ISSA Proceedings 2006 – Actually Existing Rules For Closing Argument

Our interest in argumentation is provoked at least in part by the apparent paradox it presents. People are arguing because they disagree, sometimes deeply. But despite their disagreement, their transaction is orderly – at least, somewhat orderly. Furthermore, this orderliness apparently has a normative element, making room for them to critique each other's conduct as good and bad. So how is this normative orderliness achieved, even in the face of disagreement? – That must be a central question for any theory, especially one that aims to deepen our understanding of the normative pragmatics of arguing (van Eemeren 1994; Jacobs 1999; Goodwin 2004).

In this paper, I want to probe one rather abstract aspect of this question, about what I will call the general "shape" of the account we should be giving of argumentative orderliness. In attempting to understand or explain argumentative talk, how should we *represent* the activity? What basic *model* should we be using? In what *terms* should we explain the affairs? What *story* should we tell about them? Or, again, to put this generally, what *shape* should an account of arguing take?

One common approach to this question has been to say that we should account for arguing as a form of following rules. According to an account of this shape, although arguers may disagree about many things, they agree on the rules of arguing. When followed, these rules lend order to a transaction; talk which follows them is good, while talk which breaks them is bad.

There are good reasons to find this shape of account attractive to explain argumentative orderliness, for it has proved attractive for other fields. Consider: A current in social science initiated by Peter Winch takes off from one interpretation of Wittgenstein and holds that we understand any form of life when we know the rules of that particular game. Again, a Searleian approach to speech acts represents them by the rules that constitute them. Again, Chomsky's model of syntax shows how what on the surface appears complex behavior can be the

outcome of the recursive application of a limited number of simple rules. Again, contemporary cognitive science tells us that in acting humans are following "scripts" laying out the basic rules for an activity. And so on; other twentieth and twenty-first century tendencies could be cited, such as the axiom systems of formal logic and the instructions which constitute the activities of computers.

Working in parallel to these diverse projects, argumentation theorists may readily propose that arguing, too, is constituted through rules. The theory of argument should proceed by articulating those rules.

But is this so? Is rule-following the general shape of account we should be giving about arguing? Most of the above rule-following accounts have been criticized, and undoubtedly some of the criticisms bear against an account of rule-following in arguing as well. In this paper, however, I want to explore the very abstract question about the ruliness and possible unruliness of arguing using a very concrete, empirical method, by examining the shape of account arguers themselves give when they talk about their own activity.

Although arguers may be wrong, even fundamentally deluded or lying about what they are doing, there are nevertheless good reasons to take what they say about their activities, in their activities, as *presumptively* correct. The ultimate desiderata for an account of any shape, for any model, representational scheme or explanatory mode, are what have been termed "problem solving validity" and "conventional validity" (van Eemeren et al. 1993). That is, the account of argumentation must elucidate how arguing does some work, and further the account must be acceptable to the community of arguers. Now, the accounts of argument actually put forward by arguers in their arguing – the "native" theories of argument, of whatever shape – presumably are offered as attempts to get arguing to do its job, better; they are furthermore already "intersubjectively" accepted by them (or some of them). So "native" accounts of arguing meet the two desiderata, and are *one* good place to start building more sophisticated theoretical accounts (see also Craig, 1996, 1999).

The "natives" I will be studying here are participants in the closing arguments of trials in the United States. Although I do not follow authors such as Toulmin and perhaps Perelman in taking legal argument as the *paradigm* for argumentation generally, there still can be no doubt that (a) trial "natives" are arguing, and (b) that they're arguing in a sophisticated fashion. As to (a), the practice I will focus on – the trial advocates' final address to the jury – is variously called "closing argument, final argument, jury argument" or even just "argument," and standard

training manuals urge participants to "*argue*!" (Mauet 1996, p. 367), leaving little doubt that much of what is happening in this context is relevant to argumentation theory. As to (b), participants in closing arguments are trained and experienced professionals, inheriting a long tradition of practice, facing complex situations and with strong incentives to perform well; all of which assure us that what is happening in this context is worthy of attention.

Closing argument practice may furthermore provide a good window onto the specific question I'm asking here, about participants' own accounts of their activities. Legal arguers not only are likely to argue *well,* they are likely to argue quite *self-consciously* – to be quite *articulate* about what they're doing, thematizing matters that might in more relaxed contexts ordinarily remain implicit. This is in part because of the professionalism of the activity, which renders practitioners more self-aware, but even more because of its adversariality. Practitioners are likely to become very articulate when they can accuse their opponents of failing to perform correctly, and in such accusations they will be pushed to give an account of what went wrong (see also Philipsen 1992). And finally, in legal contexts there are judges – indeed, an entire array of trial and appellate judges – who are empowered to announce what ought to be done. For all these reasons, we can expect participants in closing argument to give us relatively extensive accounts of what they are doing.

Finally, participants in closing arguments are likely to be sympathetic to giving an account of their practice in terms of rules. Lawyers are used to thinking in terms of laws, viz., rules for all sorts of activities, including rules for arguments. If we find that even in closing arguments there are things going on that aren't conceived of as following (or breaking) rules, then it is likely that arguing in other, less rule-oriented, contexts is at least that unruly, too.

So I am going to ask: is arguing well in closing arguments fundamentally a matter of following rules? – is rule-following the shape of account we should be giving? Or is closing argument unruly – and if so, how is its normative orderliness achieved, even in the face of disagreement? And I'm going to answer these questions in a preliminary fashion by examining the participants' own views of the ruliness and unruliness of closing arguments in U.S. trials.

1. *Rules for closing arguments.*

Courts (and in some cases, legislatures) do promulgate rules governing various trial procedures. Notably, these rules give almost no coverage to advocates'

closing arguments – in contrast, say, to their more detailed treatments of what can be said by witnesses during the trial proper. The U.S. Federal Rules of Criminal Procedure, for example, specify only that the prosecutor speaks first, the defense counsel second, and the prosecutor last; nothing else is said about the process or content of closing argument (Rule 29.1). This lack of promulgated rules is not a serious blow to an account of closing argument as rule-following, however, since in a common law system rules can emerge incrementally through decisions on individual cases, as opposed to being announced by a central authority. And indeed, there are many pronouncements about closing arguments made by judges considering appeals based on alleged irregularities of closing argument procedures. Legal scholars (senior practitioners, law professors and students, and judges) summarizing the case law regularly produce lists like the following:
(1)
General Rules Governing Closing Arguments . . .
Several forms of conduct are prohibited in closing argument: . . .
Providing Improper Statements of the Law. . . .
Attacking the Law or the Court's Rulings. . . .
Misstating the Evidence. . . .
[Personally] Vouching for [the truthfulness of] Witnesses. . . .
Stating Personal Beliefs. . . .

Improperly Exciting Prejudice, Passion, or Sympathy. Inflammatory language is improper and may be grounds for mistrial. Avoid any derogatory remarks about opposing counsel or the opposing party, or improper stories or descriptions designed to provoke sympathy for the client or prejudice against the opponent. Along the same lines, arguing an impermissible inference is improper by, for example, implying that the defendant is wealthy or has insurance coverage and so can afford the judgment. Also beware "conscience of the community" arguments, appealing to policy objectives divorced from the law or the facts of the case.

Advocating the Golden Rule. In closing argument, do not suggest that the jurors put themselves in the place of one of the parties. A Golden Rule argument is rarely expressed as "do unto others as you would have them do unto you." If it were that simple, no one would ever violate the rule against such arguments. You must avoid implying the Golden Rule, by asking the jury to put itself somehow in the shoes of a party. . . .

Asking the Jury to “Send a Message” to the Defendant When Punitive Damages Are Not an Issue in the Case. . . .
Accusing Defendants of “Hiding the Ball” or Withholding Evidence. . . .
Contrasting the Wealth of the Defendant and the Poverty of the Plaintiff. . . .
Appealing to the “Conscience of the Community.” . . .
Making the “Us Against Them” Argument. . . .
Injecting the Plaintiff’s Attorney’s Personal Experience. . . .
Encouraging “Comparative Awards.” . . .
Justifying a Large Award With the Promise of Judicial Remittitur. . . . (Ronzetti & Humphries 2003; emphasis added).

These lists, often like this one explicitly identified as sets of “rules,” vary in details, but have similar general outlines and share many specific items (see the Appendix for an overview of the material).

Now, at least some of the entries of list (1) appear without controversy to be rules for closing argument. Consider the prohibition against Golden Rule arguments, the seventh item above, and one that appears on most lists. Advocates may not ask jurors to put themselves into the position of one of the parties, in considering (for example) how much money they themselves would want as compensation for an injury. In this item, a relatively well-defined sort of talk is being given a name by closing argument “natives” and is being acknowledged as something mutually known to be forbidden. In other words, this item looks like a rule for argument.
Furthermore, it acts like a rule; when participants deploy it to solve closing argument problems, they make the intuitively familiar moves of rule-based reasoning. They begin by stating and perhaps briefly justifying the applicable rule as something already apparent to all, as for example:
(2) What every lawyer should know is that a plea to the jury that they “should put themselves in the shoes of the plaintiff and do unto him as they would have done unto them under similar circumstances … (is) improper because it encourages the jury to depart from neutrality and to decide the case on the basis of personal interest and bias rather than on the evidence.” The use of such a “Golden Rule” argument so taints a verdict as to be grounds for a new trial (*Loose v. Offshore Navigation*, p. 496; citations omitted).

They may go on to interpret the rule, either to explicitize it further or to establish exceptions to it:
(3) McNely also contends that the district court permitted defense counsel to

engage in an impermissible "golden rule" argument at trial. McNely charges that defense counsel engaged in a prohibited golden rule argument by inviting the jury to put itself in the defendants' position when considering McNely's alleged work place misconduct and evaluating whether he was terminated because of his disability. However, an impermissible golden rule argument is an argument "in which the jury is exhorted to place itself in a party's shoes with respect to damages." As in *Burrage*, "in this case the argument complained of was not in any way directed to the question of damages; rather it related only to the reasonableness of appellee's actions." Accordingly, the argument was not impermissible (*McNely v. Ocala Star-Banner,* p. 1071; citations omitted).

And finally, they must also interpret the situation presented by the trial, comparing the actual closing argument talk with the "Golden Rule" talk prohibited by the rule:

(4) Defendant objects to the following comments made during the prosecutor's closing argument: "Does he make substantial income from this venture? When you left your house this morning, did you leave $ 23,000 on the bed? Did you leave $ 2,500 in the headboard of your bed? Did you leave $ 500 in the kitchen drawer? Did you leave $ 26,000 in your apartment when you left this morning?" . . . Neither did the government invoke the "golden rule" argument by encouraging the jury to depart from "neutrality and to decide the case on the basis of personal interest and bias rather than on the evidence" and compare their behavior to that of the defendant. Instead, the prosecutor simply called on the jury to employ its "collective common sense" in evaluating the evidence and to draw reasonable inferences therefrom. Id. at 5. (*U.S. v. Abreu*, p. 1470; citations omitted).

The Rule against the Golden Rule looks like a rule, and acts like a rule; it is a rule. Good closing arguments are thus in part a matter of following rules.

2. *Unruly closing argument.*

Still, there are reasons to be suspicious whether everything in closing argument is governed by rules like the rule against the Golden Rule.

Notice, first, that the rule list in (1) is predominantly negative (see also Kirk & Sylvester 1997 on this point). These are not rules constituting what good closing argument is; these are rules carving out specific forms of badness. Participants and commentators apparently are able to practice and recognize good arguing, but are unable to capture it with the exactness that they can specify what is bad**[i]**.

Notice, again, the rather mixed-up character of the list in (1), typical of such lists generally. It resembles Borges' Chinese Encyclopedia in jumbling highly specific prohibitions with more sprawling proscriptions. The sixth item on the list, what is often called the "rule" against inflaming passion and prejudice, is a good example of the sprawl. In this item, participants seem to be articulating their sense that what argumentation theory calls fallacies – *all* the fallacies – should be avoided during closing arguments. That is pretty broad coverage for a single rule. But "native" attempts to define the contours of this "rule" more narrowly lead quickly to circularities or worse. In (1), for example, "improperly" exciting prejudice is forbidden. What is "improper"? "Improper stories" are improper, as are "impermissible inferences." A U.S. Supreme Court is often quoted in this context, making a similarly tautological pronouncement: the advocate "may prosecute with earnestness and vigor – indeed, he should do so. But, while he may strike hard blows, he is not at liberty to strike foul ones. It is as much his duty to refrain from improper methods calculated to produce a wrongful conviction as it is to use every legitimate means to bring about a just one" (*Berger*, p. 88). "Foul blows," of course, are by definition what one ought not to strike, while "legitimate means" of course may be pursued. And worse than circularities are contradictions. In another commonly quoted phrase, advocates are permitted at times to make arguments that are "illogical, unreasonable, or even absurd" (Stein, 2005, p. 1-50, 51; Smith 1992, p. 2.12; Lagarias 1989, 1.12). If these are "legitimate," what then is "improper" and "impermissible"?

Given this sort of indeterminacy, it is not surprising to find that courts and commentators have themselves noticed the problems with the standard "rule" lists. They acknowledge that determining impropriety is not an "exact science;" the doctrine is "extraordinarily complex," and courts are "perpetually divided" over it (Lessinger 1997, p. 780; Spiegelman 1999, p. 133; Montz 2001, p. 69). "The law surrounding closing argument," one admits, "generally lacks specific rules and is not so technical as other bodies of law" (Stein 2005, p. 1-5). Trying to put this situation in a cheerful light, some describe how in closing arguments advocates are "released" from the "highly regulated process" that confines them during the rest of the trial (Nidiry 1996, p. 1306). Another quotes with approval from an opinion which is confident that "though there can be no detailed handbook rules, … everyone, including the trial judge, knows the limits beyond which a lawyer should not trespass" (Lagarias 1989, 36). In more negative terms, commentators complain that the "rules" of closing argument give advocates "no

clear map," and that the "rule" against passion and prejudice in particular is a "broad catch-all without any true definition" (Kirk & Sylvester 1997, p. 326; Headley 2004, p. 806).
The prohibition against passion and prejudice thus appears to be one significant example of the way in which closing argument cannot be reduced to rules. But if we cannot talk about closing argument (only) as rule-following, how are we to talk about it? For I don't think we should rest with cheerful but empty assertions that good arguing is *just* a matter of contextual judgment or an exercise of some inarticulatable prudence (and so on). Every *argumentative* event may be unique, but there are presumably some reasons why most are orderly; indeed, some reason for identifying them as argumentative events at all. Trial "natives" appear able routinely to determine when some talk is an improper appeal to passion and prejudice. How do they manage to do this? What shape of account do they give of their practice?

Examining the opinions of judges struggling with this particular issue and the associated scholarly commentary, we can observe that though unruly, the participants' understanding of passion and prejudice is not disorderly. Analysis of whether some specific closing argument talk should be criticized as appealing to passion or prejudice regularly proceeds in three steps:
(a) acknowledgment of the responsibility and power of a participant in the transaction to manage the arguing;
(b) articulation of the overall goals that participant is responsible for achieving; and
(c) partial articulation of some of the situational factors that participant should take into account in evaluating the propriety of the arguing.

Consider the following examples, drawn from a well-known legal encyclopedia and from an appellate opinion:
(5) Matters related to the closing argument of counsel, such as the extent of allowable comment thereto and the allowance of rebuttal arguments, rest largely in the discretion of the court. Generally speaking, counsel must restrict his or her argument to the issues of the case, the applicable law, pertinent evidence, and such reasonable inferences and deductions as may be drawn therefrom. The introduction of purely emotional elements into the jury's deliberations by closing arguments is prohibited conduct.… Within the foregoing limits, a district court is entitled to give attorneys wide latitude in formulating their arguments (*Corpus*

Juris Secundum, Federal Civil Procedure §943).
(6) The denial of a new trial on the issue of damages is reviewed for abuse of discretion.… No doubt, final arguments must be forceful. And, generally, counsel are allowed a "reasonable latitude" in making them. "When a closing argument is challenged for impropriety or error, the entire argument should be reviewed within the context of the court's rulings on objection, the jury charge, and any corrective measures applied by the trial court."… [But] consistent with plain error review, we must reverse when necessary to preserve "substantial justice". In sum, in order to serve "the interests of justice", we must abandon our deference for the district court's decision.

Obviously, awards influenced by passion and prejudice are the antithesis of a fair trial. This case was fertile ground for such bias. By its very nature, it was extremely emotional. Indeed, part of the damages involved "emotional distress". But, this did not permit appeals to emotion – quite the contrary. In cases of this type, counsel must be unusually vigilant and take the greatest care to avoid and prevent such appeals, in order to keep the verdict from being infected by passion and prejudice. Unfortunately, the Whiteheads' counsel did just the opposite. Our close and repeated review of the Whiteheads' closing argument convinces us that it caused the verdict to be so influenced.
First, the Whiteheads' counsel made statements that appealed to local bias. On numerous occasions.… This repeated emphasis on Kmart being a national, not local, corporation was exacerbated by counsel's shameless refusal to abide by the district court's sustaining Kmart's objections to counsel's comments concerning [these arguments].…Counsel made other highly prejudicial statements during closing argument.… Of course, we need not find that each statement, taken individually, was so improper as to warrant a new trial. Rather, taken as a whole, these comments prejudiced the jury's findings with respect to damages.… (*Whitehead v. Food Max*, p. 276-77).
Each of these examples starts by assigning to the trial judge primary responsibility for determining whether or not some talk constituted an impermissible appeal to passion or prejudice; even the appellate court which is about to overturn the judge's decision acknowledges his discretion, assigning itself the responsibility to reverse only if that discretion was abused.

Each of these proceeds by noting multiple and indeed competing principles regulating the trial judge's discretion. On one hand, advocates should have room

to argue vigorously—"wide latitude," to make "forceful" arguments. On the other hand, the trial must be "fair," and the arguments "restricted" to the issues and evidence. The fact that the two examples order these principles oppositely suggests that neither trumps the other; it's equally valid to say that "closing argument should be vigorous, but fair," as it is to say that "the argument should be restrained, yet forceful."

Each of these finally notes some of the aspects of the situation that need to be considered by the judge in determining the appropriate balance between fairness and zeal for a particular case. Degree of emotionality versus reliance on issues, evidence and inferences is mentioned in (5), while (6) notes the number of passionate statements, their variety, and the way they continued despite warnings. Even together, these factors don't constitute a complete list; other participants note the importance of the advocate's intent, which party (prosecution or defense) is making the appeal, whether the appeal was neutralized by a reply in kind, the relationship of the appeal to the evidence, and the strength of the rest of the case, among other things.

Overall, if I were to give this shape of account a name, I would call it "good arguing as practical reasoning." Contrast it with the idea that normative orderliness in arguing is achieved through following rules:

First, a rule is established before to the transactions in which it will be applied. And anyone, inside or outside of a transaction, is equally well positioned to say whether a rule is being followed. Rule-based argumentative orderliness is thus independent of any specific argumentative transaction. By contrast, practical reasoning occurs only from a position within a transaction. Indeed, the first step in practical reasoning as sketched above is to determine "who I am" – what responsibilities and powers this "I" has in this transaction**[ii]**. In this approach, orderliness in argument is achieved only *within* a transaction, through the activities of the participants themselves.

Again, a rule points activity in one direction. Although rules may conflict, and have exceptions, any given rule must be relatively univocal – otherwise it wouldn't qualify as a rule. Ideally, therefore, application of a rule to a situation will produce a single clear answer. Practical reasoning, by contrast, points the participant towards multiple and competing goals. This is true for closing arguments – with goals of both fairness and zeal – and I believe more generally. As Karen Tracy has put it, communication is *dilemmatic*, pulling participants in two (or more) directions (Tracy 1997). This means that generally there is not

going to be any one good way to argue, but rather multiple defensible choices which weigh the goals against each other.

Finally, a rule sets the aspects of the situation that are relevant to determining whether the rule is being followed. There is certainly room for free play in interpreting the arguing in order to compare it with what the rule allows or prohibits, but the play is constrained by the rule. By contrast, practical reasoning is relatively unconstrained. The factors articulated by a practical reasoning account of arguing direct the reasoner's attention to certain aspects of the situation, but the factor list never pretends to be complete and can expand to attend to novel or previously invisible aspects of the situation, as they appear. As Cass Sunstein has put it, factor lists are "specific but nonexhaustive," allowing the users to be attentive "to (much) of the whole situation," however it happens to turn out (1996, pp. 143-44).

3. *Conclusion.*

What can we learn from the "natives" of closing argument about the shape of the accounts we should be giving of argumentative orderliness generally?

Participants in closing arguments do treat some aspects of their activity as a matter of following rules. If we were to adopt this shape of account to construct a more general theory of argumentation, we would explain that argumentative transactions are orderly because participants know the rules, interpret the rules, and interpret the situations to see if they meet the rules. The task for argumentation theorists would then be to articulate more precisely the rules, systematize, justify and critique them.

But, as I have tried to show, much of closing argument practice appears to be irreducible to rules. Instead, participants in closing arguments treat their activity as a matter for practical reasoning. If we adopt this shape of account to construct a more general theory of argumentation, we would explain that argumentative transactions are orderly because participants figure out their responsibilities, recognize dilemmatic goals, and sort though the factors they need to consider. The task for argumentation theorists is then to articulate more precisely the practical reasoning involved in these three tasks, systematizing, justifying and critiquing this reasoning.

If we do adopt accounts of the second shape, admittedly we will be taking argument as unruly. Still, we will be able to see how arguers achieve some order in their disagreements, and in particular, how they and we can make the judgments of good and bad that we want to make.

Appendix: Lists of "Rules" for Closing Argument

Some of the common items appearing on closing argument prohibition lists:
A. Don't misstate the law.
B. Don't misstate the evidence.
C. Don't mention facts not in evidence.
D. Don't comment on privileged matters (e.g., on a criminal defendant's failure to testify).
E. Don't vouch for the credibility of witnesses.
F. Don't state personal beliefs about the case.
G. Don't appeal to passion and prejudice.
H. Don't make personal attacks.
I. Don't make "Golden Rule" arguments.
J. Don't mention insurance (when arguing about damages in a civil case).
K. Don't mention the wealth or poverty of the parties (when arguing about damages in a civil case).

Commentators and the items they discuss;
Ahlens (1994): A, B, D, F, G, H.
Benner & Carlson (2001): A, B, C, D, E, F, G, H, I, J.
Cargill (1991): C, D, F, G, I.
Carney (1997): A, B, C, E, F, G, H, I, J, K.
Headley (2004): C, G, I, J.
Kirk & Sylvester (1997): C, G, H, I, J.
Lagarias (1989): A, B, C, F, G, I, J, K.
Montz (2001): A, E, F, H, I.
Ronzetti & Humphreys (2003): A, B, E, F, G, I, K.
Smith (1992): B, C, E, F, I, J, K.
Stein (2005): A, B, C, E, F, G, H, I, J.
Sullivan (1998): C, D, E, F, G, H, I.
Tierney (2003): C, F, G, H, I, K.
Tobin (1995): D, F, G, H.

NOTES
[i] Further evidence of how participants' understanding of good arguing is prior to their articulation of any rules for it is suggested by the way that new prohibitions can emerge and be justified. For example, some courts and commentators have debated a new rule against invoking religion in closing

arguments (Brooks 1999; Henson 2001; Miller & Bornstein 2005). Advocates, judges and commentators are able to justify and attack this proto-rule not on the basis of other rules, but on the grounds of some understanding of good closing argument that precedes all prohibitions. Indeed, in (2) there is a hint that even well-established rules still need justifying in terms of some prior understanding. What is the shape of that understanding?

[ii] All responsibilities for managing argumentative talk need not fall on a single participant. In the trial setting, for example, the judge has discretion to oversee the entire transaction, but the appellate court can overturn decisions that are an "abuse of discretion," advocates are responsible for their own activities to their clients and to the court system, and legal commentators take the license to pass judgment on all.

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ISSA Proceedings 2006 – "Yucca Mountain Will Become Unhappy And Angry" : Culture, Metaphor, and Argument

"Yucca Mountain Will Become Unhappy And Angry" – Southern Paiute Edward Smith **[i]**

Argumentation is a cultural phenomenon. It is a way of thinking and speaking that can vary slightly or vastly between different national, ethnic, regional, gendered, or racial cultures. George Kennedy's (1998) examination of the rhetorical traditions of a variety of cultures provides support for the argument that the Western Greco-Roman tradition of argumentation that serves as the foundation for most American and European theories of argumentation is not a culturally-universal tradition (see also, Combs, 2004a). An increasing corpus of literature supports this thesis by showing both the similarities and differences in argumentation across cultures, most often defining culture as national culture**[ii]** (Combs, 2004a; Combs, 2004b; Becker, 1986; Dolina & Cecchetto, 1998; Ellis & Maoz, 2002; Endres, 2002; Garrett, 1993; Garrett, 1997; Lee & Campbell, 1994; Liu, 1999; McLaurin, 1995; Walker, 1987; Warnick & Manusov, 2000). Indeed, the

diversity in argumentation across cultures can be categorized into variations of the form (preferred reasoning forms), function (goals of engaging in argumentation), and evaluation of argument (how ought we to judge a "good" argument) (Endres, 2002). However, the field of argumentation still focuses mostly on the Western Greco-Roman argumentation tradition. When non-western cultures are considered, they are often evaluated based in according to the Western tradition of argument and are sometimes considered to be cultures without an argument tradition. Littlefield and Ball (2004) concur stating, "There is a certain presumption in our acceptance of Greco-Roman forms of argumentation as proper, intellectual, even historical. But every society must have accepted forms of argumentation if its members are to solve conflict" (p. 99). The key is recognition that the Western tradition is not the only way of arguing and understanding the world. One goal of scholarship that explores the connection between culture and argument is to better understand the forms, functions, and evaluations of argument as understood and used by members of particular cultures.

Just as important as a focus on argumentation theory and practice in particular cultures is the study of cross-cultural argumentation in particular issues of controversy. In other words, what happens in the interaction of two or more argumentative traditions? In addition to showing how the forms, functions, and evaluations of argument differ across cultures, we must also turn our attention to how the differences and similarities in argumentation traditions play out in public debate and controversy (see Dolina & Cecchetto, 1998; Ellis and Maoz, 2002; Liu, 1999; Walker, 1987). This essay closely examines the arguments in a scientific and environmental controversy over the Yucca Mountain nuclear waste site, the future site of the first permanent nuclear waste repository in the United States. Though there are multiple participants in the controversy, this essay focuses on the arguments of American Indians from the Western Shoshone, Southern Paiute, and Owens Valley Paiute and Shoshone in a situation that demands intercultural communication with non-Indian audiences**[iii]**. By examining the arguments of these American Indian tribal members in a public hearing session about the Yucca Mountain site, I reveal the forms of argument used by tribal members in this controversy, show how the European-American Western tradition of argumentation interprets these arguments, and examine how these arguments circulate in the Yucca Mountain controversy.

Interestingly, though some American Indian forms of argument can be classified

and discussed under the rubric of Western argumentation theory, such characterizations do not tell the entire story of argumentation in American Indian cultures. Attending to role of history, values, worldview, and ritual in American Indian cultures provides a rich understanding of American Indian arguments in an intercultural controversy. For example, American Indian arguers often referred to Yucca Mountain as having living, human characteristics, which can be considered a form of prosopopoeia or of metaphor. Further investigation of the values, spirituality, and worldview of the tribes, however, discloses that what a Western argumentation theorist might classify as prosopopoeia is likely not seen by American Indian arguers as such, but is reflective of a worldview that assumes that mountains speak and feel. This difference in understanding has significant implications for the force of American Indian arguments and the outcome of the controversy.

Because this essay looks at a case of intercultural controversy as opposed to a case of argumentation within a particular culture, this finding has significant implications for the intersection of values, culture, and argumentation in controversy. Moreover, this essay contributes to the scholarly conversation with an improved understanding of American Indian forms, functions, and evaluations of argument, and the importance of considering the intersection of differing cultured ways of arguing in public argumentation over issues of controversy.
This essay begins with an examination of American Indian forms, functions, and evaluations of argumentation in general. This examination includes scholarship focused on individual American Indian nations and on American Indians as a whole. In this section, I identify some of the problems with current understandings of American Indian argument. Next, I investigate the particular case of American Indian arguments in the Yucca Mountain controversy as a way to show specific ways of arguing by the Western Shoshone, Southern Paiute, and Owens Valley Paiute and Shoshone, the difficulty of characterizing these arguments with Western theory, and the implications of this on the controversy. The paper concludes with implications and a call for further research.

1. *American Indian Argumentation*
Examination of the communication patterns of American Indian cultures is a complicated area of study for a couple of reasons. First, though American Indians are often viewed as a distinct culture, there are over 500 tribal nations in the United States each with their own systems of thought, language, and culture.

Scholars, therefore, ought to be careful not to generalize the communicative patterns of one or a few American Indian nations to all American Indians in the United States. However, to add to the complexity, there exists a pan-Indian culture that is a result of the interaction and collaboration of American Indians from various tribal nations throughout the US. This pan-Indian culture often focuses on similarities across many tribes such as the tendency for American Indian cultures to have land-based spirituality. Pan-Indian communication may be expressed through Powwows, the American Indian Movement, and other organizations that bring together Indians from all nations. This reminds us that many American Indians are simultaneously negotiating their identities as members of their tribal nation, members of the "Native American culture," and members of the United States, not to mention fighting the perceived and often stereotypical identities ascribed by non-Indians. This essay focuses on the comments made by members of particular American Indian nations, but also recognizes the similarities in the types of arguments used across these nations. By no means does this essay attempt to lay out a comprehensive characterization of the forms, functions, and evaluations of argumentation for all American Indians. Instead, the analysis in this essay adds to out understanding of arguments by self-identified members of American Indian nations in a context of cross-cultural communication at a public hearing. It also adds to our understanding of the pastiche of the discourse of Native Americans.

Secondly, most of the research on American Indian rhetoric and argumentation considers published speeches that were primarily directed to a non-Indian audience and therefore invoked non-Indian, primarily western white, values and rhetoric (Kennedy, 1998). Therefore, most of the analyzed oratory of American Indians is intercultural in nature. This is in line with my call for attention to intercultural controversy and the role of cultured argumentation in such controversies. However, it does not recognize the non-western arguers are often forced or choose to assume western modes of arguing (Liu, 1999). In the case of American Indians, Richard Morris (1997) states that they are always judged by dominant standards such that they are "forever caught in a deadly double-bind: she can participate fully only to the extent that she acquiesces to the requirement that she be other than who she is" (p. 167) Whatever results scholars come up with in studying American Indian argumentation have to be seen in light of the dynamic nature of culture in general. American Indian cultures are continually developing, as are all living cultures, and this development is in relation to contact with non-Indians.

Though little work has been done specifically on argumentation in American Indian cultures, we can glean a contemporary understanding of argumentation from the variety of materials that focus on American Indian communication patterns. Some of the patterns include value placed on the ethos of the speaker in many American Indian cultures, (Arnold, 1997; Kennedy, 1998; Woods, 2001), listening in the Blackfeet culture (Carbaugh, 1999), razzing as a form of ritualized humor in many American Indian cultures (Pratt, 1998), the use of silence in many American Indian cultures (Clair, 1997), abduction/dissociation in the Navajo culture (Scheutz, 2003), the role of metaphor in many American Indian cultures (Clements,2002; German, 1997 Kennedy, 1998), factionalism in the Jemez Pueblo (Littlefield and Ball, 2004), and collaborative approaches to decision making among many American Indian cultures (Runningwolf and Richard, 2003). Moreover, Randall Lake (1983, 1986, 1991, 1997) shows in several essays that American Indian social movement rhetoric and American Indian identity must be understood in relation to the cultures, histories, and values of the American Indian nations. Each of these patterns can be linked to the forms, functions, and evaluations of argument. Moreover, scholars link each of these patterns to the cultural histories, practices, and values of particular tribes or American Indians in general. Despite this growing corpus of literature on communicative patterns of American Indian cultures, further research that specifically examines argumentation patterns of American Indian cultures is necessary.

Beyond more research into the forms, functions, evaluation of arguments by American Indian cultures, we must also look at argumentation in issues of controversy across cultures. While it is important to understand the patterns of communication within a culture, globalization both mandates cross-cultural communication and pushes Western systems of thought into non-western cultures (whether welcome or not). So, understanding the unique forms, functions, and evaluation of arguments in a particular culture is just a starting point for an examination of intercultural argumentation. This study raises many questions. Is the western tradition of argument sufficient to understand intercultural argument? Is there a possibility of argumentation across cultural styles or do members of "the nonwestern world prefer to draw from *Western* discursive resources and to frame, formulate, and defend their positions in *Western*, rather than their own native terms" (Liu, 1999, p. 302). Finally, how does the use of varied cultural argumentation practices affect the outcomes of controversies?

2. *Native American Argumentation in Yucca Mountain controversy*

Yucca Mountain lies on land that is part of the original land-base of the Shoshone and Paiute Indians who, before Caucasian contact, occupied the Great Basin region since “time immemorial” according to the Shoshones (Harney, 1995). The Western Shoshone, the Southern Paiute, and Owens Valley Shoshone and Paiute tribes claim spiritual and traditional connections to Yucca Mountain. Though there is little pre-1859 archaeological data on the various tribal groups such as the Western Shoshone, there is data to suggest that there have been dwellers in the Great Basin for over 12,000 years (Pritzker, 2000). The surrounding region and Yucca Mountain are claimed by the Western Shoshone under 1863 Ruby Valley Treaty of Peace and Friendship. Some members of these tribes call Yucca Mountain “serpent swimming west” because of the belief that the mountain is a snake spirit. Corbin Harney (1995), a Western Shoshone spiritual leader, states, Yucca Mountain lies asleep like a snake. When you walk on top of the mountain, it feels like you are walking on the dried snakeskin. Someday when we wake that snake up, we will have to sit down and talk to that snake. It will get mad and rip open. When it awakens, we will all go to sleep. With his tail, that snake will move the mountain, rip it open, and the poison will come out on the surface. Long ago, the Indians talked about it (p. 154).
This is but one example of an argument made against the Yucca Mountain site by an American Indian, in this case a Western Shoshone.

In order to understand American Indian arguments in the Yucca Mountain site authorization controversy, I examined public hearing statements and comments submitted by self-identified Americans Indians during the initial and supplemental public comment periods between May-December 2001. Comments took the form of a statement at one of the 66 public hearings that the DOE held in all counties of Nevada as well as Inyo county in California, a statement to a court reporter at the Yucca Mountain Information Center, an e-mail message, or a written comment sent via post. From a corpus of over 5000 public comments, there were 52 comment statements made by 33 self-identified Americans Indians from 26 tribes and two organizations (Western Shoshone National Council and Consolidated Group of Tribes and Organizations).**[iv]** Although this may be a small number of comments compared to the total number, keep in mind that American Indian tribal populations are smaller than the rest of the population of the United States that submitted comments, and that many of the 52 comments and statements were issued from tribal councils or governments that speak for larger numbers of people. The comments contain official tribal governmental speakers, tribal council

resolutions, and personal statements by tribal members.

All but two of the 51 American Indian public hearing statements and public comments express opposition to the site. Of the two that are not opposed to the site, one is a letter from the chair of the Cocopah Indian Tribe in Arizona and Mexico asking a question about potential effects of radioactive waste disposal on water and air quality and the potential for accidental releases of radiation (Cordova, September 7, 2001). The second is a statement from a member of the Mdewakanton Sioux from the Prairie Island reservation in Minnesota that is in favor of the Yucca Mountain site because the site would remove waste from the nuclear power plant that lies right next to the Prairie Island reservation, about 600 yards away. The site has reached its storage capacity and the Prairie Island tribal council claims that radioactive release from the temporary site storage endangers the Prairie Island tribe (U.S. Department of Energy, October 12, 2001b).

A close reading of self-identified American Indian hearing statements reveals prominent argument themes (i.e., the land, spirituality) and argument forms (i.e., narrative, prosopopoeia) that distinguish American Indian forms, functions, and evaluations of argument. In line with Perelman and Olbrechts-Tyteca's (1969) contention that, "values enter, at some stage or other, into every argument," the public hearing arguments also show the importance of values and cultural history in the arguments made at the hearings (p. 75, see also Sillars, 1995; Sillars and Ganer, 1982; Walker & Sillars, 1990). I describe two examples of arguments in the public hearings to better our understanding of American Indian forms of argument in relation to western forms of argument and the role of these arguments in controversy.

3. *Figurative Arguments or Literal Arguments?*

Forms of metaphor and prosopopoeia were used heavily in the public hearing statements by members of most of the tribes. This is not surprising because many scholars have noted the prominence of figurative language in American Indian rhetoric (Clements, 2002; German, 1997; Kennedy, 1998). Indeed, William Clements (2002) asserts "By a large margin, the feature of Native American speech most frequently mentioned by commentators has been the use of metaphor and other tropes of language" (p. 79). Though the use of figurative language, namely metaphor, is widely associated with American Indian cultures, figurative language in oratory is often mistakenly characterized as ornamentation or serving as mnemonic devices for traditionally oral cultures (German, 1997).

However, as Kathleen German argues, figurative language for American Indian cultures is not merely ornamentation or mnemonic, but is reflective of the culture and values of the tribes. My analysis of public hearing comment confirms German's point about the link between figurative language and the cultures of many American Indians; however, I also examine how labeling these arguments as figurative or metaphorical is problematic in a context of political controversy where health and land are at stake.

In the corpus of American Indian comments in the Yucca Mountain site authorization hearings, there are many statements that express concern over putting nuclear waste in Yucca Mountain because of the effect it will have on the spirits of the plants, animals, and the mountain itself. Edward Smith of the Chemehuevi Indian Tribe (Shoshonean) states, "We believe that Yucca Mountain will become unhappy and angry if you put radioactive waste into it. The spirits living in the area will move away and eventually the land will be unable to sustain plants, animals, water, air, people, and life" (U.S. Department of Energy, October 5, 2001, p. 25). Marlene Begay, a member of the Walker River Paiute, explains the importance of protecting Mother Earth and the consequences of delinquency in this responsibility. She states, "Putting nuclear waste in the land is polluting it and will kill Mother Earth. We have only one earth and one water. Everything is related. If we poison the earth, then we are poisoning ourselves." (U.S. Department of Energy, October 12, 2001a, p. 17).

From a western perspective, these arguments would be classified as metaphor or prosopopoeia (personification). Edward Smith's statement implies that the resources of the mountain, and the mountain itself, have living characteristics. Begay, similarly, attributes human characteristics to the earth, Mother earth, and states that nuclear waste will kill her. Considering these arguments as a form of metaphorical argument allows for an interpretation from the western tradition of argument. Indeed, the western tradition, from Aristotle to Lakoff, places a high value on metaphor and one of its forms, personification. However, is it possible that these arguments are not metaphorical for the arguers? Kennedy (1998) states that "what to an English speaker seems a metaphor was to the native mind undifferentiated from reality" (p. 98). This suggests that there is another ways of interpreting this form of argument.

Though we can characterize non-western arguments using Western terminology, knowing about the culture and their values allows for a better interpretation of

the argumentation. Just as values shape all arguments, culture also affects all arguments. Charles F. Wilkinson (1991) argues that most American Indian tribes have a spiritual and physical connection to land with strong ties to environmental protection of the land. Unlike many non-Native religions in America, he writes, "the fact that humans cannot survive without the natural environment is recognized by most Indian religions, and tribes usually are responsible for protecting the ancestral territories provided them by their creator" (p. 50). From the perspective of many American Indian nations, "everything the creator made is a living entity" and "all living things existed in a state of harmony" (Kidwell, Noley &Tinker, 2001, p. 127-8). These living things have the ability to communicate with humans. Carbaugh (1999) demonstrates this form of communication in the Blackfeet culture in which birds talk and places speak, if only humans would listen. The belief that all parts of the earth are living, filled with spirits, and able to communicate is integrally linked to Western Shoshone, Southern Paiute, and Owens Valley Shoshone and Paiute forms of spirituality, in particular, and many forms of American Indian spirituality in general (Deloria, 2003; Harney, 1995; Kidwell, Noley & Tinker, 2001; Wilkinson, 1991) Spirits inhabit the land, plants, animals, sky, and water. Thus, Smith, Begay and others' arguments that the mountain will become unhappy or die as a result of nuclear waste storage are likely perceived by them as literal and not figurative. These arguments are not using metaphor or prosopopoeia, but are referring to the literal beliefs of the people who make them. Keep in mind that I do not claim this to be true of all American Indians, all Shoshone and Paiutes, or all contexts in which metaphor is employed. Indeed, there are times when metaphor is perceived and used as metaphor by members of these tribes. However, in this particular context and set of discourse, we find the use of seemingly metaphorical arguments as literal.**[v]**

Why does it matter if we call these arguments figurative or literal? This is where the issue of controversy becomes crucial. The classification of these arguments as figurative allows for their dismissal by western audiences. As Lakoff and Johnson (1980) suggest, "metaphor for most people is a device of the poetic imagination and the rhetorical flourish – a matter of extraordinary rather than ordinary language" (p. 3).**[vi]** In the case of the Yucca Mountain controversy, it is ultimately a western institution, the federal government, that decides whether or not to go forward with the project. These arguments, though making an important point that storing nuclear waste at Yucca Mountain will disturb the ecosystem, are dismissed because they are perceived as metaphorical arguments. Jessica Bacoch, Tribal Chair of the Big Pine Paiute Tribe of the Owens Valley states, "The

Paiute people regard the total ecosystem as a living entity and the spirits and beings that dwell there to this day are still meaningful to us. Many tribal people indigenous to the Yucca Mountain region have informed DOE officials that this area has special meaning and expressed opposition to the proposed Yucca Mountain project." (Bacoch, October 3, 2001). In the Secretary of Energy's recommendation of the Yucca Mountain site report published after his consideration of scientific documents and the public hearings, there is no mention of American Indian objections to the site (Abraham, 2002). This represents a negative consequence of lack of cultural understanding in cross-cultural argumentation in issues of controversy. By viewing these arguments from a western perspective as prosopopoeia or metaphor, they are stripped of the argumentative force intended by the arguers.

One potential objection to my argument is that by arguing that many American Indian cultures have land-based spiritualities and that when they say the mountain feels, they mean it literally if that I am romanticizing or falling prey to stereotypical notions of American Indians. Many scholars point out that viewing American Indians as the protectors of the earth is a stereotypical and created image. Deloria, Jr. (2003) states that American Indians are often stereotyped as "either a villainous warlike group that lurked in the darkness thirsting for the blood of innocent settlers or the calm, wise and dignified elder sitting on the mesa dispensing his wisdom in poetic aphorisms" (p. 23). However, Deloria (1992) also states that there is substantial evidence through the religion and culture of many American Indian tribes to show that they viewed the earth and everything on earth as living. This is a complicated matter. Certainly, there are dangers to stereotyping all American Indians as ecologists, especially because it views American Indians as a thing of the past. However, it is important to recognize that the passages I used in this essay (and the many other passages I am not including in the essay) are direct quotations from self-identified American Indians. It is possible that the Native Americans used these arguments to invoke this romanticized image for persuasive purposes and that they do not really believe that the mountains can experience emotions. Either way, this type of argument (metaphor or prosopopoeia) appeared very frequently in the public hearing comments and is clearly an important argument the American Indians who made them.

4. *American Indian Scientific Arguments*

Many of the arguments by American Indian tribal members in the Yucca Mountain

public hearing process concern the use of science in the Yucca Mountain hearings and controversy more generally. Most of the tribes reject the science presented by the federal government and assume that science has been manipulated to guarantee site authorization. Chad Smith, the tribal archeologist for the Fort Mojave Indian Tribe, states, “We do not accept the validity of the nearsighted scientific studies or the flawed Environmental Impact Statement process your office has attempted to impose upon the people of the State of Nevada and Indian Tribes upon whose ancestral lands this project is proposed.” (Smith, September 21, 2001, p. 1). Arguments varied and included arguments that the science is difficult to understand, arguments that challenge the scientific models, arguments that identify of geologic dangers such as volcanism, groundwater contamination, and earthquakes, and arguments that assert that site authorization is moved by politics and not science.

Though the arguments listed above about the scientific basis for the site are similar to arguments made by non-American Indian opponents to the site, American Indians who submitted comments or spoke at the hearings also made arguments about how to evaluate arguments. In response to scientific proof of the safety of the site, Calvin Meyers, chair of the Las Vegas Paiute, states that he believes in the advice of a medicine man: “I have read a long time ago and I believe this, because it came from the medicine man, that before the government or anybody else even messed with the – with radiation, they were told not to bother with it because they don’t know what to do with it. They don’t what it can do to them. They don’t know how to get rid of it” (U.S. Department of Energy, December 12, 2001). This indicates a different value of knowledge. While the tribes certainly employ scientific evidence and challenge the science that supports the Yucca Mountain project, Meyers and others also value the collective knowledge of the tribe. In his book, *Red Earth White Lies,* Vine Deloria Jr. (1997) challenges the predominance of Western scientific thought and the public’s blind acceptance of scientific fact as “truth.” His book posits an alternative to western scientific knowledge that draws from both science and traditional tribal knowledge.

Scholarship that discusses the role of science in public deliberation states that science often dominates decision-making while non-scientific, pathos-based arguments made by the public are viewed as less important (Katz & Miller, 1996; Waddell, 1990; Waddell, 1996). American Indian arguments represent an alternate perspective on knowledge that displaces the superiority of science, not eliminating it, but adding to it with other knowledge. The Department of Energy’s

justification for the site has a strict value of scientific argument. From this perspective, science and knowledge are continually advancing and progressing to meet the goals of society, just as the Yucca Mountain project, firmly rooted in science, is an end that allows us to achieve our national goals. Arguments that challenge the supremacy of science and advocate alternate evaluations of argumentation are often disregarded.

5. *Conclusion*

Members of American Indian Tribes, particularly Shoshone and Paiute peoples, who spoke at the Yucca Mountain public hearings made a variety of arguments against the site. This essay specifically focused on two types of arguments: those that claimed that the site would harm the mountain, plants and animals and those that challenged the scientific findings of the federal government. Arguments about the natural world are a form of argument that can be classified as either literal or figurative, depending on the perspective of the classifier. Nonetheless, whether they are literal or figurative, this is a form of argument unique to many American Indian nations that is related to the culture, history, and values of the tribes. Though many of the arguments about science directly challenged the scientific findings of the federal government, several arguments challenged how we evaluate scientific arguments. In this evaluation of argumentation, collective knowledge of the tribe is valued above western scientific information. Though this certainly does not describe all of the forms, functions, and evaluations of argument in all American Indian cultures, these two argumentative patterns increase our understanding of the arguments of particular cultures. However, as the example of scientific argumentation shows, these findings should not suggest that American Indians are incapable of making arguments in the Western tradition. Rather, American Indians of all tribes use a variety of argument forms, functions, and evaluations that draw from both western and tribal traditions of argumentation. In fact, because of the use of Western forms of argument in collusion with non-western forms makes it all the more tempting to use a Western standard of evaluation of the arguments. However, as I have shown, lack of consideration of other cultures forms, functions, and evaluations of argument can severely limit one’s understanding of controversy.

While this essay tells us something about American Indian forms and evaluations of argument, it is more important to examine the ways that western and non-western forms of argument interact in cross-cultural controversies. In this case,

the western tradition of argument is not always sufficient to describe the ways of arguing of other cultures and can actually have harmful implications for the non-western cultures such as dismissal of arguments. That is, because they are viewed as metaphorical, the arguments about the effects of nuclear waste on Yucca Mountain made by tribes are not considered and, in effect, the tribes' voices in the public hearings are silenced. Regarding scientific arguments, we see again that alternate understandings of the role of science and the evaluation of arguments are not considered by the federal government. In issues of controversy which will inevitably involve cross-cultural argumentation, we must recognize that viewing all forms of argument from a western perspective has a definite effect on the outcome of the controversy. In this case, voices in the controversy were silenced.

NOTES

[i] This comes from the following statement from Southern Paiute Edward Smith in public hearing testimony. "We believe that Yucca Mountain will become unhappy and angry if you put radioactive waste into it. The spirits living in the area will move away and eventually the land will be unable to sustain plants, animals, water, air, people, and life." U.S. Department of Energy, Yucca Mountain Project Comments, reporter's transcript of proceedings taken on Friday, October 5, 2001 at 2:20 p.m. at Fiesta Hotel, Las Vegas, NV, reported by Christine I. Phelps, CCR #683, available at the Yucca Mountain Information Center, 4101B Meadows Lane, Las Vegas, NV 89107, 702-295-1312, 25.

[ii] I subscribe to a broad definition of culture as a "socially constructed system of symbols, meanings, premises, and rules" which includes nationality, gender, ethnicity, and other ways of defining a culture (Philipsen, 1997). However, much of the research in cross-cultural argumentation is limited to a definition of culture as synonymous with nationality. I find this definition limiting because it denies the many other forms of culture in society and may lead to a tendency toward essentialism. This criticism is not the focus of this essay, but it is important to note that one area for further study involves expanding our definition of culture in cross-cultural argumentation scholarship.

[iii] This essay specifically focuses on the arguments made by the members of a variety of American Indian nations in the United States. In all, there were representatives from 26 tribes or bands and two organizations who spoke at the hearings. Though I sometimes categorize these arguments as American Indian arguments so as not to have to list all of the tribes and organizations, it is crucial

to remember that American Indians are not a univocal culture. There are over 500 distinct American Indian nations in the United States alone. Though there are some commonalities between these cultures, there are also significant differences. My findings then, relate to the specific tribes who spoke at these hearings, most of whom where Great Basin tribes.

[iv] These include the Moapa Band of Paiutes, Western Shoshone, Southern Paiutes, Delaware Indian, Cherokee, Prairie Island Reservation (Mdewakanton Sioux), Lone Pine Paiutes-Shoshone Tribe, Ely Shoshone Tribe, Timbisha Shoshone Tribe, White Knife Band of the Western Shoshone, Walker River Paiutes, Las Vegas Paiutes, Kaibab Paiute Tribe, the 5 Paiute Tribes of Utah (Shivwits Paiute Tribe, Cedar City Paiute Tribe, Indian Peaks Paiute Tribe, Kanosh Paiute Tribe, Koosharem Paiute Tribe), Big Pine Paiute Tribe of the Owens Valley, Colorado River Indian Tribes, Bishop Paiute Tribe, Chemehuevi Paiute Tribe, the Hopi Tribal Council, Cocopah Tribe, Yakama Nation Tribal Council, and Fort Mojave Tribe.

[v] This is consistent with my personal interactions with the Shoshone. The Shoshone with whom I have interacted confirm this difference in thinking. But, I have also encountered American Indians who do not adhere to this way of thinking that believes in the literal ability of Mountains to speak and feel.

[vi] I do not cite Lakoff and Johnson here to invoke their thesis that all people think metaphorically. Rather I cite them for their astute description of how metaphor is perceived to be an ornamental and non-literal form of speech.

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ISSA Proceedings 2006 – Obscuring The Facts: The Bush

Administration And The Politicization Of Science In The Greenhouse Debate

In an essay published in the journal *Science*, Naomi Oreskes reviewed 928 refereed essays published in scientific journals between 1993 and 2003 and found that none of the studies disagreed with the consensus position that anthropogenic climate change is occurring (Oreskes). Despite widespread agreement in the scientific community, the Bush administration asserts that climate science remains uncertain. The thesis of this essay is that the Bush administration is committed to rekindling the debate over the uncertainty of climate research in the face of the scientific consensus on the subject. The Executive branch of government has embraced a distinctly minority viewpoint in an effort to portray the debate over the nature of climate change as a case in controversy. This rhetorical strategy is an effort to keep the focus on the status of "good science" and allows the administration to advance its policy of voluntary efforts to reduce the emission of greenhouse gases in the atmosphere.

To understand the administration's public argument strategy, there is a need to understand the ways that climate arguments take place in two locations. Initially, one must have a sense of the appeals used in scientific fields by scholars who hold a distinctly minority point of view on the greenhouse question. These arguments serve as the cornerstone of the administration's call for additional support for research. The circulation of these appeals is due in part to the way the media in America reports on climate change. The longstanding commitment to the journalistic principle of balancing the reporting on controversial subjects provides the critics of global warming theory with extensive coverage in print.

1. *The "Controversy over Consensus" in Climate Research*

While media outlets in the United States continue to report that there is disagreement in the scientific community over the unprecedented rate of global warming, one finds very little proof of a genuine debate in peer reviewed scholarly research. For example, in a report released shortly after the 2004 election cycle in the United States, the Natural Resources Defense Council

indicated that a team of 300 climate researchers concluded that half of the Arctic may melt before the end of the Century This melting will be accompanied by a loss of most of the Greenland Ice Sheet and a warming in the region of 7-13 degrees F (St. Clair). This report affirmed the conclusion of the noted Intergovernmental Panel on Climate Change (IPCC) in its Third Assessment Report: "There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities. And in the light of new evidence and taking into account the remaining uncertainties, most of the observed warming over the last 50 years is likely to have been due to the increase in greenhouse gas concentrations" (Connolley). Perhaps the most convincing evidence comes from the National Science Academies of the G-8 nations, Brazil, China and India in 2005. The group concluded that the scientific understanding on climate now justifies nation states taking policy action to curtail the emission of fossil fuels.

The alleged controversy surrounding publication of Oreskes' 2004 survey on climate research highlights the strategy of obfuscation employed by climate skeptics. They are compelled to contest the scientific consensus to avoid the debate that would ensue over policy actions that might be implemented to stall the warming effect. Instead of a robust debate interrogating the economic, legal and moral implications of public policies, the skeptics continue to push the claim of uncertainty and call for the public to keep an open mind (which is translated by some into a rationale for voluntary emissions reduction strategies) on the subject of global warming.
Naomi Oreskes, a Historian at the University of California at San Diego, began her scholarly project as an effort to see if there is a disagreement between the public statements of opinion leaders in a scientific field and their research community. To test this position, she settled on looking at climate research to interrogate the nature of scientific consensus (Whipple). The review of the consensus proclamations of groups, like the IPCC, and the survey of refereed papers in the field of climate science found that the opinion leader's assertions simply affirmed the work of researchers. In fact, she did not find a *single* article in the selected group of 928 that stood in opposition to the consensus claim.

With the publication of this research, the climate skeptics weighted in quickly. She was barraged with e-mails, many of which were hostile including one that compared her to Joseph Stalin. Additionally, *Science* published a letter to the

editor from a climate scholar calling her work into question. Roger Pielke, of the Center for Science and Technology Policy Research at the University of Colorado asserted that a diversity of perspectives needed to be incorporated into the scientific debate. He points out that while there may be a consensus, that consensus is nothing more than a central tendency of opinions in the community. In such a community, there is still serious disagreement amongst competing views. To have a robust debate about the importance of the consensus more oppositional viewpoints need to be included in the dialogue (Pielke).

The viewpoint of scholars with a minority perspective is not popular in the scholarly community, but it seems to hold sway in other argument communities. At this point in the public debate, the scientific opposition seems to have sold some U.S. policymakers, and many in the general public, on the following claim: the U.S. should not act based on the current consensus which may ultimately be proven false. Alternatively, I believe that given the potentially catastrophic consequences, the U.S. government cannot wait to act in the hopes that a distinct minority may be correct.

Beyond contesting the significance of the Oreskes finding, the climate skeptics pointed to the fact that *Science* would not publish a survey, undertaken by Benny Peiser an anthropologist at John Moores University, to validate the well circulated claim that the climate research community wished to ignore or suppress alternative viewpoints (Peiser, 2005a). Peiser's research concluded that 3% of essays, 34 articles of the 1000 surveyed, rejected the consensus claim. Additionally, his work concluded that 57% of the research was neutral to the consensus position. Peiser is a well published author with a line of research that assaults the consensus claims in the scientific community (Peiser, 2005b).

In response to this "controversy" Peter Norvig, Director of Research at Google, carried out a study of his own and ultimately concurred with Oreskes. In his review of the relevant scholarship Norvig pointed out that Peiser's study included non-peer reviewed work. Peiser seemed to be asking a slightly different set of questions in his work and accessed a broader range of texts for his study. Norvig then carried out a third survey of the literature on the question of whether there is a consensus related to consequences anthropogenic warming. In his review Norvig concluded that there was a substantial amount of research that serves as the foundation of the consensus claim. Interestingly, he speculates that his own limited knowledge on the subject was due, in part, to the failure of the press to effectively cover the issue (Norvig, 2005).

The dispute surrounding the publication of Oreskes study highlights a few of the more important arguments employed by the climate skeptics in their effort to kept the point of stasis on the quality of global warming research. The opposition seems uninterested in posing questions that might move the debate over global warming from questions related to the accuracy of greenhouse models. Rhetorically, they limit themselves to a very narrow range of issues. First, they assert that skeptical climate research is mainstream research and should be evaluated alongside of the consensus viewpoint to enrich the quality of scholarship. Second, when scientific journals elect not to publish their research, the skeptics cry foul and accuse the editors of establishing a very narrow orthodoxy in the field of greenhouse research. These arguments serve as the backbone of the Bush administration's climate policy. For the Bush administration, advancing the position that the U.S. needs additional science requires some expectation that new research would not simply replicate the work of the last decade by climatologists from across the globe. The climate skeptics provide the camouflage the administration needs to sustain the commitment to improving science.

2. *Media Coverage of Climate Change*

One reason the press in the United States has failed to elaborate the scenarios outlined in the mainstream climate research is the journalism culture's commitment to balanced reporting on a subject. As a result of this tendency, newspaper and television reporters in the United States seek out opposing viewpoints on the issue of global warming before publishing a story. The result of this ethical test is that in many instances, the debate is not moved beyond the true/false exchange that inevitably devolves into an acrimonious rhetorical altercation between consensus researchers and the greenhouse skeptics.

In the case of climate research, the media often finds itself relying on fringe researchers, whose work in some cases is underwritten by the petroleum industry, when they look to present the opposing viewpoint. With a limited number of people holding the skeptical position, the same names and faces tend to be circulated in the print and mass media. When a reporter publishes an essay without the skeptics point of view, industry funded representatives demand time and space in the name of balance. The news magazines and newspapers are accused of the same intellectual narrowness that Peiser decried when *Science* decided against publishing his work.

The journalistic standard of balance is an important safeguard to ensure effective reporting in cases that involve values and option. For example, the claim that the United States should establish an immigration policy that provides amnesty for undocumented workers might require a declaration of the opposition position. That story revolves around the opinion of what should be done to resolve the problems of social services being over burdened in the states which border Mexico, undocumented workers being exploited by unscrupulous employers and the U.S. borders being vulnerable to terrorist infiltration. In such a circumstance, a reporter may provide roughly equivalent space to the competing positions.

In the case of global warming, the commitment to journalistic balance is counterproductive. Ross Gelbspan, Pulitzer Prize winning author, describes the problem:
"Granted, there are a few credentialed scientists who still claim climate change to be inconsequential. To give them their due, a reporter should learn where the weight of scientific opinion falls – and reflect that balance in his or her reporting. That would give mainstream scientists 95 percent of the story, with the skeptics getting a paragraph or two at the end. But because most reporters don't have the time, curiosity, or professionalism to check out the science, they write equivocal stories with counterpoising quotes that play directly into the hands of the oil and coal industries by keeping the public confused" (Gelbspan).

The concern, reflected in Gelbspan's two books *Boiling Point* and *The Heat is On*, is that the failed attention to the Code of Ethics has contributed to the inadequate media coverage of climate change in the United States. While media coverage of the greenhouse effect in the United States may be fair and balanced it is in no way accurate.
This position is validated by an empirical review of articles found in the newspapers of record in the United States (*New York Times, Washington Post, Los Angeles Times* and *Wall Street Journal*). Jules and Max Boykoff identified more than 3,000 articles on climate change and the greenhouse effect published between 1990 and 2002. They extracted a sample of 600 essays and found that a majority were organized to conform to the journalistic expectation of balanced reporting. The study found that more than 50% of the articles gave equal space to the claims that climate change could be the result of either fossil fuel emissions or simply natural fluctuations. Only 35% of the articles emphasized the role that emissions play in global warming while acknowledging the existence of an

opposing point of view. The study concluded that there was a divergence in media coverage in the United States from the IPCC consensus during the period between 1990 and 2002 (Boykoff).

In the face of research demonstrating extensive impacts associated with the use of fossil fuels, climate skeptics remain committed to debunking the claims of a consensus. If anthropogenic climate change is taken to be a scientific fact, industry expects to incur significant increases in operating costs to abate the emission of greenhouse gasses. The campaign against mainstream greenhouse science is intended to muddy the issue to the point that the U.S. does not get beyond the issue of what constitutes good science. In many ways, for much of the last decade the print media has unwittingly served the interest of the climate skeptics and their corporate benefactors.

The members of the skeptical community have appropriated the term junk science, widely used by the tobacco industry apologists in the 1980, when discussing global warming with journalists and media pundits. Junk Science is understood to be science used to push a political agenda. The scholarly community's refusal to publish the skeptic's line of work, for instance, is used to proof that mainstream climatologists practice "junk science." In a recent *Wall Street Journal* opinion piece, the Alfred P. Sloan Professor of Atmospheric Science at MIT Richard Lindzen stated that scholars are punished when they elected to call the "junk science" of mainstream climate researchers into question. The use of the term by an authority with Lindzen's scholarly record adds immensely to the opposition and is circulated by a variety of media outlets (Lindzen).

The allegations that "junk science" is underlying climate science research – should be of relevance to people concerned with the rhetorical devices that corporations employ to advance their interests in public argument. Of course it is in the petroleum industry's economic interest to insist that the use of their product should continue unabated (Livesey). In addition, understanding how the climate skeptics attacked consensus research is of importance to those who wish to explain the power and limitations of science in society and to policy analysts who routinely turn to the authority of "science" when negotiating the implications of public policy. While scientists can't speak with absolute certainty on this topic, scholars need to work through the issues of when scientists should speak publicly to facilitate a robust debate on remedies.

There has been anecdotal evidence to suggest there is a link between the

rhetorical strategy of the climate skeptics and the tobacco industry advocates who suggested that smoking did not have second hand impact in the 1980s and 1990s (Hertsgaard). That linkage is made clear when one looks at the scholarly research record of Dr. Frederick Seitz. He is a winner of the National Medal of Science, a former President of the National Academy of Sciences, and a retired scholar at Rockefeller University. He former consulted with R.J. Reynolds (earning in excess of $500,000) and now works to call into question the work of mainstream climatologists. Writing in his capacity of an opinion leader on global warming, Dr. Seitz accused the Clinton administration of doctoring the science and accused unscrupulous scientists of generating the exaggerated environmental threat when the IPCC 1995 report was released. This is the same Frederick Seitz who proclaimed that second hand smoking posed no health risks in the *Wall Street Journal* a decade earlier. While one cannot prove that Seitz's current work is done at the behest of the oil industry, the George Marshall Institute, of which Frederick Seitz is the emeritus chair, has been the recipient of significant contributions from ExxonMobil. Since there are limited number of high profile figures in the skeptics camp (including the noted fiction author Michael Crichton and Professor Richard Lindzen), much of the advocacy is carried out by individuals funded by the energy and automotive industry. A 1991 internal memo asserts that the goal of the greenhouse campaign is to "reposition global warming as theory rather than fact" (Vanity Fair). John Passachantado, executive director of Greenpeace USA, has gone so far as to warn oil executives "You're going to wish you were the tobacco companies once this stuff hits and people realize you were the ones who blocked [action]" (*Vanity Fair*).

The assertion that anthropogenic climate change has not been proven to be responsible for warming dove-tails neatly with the overall public argument strategy of the energy industry. Since science has failed to prove, with certainty, that man-made fossil fuel consumption is dangerous, then emitters should determine whether to bear the costs of the transition to alternative fuels. As a result, the strategy is to poke any hole in the science to allow energy users the choice to emit without suffering the consequence of government regulation. While this ploy worked for the tobacco industry, to the tune of thousands of unnecessary second hand smoking deaths, the costs could be far greater in the case of greenhouse emissions. The potential impact on the ecosystem may be catastrophic if the United States continues to use fossil fuels at a record pace year after year.

Given that science can never speak with certainty and that those on the disciplinary margin proclaim they are not given a fair chance to be published in the refereed journals, it is unlikely that any consensus will ever satisfy the scholars affiliated with petroleum interests. While one can not rule out the possibility that the current consensus on human generated climate change may be thoroughly incorrect and the science flawed, there is really no rational to support the contention that current public policy decisions in the United States should be based on the speculation that mainstream science is wrong (Mooney).

3. *The Bush Administration and Scientific Uncertainty*

Throughout the first six years of the GW Bush administration, there have been a series of conflicts related to public policy and science. Many of President Bush's major speeches and policy initiatives on a variety of scientific subjects were products of his first term. A thorough, and rather scathing, review of the administration's science policy was prepared for Representative Henry Waxman by the US House of Representatives Minority Staff in 2003 (Waxman). The report entitled "Politics and Science in the Bush Administration" chronicles a variety of subjects including: Abstinence Only Education, Arctic Natural Wildlife Reserve, Condoms, Drinking Water, Global Warming, Stem Cells, Wetlands and Workplace Safety. The report concludes that interference with science has led to misleading public statements by the President, inaccurate Congressional reports, altered and suppressed scientific reports, and the suppression of scientific dialogues. In each case chronicled in the study, industry was the beneficiary of the Bush policy decision. While the current administration is not the first to politicize and manipulate science at the behest of a pre-determined policy agenda, it is the first to allow that manipulation to permeate the entire scientific apparatus of the Federal Government.

Russell Train a former Administrator of the Environmental Protection Agency in the Nixon administration has gone so far as to claim: "There has been a tendency on the part of this administration, this White House, to distort science. And if they don't like the science, they take out that particular finding. . . I think this administration is not a conservative administration. I think it's a radical administration. It represents a radical rollback of environmental policy going back to a period many, many years ago. It's backward" (Train).

The next section of this presentation has three objectives. First, the rhetorical strategies used by President Bush when addressing global warming and the

emission of greenhouse gases will be detailed. Second, the administrations efforts to alter, distort and suppress science will be outlined. Finally, the administration's use of government appointments to champion the position of industry will be summarized.

A. *President Bush's Public Statements on Global Warming*

While there are many public appearances in which President Bush makes anecdotal statements about global warming, to this point in his Presidency, he has delivered five major addresses on the subject. The first few minutes of the June 11, 2001 address provided the framework for the administration's response on the subject: "I've just met with senior members of my administration who are working to develop an effective and science-based approach to addressing the important issues of global climate change. . . That is why I am today committing the United States of America to work within the United Nations framework and elsewhere to develop with our friends and allies and nations throughout the world an effective and science-based response to the issue of global warming" (Bush, 2001). This commitment to a science based response to climate is an appeal found in many of the speeches the President delivered on the subject. He further refined the appeal in making reference to sound science in response to the emission of greenhouse gases. In his 2002 speech announcing "The Clear Skies & Global Climate Change Initiative," President Bush introduces the concept of sound science. Without directly calling the work of scientists into question, President Bush advocates the development of sound science. This science, the result of the Administration's study, would replace the current science circulated in the greenhouse community. This speech also serves to provide a rationale for sustained economic growth to resolve the greenhouse problem. If the level of progress on reducing greenhouse emissions, set by the United States government, is insufficient when we reach the year 2012, the United States would simply increase market based incentives. For George Bush, economic growth is the solution to the warming problem (Bush, 2002).

The scientific interrogation of the Bush administration would call for further policy action a full four years after he leaves office. If the science points in the direction of change, that change would be based upon voluntary incentives. As President Bush has alluded to in the past, sound science did not serve as the basis of decision-making during the Clinton administration, thus the need for more governmental research. For free market supporters, like President Bush, the

Kyoto Protocol was not formulated based upon sound science. Rather it was a political document intended to punish the American economy at the behest of environmental activists from across the globe. The consensus claim used by climate scientists is not the result of sound science. There is a need, according to President Bush, to advance "the science of climate change." He does not use the term "junk science" or refer to the work of the climate skeptics in any of his speeches. However, President Bush affirms that the critics are correct in calling science into question. With the support of the Executive branch, the critics are emboldened to continue their assault on climate science under the guise of helping to develop the sound science that should frame public policy.

Given the incomplete nature of climate research, the President equipped himself with a ready-made answer to any scientific report calling for quick policy action. The publication of a greenhouse finding is nothing more that another piece of evidence needed in the project to construct sound climate science. The reason we can't come to quick closure on the question of global warming is that the administration finds itself in the early stages of an exhaustive program intended to improve the science The President outlines that commitment: "The United States has spent $18 billion on climate research since 1990 – three times as much as any other country, and more than Japan and all 15 nations of the EU combined. Today, I make our investment in science even greater. My administration will establish the U.S. Climate Change Research Initiative to study areas of uncertainty and identify priority areas where investments can make a difference. I'm directing my Secretary of Commerce, working with other agencies, to set priorities for additional investments in climate change research, review such investments, and to improve coordination amongst federal agencies. We will fully fund high-priority areas for climate change science over the next five years We'll also provide resources to build climate observation systems in developing countries and encourage other developed nations to match our American commitment. . . So we're creating the National Climate Change Technology Initiative to strengthen research at universities and national labs, to enhance partnerships in applied research, to develop improved technology for measuring and monitoring gross and net greenhouse gas emissions, and to fund demonstration projects for cutting-edge technologies, such as bioreactors and fuel cells" (Bush, 2001).

The working assumption is that the United States government can produce sound science with an additional infusion of research dollars. In the effort to produce

sound science, other countries are invited to participate in the research. But, make no mistake; the United States had earned the leadership position in any collaborative effort.

B. *The Bush Administration's effort to alter, distort and suppress science*
In June of 2002, a report produced by the EPA and the Department of State endorsed the position that human activity was responsible for climate change and there was a possibility of a profoundly negative effect on the environment in the long term. When fielding a question on the conclusion of the report the President is reported to have said: "I read the report put out by the bureaucracy," and when asked about the EPA report, adding that he still opposes the Kyoto treaty (CBSNews.com).

Following this political miscue, the administration took a more preemptive tact by removing entirely the global warming section from an annual EPA report beginning in 2002. By 2003, the Administration published its comprehensive report on the environment without a mention of climate change. In place of an analysis of global warming, the report acknowledged it could not cover this complex question. According to the *New York Times*, while earlier drafts of the report tackled the question of global warming, the administration called for its removal prior to publication of the document.
Jeremy Symons, a former climate policy advisor in the Bush Administration, reported that by 2003 the White House tried to alter an EPA report on global warming. In response to the White House edits, an internal memo circulated within the EPA stated that the report no longer represented the scientific consensus on climate. In some cases, rather than working through political edits to scientific reports, the EPA would redact climate commentary from reports (Symons).

During 2002 and 2003, much of the editing of climate research was done by Philip Cooney the Chief of Staff for the White House Council on Environmental Quality (Revkin, 2005). Before joining the Bush Administration, he served as a lobbyist for the American Petroleum Institute. In some cases he was reported to have enhanced the claim that climate research was uncertain. For example, he added the word extremely to a section of a report which now reads: The attribution of causes of biological and ecological changes to climate change or variability is *extremely* difficult.
Unsurprisingly, the administration has implemented guidelines that restrict

scientists from speaking with the public. The White House must approve any interviews done by scientists on the greenhouse effect or other "controversial" scientific questions. According to National Oceanic and Atmospheric scholars, the press limitation amounts to a veto that can be used to limit the public circulation of ideas (Eilperin). The most noted US climate researcher, James Hansen, went so far as to accuse the Administration of silencing researchers who worked on climate issues. Hansen has been a NASA climate modeling researcher since 1978 and has a track record of challenging Republican Presidents on the issue of climate change. In 1988, he presented testimony to a Congressional committee which brought the climate issue to the public's attention in the United States. After almost thirty years in the profession, Hansen remains one of the most credible researchers in the field. According to Hansen, by 2003 the administration attempted to limit reporter's access to him as well as his ability to speak publicly on the issue of global warming. Interestingly, the NASA spokesperson who allegedly edited writings and attempted to limit e-mail access to Dr. Hansen resigned his post within a month of Hansen's claim of the suppression of speech at the agency.

C. *Manipulating the appointment process*

The House Minority Staff Report documents the Bush administration's willingness to deny appointments to scientific committees for researchers not supporting the agenda of big oil. Dr. Robert Watson had served six years on the Intergovernmental Panel on Climate Change (IPCC) including a stint as the chair of that body. Following the release of the 2001 IPCC report that indicated that science had come to the conclusion that anthropogenic emissions were responsible for warming, the Bush administration moved to oppose the re-appointment of Watson to the group. A memo sent from ExxonMobil to the White House asked if Watson could be removed from his post. Without providing a scientific rational for its decision, the Department of State opposed his reappointment (Waxman). This politicization of the appointment process was a source of discomfort for many in the scientific community.

Many appointments in every agency are inherently political by nature. In the case of the Bush administration, some political appointees have worked to limit the public dissemination of scientific information that might be harmful to the President's free market agenda. During the 2004 election cycle, the NASA press office was pressured to curtail press releases on topics including: glaciers, climate and atmospheric pollution (Revkin, 2006). Press officer, Gretchen Cook-

Anderson was told by Bush appointee Glenn Mahone that a press conference on some new ozone readings should be delayed until after the election. While NASA administrators denied the assertion, a review of press releases on the NASA web page show a four fold reduction in the number of releases beginning in early 2004 and continuing through 2005.

4. *Implications and Conclusion*

By calling the greenhouse consensus into question, the administration is able to deny science an authoritative voice in the debate over public policy remedies. Rather than moving the point of conflict in the debate to questions of remedy and cost, the administration continues to demand genuine scientific proof. All the while, the signs of global warming can be seen even by an untrained eye.

The denial of the consensus is an essential component in the strategy to legitimate long-term free market remedies as the primary response to the emission of fossil fuels into the atmosphere. By editing scientific findings and suspending governmental research that confirmed the international consensus, the administration methodically works to cast doubt on scientific opinion. The administration is deploying rhetorical strategies, adapted from the tobacco industry in the 1970s and 1980s, to cloud the issue of global warming. Specifically, the administration is recycling the claim that the opposition is engaged in junk science. The term junk science is circulated in the mass media and on the Internet whenever a report of the consensus of anthropogenic climate change surfaces in the public. Capitalizing on the work of political allies, the administration dismisses conflicting findings as the work of bureaucrats and scientists with a political agenda, or worse, it is stated that the findings should be added to the administration's on-going climate study.

Much like his father never has to directly let fearful white suburbanites know that Willie Horton was black during the contentious race based election cycle of 1988; President GW Bush has not found it necessary to use the term junk science when commenting on global warming. His role is to gently call into question the quality of current science and provide a remedy, more study, which does not run the risk of government imposed restrictions of emitters. Other voices, skeptical researchers and conservative pundits, are let to cast aspersions against the junk scientists and environmental apologists

The Republican Party had a long-standing commitment to science throughout the 19th and into the middle of the 20th century. In the 19th Century, The National

Academy of Sciences was founded by Abraham Lincoln and William McKinley was a two term president, winning elections over a creationist, William Jennings Bryan. One of the United States most science friendly Presidents of the 20th century was Dwight Eisenhower. Ike was committed to using science to improve both the defense and educational sectors of the economy (Thompson). To simplify the current failure to respond to warming as something linked to the extremism of the current administration allows powerful voices to continue to unduly influence public policy.

While Al Gore's documentary is receiving positive reviews for its treatment of global warming, one should not forget he was unable to implement a legislative agenda to curb global warming during the Clinton-Gore years. Those who oppose global warming have a friend in George Bush, but he is not the only powerful ally that industry has in Washington D.C. If one merely focuses of the failings of the current administration, and demonizes the President's failure to act, there is a risk that the on-going campaign against climate science will continue to drive the political discourse in the United States. While it is important to understand the devices used by George Bush and his administration, argument critics would be well served to pursue larger questions related to this debate.

In addition to highlighting the argument strategies that seem to be working in the current debate, argument scholars should find other ways to influence policy on this issue. First and foremost, Americans need to be equipped with better skills to assess public controversies. There is a tendency for many to simply delegate responsibility for this important issue to experts. Which begs the question of how one would credential someone as an expert in this area? In a conflict adverse culture, individuals would be served by training in argumentation and debate. Such training may prepare individuals to participate in the most important issue confronting the world in the 21st century.

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Defeasible Pragma-Dialectical Model Of Argumentation

1. *Introduction*

What's an argument? According to Daniel J. O'Keefe (1977), there are two types of argument. Argument1 is an argument characterized as "a kind of utterance or a kind of communicative act". It can be thought of as a claim and its reason. Argument2 is described as "a particular kind of interaction" and denotes the process of arguing, or the act of making arguments for a certain claim. In other words, argument1 means argument-as-product while argument2 denotes argument-as-process (Reed & Walton, 2003). Habermas (1984) called the former "argument" and the latter "argumentation". However, in the first half of 20th century, the structure (or form) of arguments had mainly been idealized, i.e., mathematical proofs had been taken as paradigm of successful argument. An argument was entirely abstracted away from the daily context. Most people focused on argument1 (argument-as-product) while neglected argument2 (argument-as-process). In the framework of argumentation evaluation based on classical or traditional logic, therefore, an argument is treated as static, context-insensitive, no goal-oriented, and zero-agent (van Benthem, 2003). Whereas, generally speaking, the basic characters of argument in everyday life is dynamic, context-sensitive, goal-oriented, and multi-agent.

Beginning in 1940s, as a matter of fact, many philosophers such as Strawson, Austin, Searle et al. focused on the pragmatic elements in assessing arguments. Toulmin (1958) presents a dialectical model, which is called Toulmin Model, differing from the CM in trying to describe the structure of argument as process. Toulmin has pointed out that formal logic lacks adaptability to different fields, but arguments can only be understood in a context. However, it is a pity that their works had little bearing on the formal semantic developed by Richard Montague and his followers. It was not until the rise of Informal Logic (in North America), Pragma-Dialectics (in Holland), and Radical Argumentativism (in France), that argumentation theorists or (informal) logicians paid attention to the importance of pragmatic elements such as context again. It is apparent that we cannot deal with the above character of argumentation with the classical model of argument

evaluation. Therefore, another logical model is needed to evaluate a real argument.

2. *Classical Model and Its Limitations*

The model of argument evaluation based on classical logic is called the Classical Model (CM). This model, which is based on deductive validity, usually consists of at least two calculus systems: the one for propositional one and the other for predicate one, where the essential rule is,

R1 [Modus Ponens (MP)]
$p \rightarrow q,\ p \vdash q$

It means that if p then q, p, therefore, q. MP consists of three statements. The first statement is the "if-then" or *conditional* statement, namely that p implies q. The second statement is that p, the *antecedent* of the conditional statement is true. Following those two statements, it can be logically concluded that q, the *consequent* of the conditional sentence, must be true as well.

In order to grasp the CM, let us start with analyzing a classical example presented by Wilson (cf., Walton, 1989, p.2).

Example 1

A seaman drafted to our ship just before we sailed from Halifax had never seen his new captain, who at sea often went hatless and wore a nondescript jacket. The new man had just begun a forenoon watch on the gun deck when the captain came along. The skipper suddenly stooped and picked up a butted cigarette. He thrust the butt at the seaman and demanded: "I want to know who the hell owns this damned thing." The new hand considered for a moment, then said slowly to the rankles, hatless officer: "I'd say you do, mate. You found it."

According to the CM, the seaman's argument form is a MP rule with Universal Quantifier.

$(x)(Ax \rightarrow Bx)$
Aa
$\therefore Ba$

In this case, the first premise is unexpressed. Intuitively, the argument is valid in the following generic sense:

D1 (Semantic Validity)

An argument is semantically valid if and only if no interpretation makes premises all true and conclusion false

According to Belnap (2002), this is called semantic validity because D1 shows that no interpretation is a counterexample of the argument. However, what makes a valid argument valid? What is the ground of the impossibility of the premises being true and the conclusion false? One answer is that the source of validity is narrowly logical or purely syntactic: the validity of a valid argument derives from its subsumability under logical laws or (what comes to the same thing) its instantiation of valid argument-forms. We now definite a second, specific sense, of 'valid'; one that alludes to the source of validity:

D2 (Syntactic Validity)
An argument is syntactically valid if and only if the conclusion can be derived from the premises (including an axiom or) by means of MP.

According to D2, a valid argument inherits its validity from the validity of its form, or logical syntax. So on D2 it is primarily argument-forms that are valid or invalid; arguments are valid or invalid only by virtue of their instantiation of valid or invalid argument-forms. Belnap (2002) called this proof-theoretical validity meaning that an argument is valid by some rules, i.e., there is a proof leading from premises to conclusion. In a word, deductive validity is the criterion of allowing formal derivation meaning that an argument is valid if and only if it is a substitution instance of a formally valid argument form which is such that it cannot be the case that true premises lead to a false conclusion. After we distinguish the above two kinds of validity, we can define the deductive validity.

D3 (Deductive Validity)
An argument is deductively valid if and only if it is semantically and syntactically valid.

However, the deductive validity does not say that the premises are actually true. An argument is valid, supposing the premises are true, the conclusion follows. In actuality the premises might be false. Consider an example of a valid argument with actually false premises:

Example 2
All dogs have eight legs.
The President is a dog.

Therefore, the President has eight legs.

The argument above is perfectly valid when the truth of the premises is assumed. It is not necessarily true that a valid argument is sound. In example 2, the argument, while valid, is clearly not sound because it is not true that all dogs have eight legs and that the president is a dog. It is the form, but not the content, that makes the argument valid. To evaluate an argument properly, another concept must be introduced.

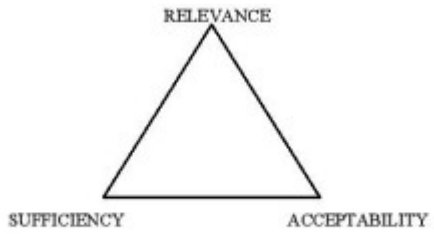
D4 (Soundness)
An argument is sound if and only if (i) all premises are true and (ii) the argument is deductively valid.

That's all the CM would have to say about argument evaluation. However, is a sound argument certainly good in real argument or argumentation? This answer is NO. Back to example 1, although the first premise is (plausibly) true and the second one true, the conclusion seems to be odd and not to be acceptable for the skipper. That is to say, the seaman's argument is not good even under this definition of soundness. On the one hand, the key issue is that the first premise is plausibly rather than necessarily true. In fact, most statements seem to be true in daily natural language argument. On the other hand, the context is necessary to evaluate a real argument. In the example 1, the questioner happens to be the skipper, so the seaman's answer is not apt since he wholly distorted the intention of the questioner.

So there is a gap, called pragmatic gap, between CM and the evaluation of real argument. Such gap results from the well-known tri-partition of semiotics – syntax, semantics, and pragmatics. An argument is a kind of linguistic act, speech act, and conversational act (Fogelin & Sinnott-Armstrong, 2001, p.3). Therefore, a real argument is always concerned with the tri-partition. Syntax is the study of linguistic expressions of various kinds in their interrelations within a system, in abstraction from their meanings and users. Semantics is the study of the meanings of expressions and their applicability. Pragmatics is an empirical investigation of the human use of language (Cohen, 2001).

Q1 [Pragmatic Gap]
What one focuses on in CM is the syntactic and semantic dimensions while overlooking the pragmatic one.

Resolving this gap is a key question when discussing argumentation theory and its application. Once people cannot explain some real events in practice with our argumentation theory, what they often doubt is the theory rather than its application. Sometimes they even refuse to accept the original theory. Here we don't think CM should be radically refused, but when some real phenomenon cannot be interpreted and treated by it, we should modify the original theory sensitive to argumentation practice. Therefore, a pragmatic model or informal logical model emerged as the times require.



RSA Triangle

3. *Pragmatic Model and the Münchhausen Trilemma*

In order to resolve the Q1 of argument evaluation, we need introduce the RSA triangle developed by informal logicians Johnson and Blair (1994, p.55). The RSA triangle postulates that there are three criteria for a good argument:

(1) the premises must be acceptable,
(2) the premises must be relevant to the (main) conclusion, and
(3) the premises must provide sufficient support for the (main) conclusion.

In this approach, an argument must satisfy the criteria of relevance, sufficiency and acceptability; a fallacious argument is one that violates one or more of these criteria. Here, sufficiency is equal to deductive validity in the CM. Now we can modify the CM by introducing the RSA triangle and then developing the PM based on informal logic.

D5 [Relevance]
Every premise must be directly or indirectly relevant to the conclusion.

An argument can comprise several subarguments. In this case, the conclusion that should ultimately be justified is entitled the main conclusion, while those statements which support the main conclusion as premises are being supported by other reasons so they are called the subconclusion. Direct relevance means a premise must be relevant to the main conclusion. Indirect relevance implies a premise must be at least relevant to the subconclusion as the premise of subargument. By relevance we can overcome the paradox of material implication.

D6 [Acceptability]
Every premise must be accepted as acceptable for all the participants in argumentation.

Walton (1989, p.2) argues that an argument occurs in the context of some dialogue. In an argumentation dialogue, there are always at least two parties as participants, the proponent and the opponent, as an audience or a reader. Firstly, every premise must be acceptable for the proponent because an arguer should not make an assertion he or she doesn't believe in. Otherwise the argumentation is pointless. Secondly, the premises should be acceptable for the intended audiences or readers after hearing all the proponent's arguments. Otherwise, these arguments are not successful. Now, a new concept of validity may be introduced as in the following.

D7 [Pragmatic Validity]
An argument is pragmatically valid if and only if (i) all the premises put together can sufficiently support its main conclusion; (ii) every premise must be (directly or indirectly) relevant to the conclusion; and (iii) every premise must be accepted as acceptable for all the participants of argumentation.

However, what's a good argument? In Daniel Cohen's opinion (2001) there are many questions contained in this one. Ethics, politics, aesthetics, epistemology, psychology, jurisprudence, and many other disciplines, all have something to contribute. *In fact*, the Aristotelian triad (Logic, Dialectic, Rhetoric) is often identified with the three p's of product, procedure and process in *mainstream philosophy*, where logic is concerned with the product, dialectic with the rules or procedures required for argumentation, and rhetoric *concentrates* on the communication processes inherent in argumentation (Tindale, 1999, p.3-4). For the purpose of rational persuasion, however, the real core of argumentation theory rests on the tripod of logic, rhetoric, and dialectics. Those three approaches are just what Aristotle, modern informal logicians, and argumentation theoreticians have been focused on all along. From informal logical perspective, a good argument can be defined as:

D8 [Good Argument]
An argument is good if and only if it is semantically, syntactically and pragmatically valid.

By D8, the pragmatic gap question appears to be resolved, but many questions still exist. First of all, let's examine the sufficiency of argument. It is easy to understand this concept of sufficiency, where the basic idea is based on the truth-preserving, validity and monotonicity of deductive argument in the CM. The MP rule embodies these central viewpoints. In the CM, it is these notions that insure the validity of argument. However, another two new questions appear:

Q2 [Monotonicity Problem]
Is an argument always monotonic?

Q3 [MP Validity Problem]
Are modus ponens arguments always valid?

With the rise and the development of non-monotonic logic, logicians aimed at modelling a commonsense reasoning have given a negative answer to Q2. They have suggested that a real argument is normally defeasible when some new information enters the set of premise as a result of deep cognition. As Donald Nute (2003), who is the developer of defeasible logic, said, "Human reasoning is not and should not be monotonic." We often reject old conclusions based on new evidence, even when those old conclusions were justified by the evidence we had at the time we arrived at them. Justification preserving reasoning is not monotonic. So in the CM monotonic argument is completely abstracted, based on the Close World Assumption (CWA), from the context in which the argument is used.

In the CM, the validity of MP argument is above suspicion. But is it right? Walton gave also a negative answer to Q3. There are many common arguments used in everyday reasoning that have the form modus ponens but are not deductively valid (Walton, 2002). Let's check a classical example in the introductory logic textbooks.

Example 3
If it is raining, then the ground is wet.
It is raining.
Therefore, the ground is wet.

According to the CM, this is an instantiation of modus ponens form and obviously valid. However, it could be true that it is raining even though it is false that the ground is wet, for instance, the ground could be covered. Thus it is not impossible

that all the premises are true but conclusion false. So, as to this example, many questions can be raised whether the example is really a type of modus ponens argument, whether it is truly a deductive argument, and whether it is indeed deductively valid? Therefore, formal validity in the logical sense, said Toulmin, is neither a necessary nor a sufficient condition for soundness of argumentation (cf. van Eemeren at el, 1996, p.133).

As we all know, almost all our logic systems, especially the classical logical systems, are based on deductive validity – and only MP is absolutely necessary among all basic inference rules in these systems. So most people often challenge the truth of premise instead of the premise itself, supposing that they will discover that an argument is not acceptable. In their view, if the premise is not true, then we cannot establish a conclusion, so the argument becomes unacceptable. However, some might say that such a type of argument does not have the form of modus ponens. Why not? Well, they might argue that the first premise isn't really a conditional. It has the form "If A then B", but the defenders of this view might counter that it is not a material conditional, of the kind appropriate for logic, because it is not the sort of conditional of the kind represented by the truth-functional connective called the hook (horseshoe).

In the second place, let's look at the relevance of argumentation. Grice (1989, p.27) identifies relevance as one of the governing assumptions of conversational communication, but he does not provide any theoretical enlightenment as to the nature of relevance. In the introductory logic textbooks irrelevance fallacies have been discussed from the reversed side of relevance – what is irrelevant. However, it is not easy to judge whether a premise is relevant to the conclusion or not and sometimes the judgment itself is a process of making an argument. For example,

Example 4
Harry: Not only should the library remain open longer so that students can have a place to study, but student tuition fees should be lowered as well.
Pam: Hold on, Harry. The topic of this meeting is the proposal for the extension of library hours. What does the topic of tuition fees have to do with it? I don't see the relevance of that issue.
Harry: Well, if students didn't have to pay so much tuition, they could afford better lodging, and therefore better facilities to study at home. I mean it's all connected because many factors are responsible for not providing students with adequate facilities for studying. Therefore my point is relevant. (Walton, 1989, p.

71-72)

This example shows that sometimes it is difficult to judge the relevance of premise because it not only relate to the context but also to further argumentation. Walton (1989, p.78; 2004) has systematically studied the relevance in argumentation. A useful contribution has been Walton's distinction between "local" and "global" relevance. Local relevance, which equals the indirect relevance, is the relevance of the premises offered in a single argument; global relevance, which equals the direct relevance, is the relevance of a proposition to the issue under discussion. In addition, he distinguished subject-matter relevance and probative relevance. Anyway, it is still not easy to make clear whether a premise is relevant to the conclusion. Maybe it is not relevant at first view but becomes relevant after hearing the arguer's further arguments.

Finally, we will discuss the acceptability of premises. The criterion of "acceptability" is the informal logicians' counterpart to the truth requirement in the formal logicians' doctrine of soundness. Influential in this respect was Hamblin, who argued that truth is an inappropriate criterion for the premises of arguments because it is neither sufficient nor necessary. Truth is not sufficient because a premise that could be ontologically true is actually unknown to be true by arguer. Truth is not necessary because in many arenas the very idea of truth is questionable. Hamblin's argument was not unlike that of the deconstructionist: The idea of truth presupposes an impossible God's eye position from which to view matters (van Eemeren at el, 1996, p.180). However, we can know or believe, by means of some other approaches, whether a premise is acceptable for the participants in argumentation or not.

In an argument there are often two kinds of justification involved, i.e., an internal and an external one. Some scholars think the former is about the form and the latter is about the content (Lodder, 2004). What this kind of interpretation impresses on one is that the former is directly relevant to logic, while the latter lacks of necessary relationship with logic. Actually the distinction between the two justifications is at different levels of argumentation and they should have a close correlation with logic. Consequently, we argue that the former justifies the main conclusion while the latter aims at justifying the premises used in the internal justification.

D9 [Internal Justification]

An internal justification is composed of the main conclusion and its directly supporting premises (reasons).

D10 [External Justification]
An external justification means one that justifies the premises in the internal justification.

A real argument may generally be compared to a mathematical proof. There is, however, an important difference between them. A solid mathematical proof is universally true; a proof that stands once and for all. However, in a daily argument, the premises might be such statements that they are not necessarily true in fact. Some of them describe the opinions of experts, some state the common knowledge which considered plausible, some express testimony of witness or personal ideas, and so on (van Gelder at el, 2002). Once these premises are gathered that justify a claim it still remains an open question whether those premises themselves are justified. By external justification, we can answer the acceptability of premises to some extent. It is a pity then that we maybe run into the *Münchhausen Trilemma*.

In the *Münchhausen Trilemma*, generally speaking, the set of premises is often open in a real argument, that is to say, we can not maybe find an end-point or inartificial ground for justifying for the acceptability of some premise. If someone insists to try to find an ultimate or global justification, it inevitably leads to Albert's so-called Münchhausen Trilemma. The three branches of the Trilemma are:

1. An infinite regress□justification has never an end-point or inartificial ground;
2. A logic circle□a statement that is being justified is used to justify itself;
3. Dogmas□some statements are assumed to be justified by some definitions, regulations, rules, authority opinion and so on.

Lodder (1999, p. 20-23) gave us a good illustration. The first branch of the Trilemma deals with the demand that each premise must in turn be justified.

i. I am King.
ii. Because the first born child of a King becomes King.
iii. Because the constitution says so.
iv. Because the majority of the Parliament wanted it that way
… Because …

n. Because …

This on-going justification is called infinite regress. Each time a statement has been justified by another statement, the latter statement needs to be justified itself. Because the regress is infinite, there is no ultimate (and justified) premise on which a justification can be based.

The regress can be stopped by adopting one of the other two branches: a logical circle or a dogma. An example of a logical circle is the following:

i. I am King.
ii. Because I wear a crown.
iii. Because I am King.

In case of a logical circle one cannot speak of a true justification. If it were considered a justification, then every statement could be justified by itself. From a different point of view the circle does not even stop the regress, namely if the circle is seen as an infinite loop.

The last branch of the Trilemma deals with founding the justification on grounded statements.

i. I am King.
ii. Because the first born child of a King becomes King.
iii. Because the constitution says so.

In the infinite regress example the justification continued at this point. However, it is possible to stop the justification at a certain point. A possible reason to stop might be that it is generally accepted to use the statement as an ultimate justification. In this case it means that a statement that is referring to this constitution does not have to be justified. Such grounded statements are dogmas, comparable to mathematical axioms. They are called dogmas because it is not deemed necessary to justify these statements. However, it is not the case that they never need to be justified. Sometimes it is necessary to allow arguments against these dogmas.

Furthermore, the goal-oriented characteristic of the argument has not only been taken into account, but also context-sensitivity, dynamicity and multi-agent have partially been involved. Anyway, informal logicians have considered some

pragmatic elements in the process of evaluating a real argument, say, acceptability, but an argument is viewed as argument-as-product just like in classical logic. Normally in informal logic, the aim is to identify, analyze, or evaluate an argument found in the text of written discourse. An argument is seen as a product. It is already there and the analyst going only by what is given there. What is given a set of statements, one a conclusion and the others playing the role of premises offering support for (or against the view represented by) that conclusion. But even this task quickly becomes one of arguments as process (Reed & Walton, 2003). As Johnson said, dialogue logic has its focus on the process of arguing whereas informal logic is focused on the product (Johnson, 2000, p. 291). It means informal logic is not enough for evaluating a real argument.

4. *Defeasible Pragma-Dialectical Model (DPDM)*

This model will be based on the Pragma-Dialectical Model (PDM) developed by van Eemeren, et al. (1984; 1992; 1993; 2002; 2004). If the acceptability of the premises is one of the three central objects that the PM is concerned about, then the focus of Pragma-Dialectical Model (PDM) is the acceptability of the conclusion. In PDM, van Eemeren and his colleagues give ten rules for conducting a reasonable argumentative discussion. The ten rules are only necessary for a critical discussion, i.e., it is not true all arguments obeying them are good arguments, but an argument violating them is surely not good, but fallacious. However, PDM was based on classical logic such that it cannot deal with the defeasibility of the real argument.

Defeasibility, which depends on dynamicity, goal-oriented, multi-agent and context-sensitivity, is one of the essential characteristics of real arguments and, in a derived sense, of conclusions. A conclusion is defeasible if it is the conclusion of a defeasible argument. Defeat occurs if a conclusion is no longer justified by an argument because of new information. For instance, the conclusion that a thief should be punished is no longer justified if it turns out that there was a legal justification for the theft, such as an authorized command (Verheij, 1998). Therefore, our goal will be to develop a Defeasible Pragma-Dialectical Model (DPDM) by introducing the Defeasible Modus Ponens (DMP) rule.

The validity rule, as one of the ten rules of PDM, states that the reasoning in the argumentation must be logically valid or must be capable of being made valid by making explicit one or more unexpressed premises (van Eemeren, Grootendorst &

Henkemans, 2002, p. 132). But in PDM, van Eemeren and Grootendorst don't systematically expand the validity rule.

In order to construct a pragma-dialectical model of argumentation, we must first amend MP rule. In fact, R1 should be entitled Strict Modus Ponens (Walton, 2005).

R1 [Strict Modus Ponens (SMP)]*
As a universal rule not subject to exceptions, if p then q.
p is true.
Therefore, q is true.

R1* may be formalized in symbolic logical method as,

$(x)(Px \rightarrow Qx)$
Pa
$\therefore Qa$

As the case stands, pragma-dialectical theorists do not actually care whether the premises are true or not, but focus on the acceptability of these premises and the conclusion. So we have to remodify R1* into R2 so as to be applicable for pragma-dialectical situations.

R2 [Defeasible Modus Ponens (DMP)]
As a rule subject to exceptions, if p then q.
p is accepted as true.
It is not the case so far that there is a known exception to the rule that if p then q.
Therefore, q holds tentatively, but subject to withdrawal should an exception arise.

Verheij (2000) drew a proof-theoretic distinction between R1* (or R1) and R2. SMP is a deductively valid form of argument of the kind widely known and accepted as valid in (classical) logic. However, DMP is not a deductively valid argument so what is less widely accepted is that modus ponens can also have a non-strict, or defeasible, form that can be reasonable in some cases even though it is not deductively valid when applied in these cases. R1* and R2 need to be applied differently to different kinds of cases. In a case where both R1* and R2 might possibly come into play, R2 must always be used. In a case in which only universal rules that are not subject to exceptions are involved, R1* suffices as the

appropriate rule of inference. Although the conclusion is really the same in both forms of argument, the qualifier 'tentatively, but subject to withdrawal should an exception arise' is stated in the conclusion part of DMP, indicating that the inferential relation between the premises and the conclusion is different in this kind of modus ponens argument. The reason for this feature has to do with recognizing each type of argument as distinct from the others based on "indicator words". Now let's explain the Birds Fly Problem (Reiter, 1980) by DMP.

Q4 [Birds Fly Problem]
Birds can fly.
Tweety is a bird.
Therefore, Tweety can fly.

In this argument, classical logicians usually prefer to view the first premise as a universal statement omitted a universal quantifier, while non-monotonic logicians challenge their interpretation. Some non-monotonic logicians argue that the first premise should be explained that most (or many) birds can fly, while others claim that it should be explained that birds can normally (or typically) fly, etc. According to DMP, we can explain as following,

As a rule subject to exceptions, if something is a bird, then it can fly.
Tweety is a bird.
It is not the case so far that there is a known exception to the rule that if something is a bird, then it can fly.
Therefore, Tweety can fly holds tentatively, but subject to withdrawal should an exception arise.

In the CM, we can in nature say "a universal quantifier may be omitted", but this does not mean "all the omitted quantifiers are universal ones". If someone thinks so, he or she actually commits a simple logical fallacy, i.e., it is impossible that SAP can infer PAS by conversion in traditional logic.

DMP should only be applied to certain special cases, but can not be used for modeling strict arguments of the kind based on a rule (or generalization) that does not admit of exceptions. Within the confines of a case of this sort there is no need to use DMP. MP will do. But then, considering cases of realistic argumentation in natural language discourse, DMP is clearly the model of choice in many cases. Of course, contrasting R1* with R2, the former has preference

right over the latter in evaluating a real argument. In other words, if SMP is used in a given case, we cannot replace it with DMP.

In the pragma-dialectical framework, an analysis of argumentation must begin by identifying the main difference of opinion, and what type of difference of opinion it is (van Eemeren, Grootendorst & Henkemans, 2002, p. 3). So resolving the difference can make us walk out the Münchhausen Trilemma of argumentation.

For one thing, let's start with discussing what ontological or epistemic truth is. Truth is a complex problem discussed by many famous philosophers, Aristotle, Austin, Quine, Russell, Wittgenstein, Tarski, Kripke, and so on. According to Catholic Encyclopedia (2006), truth is a relation which holds
(1) between the knower and the known – Logical Truth (Epistemic Truth);
(2) between the knower and the outward expression which he gives to his knowledge – Moral Truth; and
(3) between the thing itself, as it exists, and the idea of it, as conceived by God – Ontological Truth. In each case the relation is, according to the Scholastic theory, one of correspondence, conformity, or agreement. As to pragma-dialectics, we shall only concern with (1) and (3).

D11 [Ontological Truth]
A thing is said to be ontologically true or false if and only if the reason it will be true or false is not that some participant know it.

This kind of truth, which is also called objective truth, real truth or the truth of reality, does not be changed with the some arguer's knowledge database, so it is objective or impersonal.

D12 [Epistemic Truth]
A statement is epistemically true or false if and only if it is known to true or false by all participants of argumentation. This is called subjective truth, too. Compare ontological truth with epistemic one.

It is no problem in the case 1 and 4 because epistemic truth always conforms to ontological truth. But in the case 2 and 3, what arguers will normally focus on can only be epistemic truth rather than ontological truth. In the PDM, the truth which is concerned is not ontological one but just epistemic one.

D13 [Argumentation]
Argumentation is a verbal, social and rational activity aimed at convincing a reasonable critic of the acceptability of a standpoint by putting forward a constellation of one or more propositions to justify this standpoint (van Eemeren, Grootendorst & Henkemans, 2002, p. xii).

This definition does not only refer to the activity of advancing arguments but also to the shorter or longer text which results from it. Argumentation relates both to the process of putting forward argumentation and to its "product," and the term argumentation covers the two of them. In argumentation theory, argumentation is not only viewed as the product of a rational process of reasoning, like arguments are traditionally seen in logic, but also as part of a developing communication and interaction process.

D14 [Standpoint]
A standpoint is the claim that an arguer defends in critical discussion. In the pragma-dialectical theory the object of argumentation is referred to as the standpoint, which can be positive or negative.

D15 [Difference of Opinion (DO)]
1. Elementary DO: A DO arises when one party's standpoint meets with doubt from the other party.
2. Mixed DO: If the other party is not only doubtful but adopts an opposing standpoint, then the DO is mixed.
3. Multiple DO: If there is more than one proposition involved, the DO is multiple.

A DO always involves two parties. One party puts forward a standpoint and the other party expresses doubts about it – or, as often happens, goes a step further and rejects the standpoint. In all these cases advancing argumentation is a reasonable way of trying to put the DO to an end.

D16 [Resolution of DO]
A DO is said to be resolved as soon as at least one of the two parties revise their original position.

In the elementary form, the resolution is reached if the doubting party abandons his or her doubts, or when the other party retreats from his or her standpoint. According to van Eemeren and Grootendorst, however, the end of active disagreement does not necessarily mean that the DO has truly been resolved. It is

important to distinguish between resolving a DO and merely settling it. Settling a disagreement means that it is simply set aside. This can be achieved in an uncivilized manner by intimidating the other party or forcing him or her into submission. A civilized, but arbitrary, way of settling a disagreement, such as legal disputation, is to lay the matter before a third party who serves as judge and decides who is right. Another civilized way of settling a disagreement is to decide the winner by drawing lots. In such cases the difference of opinion has not really been resolved. True resolution is reached only if both parties come to hold the same position on the grounds of rational argumentation. Either both parties adopt the same standpoint (positive or negative) or else both parties begin to question the standpoint (van Eemeren, Grootendorst & Henkemans, 2002, p.24).

5. Conclusion

According to the PDM, an argument is always put into a special context of dialogue when we discuss how to evaluate it. We focus on the epistemic truth instead of the ontological truth so once a DO is resolved on the basis of rational discussion the standpoints (conclusions) of the two parties in argumentation become acceptable, i.e., epistemically true. In this case, the Pragmatic Problem is not only successfully resolved, but also the *Münchhausen Trilemma* can be avoided. However, the PDM based on SMP cannot deal with the defeasibility of a real argument, i.e., MP Validity Problem, the same as CM, so only if the basic inference rule MP or SMP is replaced by DMP to construct a DPDM, all the problem encountered by CM, PM and PDM can be resolved.

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ISSA Proceedings 2006 – Scientific Demarcation And Metascience: The National Academy Of Sciences On The Greenhouse Effect And Neo-Darwinism

Scholars who have followed up on Thomas Gieryn's work (1983) on scientific boundary – work have often seen rhetorical behavior of this kind as an informal alternative to the kind of demarcation undertaken by philosophers of science. The functionality of informal demarcation was fleshed out in Charles Alan Taylor's (1996) application of this model to various controversies in American science. Like Gieryn, Taylor regards boundary – work as a positive alternative to formal philosophizing on the nature of science. I do agree that the articulation of such dividing lines as arise from institutional challenges to science may achieve practical resolutions to problems that philosophers of science have never been able to resolve, but this exclusive focus overlooks some of the complexities arising from demarcation of this kind.

Certainly it is as important for scientists as it is for philosophers to develop what I will here call "metascience," answers to the question: what is science? And so the informal argumentative work that achieves this may be as vital as Gieryn and Taylor suggest – especially if it succeeds where more academic exercises of scientific demarcation do not. But in this essay I will consider the complicating fact that the motives that inspire boundary-work are not strictly regulated by intellectual concerns. Because of this informal demarcation could easily misfire, causing scientists to define their own intellectual labors in ways that could weaken or perhaps even undermine public deliberations that bear upon scientific questions.

This problem is suggested by Gieryn's own analysis of the three ideological pressures that inspire boundary-work (pp. 785-791):

(1) outside encroachments upon science such as might come from religious interests,

(2) challenges to the ethicality of science, and

(3) the need to protect scientific patronage by excluding pseudo-science.

Of course these efforts may have something to do with science as practice, but more often they have to do with the secondary concerns of science as an institutional body. This is shown in one of the cases that interested Gieryn, the informal demarcation undertaken in the energetic public campaign for science that was advanced in Victorian England by such figures as Thomas Huxley, Herbert Spencer, and John Tyndall. Focusing specifically on Tyndall, Gieryn (pp.

785-786) observed that the Irish physicist constructed these boundaries differently when he was working two different fronts of this campaign. The emerging scientific professions at this time felt threatened by the deeply entrenched power of the Anglican Church, which continued even in the face of science's rising fortunes to wield considerable influence over faculty positions and curricular decision-making in English universities. But on another front (pp. 786-787) scientists like Tyndall were also wary of the growing power of the technical professions, since these competed with science for patronage and for a hold on the public imagination.

Gieryn observes that Tyndall demarcated science differently on each of these fronts. To show science's epistemic superiority over technology, the physicist highlighted its purely theoretical powers, but to show its superiority to theology he was disposed to play up its concrete character and applicability. Science was superior to theology because it solved real problems, but it was superior to engineering precisely because it did not. While the pragmatic reasons why this influential scientist would have taken these contradictory stances are evident, Gieryn does not consider the rhetorical costs that demarcation of this kind might have accrued. In fact he does not regard this inconsistency as a problem at all. Tyndall, Gieryn tells us, was not "disingenuous" when he described science differently in various contexts. "It would be reductionistic, "he insists, "to explain these inconsistent parts of a professional ideology merely as fictions conjured up to serve scientists' interests" (p. 787). This was a "genuine ambivalence" reflecting "an unyielding tension between basic and applied research, and between the empirical and theoretical aspects of inquiry" (p. 787). Of course Gieryn is right about this, but this explanation overlooks the obvious fact that Tyndall communicated these half truths with the intention of deceiving his listeners by masking this very ambivalence. Had the physicist explained this as forthrightly as Gieryn does, he would not have been able to achieve these boundary-work effects, for to acknowledge that science is both theoretical and applied, would be to admit that it cannot be utterly demarcated either from theology or engineering. In wanting to forgive Tyndall's equivocation, in other words, Gieryn seems to suggest that it is okay to mislead the public, provided that one remains true to science.

While this work of informal demarcation may have helped to achieve the institutional goals that were at issue in Victorian positivism, there is some danger

that demarcation of this kind, were it to really succeed, could interfere with scientific inquiry. The same positivist demarcation that enforced a separation between science and theology by insisting that science is based in fact and theology in mere speculation, has sometimes blinded scientists, for instance, by making them unable to recognize that their own thinking also has an important speculative aspect. A famous instance hinting of such a barrier was the general reluctance of physicists to embrace big bang cosmology in the last century. Having convinced themselves that scientific thinking was not governed by speculative concerns, they were disinclined to recognize that it had been their naturalistic predispositions that made them cling to the steady state view. Without this kind of critical reflexivity, scientists did not recognize the implications of the expanding universe suggested by Albert Einstein's general theory of relativity and Edwin Hubble's discovery of a pervasive red-shift (Farrell, 2005, pp.73-120).

It is perhaps revealing that the scientist who ultimately did recognize the larger implications of general relativity and red shift, the Belgian physicist Georges Lemaître, also happened to be a Catholic priest. It was undoubtedly the theological perspective that he brought to his science that exempted him from the positivistic preconceptions that had prevented such eminent contemporaries as Eddington, Hoyle and Einstein from seeing this solution (Jastrow, 1978). Although Lemaître had deduced his theory of the "primeval atom" from general relativity, even the typically fair-minded Einstein had initially ridiculed his proposal and suggested, as did Eddington, that the priest's judgment was clouded by his religious convictions (Farrell, p. 100).

My point here is not to say that theology actively assisted scientific discovery in this instance – omething Lemaître certainly would have denied (Farrell, pp. 192-198). Religious metaphysics, even within a relatively homogeneous faith such as Catholicism, are quire diverse, and they could just as easily be a deterrent. My point is only that, contrary to what Tyndall and countless of his successors have argued, speculative thinking such as is found in theology also figures in science. Both fields are concerned, for better or for worse, with basic metaphysical questions – in this particular instance the age-old question of whether the universe is eternal or temporal.

My concern here is with another side of this problem, the extent to which the positivism sustained by such boundary-work may interfere with scientists' responsibilities as public actors. In exploring this suggestion I would like to show

how some of the boundary-work occurring in scientific responses to religious anti-evolutionism may affect public thinking about another controversial subject, the environmental effects of greenhouse gas emissions. My argument will be that the boundaries set up by the first debate are potentially deleterious to the scientific interests at stake in the second one. To put this simply, in the boundary-work transpiring in official efforts to combat religious anti-evolutionism, experts appeal to the traditional positivist topos of certainty. They affirm the verifiability of scientific claims as a rationale for dismissing what they regard as unwarranted skepticism. But in the debate over greenhouse emissions, as in many areas within evolutionary science as well, such an affirmation is not possible. Greenhouse theory makes considerable conceptual sense as an explanation for global warming, but if held up to the rigid standards of epistemic certification proposed to demarcate science in debates about evolution and religion it will fail.

If the demarcation achieved by contrasting science against religion persists in public thinking about global warming, it should not surprise us that many policy makers regard the greenhouse gas theory as an insufficient warrant for the decisive regulation of CO2 emissions. This danger arises from a rhetorical feature of public science that Gieryn did not consider. His analysis seems to assume that the rhetorical effects arising from informal demarcation are contained within their immediate rhetorical situations. When Thomas Huxley championed the applicability of science in the popular "working men's" lectures he gave to London's cloth caps, Gieryn seems to suppose that he did not need to worry that Parliament would take these messages to heart and cut off funding for theoretical research that seemed to lack this promise. But is this a safe assumption? Are the situated acts of public demarcation truly situated, or do they have a more general effect?

My reason for supposing that certain definitions of science may be generalized for all contexts comes from what Chaim Perelman (1982, pp. 35-36) called effective presence. This is the recognition that arguments designed to achieve immediate persuasive goals may also have presence in other contexts for which they were not intended. Thus while the boundary-work that is executed to demarcate science from theology may be intended for the pragmatic work of silencing religious criticism by affirming scientific certainty, this constitutive effect may also come into play in other situations where a scientific standard based on probability would better serve the public interest.

In consideration of this interpretation, I will examine how the constitutive effects of boundary-work arising from one scientific publication intended for broad distribution might affect public judgment of other scientific messages that demand greater discernment. This publication is a small book issued by the National Academy of Sciences entitled “Teaching about Evolution and the Nature of Science” (1998). It was explicitly designed to influence how educators throughout the United States teach evolutionary biology. The main purpose for its publication (p. viii) was to remedy the fact that many American “students receive little or no exposure to the most important concept in modern biology, a concept essential to understanding key aspects of all living things – biological evolution.” But since the authors attribute this deficit to religious belief, they actively undertake boundary-work as a pedagogical measure that may help to counteract its influence. Two factors are likely to give the arguments advanced in this book effective presence in other contexts. First, the NAS which has sponsored it is the most elite scientific association in the U.S., and thus the voice of scientific opinion leadership in this country. Second, as a publication specifically designed to guide educators in secondary schools, it is likely to reflect how most Americans come to understand the nature of science.

The last part of this analysis will consider what would result if the understanding of science developed in the first publication had effective presence for those reading a second NAS publication on global warming. This report, “Climate Change Science: An Analysis of Some Key Questions” (2001), was commissioned by the Clinton administration to brief policy makers on current scientific opinion in this area. Unlike the evolution publication, this report is not concerned with boundary-work. Its authors seem to assume that the constitutive features of scientific knowledge are uncontested for their readers. But what if the scientific judgment of these readers had been shaped by the sort of metascientific discourse we find in the evolution book? How would this equip them to interpret the current state of climate science? I believe that public understandings of science are shaped by the kind of scientific demarcation at work in the evolution book and that metascience of this kind will be effectively present for those reading the publication on global warming. Since public discourses on global warming occur in a metascientific vacuum, salient understandings of science originating elsewhere, such as in the science classrooms for which the NAS publication on evolution is intended, will move in to fill this conceptual gap.

1. *The NAS and the Nature of Science*

In the preface to the evolution publication, the authors (a committee of thirteen scientists) indicate that demarcation is one of their chief purposes and that it occurs here as an effort to combat religious skepticism. They acknowledge that "most religious communities do not hold that the concept of evolution is at odds with their descriptions of creation and human origins" (NAS, 1998, pp. viii-ix), but they then go on to add that because religious faith and scientific knowledge are "different," this publication "is designed to help ensure that students receive an education in the sciences that reflects this distinction." The writers reiterate their intention of demarcating these two realms a few pages later (p. 4) by adding that because "some people see evolution as conflicting with widely help beliefs, the teaching of evolution offers educators a superb opportunity to illuminate the nature of science and to differentiate science from other forms of human endeavor."

It is in the context of this discussion that the authors treat what they regard as an attendant subject, the religious skepticism that is expressed in the popular notion that a theory such as Darwin's is merely a "guess or hunch." The authors counter this by insisting that in science theory "refers to an overarching explanation that has been well substantiated."

Science has many other powerful theories besides evolution. Cell theory says that all living things are composed of cells. The heliocentric theory says that the earth revolves around the sun rather than vice versa. Such concepts are supported by such abundant observational and experimental evidence that they are no longer questioned in science (p. 4).

In an effort to help teachers wishing to combat religious skepticism about evolution, it makes *prima facie* rhetorical sense to assert that it is certitude that sets scientific theories apart from other categories of speculation. Once it is supposed that scientific theories are constructs that have been so thoroughly substantiated as to be "no longer questioned," resistance of this kind would seem silly or irrational at best. But this rhetorical achievement comes at the price of historical and metascientific infidelity. Even a moment's reflection will show that demarcation based on certitude excludes all manner of theoretical constructs that practitioners now regard or once regarded as scientific. First, it excludes those theories that are seriously discussed and researched by scientists but which remain controversial and often speculative – such as the Gould-Eldredge theory of punctuated equilibrium, theories of abiogenesis, or the theory that birds evolved from dinosaurs. Second, this definition would exclude even the well substantiated

theories mentioned here, if we were to consider their scientific status at some earlier point of development. Scientific theories are never "well substantiated" positions in their inception, and achieve such standing typically only after decades or centuries of study. Cell theory and heliocentrism once *were* more like hunches or guesses, and only found extensive support after a long and arduous examination. Were we to take the above definition at face value it would mean that they only *became* "scientific" when they had reached an advanced level of maturity. String theory by this standard would be excluded, even though it is currently at the forefront of theoretical physics, and so would Ludwig Boltzmann's pioneering work on atomic theory, at least during his life time when it was generally dismissed. Third, this description fails to recognize that even theories supported by an abundance of evidence may subsequently fail. A theory can be compelling in its power to "save the phenomena" and still turn out to be wrong once additional data is taken into consideration. In every instance theories of this kind, (e.g. geocentrism, ether theory, phlogiston theory, and steady state cosmology), could at one time have been said to be "no longer questioned."

A characterization of scientific theory as unrealistic as this would be difficult to sustain without selectively omitting or distorting vital elements of scientific history. This perhaps explains why this book's effort to illustrate how theories achieve this certainty, its discussion of the Copernican revolution in a chapter called "Evolution and the Nature of Science," relies on a traditional or "folk" narrative that shapes this historical episode to fit prearranged didactic purposes (Lessl, 1999). Desiring to certify that scientific theories are cognitive frameworks that are "no longer questioned," the authors fail to mention that the Copernican view was more hotly contested by the scientific community than by religionists (Santillana, 1955, pp. 197-238; Finocchiaro, 1980, pp. 10-15).

Wanting to make straight the path that leads from heliocentrism's modern inception in Copernicus' mind to its supposed certification by Galileo, and to depict this road as one paved entirely with fact, they give no role to the kind of intellectual discord that Thomas Kuhn's (1962) recognized as an inevitable attendant of scientific revolutions. Instead it was merely an accumulation of data that "complicated the hypotheses" formerly used to account for planetary movements," that led "astronomers of the 16th and 17th centuries" to make "even more precise observations of the movements of the heavenly bodies" (NAS, 1998, p. 29).

Astronomers used these measurements to demonstrate that the age-old human

explanations of the heavens were incomplete. In the process they replaced a complex and confusing explanation with a simple one: the sun, rather than the earth, is at the center of a "solar system," and the earth revolves around it. That simple step – a bold departure from past thinking due mainly to the insights of Copernicus (1473-1543) – dramatically changed the picture of the then known universe.

This dramatization of how theories develop might be called "Baconian." It is not entirely incorrect, but in fancying that this revolution advanced by simple steps of measurement it draws attention away from the hard thinking and vigorous debate that was crucial to this advancement. The result is a picture of this revolution quite unlike what has been given by such philosophers and historians of science as Koyré (1978), Finocchiaro (1980) and Pera (1994). For Koyré, Galileo's contribution to this revolution came from daring rationalism, a kind of applied Platonism, not dogged empiricism. The Italian astronomer's great innovation was to construct through thought experiments, abstract mathematical idealizations of physical laws and then to demonstrate how they could be accounted for by the phenomena.

The empiricist conception of science that the NAS authors project onto this episode is, ironically enough, more similar to the Aristotelian view of science that Galileo was trying to reform. The Platonic corrective to scholasticism that Koyré discerned in Galileo's philosophy of science was needed to overcome the limits of commonsense empiricism that sustained the Ptolemaic view. But this battle of scientific philosophies has no place in the NAS account. To recognize that the Copernican revolution was the outcome of competition between two grand metascientific perspectives would be to acknowledge a speculative and subjective side to science that would undermine their narrative's powers of demarcation. Wanting to keep speculation and subjectivity out of science, so as not to give any foothold to religious objections to evolution, the NAS authors are not interested in such complexities.

The NAS authors would have needed to acknowledge a similar subjectivity had they mentioned anywhere in this account that the struggle leading toward the triumph of the Copernican view pitted scientists against scientists. Indeed, the uninformed reader of this account would scarcely understand there even was a scientific alternative to what Copernicus proposed – so thoroughly have the authors depicted Ptolemaic cosmology as a theological position. There are only two vague references to the geocentric model. The authors mention "ancient

observers" of the heavens and the "theories of the cosmos then prevailing" (NAS, 1998, p. 29), but we hear nothing about Aristotle and Ptolemy or the complex architecture of scholastic philosophy in which the old cosmology was embedded. As they approach the denouement of their story the reason for this becomes evident. They have wished to construct this episode of scientific history as a debate between religion and science rather than a contest of scientific paradigms.

As a result of the steady accumulation of evidence, the theological interpretation of celestial movements gave way to the naturalistic explanation, and it is now accepted that night and day are the consequences of the rotation of the earth on its axis. Today, we can see for ourselves the rotation of the earth from satellites orbiting the planet (p. 29).

An obvious advantage of depicting the triumph the Copernican view as a victory over "theological interpretation," is that this episode can then serve as a warning for religionists who would challenge other naturalistic explanations such as evolution. But it also decisively demarcates science from religion. Science is ultimately about what "we can see for ourselves," and religious explanations, since they have not this basis, cannot stand up for long.

Like the definition of theory advanced by the NAS, this characterization of scientific revolutions plays down the rationalistic side of science for the sake of its empirical side. This may explain Isaac Newton's near invisibility in this discussion. In a summation of the Copernican revolution that runs for twelve paragraphs, (1070 words), the contributions of its most important theorist are summed up in a single sentence. The authors follow their treatment of Galileo by saying that "[c]ontinued study and ever more careful measurements of the movements of the planets and sun continued to support the heliocentric hypothesis."

Then, in the latter half of the 17th century, Isaac Newton (1642-1727) showed that the force of gravity – as measured on earth – could account for the movements of the planets given the laws of motion that Newton derived (NAS, 1998, p. 29).

Having invoked the notion of measurement in both of these sentences as the driving force leading to heliocentrism's victory, the writers continue to sustain the Baconian notion that science is entirely an observation-driven enterprise. Even those Newtonian contributions that were unmistakably idea-driven are nuanced to sound like products of observation alone. We are told only that Newton

“measured” the force of gravity on earth but nothing about where the idea of gravity came from, and when the authors say that Newton’s laws were “derived,” they give no hint of the source of their derivation. The naïve reader is left to suppose that the measurements mentioned in the first part of the sentence were their source, but this was clearly not the case (Kuhn, p. 78).

An explanation of the Copernican revolution that centered on the generative powers of the scientific mind might have been attractive to the NAS in a different rhetorical situation, but the goal here is to make theoretical constructs indubitable. To focus on the rationalistic side of science, no matter how powerful or vital it may have been, would draw attention to the vulnerability of Newton’s work to correction by relativity and quantum theories. If classical mechanics could be corrected in such a major way as this, so also might neo-Darwinism. The authors of the NAS book do acknowledge that scientific theories are subject to such change, but it is the half-full glass of scientific certitude that contributes the most to their immediate rhetorical purposes. Skepticism about the neo-Darwinian paradigm might grow even larger if the American public was taught that theoretical constructs, no matter how powerful, always retain a precarious subjectivity as abstract mental representations of physical realities. A simplistic Baconian model which views them as springing up spontaneously from data is preferred, in spite of its clear inability to genuinely “save the phenomena” of scientific history.

The interpretation of the Copernican revolution given by both Finocchiaro (1980) and Pera (1994) and based on their close readings of Galileo’s *Dialogue Concerning the Two World Systems*, would do even more damage to the NAS narrative. Although they assign less weight than Koyré to the influence of Renaissance neo-Platonism upon thinkers like Galileo and Newton, both agree that the Copernican theory did not win out on the basis of an inductive proof. Galileo surpassed his scholastic competitors not by showing that the evidence pointed irrefutably to a sun-centered cosmology but only by marshaling better arguments. But even then, the case was not compelling. Galileo’s case for heliocentrism, Pera shows (pp. 2-28), did not derive exclusively from something like “scientific method.” It was an argument that marshaled all the available means of persuasion, hard evidence as well as soft speculation. Even the experimental tests described by Galileo served as illustrations rather than demonstrations. They were thought models designed to clarify mechanistic principles rather than to prove physical laws. Galileo himself (Pera, p. 28) rejected the notion that any *experimentum crucis* should be allowed to settle the

debate.

2. *Climate Change Science in a Metascientific Vacuum*

I have chosen this treatment of evolution because it was specifically designed to influence how the nature of science is depicted in U.S. classrooms, and in the process to combat widespread doubts about evolutionary science. Because schools are the main source of public information about the nature of science we may also assume that the metascientific thinking of both the American citizens and the policy makers who represent them is born here. Outside the educational contexts for which the arguments of the NAS publication were intended, the scientific culture has few other opportunities to construct metascience – general conceptions of the nature of science such as are produced in this book. Even in the basic science education that most Americans get, very little discourse of this kind will be found. Metascience is typically only the stuff of the introductory sections of the introductory text books used in introductory courses. Apart from such cursory treatments, there is little opportunity for nonscientists to think about what science is in the abstract.

The brief analysis undertaken here would also suggest that these occasional moments of work on the nature of science are likely to be limited, if not distorted, by the salient issues of demarcation that inform them. The NAS initiative looked at here was specifically undertaken to combat the perceived threat of creationism, and so it is concerned with persuasive outcomes that do not seem to inspire a realistic portrayal of scientific practices.

But what happens when the public is involved with scientific controversies that more rigorous understanding of the nature of science? The answer I will propose here is that because such debates frequently occur in a metascientific vacuum, public actors will draw notions of science into this emptiness that they have appropriated from elsewhere. In such rhetorical situations metascientific work such as we have seen in the NAS book on evolution will have effective presence, even though it gives an unrealistic picture of scientific controversy. Because these conceptual resources are unreliable, they could easily undermine meaningful deliberation.

In the final pages of this analysis, I will consider one such vacuum found at the center of scientific rhetoric endeavoring to shape public opinion on global warming. The second NAS publication introduced earlier, “Climate Change Science: An Analysis of Some Key Questions” (2001), is one such message. Since

its readers are not provided with any criteria for assessing the scientific status of the climate theories it discusses, they are left to bring to their judgment of this discourse whatever metascientific criteria they will have absorbed from other messages. In this regard my interest in this message has as much to do with what it does not say as with its material arguments. Specifically I wish to consider the degree of persuasive force this message might have for readers who operate upon the notion that theoretical certitude arises spontaneously from the accumulation of empirical data.

Were readers to take seriously the notions of scientific theory that are found in the NAS book on evolution, they would be justified in disregarding the epistemic merits of the climate theories summarized in the second publication. The evolution book presents scientific theories as constructs made compelling by an accumulation of data that, once available, leaves no room for doubt. But the greenhouse gas theory described in the climate change publication does not appear to have this quality. The climate science publication, as a briefing prepared for policy makers in the executive branch of the U.S. government, is a study in epistemic modesty. It is easy to see why this would be the case. The authors are in some sense writing for their employers, the government that is the main source of scientific funding in the U.S. Reputations and public support are at stake, and so professional caution is in order.
This prudent tone is set in the book's foreword by NAS president Bruce Alberts, who (p. viii) seems to go out of his way to emphasize the tentative character of its findings. He opens by acknowledging several limits of the report, that "tradeoffs were made in order to accommodate the rapid schedule," that various "references to the scientific literature" are not provided," and that "detailed evidence" was not offered for the answers it gives to the questions the Clinton administration asked it to address. The conclusions of the report Alberts calls "'answers,'" using scare quotes as if to accentuate the definitude they lack.

The modest tone of this book is quite unlike what will be found in the evolution publication. Its authors follow Alberts not only in endeavoring to qualify the certainty of their conclusions but also in freely referencing the subjectivity that bears upon scientific reasoning. This is a feature that occasionally manifests in the evolution publication, but the authors of that effort only offer up such qualifiers en route to conclusions that pointedly accentuate the ultimate certainty of theoretical consensus. The evolution publication acknowledges that "the

statements of science should never be accepted as 'final truth,'" but in the same breath it then cautions that nevertheless "in the case of heliocentrism as in evolution the data are so convincing that the accuracy of the theory is no longer questioned in science" (1998, p. 30). No similarly bold or emphatic language appears in the climate science report. Its response to the overarching question of whether global warming can be explained by greenhouse gas theory is sprinkled with qualifiers and disclaimers. The conclusion of these writers that "the observed warming of the last 50 years is likely to have been due to the increase in greenhouse gas concentrations accurately reflects the current thinking of the scientific community on this issue" (2001, p. 3). In this instance it is the collective judgment of a community of scientists rather than indubitable fact upon which the theory's truth value stands. Moreover, the reader will soon learn that this conclusion is open to all manner of acknowledged doubts.

The stated degree of confidence in the IPCC assessment is higher today than it was 10, or even 5 years ago, but uncertainty remains because of
(1) the level of natural variability inherent in the climate system on time scales of decades to centuries,
(2) the questionable ability of models to accurately simulate natural variability on those long time scales, and
(3) the degree of confidence that can be placed on reconstructions of global mean temperature over the past millennium based on proxy evidence. Despite the uncertainties, there is general agreement that the observed warming is real and particularly strong within the past 20 years. Whether it is consistent with the change that would be expected in response to human activities is dependent upon what assumptions one makes about the time history of atmospheric concentrations of the various forcing agents, particularly aerosols (NAS, 2001, p. 3).

There is nothing particularly surprising about this summation. Its nuanced language is characteristic of the professional communication of scientists. But the fact that this was written for lay representatives of the American public creates a complication. These readers need to decide to what extent the language of scientific uncertainty reflected in this technical report should affect policy making on this issue. Is the scientific consensus on the causes and future of global warming strong enough to warrant decisive action? The authors of this book say that it is, but they do not explain how that determination takes into account the

pervasive uncertainty that is described throughout its pages.

In this regard readers of this report find themselves looking into the metascientific vacuum I described earlier. Without any criteria by which to directly answer this question, these non-specialists are likely to fall back upon more conventional modes of judgment – their own sense of the coherence and evidentiary merits of arguments for greenhouse global warming, their take on the ethos of these scientific messengers, or perhaps their sense of how their own constituents might wish them to judge this matter. But they would be just as likely to fill this empty conceptual space by bringing to this message conceptions of the nature of scientific knowledge that come from sources like the NAS book on evolution. Were they to do so, they would likely judge that the case for greenhouse gas emissions as the factor responsible for rising global temperatures is weak.

Skepticism of this kind is typically put down to political prejudice, and certainly the ideological leanings of the public actors who must to interpret such findings may dispose some to have greater doubts than others. But this does not change the fact that it is scientists who have had the responsibility of teaching the rest of us how to best judge their findings. If scientists engage in such instruction under the pressures of informal demarcation, we should likewise expect that the metascientific tools with which they equip the American public will not be up to the task of discerning complex issues like global warming. Preoccupied as it is by the ongoing challenges of creationism and intelligent design, the scientific culture is unwilling to pull back from a demarcationist strategy that has served it well for several centuries. But in the complex world of the present, in which the worth of various scientific theories must be weighed in public deliberation, this approach to shaping public conceptions of science poses new dangers.

For some time the issue of scientific literacy has occupied the attention of science educators in the U.S., and for good reason. Those living in a world increasing shaped by science, must also find their way by science. Usually these concerns center on literacy as it pertains to the content of science rather than the ways of science, but in reality it may be the latter concern that has the greater importance. Even the highly educated and interested lay person could never hope to attain more than a superficial command of what scientists know – even in several life times. Some parts of scientific learning need to be generally understood, such as those having bearing upon issues of health and nutrition, but most do not. For lay persons who must deliberate on scientific questions, a realistic knowledge of what I have here called metascience would be more useful.

As an overarching understanding of scientific inquiry, sound metascience would provide public actors with a more reliable framework for assessing the merits of particular knowledge claims.

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ISSA Proceedings 2006 – How

Newspaper Coverage Transforms Policy Issues Into Character Matters: Debate About A School District's Test Scores

1. *Introduction*

Eliasoph (1998, p. 210) argued that "Reading the local newspapers . . . did not help citizens make connections between politics and everyday life, did not help them learn about the art of political debate, and inadvertently discouraged them from speaking out in a public-spirited way." The dominant practice for reporting local events, she opines, tends to drain the political out of whatever is going on. Unlike national and international news, balance is rarely needed for local issues; local activities are presented as factual events rather than as issues that warrant debate and reason-giving. Such a state of affairs, quite often, is NOT the case in local U.S. communities when the issue concerns a school district's educational policy. In Boulder Valley School District (BVSD), this paper's focal case, the community's main newspaper was not fostering apathy. Not only did its news and editorial pages regularly present a variety of debates related to BVSD activities, but on certain occasions the paper became an initiator of a controversy. Such was the case in May of 1997 in the heated discussion about the district's 4th grade reading test scores that occurred in the newspaper and board meetings.

School board meetings are a particularly American institution, finding their roots in the early 20th century progressive movement that treated education as a community "good," democratic but not very political, in the same category as, for instance, road repair. A typical board meeting brings together elected officials, citizens, and school staff in a district to make decisions. Meetings also serve as screening sites, using citizen commentary, permitted at certain meeting moments, to identify issues that should become a focus of later board deliberation (Craig & Tracy, 2005).

This study is part of a larger project examining dilemmas and discursive strategies of "ordinary democracy" in local governance groups (Tracy,

forthcoming; 1999; Tracy & Ashcraft, Tracy & Muller, 2001).This paper focuses on the controversy about BVSD's reading test scores. Following a brief overview of the controversy, I describe the arguments forwarded by various BVSD players, organizing them into two lessons that the participants' discourse teaches about publicly-made education arguments. The chapter concludes by reflecting on the advantages and troubles that the *Camera*, the community's local newspaper, encountered in its civic journalism motivated efforts to foster community engagement.

2. *The Controversy and Its Discursive Unfolding*

The controversy began with a lead editorial in the Sunday newspaper that proclaimed "reading scores are shocking" that went on to inform readers that "Twenty-eight percent of our fourth graders are reading *below* grade level. More than one out of four. Alarming? You bet. What is going on?" (Camera, 1997, May 18, p. 2E) In the editorial, the 12 schools with the largest percentage of "below grade level" children were identified, along with the exact percent of each school's students that were below the 50th percentile on the reading section of the California Achievement Test (CAT). Offset in large print in the middle of the editorial was the following assertion: "The problem is fairly obvious: Our schools are doing a lousy job teaching the most important learning and survival skill of all-reading."

Earlier in the week, board member Riddle had met with the *Camera* editor Hartman to express her concern about how the district was teaching reading. During the meeting Riddle had shared information about the district's 1996 reading test scores. The next Sunday an editorial appeared criticizing the district's teaching of reading. In an interview with Hartman I asked him what role he saw the *Camera* taking in developing opinions about issues important to the community.

(1) We really feel that we should be totally objective on news pages, but not on the editorial pages. I thin- we're (KT: okay) we're we- we're being paid to try to understand what's going on and try to offer some guidance and leadership. And that's what we do on the editorial pages. But we also provide the whole open forum for the public to respond. For the school board to respond and for uh people writing letters to respond.

In addition to the "lousy job" assertion noted above, five additional claims were contested by one or another party in letters, opinion pieces, and in the

subsequent May meeting:
(1) “Riddle may be on to something” for favoring a “nuts-and-bolts” philosophy” and worrying that the “new educational theories may be doing more harm than good.”
(2) 28% of the district’s kids are reading below grade level.
(3) High Peaks Elementary, a core knowledge program that had zero percent of students reading below age level, has teachers that “are doing something unique” that “is worth modeling in more schools.”
(4) Those who might say scores are not alarming, since they are better than most districts in Colorado, are wrong.
(5) District shouldn’t let a “hundred more students slip though the cracks”. . . ”the mandate is to do something, and to do it now.”

Two days later, and the day before a regularly scheduled board meeting, a news article appeared reporting the reading scores with a table listing the percentage of students below the 50th and 34th percentiles at each of the district’s 30 elementary schools (Taylor, 1997). In addition, the article had a picture of board president Hult followed by a quote saying “If I were an elementary school parent, I would not be comfortable having my child go to a school where somewhere between 30 and 55 percent of kids are not reading at grade level.” At the school board meeting the next night, “reading program and achievement” was an agenda item up for discussion toward the end of the meeting. This meeting brought 37 citizens out to speak and lasted 7 hours. In the weeks following this meeting, the editorial pages of the Camera were full of letters to the editor and opinion pieces, as well as a second editorial by the Camera.

3. *Public Arguments about the Reading Test’s Meanings*
One feature of this controversy is the impossibility of formulating a single issue which the different parties addressed. Instead, the contention over the reading test’s meaning was a messy argumentative field in which different issues were raised as participants spoke and wrote. Argument scholars have tended to treat issues as straightforwardly “there.” But as Goodwin (2002) has shown, this is rarely the case; in actual disputes an issue arises when someone makes an issue about something another has said or written. Moreover, in issue-raising, emotion and logic are deeply intertwined. Through the language that BVSD participants used, they made arguments as they conveyed feelings of different kinds and intensities.

Policy-making in education, "involves an appraisal of current conditions, an assessment of why the status quo is not working as it should, and a search for causes and potential solutions"(McDonell, 2004, p. 42). One could gloss what was going on in BVSD as this type of problem solving. The board leadership, in fact, tried to make the policy discussion regarding what to do about the "poor" reading scores the dominant situation frame. As board president Hult commented toward the end of the two-hour discussion about reading achievement:

(2) Line3030
There's a problem. We need to fix it in the district. That's really the bottom line here and it should be an unemotional discussion. Rational. Clear. There's a problem. Things are not what they should be. Let's fix it.

3.1 *Lesson 1: Educational Policy Issues Easily Become Arguments about Character*

The definition of educational policy-making noted above relegates issues of actors' character and competence to the background. This concern, however, was not backgrounded in citizen comments. Citizens treated the Camera editorial and Hult's remarks as arguments about the competence of key people, or as I would put it, attacks on face (Goffman, 1967). Face presumes that people desire to be respected and seen as competent in all situations; they will inspect what is said (or written) for what is says about who they are. To assert, as the editorial did, that the schools were doing a "lousy job" teaching reading was interpreted by many as an argument that teachers were doing a bad job. Consider just two examples of the meeting commentary.

(3) Parent Comment, Line1862
I will tell you that those are dedicated teachers that they're often there till 6, 7 o'clock working. And for us not to value their professionalism and to make conclusions that this board feels that they can tell those teachers how to teach to me is just an insult to their professionalism … please would you include your teachers when you go to make these policies? Would you trust your professionals and involve them when you are trying to, you know, look at programs that work? Because believe me they're hardworking professionals that know what works with children. Thank you.

(4) Teacher Union President, Line218
We are also angry about the misuse of standardized test scores for political

reasons. ((audience applause)) We are confident ((pause)) We are confident that when the whole story on these test scores is out a more balanced picture will emerge about student achievement in Boulder Valley public schools. Teachers are concerned that poor decisions will be made as a result of the misinterpretation of test data. Teachers are angered by the outrageous conclusions that the *Daily Camera* has made in recent days. ((audience applause))

Following public commentary the board discussed the topic. Members of the board majority and its minority did have different positions about whether students' reading performance was a serious problem, but constructing a fair characterization of the stance differences was noticeably absent. Instead, opposing parties offered caricatures of each others' arguments. In actual exchanges, argument-making involves advancing one's own point while characterizing, often indirectly and implicitly, the problematic nature of other party's position. It is in this category of discursive moves – making an argument as one counters another's – that logical position-making and emotion marry. The president, for instance, formulated what minority member Shoemaker was arguing as a claim that there was no reading problem in the district. Notice how Hult's description of Shoemaker's position uses language that robs Shoemaker's position of subtlety, in fact ridicules it (e.g., "let's just uh party"). In turn, Shoemaker (LS) claims that Hult (SH) was asserting the strongest possible character attack that could be derived from a comment that reading scores were shocking ("those teachers are lousy").

(5) Line2976
SH: It's really fine, everything's fine. and it's ok that we have a third of the kids maybe roughly but they're just poor and their parents don't care . . .Uh:: it sounds like everything is going well and we don't really need to do much. And so this has been an overreaction uh:: let's just uh party
LS: I'm not satisfied uh I do think we need to: improve reading in this district What bothers me is the characterization (.) that these figures are shocking. That those teachers are lousy. That the teachers don't ca:re about these children that don't n- the teachers don't know who they are and aren't working as hard as they can (.) to improve the situation. Thank you.
SH: Well then I'm going to respond. We didn't say that? Nobody said teachers are lousy, nobody said anything along those lines, some of the test scores are shocking but nobody on this board has said that teachers are lousy.

An assessment of whether the tests scores should be judged as poor rested on the meanings that were attached to the scores. In education there are two primary kinds of assessment tests: (1) standards-based tests in which performance at a particular level is defined as a standard for students at a particular grade, and (2) nationally-normed tests in which 50% of test-takers will be below the 50th percentile and 50% will be above. The two kinds of tests are quite different. Standards-based tests make possible that 80, 90 or even 100 percent of students could meet a grade-level standard; nationally-normed tests do not. The CAT was a nationally-normed test; 72% of the district's student had scored at or above the median and 28% had scored below. One meaning of the test scores, then, was that compared to other cities in the US, BVSD had more good readers than most. At the same time, the test results revealed that a significant percent of BVSD children were below the 50th percentile.

Following opinion pieces and comments that problematized the initial move of the newspaper and the board majority to equate "below the 50th percentile" with "below grade level," and in recognition of the district's "diversity," a euphemistic term for students who were ESL, Special Ed, or poor, one strand of the argument shifted to the issue of what would be an acceptable percent given Boulder Valley's character as "affluent" and "well educated." As the *Camera* (1997, May 25. p. 2E) put it in its second editorial,
SO WHAT IS ACCEPTABLE? With the growing diversity in the district, it is unrealistic to set a goal that says no more than 10 percent will be testing below grade level. But what about 12 percent or 18 percent? Are numbers like these unrealistic?

The second *Camera* editorial illustrates another aspect of arguments that is common in public disputes. When individuals or newspaper are heard to be unfairly blaming, that blaming action, itself, becomes accountable. The second editorial said:

The phone calls from parents, teachers, and administrators – and the letters pouring into the Open Forum – are filled with outrage over this newspapers outburst last Sunday over fourth grade reading scores. . . . [L]et us correct a misstatement in last week's editorial that made it appear we were blaming "lousy teaching" for the problem. What we intended to blame was a system that isn't getting better results because resource needs of teachers are not being met in these very critical years of a child's education.

In addition, speakers and writers argued that this inappropriate blaming was evidence of the incompetence and poor leadership of the board majority. As one citizen remarked (Line649) "The conclusions you have reached based on your misunderstandings have damaged your credibility in our schools." And as another citizen concluded, after explaining the nature of norm-based tests,

(8) Line1699
Cit: this focus on a single misleading percentage produces nothing useful, it's dangerous and it's childish. It's time for this board to act like adults. This isn't a game. Eh now- ((bell rings)) I will say to the so called Gang of Five that you may think you may get [more
VP: [I'm sorry we cannot i- uh- tolerate attacks on the board please stick to the issues and the policy. Your time's up. Can you please come to closure please?
Cit: You may think you'll get more votes out of this in the next election but you don't- these are very real children you're putting at risk ….

If policy development begins with identification of a problem and its causes, then how one formulates the problem and causes matters. In this case, teachers and administrators felt blamed; they did not hear the facts about reading test scores simply as raising a policy discussion about the best practices for teaching reading. The actions of blaming teachers, administrators, and parents that were inferred to be the aims of the board and the *Camera*, in turn, became evidence in a larger argument about the competence and character of the board and the *Camera*. In contrast to the board majority however, the *Camera* (1997, May 25, p. 2E) did significant work to counteract its earlier message. It concluded its second editorial, saying: In spite of the intensity of the latest academic furor, this school district has a reputation for creatively overcoming tough challenges. We have every confidence teachers, administrators, and school board members will conquer this one too.

The character-policy connection did not stop with the first round of argument. Board members who had defended the reading test score numbers as "not shocking" were treated by some as making a "racist" argument, in which they were not holding sufficiently high expectations of minority children (Been, 1997).

There was an additional argument about the character of the community that emerged. Face as a concept has largely been applied to individual communicators, but it can easily be extended to groups and communities (Tracy &

Naughton, 2000). As people do, communities, to, have a sense of who they are that they work to uphold in public exchanges. What did these test scores mean about the character and competence of Boulder Valley? Was having 28% of students below the 50th percentile reasonable or, as the *Camera* (1997, May 18, p. 2E) argued, was "that kind of surrender to mediocrity… fine elsewhere but it won't fly in Boulder Valley." This issue was addressed in the meeting by a representative of School Links, a newsletter that discussed educational issues in Boulder county. Following an identification of herself and the newsletter, the speaker said:

(10) Line494
The primary mission of *School Links* is to inform the community on education-related issues. Because we recognize the complexity of educational topics we probe issues to present varying perspectives. And we try to ask relevant questions. Tonight, first, um *School Links* would of- would like to offer the board some information that we've gathered. Umm *School Links* wanted to know how Boulder Valley stacked up to schools across the country. We found that in standardized reading tests 24% of fourth graders in Ann Arbor scored below the median. We found that 29% of fourth graders in Madison scored below the median. We found that 37.5% of fourth graders in Cherry Creek scored below the median.

The speaker's comment can be seen as disagreement with the *Camera's* position that having 28% of students reading below the 50% percentile should be unacceptable for Boulder Valley. When speakers do comparisons, even when they dispute them, they reveal what category they take their community to be in. Ann Arbor, Madison, and Cherry Creek are not just any towns in the United Stated; they are especially affluent, educated communities, with two of them also being homes to major universities. In not selecting Los Angles, Philadelphia, or any of a number of small rural towns in the West as comparisons, the speaker is asserting Boulder's character, as well as making a claim about the reasonableness of Boulder Valley having 28% of fourth graders readers below the median score. Her argument rests on two legs. The first leg is the reasonableness of the comparisons, that is, is the category into which she has put Boulder a fitting one? A second leg is the implication that a community scoring in the middle of its peer communities – notice how the three scores are a little below, roughly the same level, and a little above Boulder Valley's – is performing reasonably. After several

other remarks, the speaker concludes: “The contributors to *School Links* think that the public should question the intentions behind the release of manipulated information which creates panic. Thank you” (Line 515).

What kind of community is Boulder Valley? This question became an argument in itself. The president of the Parent Advisory Council of the BVSD wrote a guest opinion in the newspaper disagreeing with an earlier editorial arguing for switching to phonics-only instruction (Marion, 1997). As evidence for his position, he noted that the schools in Palo Alto (another affluent, educated community as well as the home of Stanford University) used a balanced approach teaching literature and writing stories in addition to teaching phonics. Although the thrust of his editorial was an argument against a phonics-only approach, his argument presumed the suitability of using Palo Alto’s practices as a comparison point. But the community comparison had not begun there.

His guest opinion, “Learning to read in Palo Alto and Ann Arbor,” had been preceded by a letter headlined, “Boulder is no Palo Alto” (Welch, 1997). Palo Alto citizens, the “Boulder is no Palo Alto” letter argued, are much more homogeneous in their level of education and wealth than are citizens in Boulder. Boulder Valley includes several rural, low income areas; these schools, in fact, scored lower than other schools in the district on the reading test. But even as the writer denied that Boulder Valley should be grouped with Palo Alto, his denial treated the assertion of Palo Alto as a imaginable comparison point. Hence, albeit in a backhanded way, his argument reinforced Boulder Valley’s face as an above average community that should not bind itself to average performance criteria.

The first lesson to be gleaned from this controversy, then, is the potential closeness between matters of policy and issues of competence and character. When a policy centrally concerns people’s actions – as teaching of reading by teachers using administrator-developed practices in schools that parents have chosen to send their kids to does – or the identity of a community being a certain desired kind, then raising of a policy issue needs to be done with an understanding that issues of character and blame are lurking around the policy issue’s edges, if not right in its center.

3.2 *Lesson 2: Heated Local Controversies Often Tap Broader US Dilemmas about Education*

This controversy about reading scores tapped three interrelated tensions that are built into American education. A first tension concerns how to divide

responsibility for educational policy-making. What is the role for education experts (teachers, administrators, and superintendents) and what is the role for ordinary citizens? “Unlike schooling in every other major industrialized country, public education in this country is democratic and deeply local” (Hochschild & Scovronick, 2003, p. 2). Often these two groups are in accord, but when they are not, decision-making becomes difficult, as there is no agreed-upon algorithm for determining whose voice gets privileged. Across US history, standardized tests have been political matters. Standardized assessment tools, particularly as they developed in the 1990s, enabled a shift away from what professionals thought was good education toward what many ordinary people took it to be. For many lay people a good education required getting the basics down, not allowing children to spell “creatively”; teaching of phonics and attending to grammar was crucial. For most professionals, as well as a goodly number of ordinary citizens, education needed to be about fostering engagement with learning, involvement in literature, and avoiding too much drill and rote memorization. These different teaching philosophies, often labeled as the “phonics versus whole language debate” were one part of the policy piece of this controversy. The board majority represented the phonics view, and the board minority and most of the teachers represented the whole language approach. Of note, just about all participants had more subtle positions than they attributed to their opponents: all discussants saw the need for both. They differed, however, as to how much phonics versus literature was best at what stages. Consider excerpts from two guest opinions that argued with each other.

(11) Spokesperson for Coalition for Quality Schools (Charles, 1997, p. 3E)
The workbooks and drills from the 1950s may have a place for some students but they are a poor substitute for schools that challenge and encourage each student at his or her current level. We cannot afford the “one size fits all” philosophy of the current majority.

(12) Guest Opinion (Jaffee, 1997. p. 3E)
Members of the “Coalition for Quality Schools” are those same entrenched forces who brought you Whole Language, invented spelling, phony self-esteem, and now Whole Math. These are not the moderates who want only quality education for our children. In an attempt to ignore public demands and continue their damaging educational fads and socialization programs, these forces stand hip-to-hip with the teachers’ union.

Both writers advance reasonable arguments about what is the best way to teach reading as they damn the other side through the description of what it does and favors. Although (12) uses a greater amount of morally-loaded description terms (e.g., “entrenched forces,” “phony self-esteem,” “damaging educational fads”), the writer in (11) is no slouch. Describing what the board majority favors as “workbooks and drills from the 1950s” and “one size fits all” is also strongly negative, implying that the majority has a dated, rigid educational philosophy. In addition, the opinion in 8.11 makes visible the large societal debate about who should be making decisions – “the public,” who the authors aligns his views with, or the education establishment and those who “stand hip-to-hip with the teachers’ union.”

McDonnell (2004) traces the debates that occurred in the U.S. in the 1990s about standardized testing. At the state level, “high stakes” testing emerged as a way to hold schools accountable to the larger public. Too many children were not acquiring essential literacy skills needed to function in jobs, and, compared to other Western countries, American students were performing poorly. Standardized tests have been around for a long time; what began to change in the 1990s was a move from treating these tests as “low stakes” instruments that would provide helpful but not reward- or punishment-consequential information to “high stakes” tests in which results would be used to reward and punish students, teachers, schools, and districts. By 2003 slightly more than half of U.S. states had developed policies that attached consequences to their standardized tests. In the mid-90s, Colorado was working out what this would mean for its schools and the 1996 CAT testing was a practice run to allow BVSD to get a sense of how the district might perform once the state determined its meaning for “grade level” (e.g., below the national 50% or the 34%) to which all districts would be held accountable.

In the United States there is strong agreement across just about all groups that there should be standardized testing in schools; consensus disappears, however, when the issue becomes *what* the standards should be assessing (McDonnell, 2004). If standards are to be the carrot (or the stick) that leads schools and classrooms to change, then it is necessary to have a high level of agreement about the content of the standards. This is a politically difficult task. Building standards requires navigating among citizens’ different beliefs about what should or should not be given emphasis in public schools. Should tests emphasize the basics or should they give weight to the complexities of experience (e.g., literature),

thereby requiring children to make assessment about what is reasonable or moral? In addition, standardized tests raise a whole slew of practical and technical issues related to test construction. On the one hand, reliability – a key issue if other decisions are to rest on test scores – is more easily established with multiple choice tests. Moreover, multiple choice tests are relatively inexpensive, can be scored easily, and produce their results quickly. All of these are features that are strong pluses for school districts. On the other hand, important learning goals, such as students being able to develop arguments and write, cannot be funneled into multiple choice questions. If only those school goals that are easily testable are tested, and there are high stakes for teachers and schools for test performance, then standardized testing could end up fostering the opposite of what it is supposed to bring about.

The exchange of opinions between cognitive psychologist Blackmon and educational measurement expert Linn, which occurred on the editorial pages of the *Camera,* tapped into these arguments about reasonable design and uses of standardized tests. In her editorial Blackmon (1997, p. 6E) claimed that BVSD schools could change the number of students scoring low on reading tests.

Breaking the bell-curve barrier CAN happen but not without negotiating objective criteria making major changes in BVSD assessment and reporting, reforming BVSD incentive systems, and developing better responses to students who fall short of the standards our community sets.

Yes, Linn (1997, p. 1E) agreed, the CAT "can provide a useful indication of how students in a district perform in comparison to students nationally," but he went on to argue, it is important that the conditions of test use be similar to the national uses. If the stakes for the test in one state are different than is the case nationally, then serious distortions may arise. If there is a mismatch then "it is likely to be the tests, not the content standards, that prevail in guiding instructional efforts." There is no consensus in American society over how to design, use, and interpret standardized test scores. The issue is a technical one, and it is value-based and political. There are no easy answers. BVSD's controversy over reading scores was instantiating this debate.

A final issue within education that the controversy ignited was the way it made visible holes in the "American dream." As Hochschild and Scovronick (2003, p. 19) comment, "Education is at the core of the dominant American ideology; it is essential both to create the democratic structure of which Americans are so

proud and to provide the tools for success that Americans seek so passionately." The American dream promises that if individuals work hard, they will get ahead. In this promise, public schools are the main institution for making the dream work; they are the institution that insures that everyone has equal opportunities to succeed. But as everyone knows, the quality of American schools is dependent on the class, race, and ethnicity of its communities. As one citizen commented at the board meeting,

(16) Line 1747
Now fourth grade test scores published in the May twenty-first edition of the *Daily Camera* revealed a number of facts about the quality of reading education in the Boulder Valley School District. We learned that on the average, district scores are higher than anticipated, that children from wealthier neighborhoods are better readers than children from poor neighborhoods, and that higher scores come from schools where parents select their children into homogeneous populations.

Tests can be an instrument in bringing about desired social change, but when stakes are high, they can hurt students who have not had a fair chance to learn what is being assessed. Tests can exacerbate institutional racism, providing one more reason for people to believe that "the wealth of the advantaged is evidence of virtue and the poverty of the disadvantaged evidence of sin."(Hochschild & Scovronick, 2003, p. x)

At the most concrete level, the BVSD controversy was over how to spend scarce dollars in helping its students read. Should dollars go into regular classrooms for general reading programs or should they go into individualized (and hence more expensive) pull-out programs for students who were having pronounced difficulties? At the time of the May 22nd meeting, the board majority seemed to be headed toward decreasing individualized programs. In situations of scarce dollars, almost always the case, a dollar for at-risk programs is a dollar that doesn't go for programs for average or gifted kids. Where to put resources is an enduring tension in education. Advanced programs enable the most hard-working to get ahead, thereby achieving the American dream; at-risk programs further the American dream's commitment to fairness and helping those succeed who have been the most disadvantaged. The district should be targeting its dollars here, asserted a teacher at one of the district's bilingual schools: " Don't take it [an existing reading program] apart, give it time… Let's see what happens in two

years when those kids are in fourth grade and they do their famous testing and they come up with those scores" (Line1903).

The tensions between funding programs geared to the most academically able versus those designed to help children having academic problems are inescapable, a problem that can be managed better or worse but never entirely solved. The BVSD reading controversy tapped into this dilemma of American education.

4. *The Role of Local Newspapers in Public Argument about Education*

"Reasoning is a way we assume our identities and give shape to our ethical and social lives" (Crosswhite, 1996, p.65). When people have strong feelings, as Walton (1992) notes, they become willing to speak out, reason in public, and articulate what grieves them. Such reasoning and speaking out was what the citizens of Boulder Valley did in their district's board meeting and on the pages of the local newspaper. Moreover, in the process of speaking out, a public came into being around the messy tangle of issues I described above. The discursive space in which Boulder Valley citizens deliberated about the meanings of the reading test for their community stretched from the newspaper to the board meeting and back again to the paper, with each place used as a resource to advance and counter arguments in the other.

In this controversy, the *Daily Camera* was not merely covering a debate: It initiated it and then shaped its content and trajectory. During this time period, the *Camera* was enacting "civic journalism," a community engagement philosophy that many newspapers adopted in the 1990s. Civic journalism, as Fouhy (1996) defines it, is "an effort to reconnect with the real concerns that viewers and readers have about the things in their lives they care most about," but what exactly civic journalism means varies considerably with the community projects that individual newspapers tackle (Friedland & Nichols, 2002). At the time of the controversy the *Camera* was in the midst of an 18-month task force whose goal was to bring a set of citizens from diverse backgrounds together to develop a set of recommendations about how to improve BVSD schools. In addition to the task force, the *Camera* regularly weighed in on its editorial pages about educational issues, a second practice that newspapers in the 1990s were using to deepen the political engagement of their communities. The editorial that set the reading controversy in motion was part of the *Camera's* larger civic journalism commitment.

As a movement, civic journalism has been praised and criticized. On the positive side, civic journalism illustrates a way newspapers can sidestep Eliasoph's criticism about local news coverage promoting apathy. It helps citizens get involved in community affairs and provides a forum for deliberation. At the same time, civic journalism has been accused of being "naively idealistic" and "resting on a simplistic notion of community and the common good" (Fouhly, 1996) What the reading test scores "meant," as the *Camera's* first editorial had suggested, was not an obvious, "here's a problem; here's the solution" kind of thing. Interests and sensitivities in various segments of the Boulder Valley community were not cut from the same cloth.

A newspaper's voice, particularly in a community dominated by a single paper, will be loud. Its opinions will be given attention when it pronounces on the actions of people to whom readers are connected. When a problem (e.g., poor reading performance) is, in fact, a complex issue where many reasonable standpoints can be advanced on multiple sides, then a newspaper proposing a solution to "the problem" will create trouble. Perhaps the difficulties Boulder Valley was having with factions and hostility was a reasonable price to pay to create a seriously engaged public. It is important, though, to recognize that absence of apathy among local citizens, a state that the newspaper can be credited as enabling, did not translate into a problem-solving, "common good" oriented community. More likely than not, as this case suggests, a community's avoiding of political apathy will require tolerating, if not valuing, conflict and emotionally-tinged, person-directed arguments: Having large numbers of citizens willing to speak out about political issues goes hand in glove with citizens seeing the personal and community consequentiality of issues.

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