scrutinized by those who call it manufactured doubt, agnogenesis, or SCAMs, but the terminological distinction points to a difference in emphasis that will reveal aspects of the phenomenon that are obscured by the broader “science studies” literature’s focus on uncertainty production. When the manufacture of *uncertainty* is the subject of analysis,

scholars like Michaels, Proctor, and Freudenberg et al. demonstrate how conventional ignorance claims in scientific articles are taken out of context, data is cherry picked, and statistical methods are manipulated by strengthening evaluation standards for studies with inconvenient results.

The rhetoric and argumentation scholar's focus on the manufacture of *controversy* can reveal instead how the illusion of an ongoing scientific debate is built to sustain that uncertainty through the exploitation of balancing norms and appeals to open-mindedness, freedom of inquiry, and fairness. By examining the common appeals used in global warming skepticism, AIDS dissent, and intelligent design advocacy, we can better recognize how political agents in these cases use argumentative tactics to force scientific controversies into existence in the public sphere, controversies over scientific data that do not exist to any significant degree in the technical sphere.

#### *5. Some common argumentative characteristics of the manufactured controversy*

The purpose of this paper is not to set out a detailed comparative analysis of the public argumentation involved in these three cases. To do that would take me beyond the word limit for an entry in this conference proceedings. But I will preview some of my findings from that comparative analysis (Ceccarelli, 2011) in the interest of better defining the concept of the "manufactured controversy" and supporting my argument that a sustained rhetorical study of several cases together can make a productive contribution to the existing literature on this subject.

After undertaking the comparative study of these three cases, I discovered that there are two types of manufactured scientific controversy: the epistemological filibuster that delays policy change (Paroske, 2009), and the fairplay wedge that initiates policy change. In both types of manufactured controversy, contrarian scientists are deployed in the public sphere and their voices are amplified through the exploitation of balancing norms in liberal democratic institutions of journalism, law, politics, and education, where one always expects two sides to be presented with equal force to guarantee an informed citizenry.

By exploiting these balancing norms, those who manufacture scientific controversy create a situation that puts defenders of mainstream science in a bind, where they cannot refuse to debate without seeming dogmatically unscientific and opposed to freedom of speech and freedom of inquiry, but where agreement to debate suggests to the public that there are two equally strong

sides on the matter within the scientific community. To further constrain the response of mainstream scientists, those who manufacture scientific controversy describe academic practices like peer review and tenure as mechanisms for an orthodoxy to inappropriately suppress those who have a dissenting view. By employing this argument, they weaken the persuasive power of the very practices of science that could be employed to contest the quality of oppositional claims in such debates. The narrative of controversy thus produced portrays skeptics as heroes in an unfolding scientific revolution, oppressed by mainstream scientists who are ideologically deaf to their appeals and who try to silence them so that others are not exposed to their heresy.

Without a clear understanding of these argumentative constraints, those scientists who respond to manufactured controversy often fall into the very traps that have been set for them, responding with arrogant dismissal that serves only to confirm their opponents' charges in the eyes of the public. This is why I think it is especially important for scholars of rhetoric to understand the argumentative strategies of those who would manufacture scientific controversy in the public sphere. Only by understanding these strategies can scholars of rhetoric and argumentation who teach scientists begin to help them develop a response that is more sensitive to audience and burden of proof, that reclaims democratic values for science, and that allows the public to see that those who manufacture scientific controversy in the public sphere do not always embody the scientific and democratic values they claim to champion.

The science studies scholar's focus on manufactured uncertainty is important for helping us understand how scientific data can be manipulated in the public sphere, but the argumentation scholar's study of how *controversy* is manufactured to nurture that uncertainty is equally important. It is my contention that a comparative study of the rhetorical strategies used in several cases of manufactured controversy can help us to better understand this important phenomenon that is increasingly the subject of isolated case studies in rhetoric and argumentation studies, and under some circumstances, such comparative study might help prepare scholars of rhetoric and argumentation to teach scientists how to more effectively respond to these strategies in public forums.

## NOTES

**[i]** An example of this is Thabo Mbeki's refusal to distribute drugs to treat HIV infection after becoming president of South Africa because of the "uncertainty"



raised by the scientific “controversy” over whether HIV causes AIDS. That this was a political tactic to justify a reduction in government spending is suggested by the fact that before Mbeki was president, he forcefully argued that even unproven drugs should be distributed to AIDS patients because it is unethical to postpone action until all scientific uncertainty is eliminated. This case is excellently detailed in Paroske, 2009.

## REFERENCES

- Banning, M. E. (2009). When poststructural theory and contemporary politics collide – The vexed case of global warming. *Communication and Critical/Cultural Studies*, 6(3), 285-304.
- Brown & Williamson. (1969). *Smoking and Health Proposal*. Retrieved from <http://legacy.library.ucsf.edu/tid/nvs40f00/pdf>
- Ceccarelli, L. (2011). Manufactured scientific controversy: Science, rhetoric and public debate. *Rhetoric and Public Affairs*, in press.
- Discovery Institute. (n.d.). *The Wedge*. Retrieved from [http://ncseweb.org/webfm\\_send/747](http://ncseweb.org/webfm_send/747)
- Freudenburg, W. R., Gramling, R., & Davidson, D. J. (2008). Scientific certainty argumentation methods (SCAMs): Science and the politics of doubt. *Sociological Inquiry*, 78(1), 2-38.
- Fritch, J., Palczewski, C. H., Farrell, J., & Short, E. (2006). Disingenuous controversy: Responses to Ward Churchill’s 9/11 essay. *Argumentation and Advocacy*, 42(4), 190-205.
- Goodnight, G. T. (1991). Controversy. In D. W. Parson (Ed.), *Argument in Controversy: Proceedings of the Seventh SCA/AFA Conference on Argumentation* (pp. 1-13). Annandale, VA: Speech Communication Association.
- Luntz, F. (n.d.). The environment: a cleaner, safer, healthier America. In *The Luntz Research Companies - Straight Talk*. Retrieved from [http://www.ewg.org/files/LuntzResearch\\_environment.pdf](http://www.ewg.org/files/LuntzResearch_environment.pdf)
- Michaels, D. (2008a). *Doubt Is Their Product: How Industry’s Assault on Science Threatens Your Health*. Oxford: Oxford University Press.
- Michaels, D. (2008b). Manufactured uncertainty: Contested science and the protection of the public’s health and environment. In R. N. Proctor & L. Schiebinger (Eds.), *Agotology: The Making and Unmaking of Ignorance* (pp. 90-107). Stanford: Stanford University Press.
- Paroske, M. (2009). Deliberating international science policy controversies: Uncertainty and AIDS in South Africa. *Quarterly Journal of Speech*, 95(2),

148-170.

Proctor, R. (2008). Agnotology: A missing term to describe the cultural production of ignorance (and its study). In R. N. Proctor & L. Schiebinger (Eds.), *Agnotology: The Making and Unmaking of Ignorance* (pp. 1-33). Stanford: Stanford University Press.

Stocking S. H., & Holstein, L. W. (2006). Manufacturing doubt: Journalists' roles and the construction of ignorance in a scientific controversy. Paper presented at the annual meeting of the International Communication Association, Dresden. Retrieved from [http://www.allacademic.com/meta/p91537\\_index.html](http://www.allacademic.com/meta/p91537_index.html)

Whidden, R. A. (2005). The manufacturing of controversy: Debating intelligent design in public. In C. A. Willard (Ed.), *Critical Problems in Argumentation: Selected Papers from the Thirteenth NCA/AFA Conference on Argumentation* (pp. 705-710). Washington D.C.: National Communication Association.