Value-Based Rhetoric in the Campaign for Intelligent Design in Ohio Public Schools

A Senior Honors Thesis

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Table of Contents

Introduction

This project analyzes the rhetoric of an issue that has excited considerable governmental, media, and public interest in Ohio: the teaching of neo-creationist ideas (Intelligent Design) in the public schools. The project has broader significance as well, as this controversy is not isolated to Ohio- it has waxed and waned in many states since the early 20th century, and has gained momentum in recent years. More broadly still, this project can deepen our understanding of the importance of social values for political influence, public opinion, and public policy. In recent years, social research has highlighted and clarified how social values supply the foundation for citizens' political attitudes. This point is not lost on experts and political professionals; George W. Bush's victory in the 2004 presidential election stimulated a national discussion of the importance of "moral values" in political life. With respect to existing scholarship, this project is poised to bring together two important literatures: the study of persuasive political communication, and the study of "issue framing." Several important questions have emerged from these literatures, and provide guidance to this project:

- How do political communicators make explicit linkages between values and social policy in the minds of the general public? For example, in what ways do opponents of Intelligent Design link the importance of separation of church and state to the inclusion of Intelligent Design in Ohio's science curriculum?

- What kinds of rhetorical tactics do communicators use to create favorable public conceptions of complex issues like the inclusion of Intelligent Design in Ohio's public school curricula?

- How do communicators, and the public, resolve the inevitable value conflicts that generate public controversy? For instance, in the case of intelligent design, how does the public negotiate the conflict between the values of church-state separation and free speech?

Review of Literature

For the purposes of this paper, a value is defined as a positive evaluation of a general condition or behavior. The term "value" is used in reference to abstract and idealized concepts such as "justice" and "patriotism". Values reflect some positive standard of moral correctness, and reflect a standard of the way something should be. An individual's values serve as a measuring stick used to form attitudes toward issues.

Political controversies are clashes between values. They can occur both in society at large and in the minds of individual citizens (Sniderman et. al., 1996, cited in Brewer & Gross, 2005). Because any policy debate can be simplified into a clash between values, political persuaders can attempt to manipulate public opinion by exerting an influence on the process of weighting rival values. They can highlight which specific values are important to a debate. By emphasizing which pertinent values should have the highest priority, persuaders can frame a public policy debate (Nelson, 2004).

Frames assist our understanding of a debate and suggest how we should evaluate each side (Nelson, 2004). "Frames tell people how to weight the often conflicting considerations that enter into everyday political deliberations. Frames may not supply any new information about an issue, yet their influence on our opinions may be decisive through their effect on the perceived relevance of alternative considerations" (Nelson, Oxley, & Clawson, 1997). For instance, communicators can influence the relative weighting of rival values by emphasizing the importance of one public policy goal over another. This strategic framing can result in a change of opinion about a public policy issue without altering an individual's objective beliefs about an issue (Nelson 2004).

Citizens "deliberately weigh" their values when they form opinions (Nelson, Clawson, & Oxley, 1997). Value frames play on this process of weighing values by linking an advocated position on an issue to a specific core value (Brewer & Gross, 2005). Value frames can change someone's opinion either by the direct persuasive power of the frame or by encouraging opinions based on the specific values invoked by the frame (Nelson, Clawson, & Oxley, 1997).

Values may sometimes become important in this weighing process by virtue of being more mentally accessible. Because it's easier to think about and apply a value that has been mentioned recently, it is more likely to influence opinion (Zaller, 1992). Nelson, Clawson, & Oxley suggest that accessibility is not the sole factor in determining the relative weight of a value. They applied Ajzen & Fishbein's Theory of Reasoned Action to suggest that values carry weight beyond just the simple aspect of their accessibility (1997). They argue that "while frames may sometimes determine what's at the top of the head, their real contribution to opinion is in establishing which of the many possibly competing considerations at the top of the head should assume priority in one's opinion" (Nelson & Oxley, 1999). In fact, Nelson & Oxley argue that the importance attached to a belief is a much more important component of framing effects than the mere accessibility of the belief (1999).

Framing and the media

Nelson, Oxley, & Clawson state that "in political communications research, framing typically has been depicted as the process by which a source (a newspaper or television news story, or perhaps a single individual) defines the essential problem underlying a particular social or political issue and outlines a set of considerations purportedly relevant to that issue" (1997).

As the media must condense stories to fit space and time requirements, they often rely on frames out of necessity, to organize and explain complex debates in a small space (Nelson, Oxley,

and Clawson, 1997). News frames "significantly affect the topical focus and evaluative implications of thoughts generated" and also have a subtle effect on actual public policy-related opinions (Price, Tewkesbury, & Powers, 1997). Political communicators are called upon as "experts" to frame public policy debates. The communicators often introduce value frames into these issue debates, and the mass media then circulate these frames (Gamson & Modigliani, 1987). For a political communicator, gaining a voice in the media and having arguments framed favorably are two key accomplishments in the mass media forum (Ferree, 2002). For a frame to have any effect, it must be heard in the crowded "marketplace of ideas", heeded, and understood (Brewer & Gross, 2005). Therefore, having the mass media frequently and favorably frame an issue can be considered a success for a political communicator, as it will likely result in a ripple effect in public opinion (Ferree, Gamson, Gerhards, & Rucht, 2002)

Value recruitment

We use the term "value recruitment" to refer to the ways in which political persuaders try to shape political attitudes by appealing to common values. This approach can be successful when a simple fact-based campaign is not. Rather than striving for a permanent shift in an individual's value system, partisans try to rearrange the mental linkage between an issue and certain values.

We believe value recruitment is accomplished through a few general strategies. Partisans can try to create positive associations between their position and significant social values, and then attempt to increase the perceived importance of these values. They can attempt to eliminate any positive value associations that their opponents may have formed through similar efforts, or they can work to diminish public regard for the values connected to their opponents' positions.

Issue Background

Intelligent Design versus Darwinian evolution

"The theory of intelligent design holds that certain features of the universe and of living things are best explained by an intelligent cause rather than an undirected process such as natural selection. ID is thus a scientific disagreement with the core claim of evolutionary theory that the apparent design of living systems is an illusion," as the Intelligent Design Network, "a nonprofit organization that seeks institutional objectivity in origins science" and a key advocate of Intelligent Design, explains. ID proponents emphasize the importance of objectivity in science, and deliberately avoid defining the identity of the "creator" implicated in the design of the universe.

Darwinian evolution is based on Charles Darwin's theory of natural selection, the idea that individual organisms which possess genetic variations giving them advantageous heritable traits are more likely to survive and reproduce and, in doing so, to increase the frequency of such traits in subsequent generations. The definition of evolution describes a change in the frequency of alleles within a population from one generation to the next. These changes are brought about through the basic mechanisms of population genetics: natural selection and genetic drift acting on genetic variation created by mutation, genetic recombination and gene flow. This theory has become the central organizing principle of modern biology, and Darwinian evolutionists directly relate the theory to the biodiversity of the world.

The Debate over including Intelligent Design in Ohio's science curriculum

Whether or not to include the idea of Intelligent Design- the possibility of some intelligent creator of the universe- alongside traditional creation theories like the Big Bang, has become an

ongoing debate in society today. The debate originated and received extensive press coverage in Kansas, but in 2001 it came to a head in Ohio as a result of the creation of statewide academic standards. A comprehensive understanding of this particular issue is necessary to effectively separate fact from rhetoric in the debate at hand.

Amended Substitute Senate Bill 1, passed by the 124th General Assembly of the Ohio Legislature, directs the State Board of Education to adopt statewide academic standards for each of grades kindergarten through twelve in reading, writing, and math by December 31, 2001, and in science and social studies by December 31, 2002. It also "requires the State Board to adopt a model curriculum aligned with the academic standards which school districts *may* (but are not required to) use for instruction" (Am. Sub. HB1 Final Analysis, LSC, 2001).

To fulfill this legislative mandate, the Ohio State Board of Education enacted a public process to author the Academic Content Standards. Writing teams included kindergarten through undergraduate collegiate educators from across the state, as well as representatives from business and industry, parents, and community leaders, according to the Ohio Department of Education's website. Draft documents were also made available to the general public on this website, and some forty focus groups and twelve regional meetings were held in various locations across the state (Ohio Department of Education Fact Sheet).

During this early debate, two key groups emerged in the Ohio media. Ohio Citizens for Science actively opposed the inclusion of Intelligent Design in the state science standards. The group's stated goals include "defending the current draft of Ohio's new science standards from the recent political attack, seeing the level of scientific literacy rise in Ohio, [and] helping scientists educate community groups about the role of evolutionary theory in the world of science today so they can understand why it is essential to include it in the science standards" (Ohio Citizens for

Science homepage). By contrast, Science Excellence for All Ohioans is a “network of concerned citizens who support excellent state science standards that are fair, reasonable, and objective” and consists of vocal proponents of the inclusion of Intelligent Design (Science Excellence for All Ohioans homepage).

During the writing period, two major public opinion polls were conducted- one by Roper and one by Zogby. Each showed strong public support for the inclusion of Intelligent Design alongside Darwinian evolution in the public schools’ standards.

On December 11, 2002, the Science Academic Content Standards were adopted unanimously. The standards added a new "definition" of science: "Recognize that science is a systematic method of continuing investigation, based on observation, hypothesis testing, measurement, experimentation, and theory building, which leads to more adequate explanations of natural phenomena." The standards also included a statement in Life Sciences, Grade 10, Indicator 23 which reads "Describe how scientists continue to investigate and critically analyze aspects of evolutionary theory. (The intent of this indicator does not mandate the teaching or testing of intelligent design.)" The same statement was also added to Benchmark H in Life Sciences, Grade 10, with the substitution of the word "benchmark" for "indicator." In this way, Board members resolved any question as to their stance on the subject of Intelligent Design. Only positive comments stand on record: one Board member publicly called the resolution a “win-win situation”.

The second requirement of Amended Substitute Senate Bill 1 was the development of model curricula in each area. This created further debate as to the most effective and proper way to implement the standards set in December of 2002 pertaining to the critical analysis of evolution. According to Board of Education minutes, this process remained on schedule throughout the end of 2003; however, in January of 2004, as the curricula came closer to adoption, discussion became

much more heated. The minutes of the January Board of Education meeting state that "general discussion took place on the process used to develop and adopt the science exemplary lessons. The President reminded Board members to continue to be courteous and respectful to each other." While this is all that stands on record, Robert Schloemer wrote a letter to Governor Taft detailing his impression of the outcome of his first Board meeting as a member:

> "Our meeting on January 13, 2004, was one of those deplorable ones… it has been apparent Mike Cochran is a proponent of Intelligent Design. Toward the end of the scientists' testimony, I called for the resignation or removal of Mr. Cochran as co-chair of the Standards Committee."

Debate continued through the Standards Committee meeting on February 9, 2004, where the Board considered the model curriculum framework for science and social studies. Most of the discussion focused on the lesson entitled "Critical Analysis of Evolution". Martha Wise made a motion that the lesson be removed from Set A, as she was "uncomfortable with the whole lesson", and felt that "the lesson reflected intelligent design theory, which is not mandated by the Standards" passed in 2002. Committee Co-chair Michael Cochran refuted the claim that the lesson promoted intelligent design, defending the process that was used to develop the lessons. He said the lesson in question was not just written by one or two persons, but that many people gave input. Deborah Owens Fink noted that there is no mandate for a teacher to use any particular lesson. Following this discussion, the motion to eliminate the lesson was defeated by a vote of 2-6. Committee Co-chair Jim Craig made a motion to delete Jonathan Wells' *Icons of Evolution* as a reference for the "Critical Analysis of Evolution" lesson as there had been some questions raised about the author's credibility. This motion was unanimously approved. A resolution of intent to adopt lesson Set A (science and social studies) was approved by a 6-2 vote (Ohio Department of Education website).

The full State Board considered the "resolution of intent" to adopt Set A at its meeting the next day- February 10, 2004. During the Public Participation portion of the meeting, 16 witnesses spoke on the science lessons: most of the comments focused on the "Critical Analysis of Evolution" model lesson in particular. Eight of the speakers opposed the lesson, claiming that is "bad" science, contains intelligent design, or that it is religiously motivated, among other arguments. The other eight speakers were supportive of the lesson, arguing that it does not contain intelligent design concepts, supports public polling results and input to the Department, and develops critical thinking in students, as well as being "good science". The overall theme was that the "Critical Analysis of Evolution" lesson was the only one that reflects the intent of Benchmark H and Indicator 23 in the Science Standards. The resolution of intent to adopt lesson Set A was approved by a 13-4 vote (Ohio Department of Education fact sheet).

The March State Board of Education meeting minutes reflect the continued escalation of the debate. During the meeting, 42 witnesses spoke to the Board: sixteen citizens supported of some aspect of the curriculum or science standards, while twenty-three expressed some level of opposition. At the meeting's end, Mr. Hovis moved that the "Critical Analysis of Evolution" lesson plan be removed altogether, so that the committee could "wait and do a better job". The motion was defeated in a vote of 7-10, with one abstention. The Science Model Curriculum Set A, including the "Critical Analysis" model curriculum, was adopted by a 13-5 vote, temporarily ending the debate in Ohio (Ohio Department of Education website). Neither the standard nor the lesson plan endured very long, as the Ohio school board did away with both in the wake of *Kitzmiller v. Dover Area School District* decided in December 2005, where the presiding federal judge ruled that "ID is not [science], and moreover that ID cannot uncouple itself from its creationist, and thus religious, antecedents."

The Debate itself: Values & Rhetoric

The debate over the inclusion of Intelligent Design in Ohio's public school curriculum has taken many forms, including many arguments that attempted to recruit many values. However, the focal point of the debate was the essence of science itself, as proponents and detractors debated whether Intelligent Design was "legitimate" science and whether traditional science suffers from institutionalized shortcomings that oppress potentially credible scientific explanations.

Darwinian evolutionists' rhetoric In this particular debate, opponents to the inclusion of Intelligent Design in Ohio's public schools emphasized the unified opposition of "legitimate scientists" tended to the idea. They spoke of the fact that scientific professionals are in consensus in their support of Darwin's theory of evolution.

Speaking as scientific experts who value true scientific discovery, they stressed the importance of protecting and propagating "good science" as defined by the scientific method and endorsed by scientific peers. They argued that any legitimate science is both testable and falsifiable, and that as such it must be based on materialistic or naturalist explanations. Proponents of Intelligent Design cannot and will never be able to test and/or verify their claims, nor can or will they produce independent evidence of a designer. Because Intelligent Design is so clearly unscientific, arguments against Darwinian evolution are either a result of ignorance to the scientific unity on the subject, or an attempt to intentionally deceive citizens that are not professional scientists by suggesting that evolutionism is not the consensus.

The detractors of intelligent design theory noted that the theory has more similarities to poorly-disguised creationism than it does to science; in fact, many suggested that because creationism had already been deemed unconstitutional, intelligent design was simply another manifestation of the same idea. Creationism is analogous to other outdated "scientific conflicts"

that seemingly created religious conflict, such as the debate between geo-centrism and heliocentrism. Evolutionists point out that citizens are not forced to choose between religion and evolution: many scientists are religious and yet are able to maintain scientific objectivity on the topic and successfully rectify their religious beliefs with verifiable scientific theory.

Teaching the theory of Intelligent Design in a classroom is choosing not to value the Constitutionally-mandated separation of church and state, according to Darwinian evolutionists. Because Intelligent Design and creationism are one and the same, teaching it is unconstitutional. Teaching ID illegally promotes one religious point of view.

Allowing Intelligent Design/creationism into Ohio's school curriculum damages both science and religion, according to evolutionists. Science and religion address different questions and problems, and so belong in different places. Additionally, particular institutions should uphold particular values: schools should uphold education, and churches and families should uphold religion.

Throughout the course of the debate, Darwinian evolutionists detailed the negative ramifications that Intelligent Design would elicit in the state- and, more specifically, in a science classroom. Outmoded, backwards idea- Just like the backlash seen in Kansas when that state tried to prohibit teaching evolution in classrooms, similar debates damage the state's reputation. Intelligent design would undermine Ohio's ability to compete economically, as companies and individuals will not want to relocate to a state that is stuck in the past. Including it as an accepted theory would compromise the academic value of Ohio's schoolchildren's education, because Intelligent Design is not science.

Intelligent Design advocates' rhetoric Many people disagree with Darwinian evolutionists. Intelligent Design proponents argue that life is too complex to have arisen through the random,

natural processes implicated in Darwinian evolution. There are gaps in evolutionary knowledge that they see as supportive evidence for the idea that some guiding intelligent force must be responsible for creation. These opponents to "traditional" evolution have crafted their own rhetoric to counter many of their opponents' claims.

One of the underlying claims made by advocates of Intelligent Design is that the theory is as genuine as any other science. The theory of Intelligent Design has the support of many "legitimate" scientists, professionals who would not support a theory that had no basis whatsoever in science. Unlike creationism, the scientific theory of intelligent design is agnostic regarding the source of design and has no commitment to defending Genesis, the Bible or any other sacred text. The fact that intelligent design doesn't identify the source of design is not political calculation but precise thinking, refusing to go beyond what the scientific evidence tells us (Witt, n.d.).

Intelligent Design is not being considered fairly, according to the theory's supporters. Closed-minded evolutionists try to suppress discussion of alternatives by those who feel that the institutionalized definition of science should be reconsidered. Some scientists have chosen to impose limitations on what constitutes science by only allowing naturalist/materialistic explanations for phenomena, rather than considering possible explanations that are not entirely able to be subjected to the scientific method. These scientists do not publish research that they deem objectionable- such as that in support of Intelligent Design- and then criticize proponents of Intelligent Design for not presenting research for peer review in the traditional journals (Science Excellence for All Ohioans website).

Proponents of teaching Intelligent Design feel that fairness and academic freedom demand that students should be exposed to all relevant scientific theories. Particularly, students should learn all theories of evolution, not just one, as fairness necessitates that both sides can make their case. In the interest of academic freedom, teachers should be able to present the information that

they find relevant: not allowing teachers to teach what they think is correct tramples their personal and professional freedom. In the view of the intelligent design proponents, embracing critical analysis and promoting academic freedom through the inclusion of Intelligent Design in Ohio's school curriculum will make the state more competitive.

Contested values Even in this cursory overview of the major arguments on each side of the debate, we see an effort to recruit certain contested values. As logic would dictate, the major value is that of "scientific discovery," and it is obviously imperative in convincing both the public and the State Board of Education regarding the best way to craft an effective science curriculum. We see struggles over other values as well: educational excellence, freedom & democracy, religion, and development and progress. All are key values, and both sides make an attempt to claim each of them. A more convincing claim to a value can be expected to draw the support of a portion of the public that holds that particular value in high regard.

Not all values referenced in a debate are contested: some values were exclusively appealed to by persuaders on one side. This leaves the other side to either attempt to discredit or lessen the importance of that particular value, or to completely ignore the appeals to the value. Proponents of Intelligent Design appealed to fairness and the public's support of including the theory in the public school curriculum; the theory's detractors responded by arguing that both are attractive values, but have no relevance to the debate at hand. Similarly, detractors of Intelligent Design emphasized the negative effect that the theory's inclusion would have on Ohio's development and progress. Proponents were left to defend their position by arguing that including Intelligent Design may actually encourage development and progress; however, they only make this case when the value is challenged. They prefer to ignore this value as much as possible.

Research Question

In lieu of a traditional research question, we engaged in what Riffe, Lacy, and Fico term a "fishing expedition" (2005). We started out with some expectations about the kinds of values and tactics that were likely to arise, based on our informal reading of the media coverage and prior work on values and political communication. Still, we needed to do something more comprehensive and systematic in order to get a complete (or nearly so) "catalogue" of these values and tactics.

Looking at a sample of pertinent media stories concerning the debate over the inclusion of Intelligent Design in Ohio's academic curriculum, we set out to develop a comprehensive list of values included in the debate. Then, we supplemented this list with a list of tactics employed by persuaders on both sides of the debate and analyzed the relative frequencies of different values and tactics employed by the persuasive communicators in the debate.

A content analysis is naturally suited to this purpose, as a detailed analysis of this sort reveals the precise language and rhetorical tactics that communicators use to recruit values. A communicator promoting the inclusion of Intelligent Design in schools could cursorily lay claim to a value by simply stating that "we are more scientific than they are." Standing alone, that would most likely not be persuasive. However, a discussion of how the evolutionists capriciously restrict the discussion to purely natural causes, thus closing their eyes to a whole set of potential explanations, makes a stronger case for the particular value.

Method

The process of executing a content analysis involves drawing representative samples of content, training coders to use the category rules developed to measure or reflect differences in content, and measuring the reliability of coders in applying the rules. The data collected are then usually analyzed to describe typical patterns or characteristics or to identify important relationships among the content qualities examined. If the categories and rules are conceptually and theoretically sound and are reliably applied, the researcher increases the chance that the observed patterns are meaningful (Riffe, Lacy, & Fico, 2005).

Just as in traditional empirical research, results must be systematic. The research must produce generalizable empirical, not just anecdotal, evidence. Content analysis necessitates the clear identification of key terms or concepts involved in a phenomenon, specification of possible relationships among concepts, and generation of testable hypotheses. Executing a content analysis also involves traditional planning of operational procedures: specifying the timeframe encompassed by the study, choosing which type or types of communication constitutes the focus of the study, and deciding what the variables are to be (Riffe, Lacy, & Fico, 2005).

Content analysis presents two difficult and extremely important challenges: operationalizing variables and ensuring replicability. Operationalization consists of defining concepts in terms of actual, measured variables in such a way that any potential coder can understand and easily identify each variable. This promotes replicability through reliable, objective, and clear description of research procedures and terms (Riffe, Lacy, & Fico, 2005).

Definition of relevant content

To determine relevant content for the purposes of this study, I first searched the database "Lexis Nexis Academic." According to the Lexis Nexis webpage, a search through this database returns relevant articles from a wide variety of sources, including:

- National and regional newspapers, wire services, broadcast transcripts, and international news.
- Full-text of more than 350 newspapers from the U.S. and around the world.
- More than 400 magazines and journals and over 600 newsletters, including major news magazines such as *Newsweek* and *U.S. News & World Report*.
- Wire services, such as the Associated Press.

Because of the extensiveness of the mass media outlets represented in the Lexis Nexis Academic database, I deemed the results returned from a variety of searches to be representative of the media coverage of the debate. I limited the dates to the pertinent debate timeline that I had already discovered through prior research: January 2000 through July 2004. The January 2000 start date came from the rise of the issue in the public consciousness as a result of Am. Sub. HB 1, the bill that required the creation of academic standards. I chose the middle of 2004 as my end date as there was a notable lull in the debate after the passage of the lesson plan in March. This gave me a set of 97 articles from as close to home as Columbus, Ohio and as far away as London and Ireland.

Effective symbols of communication can be implicit or explicit, verbal, textual, or images. For the purposes of this paper and in the interest of promoting inter-coder reliability, I limited my coding to explicit textual references. My unit of analysis was the paragraph, and I coded it as many ways as there were applicable categories, such that one paragraph may have had several codes.

Operationalizing variables.

To begin the textual analysis, we set out to create basic coding protocol by establishing a list of value recruitment categories and defining the specific rhetoric that were included in each category. We began this process with an outline of our own observations of persuasive political rhetoric used in this debate as well as theory-based expectations about the words and phrases that should be associated with different value recruitment strategies. Comparative statements such as "is like" and "resembles" suggest the use of analogical reasoning, for example, while descriptors such as "radical" and "extremist" suggest attempts to undermine values by destroying the reputation of their symbolic representatives.

The different persuasive rhetorical strategies fell into two underlying categories. Some of the verbiage appealed to a reader's values; some pointed out or exemplified tactics employed in the public debate. Each sub-category was then divided into more specific rhetorical groups containing similar references to a particular argument or concept.

Operationalization of conceptual definitions/ Establishment of coding protocol.

Values. As the research suggests, policy debates can be simplified into a clash between values, and political persuaders can attempt to manipulate public opinion highlighting which specific values are important to a debate. By emphasizing which pertinent values should have the highest priority, persuaders can frame a public policy debate (Nelson, 2004). In particular, value frames link an advocated position on an issue to a core value (Brewer 2001). In this particular debate, we divided the rhetoric linking Intelligent Design to specific values into five major sub-categories: scientific discovery, educational excellence, freedom and democracy, religion and spirituality, and development and progress.

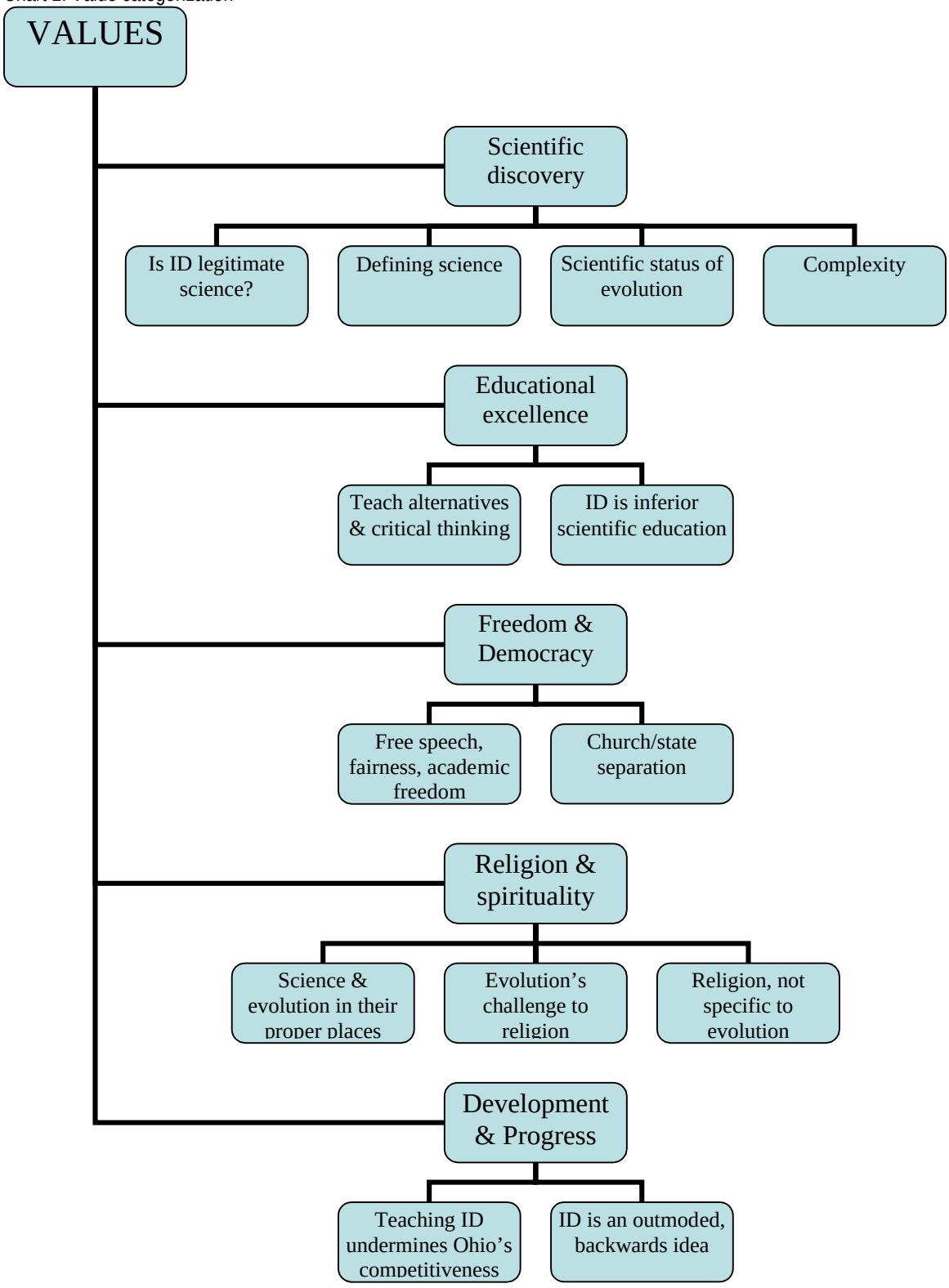
- Scientific discovery.
    - *Is ID legitimate science?* This includes rhetoric to the effect that intelligent design is "real" science, that legitimate scientists support intelligent design as well as the converse claims that intelligent design is "pseudoscience" and that scientists reject the idea of intelligent design.
    - *Defining science.* This category encompasses discussions about qualifications of true science, including testability and falsifiability, the essentiality of "independent evidence" particularly of a creator, as well as the suggestion that intelligent design does not pass muster as a true science. The idea that science accepts only material or naturalist explanations for phenomena is included in this category, as well as the ideas that proponents of intelligent design are arguing from ignorance and attempting to "put God in the gaps" of scientific knowledge.
    - *Scientific support for evolution.* This category contains references to the idea that science, and therefore scientists, supports the idea of evolution through natural selection. As such, it includes research support for the theory of evolution, explicit or implicit statements that evolution is the current scientific consensus and is supported by the vast majority of scientists, as well as the concept that proponents of intelligent design falsely claim that evolution has problems. The converses of these arguments, made by supporters of intelligent design and including suggestions that there are problems with evolutionary theory, are included also.
    - *Complexity.* The idea that life is too complex to have arisen through random, natural processes frequently arises in the discussion of evolution versus intelligent design fall into this category. This is often accompanied by a statement

suggesting that a guiding intelligent force must be responsible for this complexity. Any mention of life's complexity is coded within this category.

- Educational excellence.
    - *Teach alternatives and critical thinking*: The idea that students should be taught all theories of evolution, not just one, and that students should be exposed to all of the relevant scientific theories is categorized here. One common argument in this category is that exposing students to all sides promotes critical thinking. The category includes critiques of the idea that debate is a good way to understand the truth about evolution, or to teach evolution.
    - *ID is inferior education*: Explicit statements stating or refuting the idea that teaching students Intelligent Design will impair their knowledge of biology are coded with this label.
- Freedom and democracy.
    - *Free speech, fairness, and academic freedom*: Arguments that fairness necessitates allowing both sides to make their case; teachers should have the right to address any ideas or theories that they think are relevant; suppressing the teaching of intelligent design interferes with teachers' academic freedom; that evolutionists are trying to suppress discussion of alternatives; or any counter-argument thereof are coded in this category.
    - *Church-state separation*: This category includes any explicit comment that teaching Intelligent Design in schools raises legal and constitutional problems about the separation of church and state, or that teaching ID in the schools illegally privileges one particular religious point of view.

- Religion and spirituality.
    - *Science and religion in their rightful places*. This category encompasses any rhetoric stating that science and religion should not be mixed as doing so damages both; school should not be in the business of teaching religion, that is up to churches and parents; or referencing the idea that science and religion address different questions and different problems and so belong in different places.
    - *Religion, not specific to evolution*: Any mention of the religious beliefs of ID promoters or opponents, without explicit linkage of religion to evolution controversy is coded in this way.
    - *Evolution's challenge to religion*. This category includes the idea that Darwin and/or evolutionary theory is anti-god; that evolution insults the beliefs of Christians; and, conversely, that Darwin and/or religion do NOT threaten religious beliefs
- Development and progress.
    - *Teaching ID undermines Ohio's competitiveness*. The concern that teaching Intelligent Design will damage Ohio's ability to compete economically, academically, or it will in some way damage the state's reputation and/or abilities relative to other places where intelligent design is not mentioned are coded in this way, as well as the opposite argument (that including Intelligent Design in the curriculum will make Ohio more competitive).
    - *ID is backwards*: This includes any suggestion that Intelligent Design is an outmoded, backwards idea; that it is a silly notion that will make Ohio the laughingstock of the world; or any similar rhetoric.

Chart 1: Value categorization



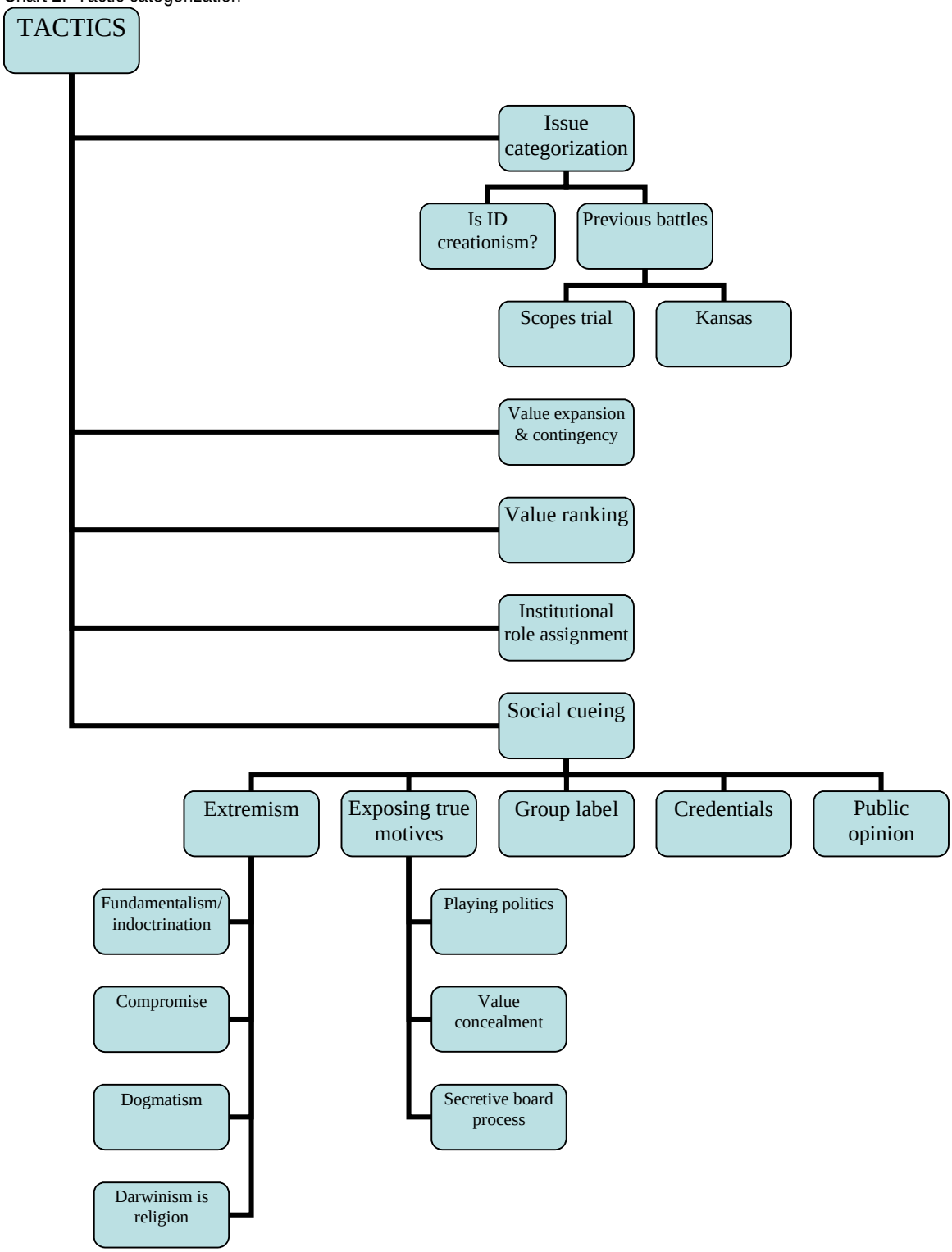
Tactics. Tactics sometimes occur in the form of blunt accusations, sometimes as suggestions of negative behavior in the opponent, and sometimes they are explicitly employed. These tactics were divided into five sub-categories: issue categorization, value expansion and contingency, value ranking, institutional role assignment, and social cueing.

- Issue categorization is an attempt to supply a definition of the topic under dispute that favors one side of the dispute. In the Intelligent Design debate, a few specific categorizations were employed:
  - *Is ID creationism?* This category includes any comparisons of Intelligent Design and creationism. It also incorporates claims that intelligent design is- or is not- significantly different from creationism, including direct statements that the two seemingly different ideas are one and the same.
  - *Previous battles*: Two previous debates over creationism have occurred in the American mass media; that of the Scopes trial which occurred in Tennessee in 1925, and Kansas' State Board of Education's attempt to eliminate the requirement to teach evolution in the state's public schools. This category is divided into two sub-categories, one for each of these debates, and any direct reference to either dispute is coded in this way.
  - *Analogy*: Comparisons of the ID debate to other political or scientific conflicts, e.g. geo-centrism versus heliocentrism, are coded as an "analogy". This category follows the traditional definition of the word, including any comparison between two different ideas, events, or objects for the purpose of drawing an inference or making a point.

- Value expansion and contingency.
  - Making one value seem more important by linking it to another value is considered value expansion. For example, describing church-state separation as a "fundamental American virtue" links church-state separation to patriotism.
  - Linking a narrow issue, value, or concern to broader and more important principles also falls into this category.
  - Demonstrations of a connection between values and/or showing how one value leads to another are coded in this category also. Some examples are asserting a connection between free speech and critical thinking, or educational excellence and economic development.
- Value ranking.
  - Explicit or implicit comparisons between values, including the assertion that one value is "more important" than other values and arguments that a certain value or principal is "fundamental" versus "trivial" or "incidental" are considered instances of “value ranking”.
- Institutional role assignment.
  - This category contains arguments that a certain institution or setting is not the proper place to apply a value. It also includes arguments that a particular institutions most important role is to uphold a certain value. For example: the argument that "free speech" only applies in a very narrow sense to public school curricula would be coded in this category.
- Social cueing.
  - Tactics that attempts to attack or bolster the reputation of individuals or groups affiliated with a side in the dispute are social cues. The attempt is to undermine (or

uphold) the values that those groups represent by attacking/ bolstering the group's reputation.

Chart 2: Tactic categorization



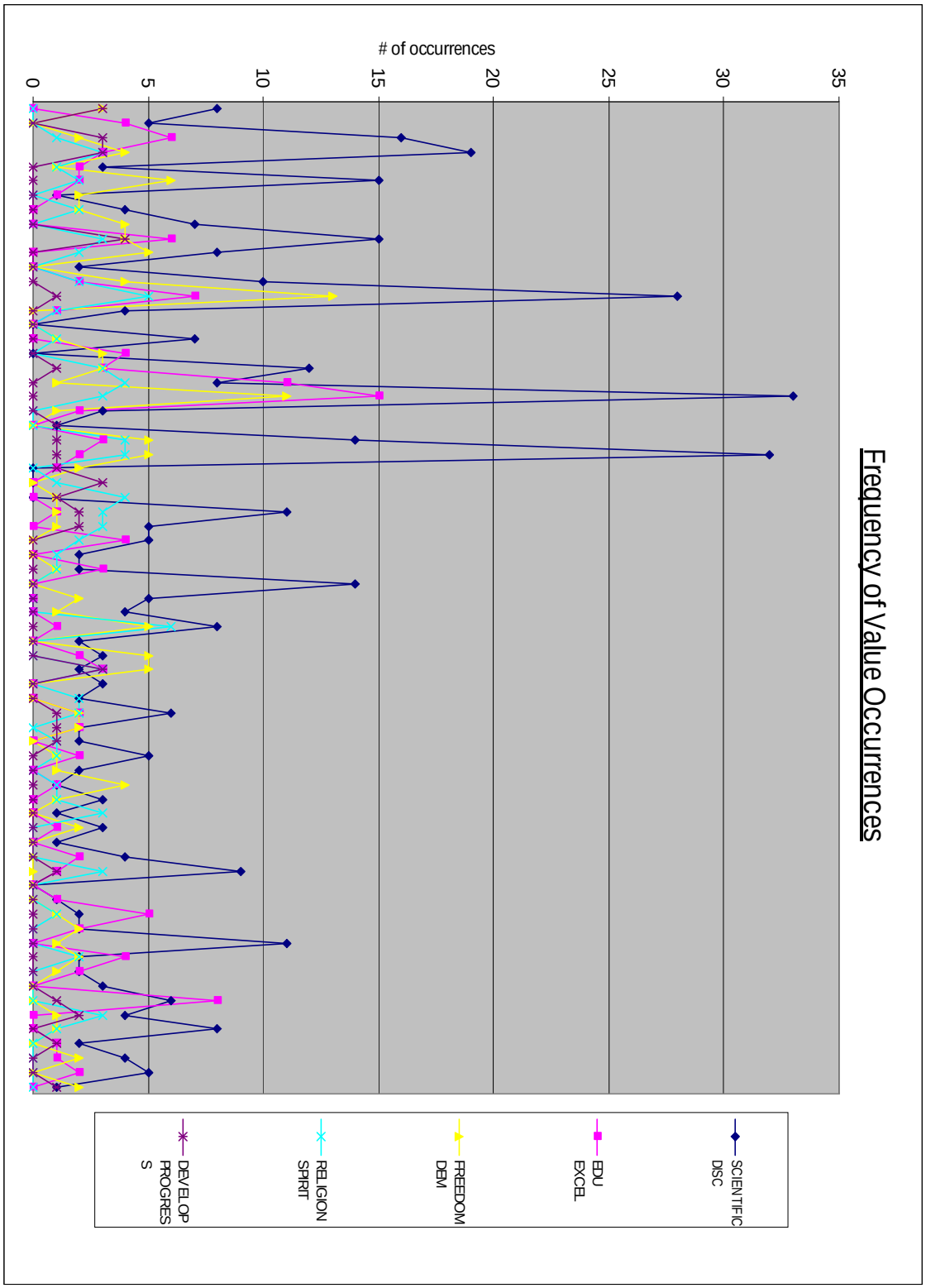
Data

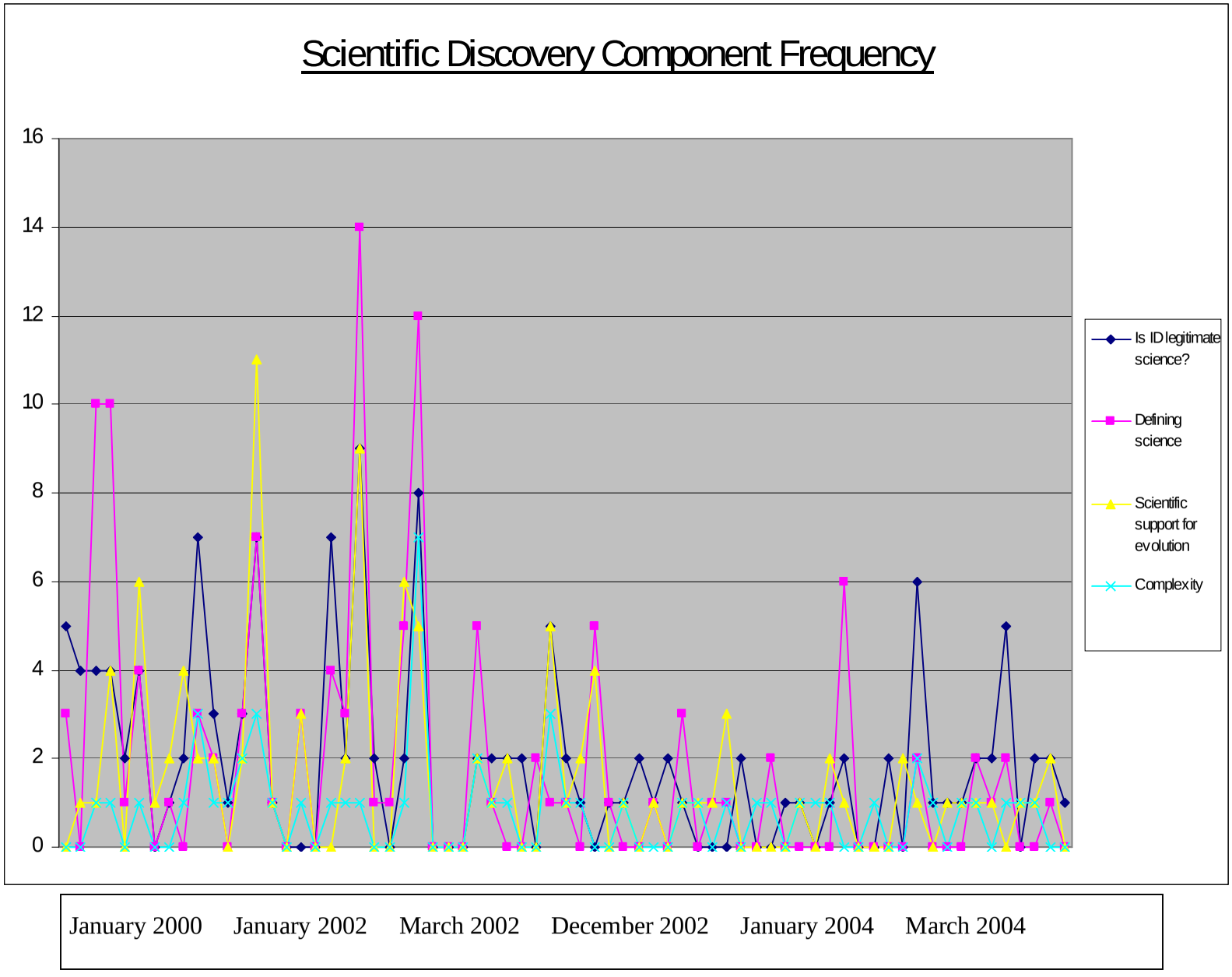
Table 1: Sum of Value Occurrences

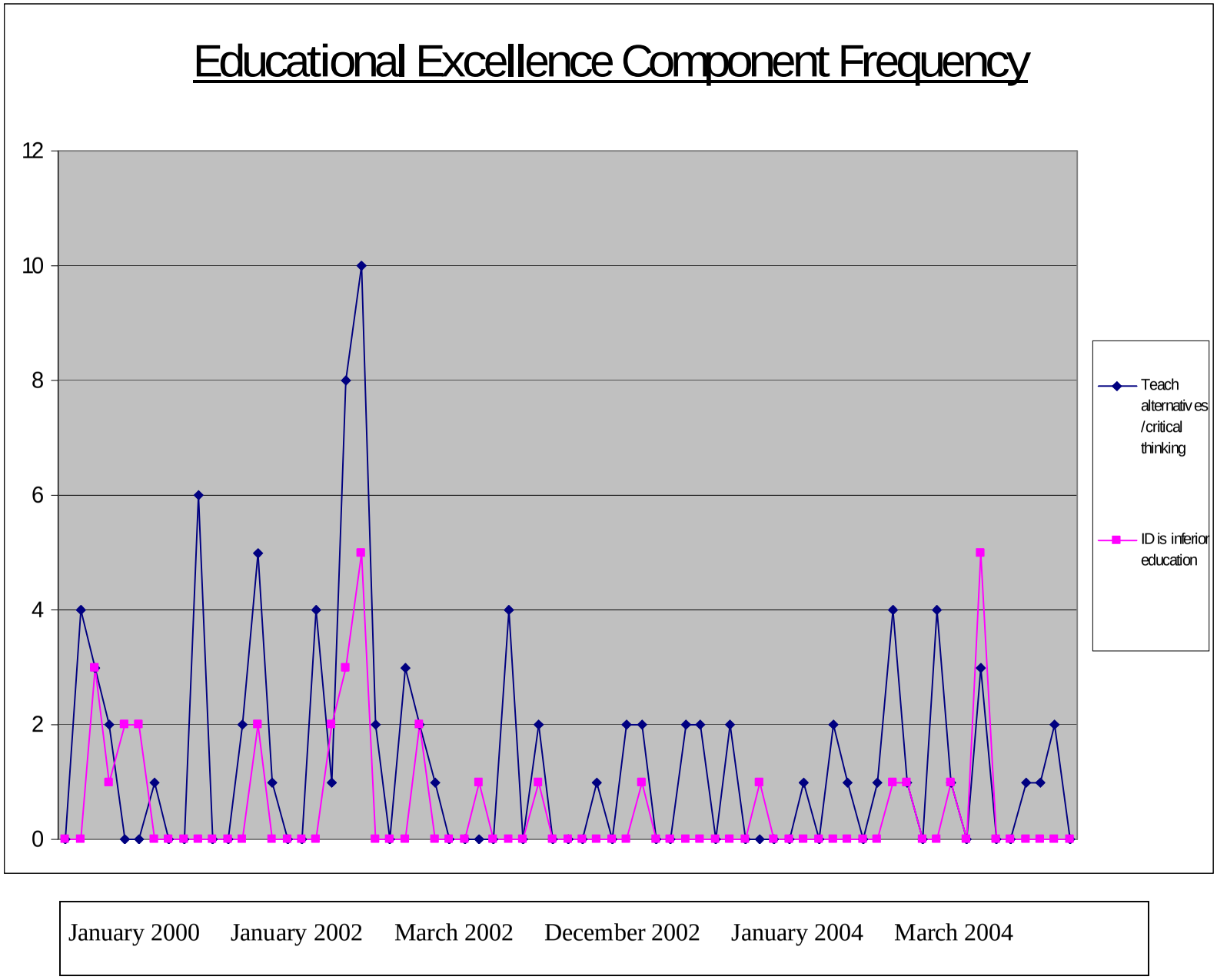
Category	*Sub-category*	*Sum total*
Scientific discovery	Is ID legitimate science?	136
	Defining Science	127
	Scientific support for evolution	102
	Complexity	56
Educational excellence	Teach alternatives & critical thinking	95
	ID is inferior scientific education	34
Freedom and democracy	Free speech, fairness, & academic freedom	74
	Church/state separation	54
Religion and spirituality	Science & religion in their proper places	62
	Religion, not specific to evolution	14
	Evolution's challenge to religion	11
Development and progress	Teaching ID undermines Ohio's competitiveness	19
	ID is an outmoded, backwards idea	17

Table 2: Sum of Tactic Occurrences

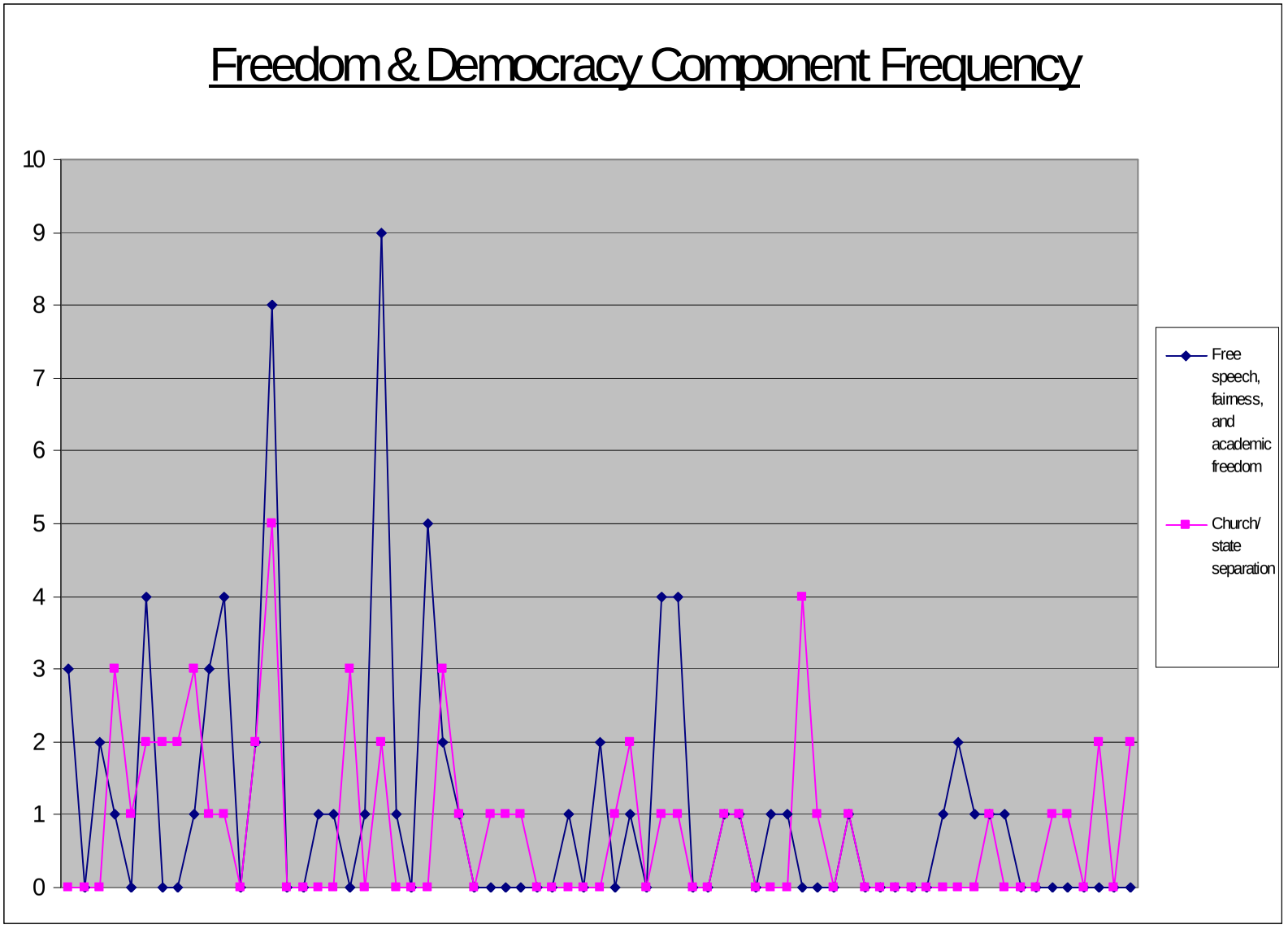
			Total
Issue categorization		Is ID creationism?	108
	Previous battles (16)	Scopes trial	19
		Kansas	41
		Analogy	23
		Value expansion & contingency	8
		Value ranking	1
		Institutional role assignment	7
Social cueing (3)	Extremism (5)	Religious fundamentalism/ indoctrination	15
		Compromise	12
		Dogmatism	17
		Darwinism is religion	3
	Exposing true motives (7)	Playing politics	51
		Value concealment	43
		Secretive board process	24
		Group label	78
		Credentials	150
		Public opinion	56


Frequency of Value Occurrences
# of occurrences
0
5
10
15
20
25
30
35
SCIENTIFIC DISC
EDU EXCEL
FREEDOM DEM
RELIGION SPRIT
DEVELOP PROGRES S
January 2000
January 2002
March 2002
December 2002
January 2004
March 2004

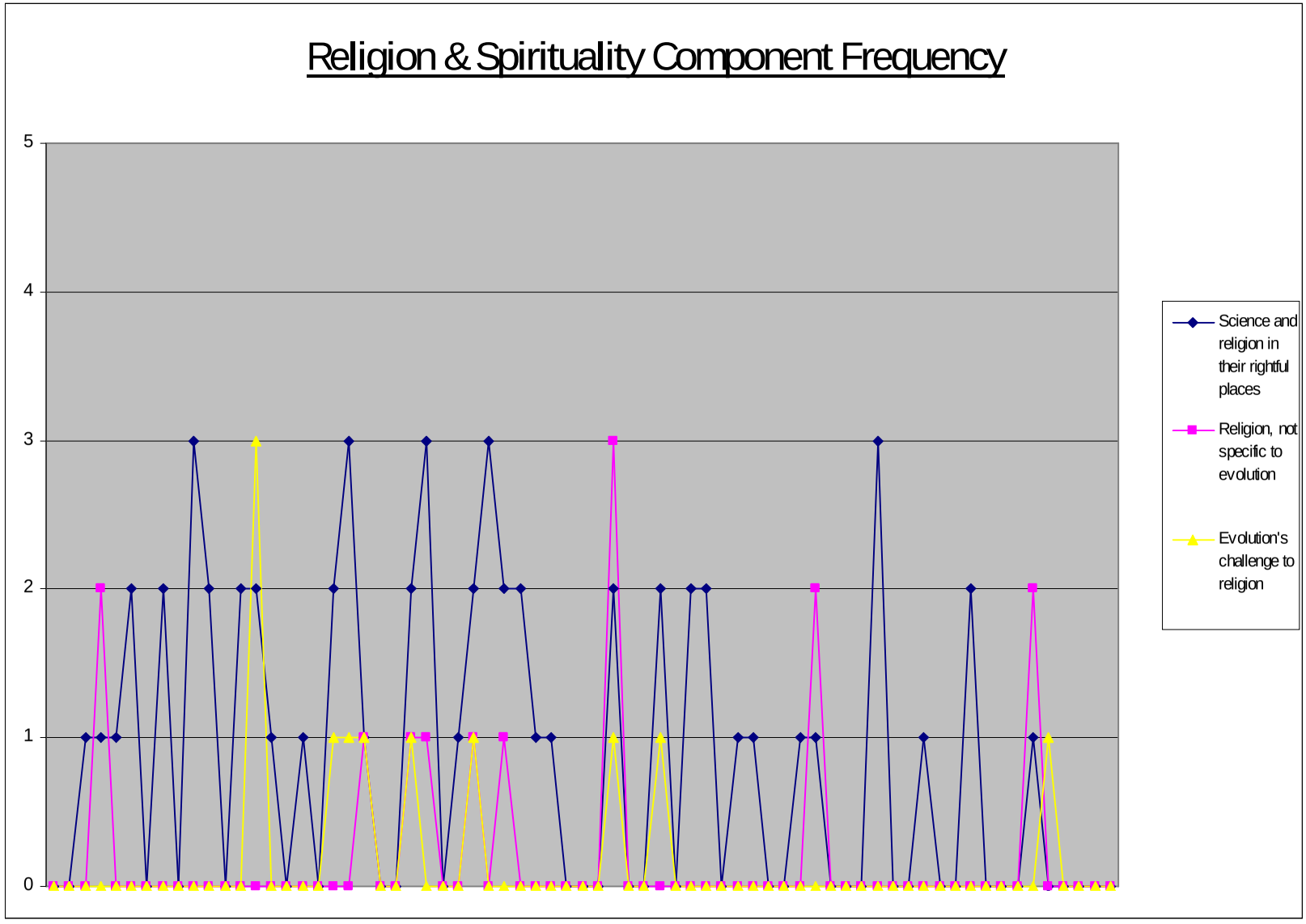

Scientific Discovery Component Frequency
16
14
12
10
8
6
4
2
0
Is ID legitimate science?
Defining science
Scientific support for evolution
Complexity
January 2000
January 2002
March 2002
December 2002
January 2004
March 2004


Educational Excellence Component Frequency
12
10
8
6
4
2
0
Teach alternatives /critical thinking
ID is inferior education
January 2000
January 2002
March 2002
December 2002
January 2004
March 2004

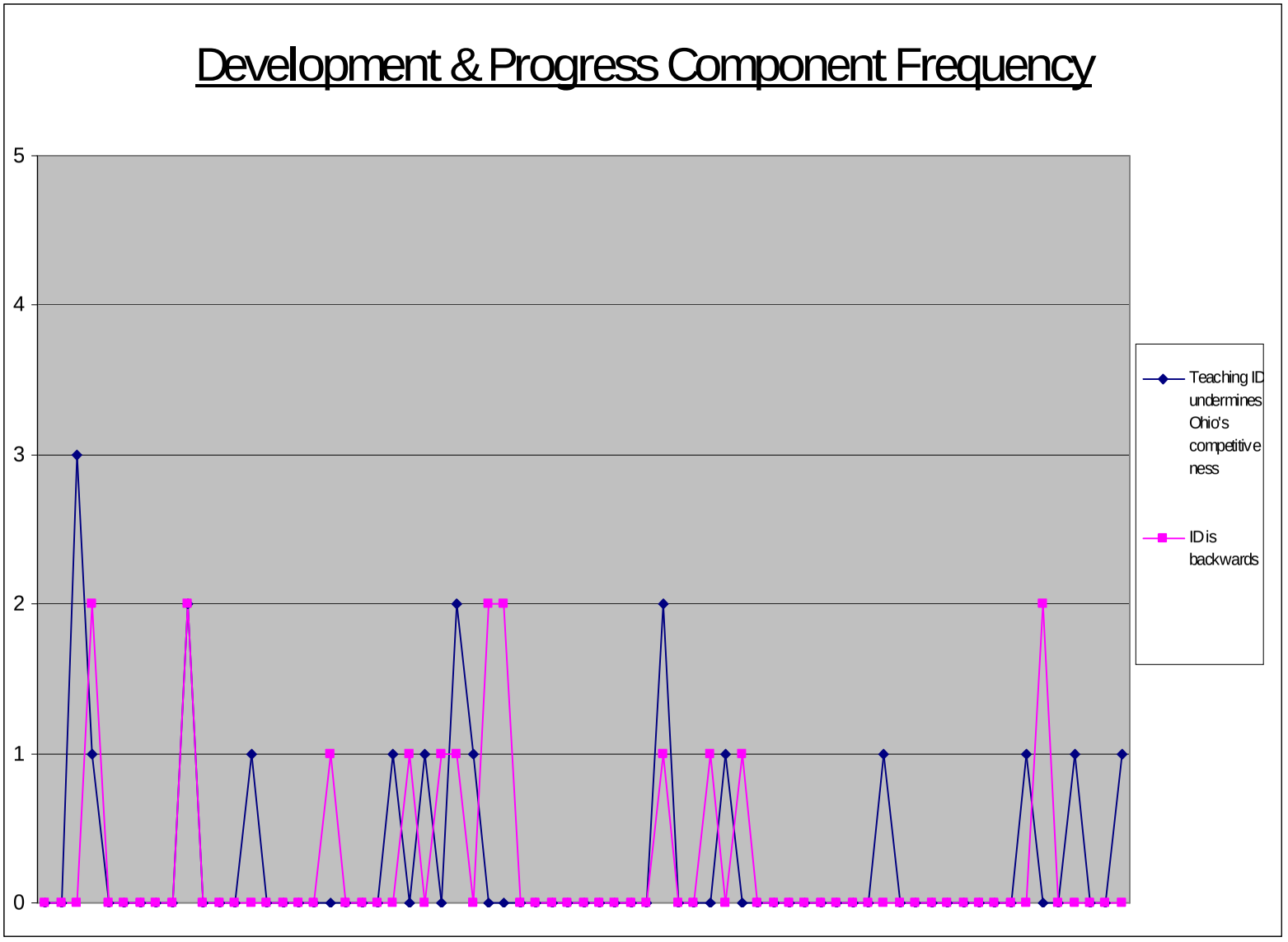
Freedom & Democracy Component Frequency



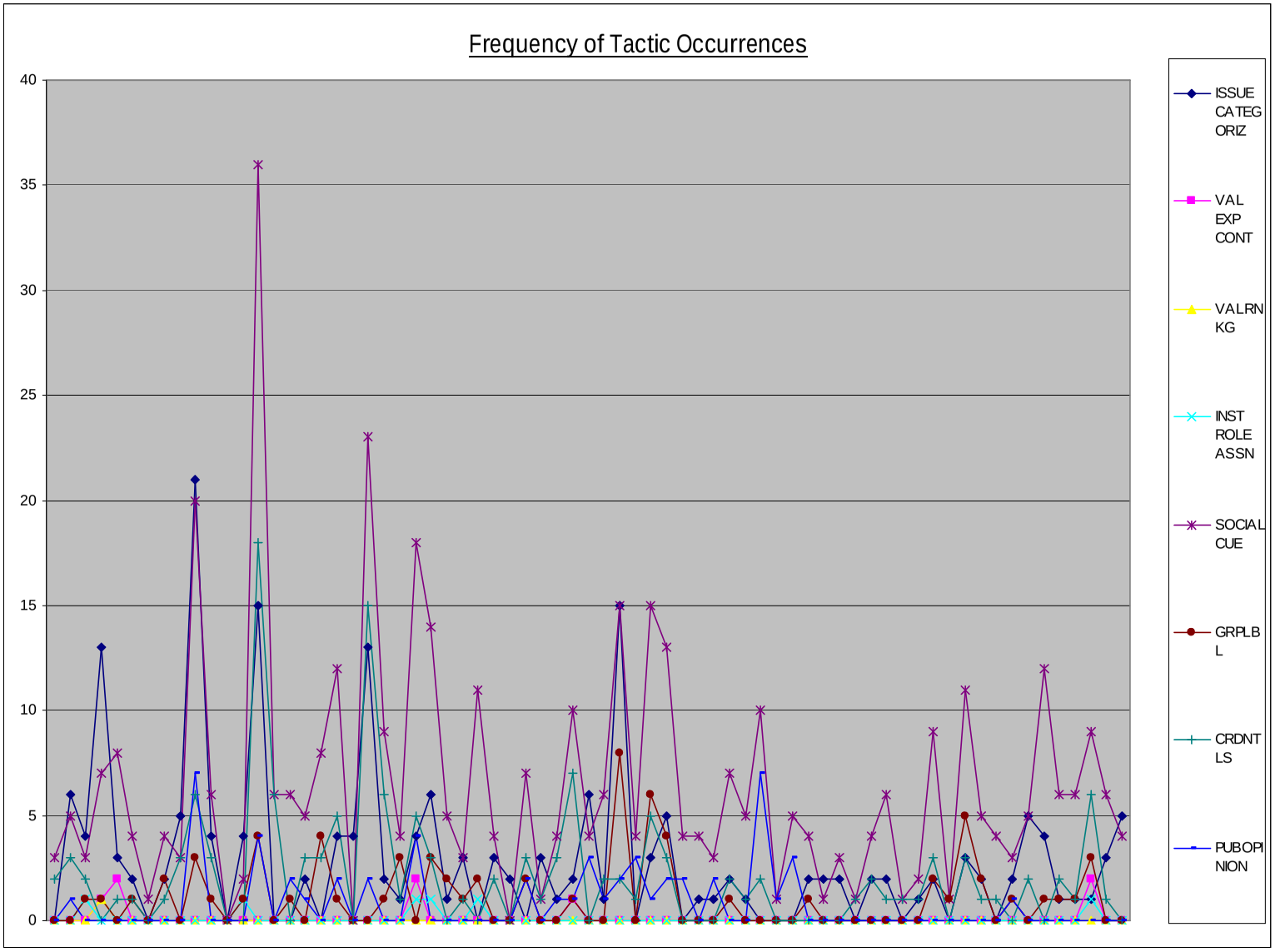
January 2000 January 2002 March 2002 December 2002 January 2004 March 2004

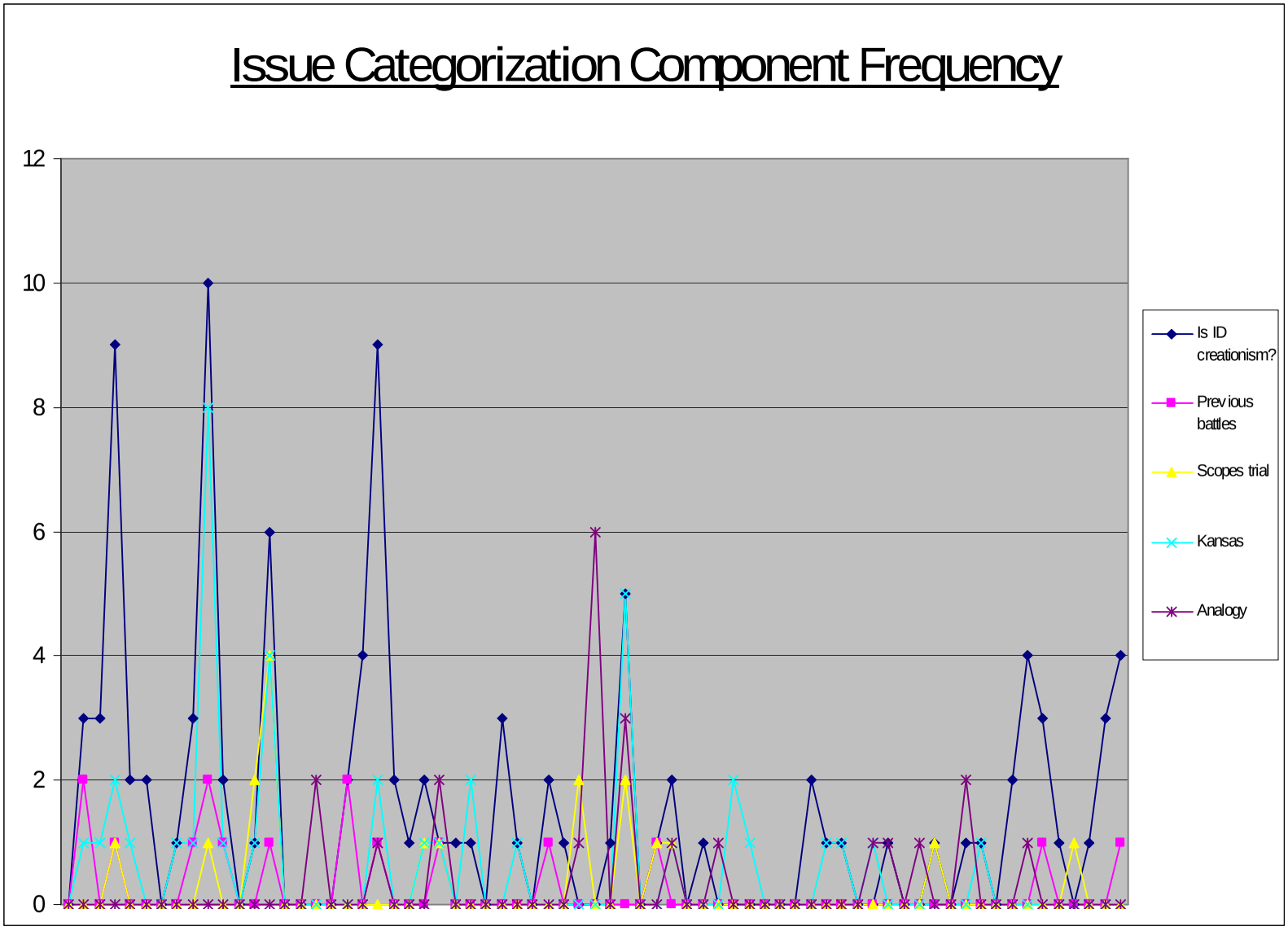

Religion & Spirituality Component Frequency
5
4
3
2
1
0
Science and religion in their rightful places
Religion, not specific to evolution
Evolution's challenge to religion
January 2000
January 2002
March 2002
December 2002
January 2004
March 2004

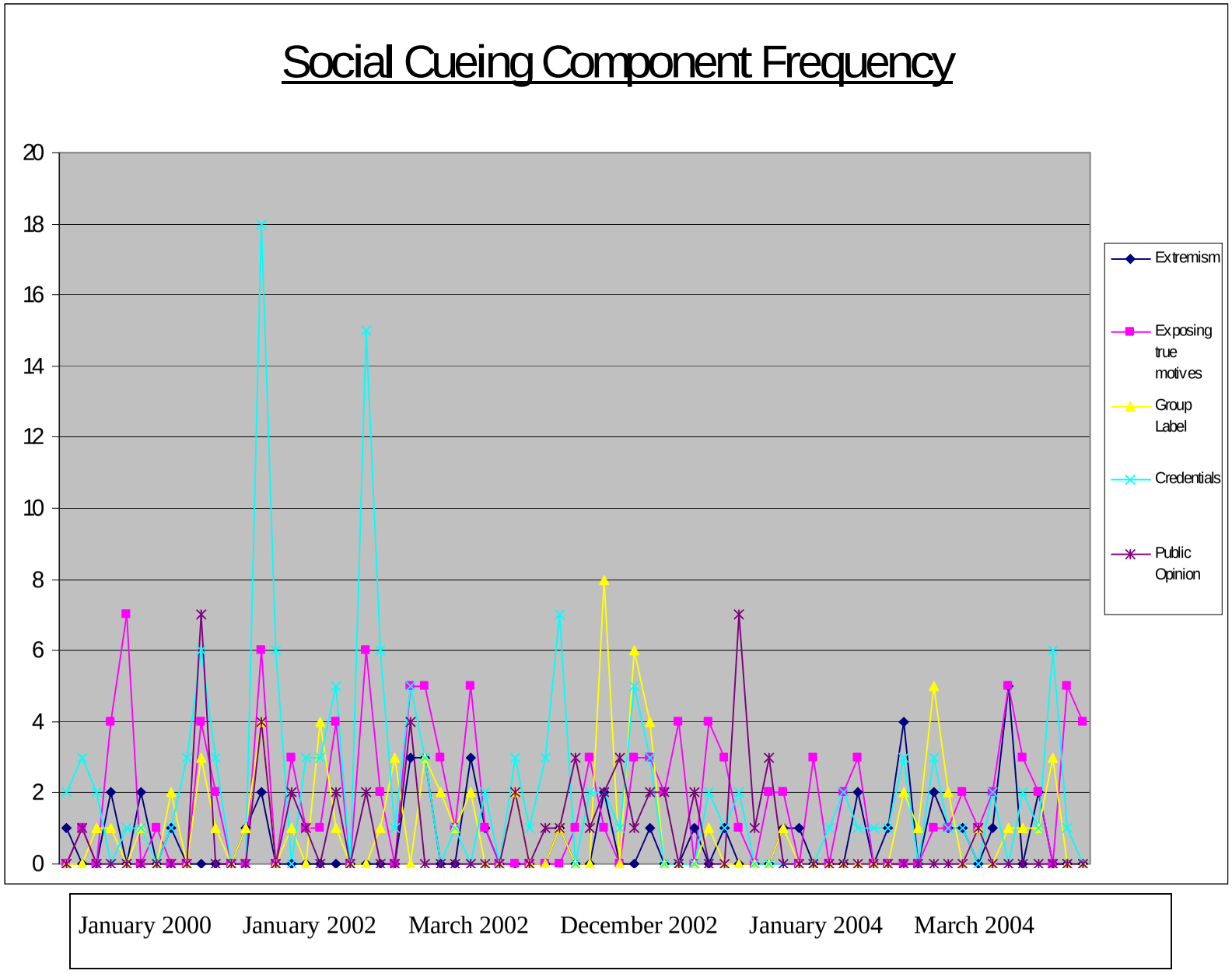
Development & Progress Component Frequency



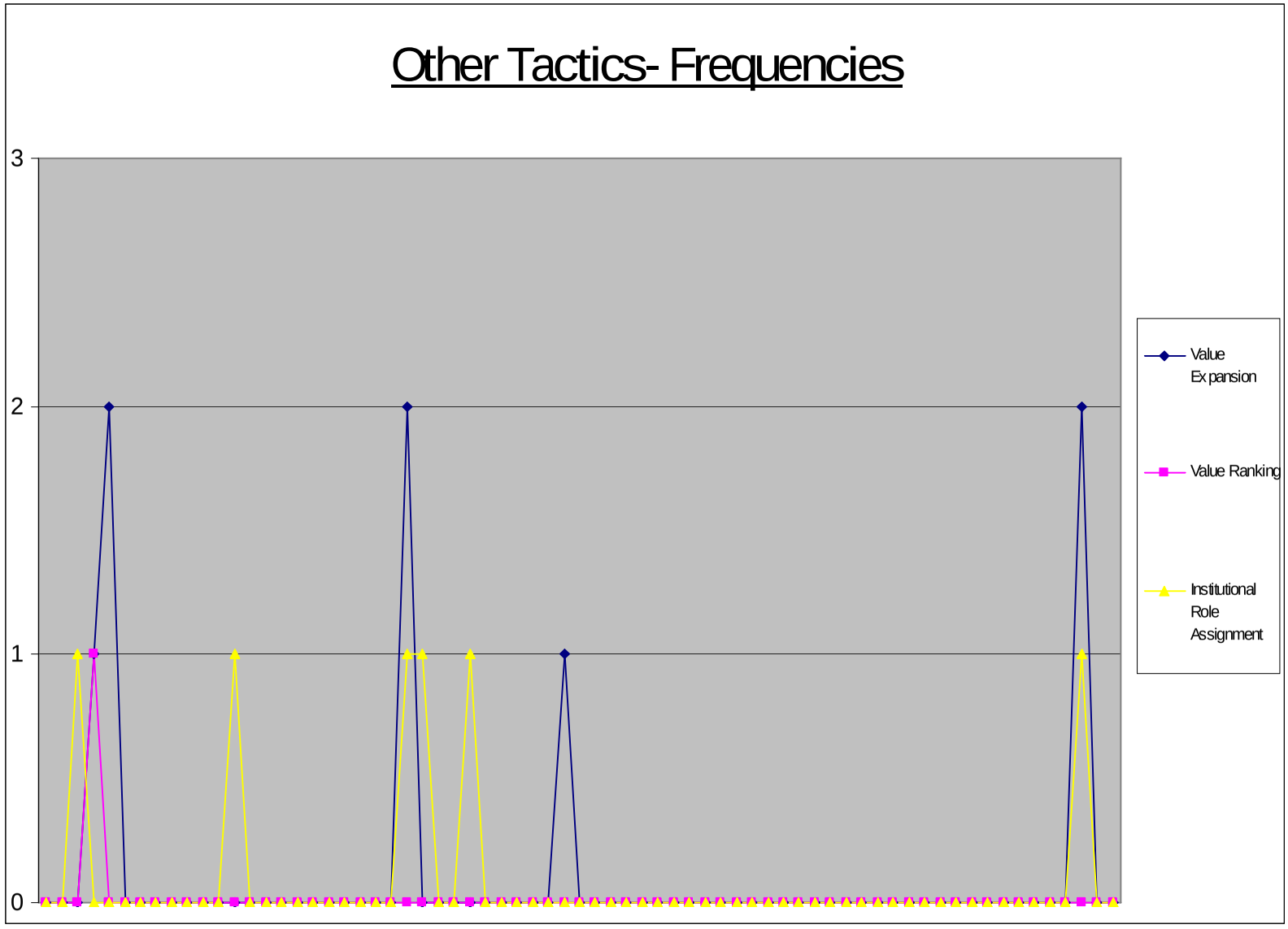
January 2000 January 2002 March 2002 December 2002 January 2004 March 2004


Frequency of Tactic Occurrences
40
35
30
25
20
15
10
5
0
ISSUE CATEGORIZ
VAL EXP CONT
VALRNKG
INST ROLE ASSN
SOCIAL CUE
GRPLBL
CRDNTLS
PUBOPINION
January 2000
January 2002
March 2002
December 2002
January 2004
March 2004


Issue Categorization Component Frequency
12
10
8
6
4
2
0
Is ID creationism?
Previous battles
Scopes trial
Kansas
Analogy
January 2000
January 2002
March 2002
December 2002
January 2004
March 2004


Social Cueing Component Frequency
20
18
16
14
12
10
8
6
4
2
0
Extremism
Exposing true motives
Group Label
Credentials
Public Opinion
January 2000
January 2002
March 2002
December 2002
January 2004
March 2004

Other Tactics- Frequencies



January 2000 January 2002 March 2002 December 2002 January 2004 March 2004

Results

Discussion.

Through this content analysis, we learned a great deal about the kinds of value recruitment tactics that were most important in this debate. The frequency of the strategies and tactics directly related to recruiting the value of scientific discovery at least superficially supports both prior research and our expectation that it is the most "important" and hotly recruited value in the debate. "Issue categorization" and references to credentials played an expected role, as the two tactics most obviously related to recruiting the value of scientific discovery. References to previous debates were frequent, and the comparison to Kansas played a particular role in Ohio's dispute. Social cueing played a somewhat surprisingly important role in the debate, as each side accused the other of fraud, narrow-mindedness, nastiness, etc. The "exposing true motives" tactic played a particularly key role, as each side pointed finger at the other for playing politics, concealing their true motives, or "secretly" influencing the school board's decision-making process.

The recruited values were clearly focused on the debate over the definition of science. As the anti-Intelligent Design crowd tended to consist of career scientists, their rhetoric in particular held this value in high esteem. Looking at the frequencies, it is apparent that the Intelligent Design proponents attempted to recruit this value also; however, they also focused on values like "teach alternatives and critical thinking" as well as "free speech, fairness, and academic freedom" much more frequently than their opposition. Many of the sub-categories tend to be exclusive to one side, as the dueling sides actively recruit a value. This is demonstrated in value sub-categories such as complexity, "Intelligent Design is inferior scientific education", science & religion in their rightful places, and church/state separation.

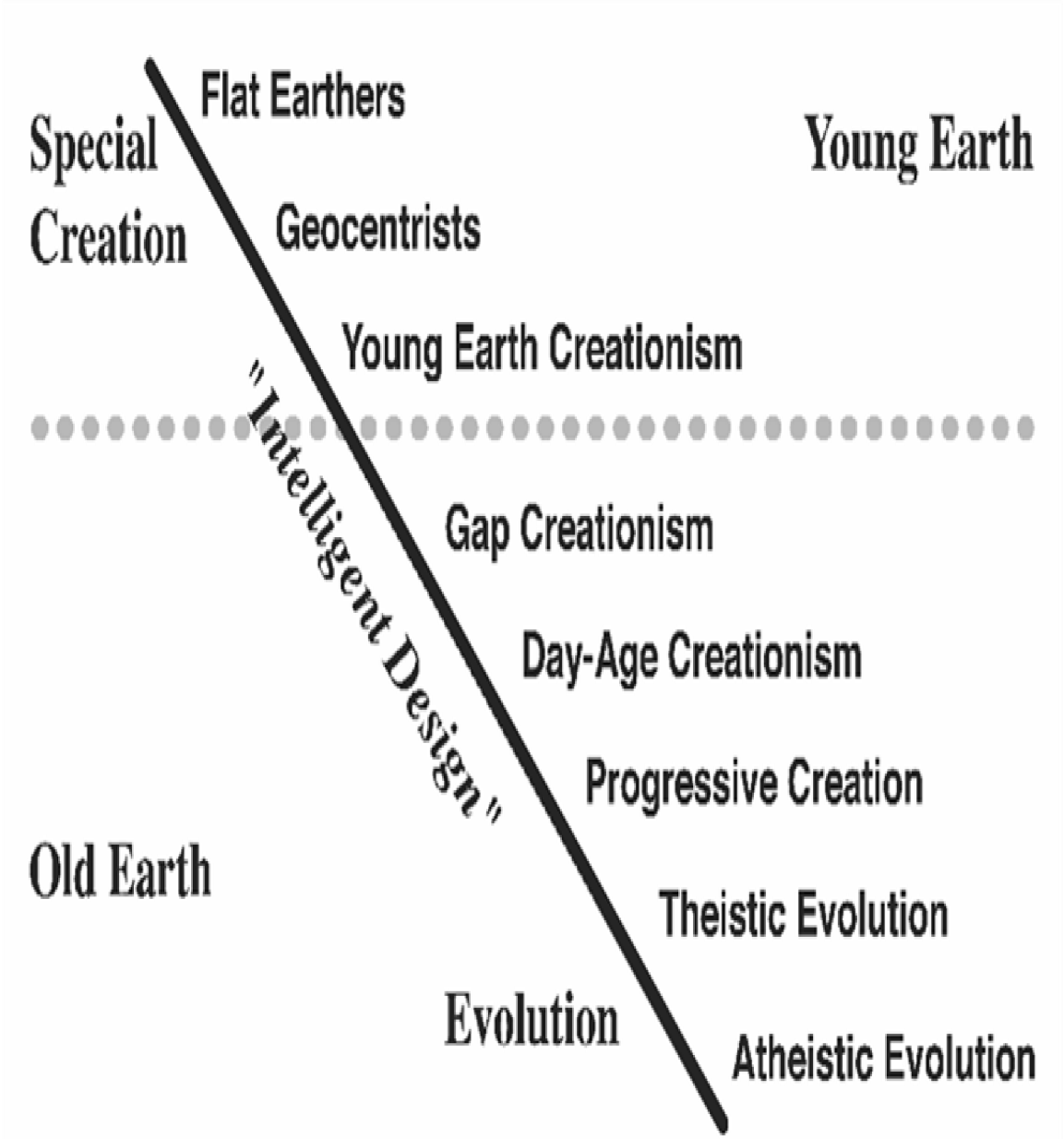
Most of the limitations of this paper are reflective of my own personal limitations. I believe that the data holds promise for more extensive statistical analysis and correlations beyond my skill set, and it would be interesting to examine some of the more subtle interrelations between the strategies and tactics over time.

As the sole coder for the purposes of this paper, my results are not verifiable at this time. I would suggest that my coding- and any future coding of this material- is impacted by the substantial amount of material to be coded: while it is representative of the debate, the coding schema is complex enough to make reliable coding difficult. This is particularly problematic when coding for tactics, as they are often not as readily apparent as values, and I feel that this negatively affected my data (and therefore my results).

Future Research

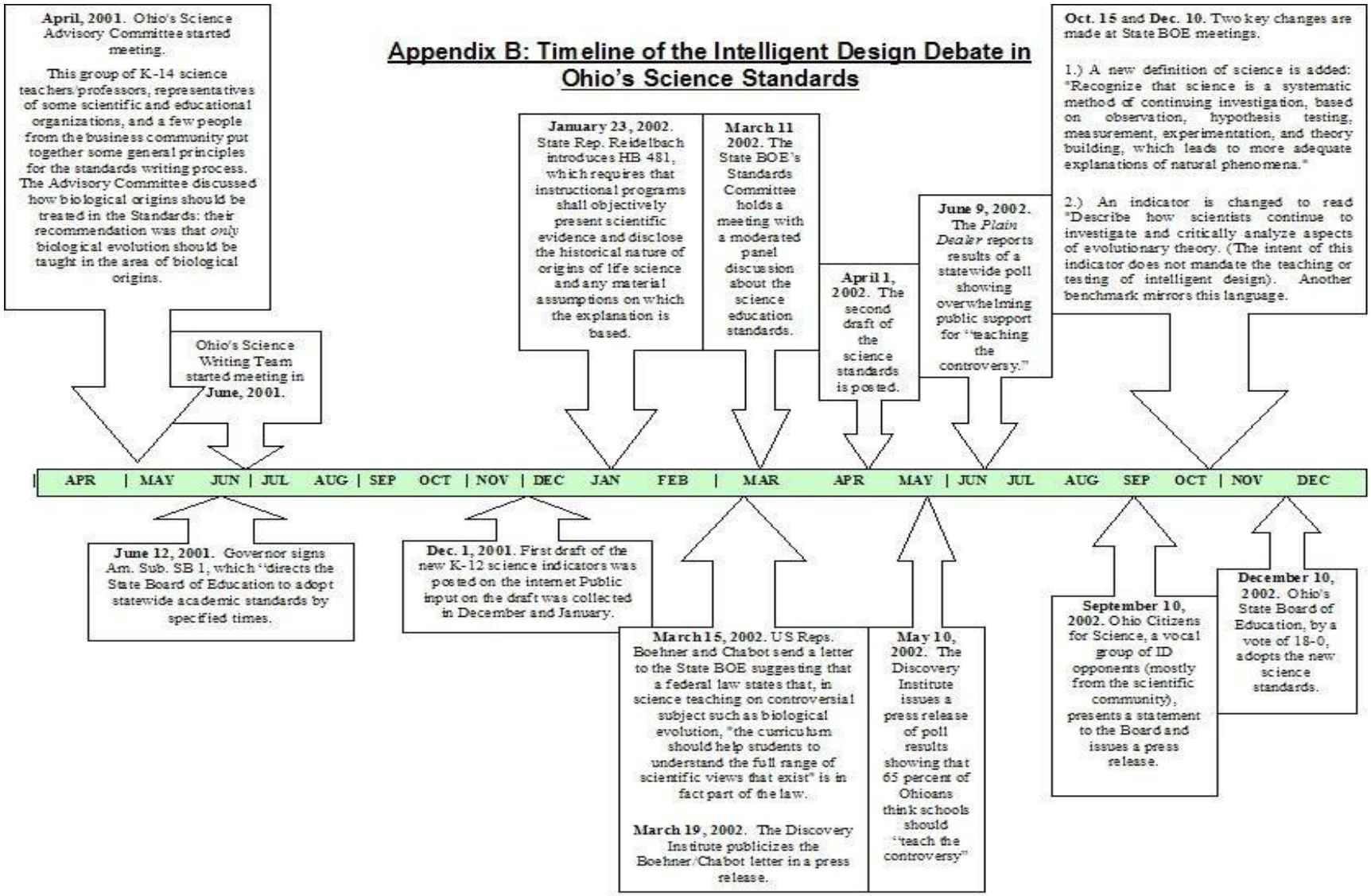
Survey Experiment. With our comprehensive list of value recruitment tactics and a definitive sense of the specific rhetorical forms which constitute each category, I suggest a future experimental test of the impact of such messages. A survey could be used to manipulate the types of language used to describe, defend, and attack ID. These manipulations would be based on the most frequent tactics appearing in the content analysis. I would suggest measuring issue attitudes, importance of values for the issue, importance of values overall, and interpretation of the issue.

Appendix A: The Creation/ Evolution Continuum

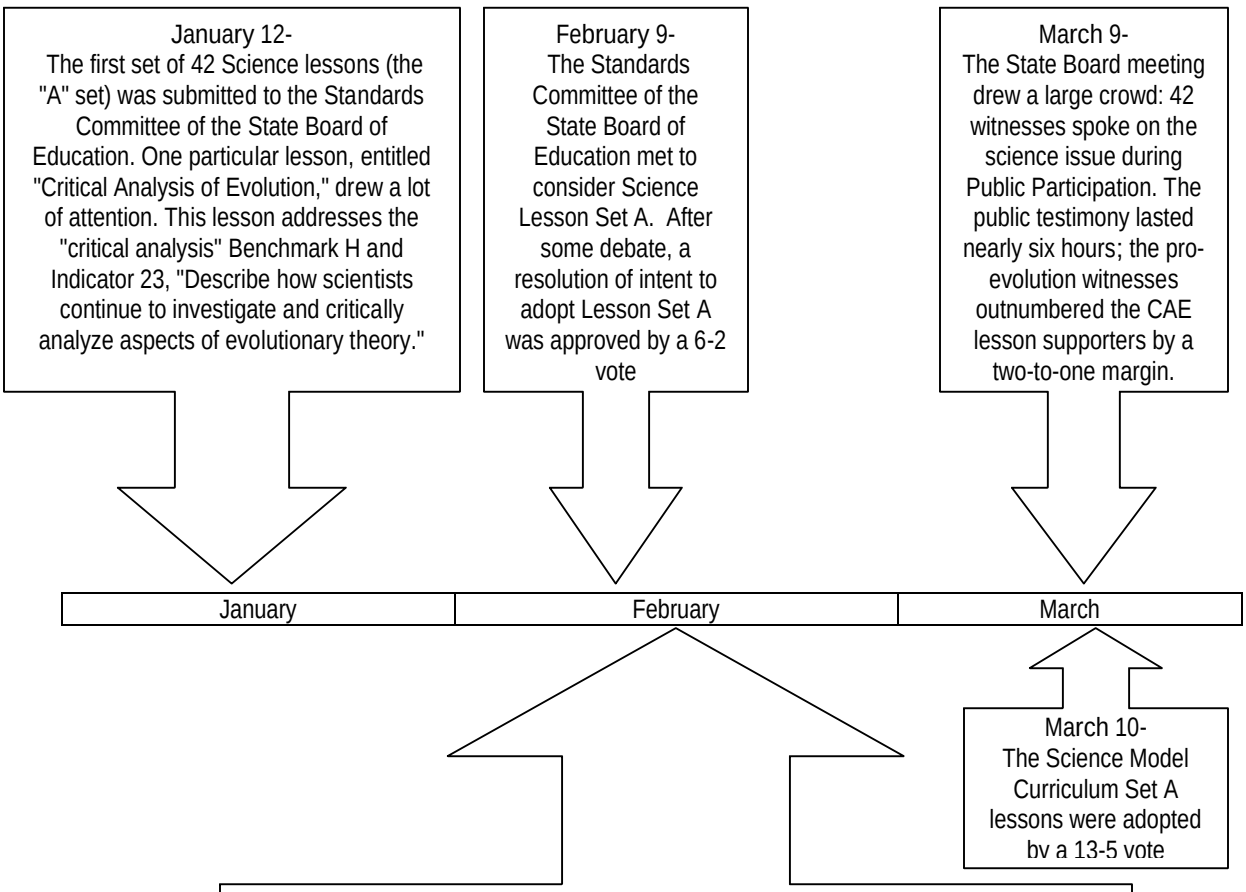


Adapted from Scott, E., 2000. National Center for Science Education, www.neceweb.org.

Appendix B: Timeline of the Intelligent Design Debate in Ohio's Science Standards



Timeline of the Intelligent Design Debate in Ohio's Science Standards: 2004- The "Critical Analysis of Evolution" Model Lesson



February 10- The full State Board considered the "resolution of intent" to adopt Set A at its meeting. 16 witnesses spoke on the science lessons. Most of the comments focused on the "Critical Analysis of Evolution" module.

Eight of the speakers opposed the lesson, claiming the lesson is "fringe" or "bad" science, comes from non-peer reviewed literature, contains intelligent design, is religiously motivated, or does not conform to proper science inquiry. The other eight speakers supported Set A as a whole and the CAE lesson in particular. They said the lesson is aligned with the Board's intent in Benchmark H and Indicator 23, does not contain intelligent design concepts, supports public polling results and input to the Department, develops critical thinking in students, and represents both good science and good pedagogy. The overall theme was that this is the only lesson in the set that truly reflects the intent of Benchmark H and Indicator 23.

There was little discussion among Board members prior to the vote. The resolution of intent to adopt lesson Set A was approved by a 13-4 vote

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