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Andrew Kidd

*University of Minnesota-Twin Cities*

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# The Limits of Dissensus: The Case of “Intelligent Design”

ANDREW KIDD

*Department of Communication Studies  
University of Minnesota-Twin Cities  
Minneapolis, MN 55415  
United States of America  
kidd0039@umn.edu*

**ABSTRACT:** Although dissensus is a natural component of argumentation and testimony, there are limits as to what can be considered acceptable contrarian or arguments. In science, dissenting arguments are limited by the extent of their fidelity to known facts and theories. Dissensus is therefore limited by how consistent a new theory or hypothesis is with an established body of knowledge, as well as other criteria any good theory must meet. In the case of the so-called “intelligent design” controversy, the supposed “dissensus” is really an attempt at imposing inappropriate forms of argument. Using this case study as an example, questions on what are the limits of dissensus will be raised and examined.

**KEYWORDS:** argumentation, evolution, science

## INTRODUCTION

Biologists will forever rue the day that the pseudoscientific concept of “intelligent design” was introduced into the popular vocabulary. After more than a century and a half of evidence in the fossil record, of corroboration through the techniques of genetic analysis and molecular biology, evolution by natural selection has established itself as being a fact as well as a theory, one which neatly and simply explains nearly every facet of the living world. Alas, what is easily understood within one discursive community is not always as accessible to those existing apart from it, and worse yet, there will always be self-described iconoclasts who would rather be wrong than accept what they perceive as conformity or quasi-religiosity. The goal of this paper is not to defend evolution over intelligent design on the basis of the evidence itself; such a defense has been well-mounted enough by the scientists themselves. It is to defend it on the basis of how it follows the proper rules of scientific argument, something which intelligent design fails to do. There are consequences for this particular case analysis which may extend beyond the uses of argumentation of science, in understanding what the boundaries of dissensus are in other forms of argument.

## REASONING AND ARGUMENTATION IN EVOLUTION

Before looking at the arguments of the intelligent design advocates, we should first examine the initial arguments used by the scientists they are responding to. According to Ruse, Darwin utilized two main forms of reasoning, promulgated by contemporaries in Victorian England, to build his arguments for evolution through natural selection as being the basis of speciation. The first of these was analogical deduction, as expounded by John Herschel, and the second was the consilience of inductions promoted by William

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Whewell. Ruse has further identified five examples of what he calls “epistemic norms” which form the basis of scientific consensus, and which aid in the pursuit and understanding of objective knowledge. These are: internal coherence, external consistency, predictive accuracy, fertility, unificatory power, and simplicity. Evolution fulfils each of these criteria well. It is both internally and externally consistent, with none of its axioms contradicting themselves, nor those of any other scientific theory, in spite of some of the uninformed claims of young-earth creationists. It has demonstrated itself to be accurate in its predictions and unification of explanations; and finally, it fulfils the criteria of parsimony on the basis of both its simplicity and its heuristic value.

When applying these epistemic norms to the recent attempt at supplanting evolution, Ruse finds that it falls far short of fulfilling them. Intelligent design proponents can’t say that their theory fulfils any of these criteria, because it doesn’t really explain anything; it questions and criticizes, but does not provide a viable alternative based on the available evidence, defines whatever axioms it may have vaguely in their relationship to one another, and while it ostensibly does not contradict any external field of physics or chemistry, it doesn’t need them as a basis for its assumptions. Without precise knowledge of what the “intelligence” is, and how it “designed” life, there is no way it can fulfill these additional criteria (Ruse 2003, pp. 476-478). What Ruse doesn’t look at is the way in which the intelligent design theorists have misused the earlier forms of argumentative reasoning which he had previously identified as being essential to Darwin’s theory. The misuse of both analogical-deductive and inductive-conciliatory arguments in the rhetoric of intelligent design advocates is what results in the violation of Ruse’s epistemic norms, and they will be examined through a closer inspection of the arguments presented by William Dembski in *The Design Revolution*, which serves as a synthesis of the currents in this particular field of thought.

## MISUSE OF DEDUCTION

Herschel’s model of deductive reasoning, which he outlined in *A Preliminary Discourse on The Study of Natural Philosophy* (1831), is based on the notion that scientific theories are axiomatic, and that laws governing natural processes can be discerned through empirical understanding. According to Herschel, for us to make sense of that which we observe through our senses, and determine the actual processes of cause and effect in nature, we must argue analogically, on the basis of our own personal experiences and observations, achieving understanding of external events through a deductive process of conceptual metaphor. Darwin utilized this notion of analogical deduction at the outset of *The Origin of Species* by comparing natural selection in the wild to artificial selection in domestication. Dembski similarly makes an attempt at a deductive analogy at the beginning of his book, but stumbles immediately, and demonstrates the limits of analogy in the physical sciences. He attempts to explain the intelligent design “research agenda” as being the attempt to scientifically study the products of intelligence rather than intelligence itself, on the basis of inferred characteristics to find which Dembski calls “specified complexity”, which allegedly are so complex they could not have arisen without the use of a designer. In his introduction alone, Dembski attempts analogical arguments relating specified complexity to Mount Rushmore, a Durer woodcut, and an archer firing at pre-drawn targets (pp.33-35), as well as Michael Behe’s attempt at

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making an analogy between a flagellum and a rotor motor (p.36), and, later, William Paley’s hoary old example of a watch in a field, to form the basis of what he calls “the argument from design” (pp.64-71).

The use of such deductive analogies by Dembski differs greatly from their use by Herschel and Darwin, however, in that they are not axiomatic; they make no attempt to deduce their hypotheses upon laws which may be inferred from observations, but instead on comparisons between observed similarities which have no relationship besides the inferred supposition of design. When Darwin made the analogy between artificial and natural selection, it was on the basis that the same laws regarding the breeding of organism in domestication can also be observed in nature. The intelligent design argument does not suggest that the same laws concerning the construction of a rotor or the chiseling of a sculpture are axiomatic; it instead insists that observed design infers unobserved design, in opposition to Herschel’s empiricism. Dembski unintentionally displays this general misunderstanding with a gross misinterpretation of the idea of constructive empiricism in the philosophy of science (p.65). Constructive empiricism does not maintain that theories are useful only to the degree in which they are useful in generating new insights, as Dembski insists, but to the degree in which they fit observable phenomena as well as to the degree they satisfy given axioms (Van Frassen, 1980). Even if Dembski had properly interpreted constructive empiricism, it would still not mean that he would have a valid epistemological platform on which to rest his argument for design. Giere (1985), in a critique of constructive empiricism, has argued that analogical models are limited in their explanatory power by how well they correspond to the object of comparison, and the strength of the binary relationship between them, as well as the fact that we are limited by how precisely we define the object of study. There exists a very strong such relationship between selection by nature and selection by domestication; although one process takes longer than the other and is random rather than directed, they both involve the same organisms, undergoing similar pressures, and the objects and similarities between them are well defined. The attempt at analogical modeling in intelligent design arguments is a classic attempt of the misuse of deductive reasoning, using vague or ill-defined similarities to assert that any “irreducibly” complex pattern is evidence of design.

### MISUSE OF INDUCTION

The other major philosophical model which guided Darwin in his theorizing is the consilience of inductions advocated by William Whewell. In his book *The Philosophy of the Inductive Sciences* (1860), Whewell maintained that we arrive at theories not through the application of axioms or analogies, but through establishing connections between related phenomena where casual relationships can be established; through this reasoning process, we are able to construct a unified explanatory framework. Darwin’s use of induction was twofold. First, he was able to establish connections between the common lines of descent that existed between both closely related and seemingly disparate organisms, so that he could demonstrate that all life springs from a common ancestor, and second, he was able to demonstrate how the process of natural selection provided an explanatory framework for a wide range of traits and phenomena which heretofore had regarded as being separate and irreconcilable (Ruse, 1999, pp.179-180). Through this

inductive process, Darwin was also able to provide an argumentative framework to address objections to his theory, such as the supposed absence of intermediary species, or alleged gaps in the fossil record.

Induction as it takes place in the intelligent design arguments, however, seeks not to carefully establish unity between the objects of evidence, but to instead refute competing explanations before a satisfactory relationship can be established. This process of “eliminative induction”, as Dembski calls it (pp.219-22), favors the imposition of design inferences upon so-called “gaps” in understanding; if it could conceivably be designed, and we have not yet found an adequate naturalistic explanation to account for it, than according to Dembski and other intelligent design advocates, it must be designed.

The problem that Dembski and like-minded scholars fail to notice with this approach is that a scientific theory by its very nature must allow for gaps and openness if it is to be considered viable. In the two centuries since Darwin’s original theory, the consilience of inductions has only gone further, as the lines of descent are further confirmed and elaborated through discoveries in biochemistry and genetics, and many of the gaps in the fossil record that so vexed scholars at the time have been filled with new excavations, all of which have confirmed Darwin’s assertion that all representatives of a species constitute the intermediate forms which evolution skeptics stubbornly insist be presented. On the other hand, eliminative induction as advocated by Dembski, as opposed to the conciliatory induction used by Darwin, is inherently self-defeating, as it views theories or models as simply objects that are knocked down with the slightest feather of opposing evidence, instead of seeking to verify how well they corroborate with the existing body of knowledge. The argument for design, without being able to explain a mechanism for design itself which is consistent with the available evidence from all relevant scientific fields, is unable to support itself except that it must be accepted with the supposed unavailability of a competing and equally valid hypothesis. Although it pretends to be a form of dissensus, this misuse of inductive argument actually results in the imposition of highly restrictive limits upon inquiry, in that alternative naturalistic explanations for complexity are to be wholly disregarding in favor of the argument from design. The design argument then becomes a perfect example of the type of illegitimate one-sided argument identified by Van Laar (2005) as arising out of the focus on a single aspect of a subject of inquiry without an attempt at connecting it or comparing it to other subjects or facets, resulting in the arguer having decidedly concluded the debate without openness to further investigation.

#### CONFLATION OF DEBATES

Beyond the misuse of scientific arguments, intelligent design also makes the error of conflating debate as it occurs in the public sphere with that which occurs within the private sphere of the scientific profession. The advocates of intelligent design have attempted to appropriate arguments from such domains as law (Johnson, 1993, 1995), rhetoric (Campbell, 2003; Fuller, 2003), as well as sociological arguments for cultural diversity and religious tolerance in a liberal society (Fuller, 2003; Nord, 2003). Absence of a higher degree does not imply lack of knowledge in a subject; however, lack of proper understanding of the epistemic community which they aspire to penetrate is all too obvious in the way in which the major intelligent design advocates attempt to impose

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rules of argument that have no place in physical science. This is evident in the misuse of both deductive and inductive forms of argument by them, in not recognizing the differences between such arguments as they occur in science, and as they occur in a courtroom, a mathematics seminar, or an ontological discussion between philosophers.

To understand how this problem may be remedied, it may be useful to return to one of Toulmin's great contribution to argumentation theory, the dual critique of analytical and practical argument (1958). The main target of Toulmin's critique was extreme absolutism in arguments, but the intelligent design issue shows that extreme relativism is just as undesirable, especially in scientific arguments. As Bermejo-Luque (2005) has demonstrated, we need not expect epistemological relativism to arise from the avoidance of absolutism in argumentation. We can instead use Toulmin's argument fields as a means of appraising the epistemological standards for what is to be considered legitimate arguments, and as providing a set of propositions which embody the truth-values of the discursive community. In the case of intelligent design, truth-values are violated by imposing argument fields which do not follow the rules of hypothetical-deductive and inductive reasoning which form the basis of the scientific method. Ontological arguments, or the rules of argument in the legal and governmental process, belong to completely different fields of both argument and inquiry. This is not dogmatic naturalism; it is the recognition of the limits of both scientific and non-scientific argument, and what the proper place for each is.

### CONCLUSION

We must not make the mistake of hastily generalizing the conclusions of this paper regarding the limits of dissensus to other current controversies involving science's place in the public sphere. Although they may involve the abuse of proper arguments, other fields of discourse tend to enter in them, whereas in the evolution/ID conflict, it is almost purely a discussion over the viability of one theory over another. This includes the debate over whether it should be taught as an “alternative” theory in public schools, as such debates rarely deal with it being taught as part of a comparative religion class, but instead as part of science curriculum. The issues become more complex in many of the other debates where scientific knowledge and literacy plays an important role in informing the debates. In discussions over embryonic stem cells, animal testing, human cloning, genetically-modified foods, and the impact of biotechnology on indigenous peoples, the arguments turn to discussions about ethics, and scientific knowledge can and must contribute to them but will not necessarily be able to alone answer them.

Similarly, arguments over policy issues which hinge on scientific knowledge such as environmental, public health and energy involve other layers of argument. While on some of these (such as denial of man-made global warming or the so-called “alternative” theories of the origin of the AIDS epidemic) do involve the misuse of scientific argument, policy decisions cannot simply be made on the basis of scientific knowledge itself, but on arguments over what consists a viable policy decision on the basis of rule of law, economic and social realities, and the pursuit of social justice. One can acknowledge the threat of global warming while also questioning the economic viability of certain policy options in this regard and one can admit the benefits of animal testing while also raising ethical concerns about such research. These differ from the evolution-intelligent design

debate in that they do indeed involve public-sphere arguments, and are not always attempts at providing a challenge to established scientific fact. On the other hand, one cannot legitimately debate the theory of evolution unless one has taken up the task of both understanding the basic scientific facts and the rules of scientific reasoning. The intelligent design advocates have almost invariably either not taken the time to educate themselves on such matters, or chosen to ignore and distort them.

There has been lately an outcry over both the lack of scientific input into public debate as well as the flagrant display of scientific illiteracy in public discussions. The evolution-intelligent design debate is just one facet of this problem. Although improvements in scientific literacy are one way to improve the sorry state affairs, it would also be useful if we more able to clearly demarcate the boundaries of arguments, understanding why consensus exists in the first place before attempting to enter dissensus into the conversation. Even as we welcome the chance to allow marginalized or subaltern viewpoints in ongoing dialogs, we should still expect them to abide by the specific rules guiding the discursive community in which they are undertaken. We should welcome dissensus, but it must be informed by the knowledge and rules which allow the machinery of free inquiry to run smoothly.

[link to commentary](#)

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