FROM THE CHAIR, SUMMER 2003

Robert Cavalier
Carnegie Mellon University, Pittsburgh, PA

During 2002-2003, PAC sponsored or co-sponsored three special sessions at the Division Meetings of the APA. In December, Helen Nissenbaum organized a session on “Ethics and Information Technology.” At the APA Pacific meeting Noam Cook organized a session on “Computers and the Mediation of Human Experience” (co-sponsored by PAC and Society for Philosophy and Technology). At that meeting, PAC also co-sponsored an Author Meets Critics session for Pat Suppes’s new book, Representation and Invariance of Scientific Structures. (Pat Suppes was the recipient of the 2002 Barwise Prize).

The following is a list of presentations made at these sessions: Session Title: Ethics and Information Technology, Chair: Helen Nissenbaum (New York University), Part I: Machines and Ethics, Moderator: James H. Moor (Dartmouth University), Speaker: Deborah G. Johnson (University of Virginia), “Ethics and Machine Intelligence”; Speaker: Lucas D. Introna (Lancaster University), “Ethics, Levinas, and the face-less Robot”; Part II: Moral Philosophy and Computer Ethics, Moderator: Robert Cavalier (Carnegie Mellon), Speaker: Jeroen van den Hoven (Erasmus University), “New Directions in Computer Ethics”; Speaker: Herman Tavani (Rivier College) “Do We Need a New Ethical Framework for the Internet Age?”; Speaker: Helen Nissenbaum (New York University) “Commons-based Peer Productions and the Virtues”; Speaker: Tom Powers (University of Virginia), “The Computer Layer in Pedagogy: Complements to Traditional Classroom Interaction”; Speaker: David Kolb (Bates College), “Philosophy Gone Hyper: New Voices and Forms of Scholarly Communication”; Speaker: Branden Fitelson (San Jose State University) “Some Recent Applications of Computing to Problem-Solving in Philosophy of Science, Logic, and Metaphysics”. The Critics at the session for Pat Suppes were: Jeff Bartlett (University of California, Irvine), Arthur Fine (University of Washington, Seattle), and Brian Skyrms (University of California, Irvine).

PAC continues to sponsor North American Computing and Philosophy Conferences. Through conference presentations and program committee work, PAC members also participate in the activities of the International Association for Computing and Computers.

The 2003 APA Barwise Prize goes to Daniel Dennett for his life long contributions to Computing and Philosophy. Professor Dennett will receive his award at the December 2004 APA meeting in Boston.

As of this year I will retire from my tenure as Committee Chair and I want to take this opportunity to thank all the committee members for their great work and to welcome Marvin Croy to the group as our new Committee Chair.

FROM THE CHAIR, FALL 2003

Marvin Croy
University of North Carolina, Charlotte, NC

My first act as chair of the PAC Committee is an easy and obvious one. Congratulations are in order to the committee for its recent accomplishments and in particular to Robert Cavalier for his able leadership on many fronts during the past three years. Robert has engineered the national and international expansion of conferences and activities related to issues intersecting philosophy and computers. He has skillfully interwoven the momentum of 15+ years of CAP conference initiatives with issues that concern the profession in general.

We owe Robert special gratitude for his efforts, and I know I will consult with him frequently during my tenure.

Other departing members of the committee include Tony Beavers, Helen Nissenbaum, and Peter Suber. Helen has worked to direct our attention to numerous ethical issues concerning computers, and Peter has labored to facilitate on-line access to philosophical and scientific literature. Tony’s groundbreaking work in support of IACAP (International Association for Computing and Philosophy) deserves special recognition. (http://iacap.org/).

Efforts such as these increase sensitivity to, and intelligent treatment of, topics relevant to our discipline and its professional pursuits. Thanks are also in order to Jon Dorbolo for making this Newsletter a source of both information and stimulating discussion. Continuing committee members include Noam Cook, Jim Fetzer, Luciano Floridi, and Patrick N. Grim. In addition to myself, new committee members include Mark Manion, David Stern, and Bruce Umbaugh. I am very fortunate to be guiding a committee whose enterprises derive impetus from such able members.

In the past, each committee chair has put something of a personal touch on the committee’s activities. I suspect that will be the same in my case. I see our profession as engaged in numerous practical activities, and I am an advocate of gathering and using feedback to guide such activities intelligently. One project I would like to see the committee attend to is a gathering of information about how, and to what extent, computers are used in philosophical research and teaching. In particular, the issue of how computers ought to be used, and how existing usage affects issues concerning professional preparation of graduate students, is of much consequence. Some years ago, during Terry Bynum’s term as Chair, a survey was conducted concerning computer use within the profession, with the results
being published in The Digital Phoenix. I’d like to see that work built upon in ways that invite cooperation with the Committee on the Teaching of Philosophy and the Committee on Philosophy in Two-Year Colleges. Those committees should take the lead in making pedagogical recommendations based on data describing current practice. By using the APA website as a means of collecting and distributing data and reports, this effort could be linked with the on-going work to make this website a more valuable resource for its members. Thanks mainly to Michael Kelly (APA Executive Director) and Chris Caputo (APA webmaster) the APA website has been steadily developing in recent times, and if you haven’t visited it lately, you should (www.apa.udel.edu/apadg/). Suggestions for improving this site are always welcome.

By the time these words are published, the committee will have met at the August CAP conference at Oregon State University. The primary aim of this meeting was to establish an agenda for the committee. I suspect that the committee will have several projects underway. More on this in the next issue of the Newsletter. Please direct any proposals or concerns about committee activities to me or to other members of the committee.

PAC sessions at APA meetings continue to draw attention to important issues. At the March 2003 Pacific division meeting, Noam Cook chaired a special session jointly coordinated by the PAC committee and the Society for Philosophy and Technology. The general topic was “Computers and the Mediation of Human Experience” and the speakers included Tom Powers (“The Computer Layer in Pedagogy: Complements to Traditional Classroom Interaction”), David Kolb (“Philosophy Gone Hyper: New Voices and Forms of Scholarly Communication”), and Brandon Fitelson (“Some Recent Applications of Computing to Problem-Solving in Philosophy of Science, Logic, and Metaphysics”). In addition, an “Author Meets Critics” session, chaired by David Malament, featured Patrick Suppes (“Representation and Invariance of Scientific Structures”) and included Jeff Barrett, Jean-Claude Falmagne, and Brian Skyrms as critics.

International CAP conferences, whose numbers are growing steadily, provide a great opportunity to meet colleagues from other nations and for hearing firsthand about distant projects and achievements. CAP Europe, held at the University of Glasgow last March, certainly fulfilled this promise. Thanks are due to Susan Stuart and her colleagues for their proficient organization of events and their much appreciated camaraderie. New friendships as well as professional relationships have blossomed as a result.

CAP Australia (October11 - November 2 at The Australian National University) was another such opportunity, and the second CAP Europe (at The University of Pavia, Italy) is planned for June 3-5, 2004. Check the IACAP site for links and details. (http://iacap.org/).

Finally, the Barwise Prize for 2003 has been awarded to Daniel Dennett and is scheduled for presentation at the 2004 Eastern Division meeting in Boston. Dan gave the keynote address at the second CAP conference held at Michigan State University in 1987. Congratulations, Dan!

So, the committee is at one of its regular transition points, and I will report on its emerging agenda in the next issue of the Newsletter.
Grosset/Putnam, 1994) and The Feeling of What Happens: Body and Emotion in the Making of Consciousness (New York: Harcourt Brace, 1999). Damasio seeks to connect Spinoza's metaphysical monism and ethical stoicism to contemporary efforts to produce a neurobiological account of emotions and feelings.

Spinoza's naturalism involves an effort to produce a unified field theory under which matter, god, consciousness, and value all fall under the same interrelated categories. Spinoza rejected the traditional dualism in which mind (and human features) is fundamentally separate from nature.

The laws and rules of nature, according to which all things happen, and change from one form to another, are always and everywhere the same. So the way of understanding the nature of anything, of whatever kind, must also be the same, viz. through the universal laws of nature." (Ethics III, Preface).

By seeking to apply causal law to the emotions, Spinoza laid a path for a naturalistic theory of consciousness. Moreover, Spinoza applies this unified naturalism to ethical theory yielding a psychological and active basis for value as well as a practical philosophy of life.

Damasio presents Spinoza's monism and naturalism as prescient of modern science.

“Darkly, through the glass of his unsentimental and unvarnished sentences, Spinoza apparently had gleaned an architecture of life regulation along the lines pursued by Sigmund Freud, the philosopher-psychologist William James (brother of the novelist Henry James), and the French physiologist Claude Bernard two centuries later. Moreover, by refusing to recognise a purposeful design in nature, and by conceiving of bodies and minds as made up of components that could be combined in varied patterns across different species, Spinoza anticipated Charles Darwin.”

Perhaps this is so, but before casting Spinoza as an antidote to Descartes’s dualism (a la Descartes’ Error), it is important to note that Spinoza’s account of the emotions explicitly builds upon Descartes’s theory of the passions as explaining human affects through their first causes “I do not forget, that the illustrious Descartes, though he believed, that the mind has absolute power over its actions, strove to explain human emotions by their primary causes…” (Ethics III, Preface). The differences between Descartes and Spinoza are philosophically important, but are more subtle than Damasio indicates.

The thrust of contemporary scientific thought about the brain and consciousness is typically an attempt to reduce the mental to the physical. When enlisting Spinoza in that effort, it must be recognized that Spinoza’s monism is radically non-reductionist. Book One of the Ethics revolves on the thesis that nature is a substantial whole that is indivisible and uncaused. That the laws governing matter, mind, and value are identical follows from the claim that nature is a single irreducible substance. Contemporary science may find Spinoza’s monism a useful foil against dualism, but it is unlikely to endure the pantheism that results from Spinoza’s Ethics.

Artificial intelligence studies may benefit from the account of consciousness that requires emotion and feeling. Damasio’s trilogy is a valuable attempt at synthesis between classic philosophy and contemporary science. This excerpt is a good place to start.

One login, one vote
An Alternet.org article by Greg Palast and Martin Luther King III, “Jim Crow Revived in Cyberspace,” raises questions about potential problems with online and computer-supported voting. Specifically, the authors worry that digital voter registration and voter rolls may be easy to manipulate to advance political and racist agendas. They write;

“Jim Crow has moved into cyberspace — harder to detect, craftier in operation, shifting shape into the electronic guardian of a new electoral segregation.”

Meanwhile, the US military plans an experiment with online voting for overseas personnel in the 2004 general election. William Matthews’ article “Military e-voting plan wins backers” in Federal Computing Week (November 5, 2001) notes that the effort will extend to several hundred thousand voters. That is a powerful way to get out the vote. Whichever party holds the majority among military voters is bound to benefit, a point that Al Gore and Democrats struggled with in 2000.


“Jim Crow Revived in Cyberspace” http://www.alternet.org/print.html?StoryID=15890

He said, she said
The Boston Globe reports on research by computer scientist Moshe Koppel, et al., which concludes that women and men exhibit differences in writing patterns that are distinct enough to allow reliable detection of the gender of a text’s author by statistical analysis.

Koppel’s group found that the single biggest difference is that women are far more likely than men to use personal pronouns— “I,” “you,” “she,” “myself,” or “yourself” and the like. Men, in contrast, are more likely to use determiners— “a,” “the,” “that,” and “these” —as well as cardinal numbers and quantifiers like “more” or “some.”

The researchers employed a text base commonly used in language analysis. A variety of genres are represented and the authorship gender is distributed 50-50. They removed text that identified the author and topic.

Then they fed the remaining text into an artificial-intelligence sorting algorithm and programmed it to look for elements that were relatively unique to the women’s set and the men’s set… the researchers wound up zeroing in on barely 50 features that had the most “weight,” either male or female. Not a big group, but one with ferocious predictive power: When the scientists ran their test on new documents culled from the British National Corpus, they could predict the gender of the author with over 80-percent accuracy.

The Boston Globe article included comments on the results by Philosopher Judith Butler (Berkeley) and Linguist Deborah Tannen (Georgetown), as well as linguists and gender theorists who interpret these results in various ways. Such work indicates a potential role that the computational turn may play in gender studies, feminist philosophy, and linguistic philosophy.

The Koppel group’s article is scheduled for publication by “Literary and Linguistic Computing” http://www3.oup.co.uk/litlin/.

A just war or just a war?
Just war theory is a traditional philosophers’ concern. The Jus in Bello aspect concerns just conduct in war, which addresses civilian casualties. Internet data-base technology provides a tool for just war philosophers as is evidenced at Iraqi Body Count (http://www.iraqbodycount.net).
Now that the war on Iraq is over, except for the fighting, many people are interested in knowing what the consequences were. How many non-combatants and combatants were killed and wounded? The official Pentagon and White House answer is that the U.S. does not keep statistics on the number of people killed in war.

American officials say numbering the enemy dead in the midst of battle is dangerous and ultimately fruitless. They say it is not a statistic that interests them. They speak in lifeless terms of “degrading” or “attracting” enemy military formations, so they can assess the strength of the force opposing them. They count destroyed tanks and artillery pieces and missile launchers. They count captured weapons. They do not count people, civilian or military.

“You know, we don’t do body counts,” Gen. Tommy R. Franks said a year ago in response to reports that American bombing killed 1,000 Al Qaeda and Taliban fighters in the Afghanistan campaign of 2001-02. (New York Times. “U.S. Military Has No Count Of Iraqi Dead In Fighting.” April 2, 2003)

Past wars, such as Vietnam, have involved detailed casualty counts of enemy combatants and in the Israeli-Palestinian conflict, both combatant and civilian casualty figures are regularly reported.

Though the Pentagon claims to not seek or maintain data on civilian casualties, the military does publicize its efforts to reduce civilian casualties. On March 19, 2003, the day that President Bush announced the start of the war on Iraq, Col. Gary L. Crowder, chief, Strategy, Concepts and Doctrine, held a press conference in which he detailed the many lengths to which the U.S. military goes to minimize civilian casualties. (Effects Based Operations Briefing. March 19, 2003. http://www.dod.mil/news/PressRelCos/Mar2003/03202003_0319effects.html).

The military forces in the Persian Gulf are doing some of the most, quite frankly, sophisticated planning that any military anywhere has ever done. Each of the component commanders and the Central Command planning staff under General Franks, are actually driving us to how in fact we do effects-based operations across the military services... Every one of those targets is examined for collateral damage. We first look to ensure that the target is directly tied to an objective. We then ensure that we do — we know enough about the target so that we can create the desired effect. You don’t always know enough about the target, but to the degree that we can, we will try to understand what we need to do to that target to effect it. We choose the right weapon to create the desired effect. We then do a clear examination not only of the collateral damage potential, but also of law of armed conflict potential, and those types of issues, the legal implications of striking that target. And then we do everything we can do in the planning factor in adjusting the weaponeering and providing the tasking to air crews to enable us to most effectively achieve the desired effect with the minimum damage — minimal potential collateral damage for civilian casualties. (Gary L. Crowder. 2003. Effects Based Operations Briefing).

Crowder describes the planning, training, redundancy, expense, and humanitarian intention that goes into every Effects Based Operations, with the exception of actually measuring the effects. Without measuring the actual effects (i.e., civilian casualties) there is no way to assess the effectiveness of Effects Based Operations.

The Air Force Time Sensitive Targeting team is tasked with collateral damage estimation and mitigation designed to reduce non-tactical damage from U.S. attacks.

“Even though our top goal is to take out the desired target, our primary concern and bottom line is to...avoid at all costs, any type of civilian casualties,” said Master Sgt. Douglas Frickey, time sensitive targeting noncommissioned officer in charge. “We use several types of high-tech electronic and computer program models based on mathematical theories to help us with the collateral damage estimation process. Everything plays a factor into how a weapon is going to affect a target. We leave nothing to chance.” (Douglas H. Stutz. Saving civilian lives with collateral damage estimation. Air Force Link. http://www.af.mil/news/opscenter/caoc_special7.shtml)

Nothing, that is, except the actual results of these priority efforts, since the military asserts that they do no follow-up to measure the outcomes. Frickey notes that high collateral damage targets are defined as those targets that if attacked are estimated to result in non-combatant casualties of 30 people or more, or have a significant effect on a particular site. It stands to reason that some assessment must follow the action in order to evaluate the estimation. If the Pentagon has no data on collateral damage, Frickey and the Time Sensitive Targeting team cannot finish their job. Can that be the way it really is?

Iraq Body Count provides the data that the Pentagon do not. By coordinating efforts to survey hospitals, funeral statistics, and homes door to door with reporting by world media, Iraq Body Count compiles a database of individual incidents and deaths.

Casualty figures are derived from a comprehensive survey of online media reports and eyewitness accounts. Where these sources report differing figures, the range (a minimum and a maximum) are given. All results are independently reviewed and error-checked by at least two members of the Iraq Body Count project team in addition to the original compiler before publication. (Iraq Body Count. Methodology. http://www.iraqbodycount.net/background.htm#methods).

The database provides the following information about each incident:

- Date of incident
- Time of incident
- Location of incident
- Target as stated by military sources
- Weapon (munitions or delivery vehicle)
- Minimum civilian deaths
- Maximum civilian deaths
- Sources

Media sources are judged acceptable according to the following criteria:

1. site updated at least daily
2. all stories separately archived on the site, with a unique url
3. source widely cited or referenced by other sources
4. English Language site
5. fully public (preferably free) web-access.

This puts a good deal of credence into the reliability of the media sources. This is interesting, since much online information has been widely considered by academics to be flawed as a research source. Improvements in the reliability of online information will be of immense value, especially where
official sources fail to provide information or generate deceptive information.

The project relies on the professional rigour of the approved reporting agencies. It is assumed that any agency that has attained a respected international status operates its own rigorous checks before publishing items (including, where possible, eye-witness and confidential sources). By requiring that two independent agencies publish a report before we are willing to add it to the count, we are premising our own count on the self-correcting nature of the increasingly inter-connected international media network. (Iraq Body Count. Methodology. http://www.iraqbodycount.net/background.htm#methods).

Compiling information from distributed and dynamic sources for a distributed audience in real time is a task suited to the web and perhaps unique to it. The real time reporting aspect is advanced by the free distribution of a Flash counter that can be downloaded from the site and placed on any website or desktop. The counter shows the current minimum and maximum casualty figures and scrolls details of the most recent deaths. The counter is significant as it can distribute the information in a very direct manner to individuals who may be able to form interpretations of the data over time.

In the matter of collateral damage, and other distant tragedies, it is often the absence of detail that leads people to miss the moral significance of atrocities. Just reporting that a minimum of 6071 civilians have died as a result of Operation Iraqi Freedom is meaningful, but to see that a family tent in the desert suffered an air attack leaving 17 dead, or that several children have been run over by speeding military convoys, may evoke a different moral response in many.

How the techniques used by Iraqi Body Count may be improved and the information sources strengthened is an important endeavor for philosophers to consider. Just war theory draws on principle but must be applied to facts in order to be practical. In the absence of any Iraqi (and Afghani) casualty data from official U.S. sources. Iraq Body Count provides the best information available.

FEATURED ARTICLE

Teaching Philosophy with Argumentation Maps

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The greatest challenge of doing philosophy today may be one of not being able to see the forest for the trees. Whether or not teachers and students will readily admit to it, the content of philosophical studies is too often presented in twigs, many of which are rarely if ever connected to larger branches of thought. The problem for students is not usually one of understanding a particular argument, but rather understanding where and how all the arguments fit together.

Consider, for example, the difficulty involved in trying to determine the current status of a longstanding philosophical debate. Which arguments have already been made? Which have been rebutted? Who has argued what against whom? What counter-rebuttals have been offered? The most interesting and important arguments are usually carried on in the journals of several different fields. Research and the debates over the nature of consciousness, for instance, appear in the journals of neurobiology, cognitive science, anthropology, psychology, and philosophy. How can we expect to keep track of what is being currently thought about or written on the subject?

At the same time, philosophers and students of philosophy also have wide-ranging curiosity. Most of us still want to know what’s happening outside of the narrow specialty that occupies so much of our professional life. Yet we live in an age of information overload. To continue the botanical metaphor, we are too often lost in a dense wood of interesting but unconnected thought on important topics. The sheer number of good journals continues to rise, making it impossible to scan, let alone read, all of the articles that might interest us. How can we expect to navigate, let alone benefit, from such abundance?

How argumentation maps came about

About 12 years ago, I asked myself the question: What is the status of the great philosophical debates that have preoccupied humanity over the centuries? I realized almost immediately there was no easy answer. After considering the question for a while, I had to admit that I didn’t have a good picture in mind about how the status would even be displayed. It was apparent that this was a worthy project to work on. I had some exposure to an emerging profession, information design (Horn, 1998b), which is concerned with exactly the issues of presentation of complex information to make it efficiently and effectively available to a wide group of people. The possibility that some form of diagramming might facilitate display of the status of a debate was the beginning of the project.

Stephen Toulmin’s pioneering work, literally creating the new field of argumentation analysis (1958), offered me a framework. Toulmin had suggested that we look to how people in various professions actually argue and attempt to sort their arguments into their components (claims, grounds, backing, warrants, rebuttals). His framework provided a way to begin my early experiments. I tried that approach early on in the project and found that, graphically, it produced a page that strongly resembled a plate of spaghetti. It was too confusing and overwhelming to the reader and the analysis was too fine-grained to provide the overview of the arguments I was looking for. After many failures, I worked out a diagrammatic scheme that clustered these Toulmin-elements into a single box connected by arrows that showed the basic relationship of “supports” or “disputes” of a particular claim (or claim plus
supporting arguments). This provided both the simplicity and the structure I was after. It became clear that what I was trying to do was to create a kind of map of the great debates.

In the early 1990s, I began gathering a team of students and colleagues to attempt to map one of the great debates. We wanted a debate that was currently being argued, one that was neither too extensive for our resources, nor too tiny to provide a robust test of our developing methodology. Others had used Toulmin-like diagramming, but we wanted to test it on an important, sizable, real-world debate. As we completed the different topics, they were shown to experts in the relevant issues for feedback.

Can Computers Think? The Debate
We settled on the Turing debate about whether computers can think (or if they ever will be able to think). The debate starts with the 1950 claim of the great British mathematician, Alan Turing. He wrote, “I believe that at the end of the century the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted.” In short, he was certain that computers would be able to think. That was a powerful claim especially coming from the mathematician who in the 1930s invented the ideas on which the modern computer is based. For our purposes, this debate had a pretty clear beginning (although philosophers as far back as Descartes and Leibnitz had speculated on the question). It had attracted some of the best minds of our century. There was a wide range of kinds of arguments and an interesting interdisciplinary nature to the debate that would surely confront our budding methodology with interesting and useful problems. It touched on so many of the ongoing topics in philosophy, especially in the philosophy of mind and consciousness. The artificial intelligence debate also focused deeply on the philosophy of mathematics and on the philosophy of science. Moreover, it also incorporated some issues in neurobiology and opened up deeper questions as to the nature of computation and the nature of machines and persons. Yet, for the most part the debate was not too technical, and hence quite accessible to most.

The Can Computers Think? debate provided us multiple entry points into major areas of philosophy. In his paper launching the debate, Turing himself delved into many of these topics. He touched on such subjects as machine creativity, free will, and emotions. Turing asked: what is the status of God if machines can think? And, of course, with the development of the Turing Test he deeply focused our attention on the nature of thinking. All of these are topics that students can and should wonder about.

The Turing debate has engaged literally thousands of scholars, philosophers, cognitive scientists, mathematicians, physicists, neurobiologists and researchers from other fields. And it has engaged some of the best minds of all time: along with Turing, mathematicians Godel and von Neuman; the pioneer cognitive scientists Philip Johnson-Laird, Alan Newell and Herbert Simon; the inventors of artificial intelligence as a field, John McCarthy and Marvin Minsky; the physicist Roger Penrose; and, of course, philosophers from Leibnitz and Descartes to the contemporaries Hubert Dreyfus, John Searle, Daniel Dennett, Douglas Hofstadter, Paul and Patricia Churchland, and many others. Surely, this debate is at the forefront of questions of the philosophy of mind and surely it could adequately challenge our methodology.

The structure of the maps
The main structure of our maps is that of a large tree with many branches. (See Fig. 1) The tree begins with Turing’s claim, quoted above. The structure is then quite simple. It proceeds by laying out the branches of claim, rebuttal, and counterrebuttal. One of our criteria for mapping the debates was that if there was no debate, the claim did not make it on to the charts. Such agreements are most often found in the sidebars on our maps.

Links
The major links in the maps’ branches are labeled arrows, the arrows being identified by icons that bear the words “is disputed by” or “is supported by.” The reader follows a branch, noting whether it is supporting or disputing the claim in the previous box, and then reads the next claim or rebuttal. Each thread of argument serves as a timeline of the argument, left to right, thus providing one of the innovations of these maps, a visual intellectual history of the debate. (See Fig. 2)

Claims
Each claim box identifies the protagonist and the year and contains the summary of the claim, support, or rebuttal. (See Fig. 2) A major aim of the writing is to summarize the claim in as clear, simple, and direct a manner as possible.

Focus boxes
Each of the 70 major branches or issue areas of the debates are labeled with a question and begin with a focus box that summarizes the general claim of that issue, which we call a “focus claim.” These claims can sometimes be attributed to a specific protagonist in the argument. But just as often other protagonists argue against this focus claim, even though they do not cite anyone who has actually claimed it. And, in fact, we have been unable at times to find anyone, in print, who has specifically claimed what the claim box summarized. Rather, authors will write “there are those who argue,” or “it is sometimes claimed…” (For an example, see Fig. 2, Box 28)

Secondary Links
Occasionally notes within the boxes provide secondary links which help readers tie together important connections.

Understanding the camps

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One of the difficult aspects of understanding great debates like this one, is that the protagonists come from quite different points of view. They bring with them vastly different assumptions about the nature of reality. Often, in a specific article students must read, the protagonists do not reveal their assumptions or their affiliation with a specific camp of thinkers. We have tried to provide a tool for learners here also. The basic clue was provided by Simon and Newell’s listing of their postulates for the representationist point of view, which they call the physical symbol system hypothesis. We then wrote sets of postulates for nine other major points of view and have included them on the various maps. (See Fig. 3 for a list) We identified, where possible, which participants on the maps could be regarded as being part of a specific camp, thereby providing students with an insight as to why particular arguments might be taking place.

**Sidebars**

To aid immediate comprehension of some of the topics on the maps, we included 50 definitions and 32 sidebars. These are located at strategic spots in the maps close to where the topics and terms are introduced.

**The uses of argumentation maps in teaching**

Philosophical argument is a lively, current concern. We took our inspiration from the biologist Lewis Thomas, who wrote, “College students, and for that matter high school students, should be exposed very early, perhaps at the outset, to the big arguments currently going on among scientists. Big arguments stimulate their interest, and with luck engage their absorbed attention… But the young students are told very little about the major disagreements of the day; they may be taught something about the arguments between Darwinians and their opponents a century ago, but they do not realize that similar disputes about other matters, many of them touching profound issues for our understanding of nature, are still going on, and, indeed are an essential feature of the scientific process.”

**Some possible learning assignments**

The maps lend themselves to assignments that involve students in the debates immediately. For example, an early assignment in a course could be: Choose one of the 70 major branches of the debate (See Fig. 6), decide whether you agree or disagree, and write a paper giving your reasons. A moderately more difficult assignment would be to ask students to rank order the strength of different debates on a given branch and consider why they give the weights they do to the different arguments. A more advanced assignment could ask students to come up with at least one new argument at the end of one of the branches, which represent the frontiers of the debate. An even more advanced assignment could be to ask students to write a paper that shows why two or more of the eleven philosophical camps described in postulates on the maps are debating a particular issue.

**Excellent hook for student interest in introductory courses**

Students often find that it is easier to get into a subject that has some connection to currently hot topics in the culture. The maps can be used to introduce questions of philosophy in a way that is attractive and compelling. Many students will have heard of the IBM computer system, Deep Blue, that recently beat Garry Kasparov, the human Grandmaster champion, at chess. They may have seen it on the TV news or on the covers of weekly newsmagazines. These events make it possible to pose such questions as: Can Deep Blue really think? What kinds of thinking are Deep Blue doing? The chess-playing arguments appear on Map 3 of this series. As I have suggested above, the question about computer thinking opens more doors to more other philosophical issues than any other topic. For this reason alone it lends itself to introductory survey courses aimed at intriguing students with the study of philosophy.

**Learning philosophy dialectically**

By watching philosophers lock horns and wrestle in an interdisciplinary arena of open debate, readers can better appreciate the subtlety and complexity of the issues with which they themselves are struggling. The dialectical method has ancient roots and remains valuable today. Socrates grappled with the best minds of Athens in public debate, and Plato recorded those dialogues as a means of teaching philosophical concepts. Argumentation maps illustrate the value of learning philosophy dialectically. Argumentation maps graphically harness the full communicative and instructional power of dialectical exchange.

**Provide project opportunities in creative argumentation**

Rarely do students get a chance to feel that they are participating in what is happening today. It is difficult to convey a sense of the leading edge of arguments. To see where debates have stopped or slowed down, students only have to read along the right-hand edge of an issue area. Because the argumentation maps provide the thread of existing arguments, and also show where they have ended (as of now), they provide the opportunity for assigning students to select one thread or topic of an argument and try to add to it an original argument, write a critical essay about it, or read the original sources of one or more issue areas and critique them. Since the maps clearly mark the frontiers of arguments, students have a chance to engage in real debates and contribute their critical assessments as well as new arguments. This, in itself, has suggested to teachers an extraordinary educational opportunity.

**Save time and provide context and visible structure**

We live in an age of information overload and specialization. The sheer numbers of argumentative moves (over 800); the number of authors represented on the maps (380); the number of sources that we consulted (over 1,000) and the sources that contained original arguments used in the maps (over 400) are overwhelming to the student undertaking study in this area. One graduate student in the philosophy of mind said: “These maps would have saved me 500 hours of time my first year in graduate school. For almost two semesters, I had to keep reading article after article without enough context to see how they fit in to the bigger picture. The maps would have made my whole experience a much more rewarding one.” It was also interesting to hear from a professor of philosophy of mind who had begun using the maps in her teaching. She reported that “The maps have, in fact, prompted me to reorganize my Philosophy of Mind course to cover certain issues and problems from a particular approach, using the commentaries of thinkers noted on the maps—e.g., the Chinese Room in more depth, and connected more explicitly to the question ‘Can Computers Think?’” (Wagner, 1998)

**Can other topics be mapped?**

A number of philosophers have remarked on the general usefulness of our methodology and have asked us if other topics are underway. The short answer is yes. We are proceeding on maps of several other major debates, in the interdisciplinary study of consciousness (by neurobiologists, psychologists, and philosophers), in some topics in the philosophy of biology (especially in evolution), in ethics, and have proposals out for still others, especially in political philosophy and public policy issues. We believe that this mapping approach will serve education by providing a general methodological tool and by providing authoritative maps in substantive areas.

**More opportunities**
The educational opportunities itemized are only the beginning, because these maps are literally only a beginning. To use a cartographic metaphor, the maps are at the stage that Mercator’s projections were in the creation of mapping methods. Since then literally hundreds of new and different kinds of projections have been devised. Even more sophisticated uses than Mercator ever dreamed of have been made of the mapping approaches that he originated. I am sure that other scholars will come up with creative new maps and extraordinary new educational uses for them that we on the project have not yet thought of. We are interested in feedback from the field as to other topics that might be addressed.

What’s the answer? Can computers think?
Our philosophy in creating the maps was not to evaluate the weight of the arguments summarized. Our goal as mapmakers was to map the debate without taking a personal stand. The maps are, as much as possible, neutral.

This highlights another aspect of our philosophy in making the maps. They are intended as educational tools to help students learn to think critically. It is left to students to evaluate the “weight” of the arguments and evidence and draw their own conclusions. Some students have been frustrated by this. They say, “So, what’s the answer?” The maps do not provide the answer. This provides instructors with many more educational options and opportunities and students with the chance to evaluate the arguments and make up their own minds. It is not intended that our maps reveal the mapmakers’ views.

Of course, the maps are to some extent interpretive. In writing and linking arguments, we had to condense huge amounts of information, often on the basis of highly obscure or technical literature. We also had to make decisions about placement and emphasis. The way these maps organize the debate is not necessarily the only possible organization, but it was carefully considered and weighed against alternatives. The argument summaries themselves, which is where the real dialogue takes place, stick closely to the words of the authors, the better to avoid interpretation.

Conclusions
Karl Popper, the 20th century philosopher of science, has said, “The best tested theory is the one which, in the light of our critical discussion, appears to be the best so far; and I do not know of anything more ‘rational’ than a well-conducted critical discussion.” Argumentation maps provide a picture, more detailed than previously available, of how such a vast critical discussion can take place across disciplinary and geographic distances. By creating an accessible map of the conceptual territory our hope is to facilitate more global interdisciplinary debate, to bring the various sources to light, and to illuminate how the pieces of the puzzle fit together. Perhaps the very existence of the maps will provide incentive and opportunity for more interdisciplinary and international discussion. It is all too easy to repeat an argument that has already been made in a distant or obscure location, to talk past one another in the heat of conflict, or to ignore important context. It is all too easy in the age of information overload, for even the most careful scholar to not know that a major rebuttal has already been made. Moving a serious debate forward requires a disciplined interdisciplinary and international dialectic and the right kind of tools.

Acknowledgements
I want to salute the members of my team, Jeff Yoshimi, Mark Deering, (University of California, Irvine) and Russ McBride (University of California, Berkeley), without whose dedicated effort and creative thought these maps would not be what they are today. I also want to thank the publishers, MacroVU, Inc. and the Lexington Institute for their generous support of this project.

Notes
1. The field of argumentation analysis has several associations, including the International Society for the Study of Argumentation.

References

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TEACHING IN CYBERSPACE

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We have previously discussed in Teaching in Cyberspace the concept of so-called ‘hybrid’ courses in philosophy, with examples, where real time, face-to-face instruction is effectively integrated with technology, assisted by online features or with other computer-assisted instructional enhancements which promote learning. Student learning in the traditional classroom, enriched by a 24/7 opportunity for class practices, writing, problem-solving, or online discussions, signifies laudable goals in philosophy pedagogy in the evolving ‘hybrid’ philosophy curriculum. Moreover, the diversity of instructional media, and the variety of classroom and research activities, aided by qualitative technology applications, seem to fit well with different learning styles among students. But the trick is to do it right, as we all know too well.

Two articles are included below which address different aspects of hybrid undergraduate coursework in philosophy. Professor Istvan Berkeley (University of Louisiana at Lafayette) offers us “Computer Communication with Students: The Bad, The Ugly and The Good,” in which he discusses his own (often frustrating!) experiences with uses of technology to facilitate interaction between undergraduate students and professors outside the traditional classroom setting. Dr. Berkeley explores three types of communication technologies, and offers a personal assessment of each: network news groups, email lists, and web forums. One can relate well with the experiences he shares, and can learn from his trials and efforts to enhance non-traditional class discussions, vital for philosophy instruction.

Professor Kevin Possin (Winona State University, Minnesota) shares with us “Critical Thinking: A computer-assisted Introduction to Logic and Critical Thinking,” in which he describes the many excellent features of the instructional CD he authored and uses in Winona State’s “Critical Thinking” courses. Anyone who has taught logic or CT knows the variation in student learning speed, and the importance of multiple exercises and prompt feedback on course modules which encourage practice, practice, practice! If only all this could be done in a large class, right? Well, Dr. Possin’s Critical Thinking CD
might have just solved the problem! The reader will probably rush to his website, which he includes. I did.

Thank you, Istvan and Kevin, for your time to develop these pieces for our Newsletter readers. Your experiences and expertise in instructional uses of technology are commendable. And don’t be surprised if you get some email from our readers. Well done!

--- Philosophy and Computers ---

**Computer Communication with Students: The Bad, The Ugly and The Good.**

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**Abstract**

Modern computational technology provides a variety of options for enriching the teaching of philosophy and other subjects. This discussion will focus on three attempts to make use of technologies to facilitate interaction between students and faculty outside traditional settings. Whilst the results are not truly scientific, as the sample sizes are too small, they may prove useful for others who wish to explore these options. The three technologies explored are local Network News Groups, Mailing Lists and Web Forums. The strengths and pitfalls associated with each technology will be assessed. These assessments are based upon the experience of applying these technologies in the context of teaching undergraduate philosophy classes.

0. Introduction

Persuading undergraduate students to engage in dialogue can, at times, be a difficult task. Although well-known techniques, such as class participation grades and the like, go some way to encourage questions and comments, they are not a perfect solution. With the increasing availability of computer technology to undergraduate students, a new range of interaction possibilities has become available. In particular, computational techniques increase the range of possible interactions beyond the traditional classroom, discussion group and office hour formats. In addition, computational techniques are often available twenty-four hours a day, for the insomniac philosophy major. They also have significant advantages for the terminally shy. Below, I will describe my experiences trying to use computational techniques for enriching teaching.

1. Local Network News Groups

Once upon a time when the Internet was a much more innocent place, Network News groups were informative places to engage in discussion with individuals of similar interests. Unfortunately, these days many news groups are little more than noisy places full of spam-like advertisements. This much being said, if your interests are sufficiently obscure (for instance antique computational systems, for instance), it is still possible to find useful information on Network News groups. A little known feature of Network News groups is that it is possible (usually with the assistance of your friendly local system administrator) to set up special purpose news groups that are only available to, for instance, people on a campus network.

Some years ago, I had a special local news group set up for a 300 level Topics in Mind and Cognition Class. This seemed a suitable class to use to investigate the use of news groups for teaching purposes, as the topic of study of the class that semester was Artificial Neural Networks (aka connectionist networks). Naturally, this topic attracted a larger than usual number of computer science majors. As such, it was reasonable to assume that students in the class would have reasonably well developed computer skills.

The idea behind the news group was to provide a forum where students could engage in discussion and ask questions, outside the traditional environmental and temporal constraints. Initially, there was a small amount of activity on the news groups, which was quite gratifying. However, this did not last long.

There were a number of flaws with the technology for the purpose at hand. The first flaw derived from the fact that the news group was only accessible from campus computers. Many students had their main Internet access through commercial ISPs and, as such, they could not access the news group from home. A few students did make the effort to use their on-campus accounts to access the news group, but all the extra effort required meant that soon this too stopped. Even those students whose main Internet access was through the University Computing Systems had problems. Although they were familiar with email and web pages, they found accessing news groups too alien an activity. This was the second major flaw in the plan. Simply, accessing news groups was not something that students were used to doing, so after a while they did not do it. By the middle of the semester the news group was essentially moribund. Thus, this first attempt at asynchronous communication was an abysmal failure. However, the lesson learned was that it is too much to ask students to learn to use an unfamiliar technology.

2. Mailing Lists

My next attempt at setting up an computer-based means for students to communicate was, to some extent, inspired by the lessons learned from my news group experiment. Students are familiar with email. Moreover, having run the PHILOSOP mailing list for years (see http://www.louisiana.edu/Academic/LiberalArts/PHIL/philosop.html), I am also very familiar with both the technical and social issues concerning mailing lists. So, for an honors Introduction to Philosophy class, I set up a dedicated mailing list. Once again, there were reasons for choosing this class. By and large, honors students are more vocal than the average undergraduate. Also, by using a traditional mailing list, it was no longer necessary that students use their University computer accounts.

Initially, there were one or two problems in getting all the students signed up for the mailing list. Although students knew about email, subscribing to a mailing list was a new experience for some of them. However, as list administrator, I could easily just manually add those students who could not manage the subscription process on their own. Soon, all the students were subscribed and things began to look good. There were sporadic contributions to the mailing list from a variety of students. Indeed, it was quite gratifying to discover that students who were too shy to talk in class could be quite eloquent in email messages. Regrettably though, things started to go wrong by the middle of the semester.

Mailing Lists are one of the oldest Internet technologies. Although there are always technical issues to be considered, one of the biggest challenges to running a mailing list concerns social or ‘netiquette’ issues (for an on-going discussion of these issues see the archives of the LIST-MANAGERS mailing list, archived at [http://www.greatcircle.com](http://www.greatcircle.com)). Indeed, there is even special terminology used by mailing list managers to describe the curious pathologies and behaviors of list subscribers. In the case of this class mailing list, it fell victim to what is known as ‘a troll’.

The way the class mailing list was set up was such that any subscriber could post to the list, simply by sending an email to the list address. There was a restriction that only list members could post, as a way of limiting the possibility of spamming.
However, once a message was submitted, it was automatically distributed to all list members. The list was not moderated in any way. Fairly early on, one of the students in the course (one who never said a word in class) became a much more frequent poster to the mailing list than any other student. This is not an entirely unusual state of affairs with a mailing list. Usually frequent posters burn themselves out fairly rapidly. Moreover, an active list is better than a list that nobody posts to at all and often a frequent poster will spark debate. However, frequent posting can also be a symptom of a Troll in the making.

The crucial event was a discussion in class of Descartes’ Fifth Meditation. In particular, the analysis of the Ontological argument as being question-begging turned the student into a fully-fledged Troll. Suddenly, the student was posting to the class mailing list on at least a daily basis, sometimes more often. At first, I tried to respond to his points diplomatically. This just made him worse. I then made the standard move of suggesting that we continue the debate via private email. This request had no effect. The student believed the class mailing list was his own personal soapbox. Other students began discreetly suggesting that perhaps the torrent of email to the list should stop. However, this turned out to be the final straw. Our Troll responded by attacking the other students on the class list for not posting enough, in terms that were very far from appropriate, or complementary. Eventually, I was forced to remove the Troll from the list. However, by that time, the damage was done. The class mailing list ceased to be used by anyone. So, my second experiment with computer-mediated communication also had to be declared a failure.

The lessons to be learned here are somewhat surprising. Large mailing lists can peacefully exist for years. However, there is always a danger of list subscribers causing problems. In the context of a class though, mailing list technology gives too much potential power to the students. This problem is exacerbated by the fact that, by their very nature, class mailing lists tend to be small. On a larger mailing list, Trolls are often emailed privately by the fact that, by their very nature, class mailing lists tend to be small. On a larger mailing list, Trolls are often emailed privately by other subscribers. This tends to help moderate their behavior. Such checks and balances do not apply in the context of a class list.

3. Web-Based Discussion Forums

Discussion forums that are based upon web pages seemed like the next obvious technological system of communication to try. They are easily accessible by students, using a technology they are comfortable and familiar with. They also do not suffer from the limitations of mailing lists, as students have to visit the relevant pages, to both post and read. My earlier experience suggested that a more senior level class would be an appropriate context in which to test this technology. I had a 300 level Topics in the History of Philosophy class, focusing on the works of Nietzsche, that I decided to try this latest attempt on. Before discussing the outcome, though, a few comments on technical details are in order.

There are several ways of setting up a web-based discussion forum. The technique that is easiest depends upon the resources available and campus policies governing such activities. Should you want to try and follow this route, and set up a discussion forum for your students, then it would be a good idea to begin by discussing the project with your local computer people. Here I will just describe the approach I took, indicating the advantages and weaknesses, and the considerations that are worth keeping in mind with any such implementation.

It is relatively easy to set up a web server on any network-connected computer that has a fixed IP address (DHCP-based implementations are considerably more problematic, to put it mildly). There are many web servers that can be downloaded for free and installed. I had an old Pentium One, 166MHz machine, running Windows 95, that I could dedicate to the task. It is seldom realized that an older machine will often be more than adequate for the task of web serving. There are also advantages of having a single dedicated machine, because this reduces the risks should a security problem arise. The disadvantage of running a web forum on your own machine, rather than on a centralized computer system, though, is that one has to take responsibility for security and technical issues.

It so happened that we had a spare copy of Microsoft’s FrontPage program available. Whilst I am not too much of a fan of Microsoft products, FrontPage had two advantages; first, it has a small and simple web server included on the CD, second, it has a wizard to make the building of a web forum a very simple process. The down side of this approach is that it may require spending money on the software and that the HTML code produced by FrontPage is pretty ugly. Moreover, for more substantial endeavors, there is much better software available. For instance, the ejournal The Electronic Journal of Analytic Philosophy, (http://ejap.louisiana.edu), which I also run, runs on a Linux machine, with an Apache web-server. Nonetheless, for a simple class discussion forum, an older machine, using the FrontPage server, is quite sufficient. Although the forum creation wizard actually made setting up the forum relatively straightforward, for those who do not have access to such software, it is easy to find HTML code templates to do this for you by searching the web. Alternatively, some institutions provide technical people who can assist in this process too. The point is, it is not difficult to do, with relatively little effort.

When it came to designing the forum, in the instructions, I suggested that people posting to the forum should provide their name, affiliation and email address. This was because the forum could be accessed by anyone with an Internet connection. So it was reasonable to assume that there might be people other than students enrolled in the course posting to the forum. Needless to say, although most of the students followed this suggestion, at least in part, many off campus postings arrived anonymously.

The web address of the discussion forum appeared on the class syllabus and a link was provided on the class web page. (This class web page can still be found at http://cognition.louisiana.edu:8080/phi329/, however, many of the links no longer work, due to a change in our domain name from ‘usl.edu’ to ‘louisiana.edu’, with the appropriate substitutions, the links can still be followed though). In my syllabus I included a class participation grade and told the students that posting and reading the forum was important for this portion of their final grade. In addition, I made it my policy to check the forum daily and discussed issues from the forum at the beginning of each class. By doing this, I was able to stimulate interest and participation.

The reader can judge the success of this strategy, by visiting the forum that is still available at http://cognition.louisiana.edu:8080/nietzschechat/. In my opinion, compared to my previous attempts, it was by far the most successful effort at getting students to participate outside traditional settings. There was active participation from almost all the students in the class, including from those who were not vocal in the traditional classroom setting.

This raises the obvious question: Why was this attempt so successful, in contrast to the problems with the previous attempts? There seem to be a number of interesting points that need to be made in response to this question. First, by using a web-based technology, the students were in their comfort zone, doing things that they were familiar doing. Student participation was clearly enhanced by the fact that they did not have to learn any new software or procedures. Second, it seems that luck may have played a role too. The particular students in the class...
were willing to participate, put in the effort and the time. The outcome might have been very different with a different group of individuals. It was interesting to note, though, that when questioned about the forum, the students had almost nothing but positive comments. They felt that it enhanced their learning experience. A third reason for the success, was the relative informality of the forum. One student for instance, chose to post using a ‘handle’ (‘Deicidal Maniac!’), rather than his real name. Also, it was possible for students to post questions and opinions that they might have felt more self-conscious about bringing up in class.

There was another interesting aspect of the exercise that is worth mentioning. This derived from the fact that the forum was open to the world. On a few occasions, postings came from individuals from other institutions (albeit anonymously). Indeed, this aspect really encouraged the students in feeling part of a wider community studying the works of Nietzsche. I actually took a few steps to encourage this, when it became clear how much the students valued external input. On a few occasions, I emailed friends and colleagues with the relevant expertise, especially if they were teaching similar courses and invited them and their students to ‘drop by’ the forum. The server logs revealed that the forum was visited from a range of campuses, although relatively few visitors left messages. This is not to say though that all external input was helpful. There were a couple of messages that came in that were clearly from people without much formal academic training, or deep knowledge of the works of Nietzsche. On both occasions, after consulting with the class, these postings were removed - this being one of the advantages of hosting a forum on a machine over which one has complete control. However, it also helped the students feel like they had a degree of control. In fact, the discussion of the misunderstandings in such postings often yielded interesting insights for the class.

4. What Next?

Whilst a single successful experience with web-based forums does not, in itself, show that this is the best approach to communicating with students outside traditional contexts, in combination with the other attempts, it does yield some interesting insights. First, it appears clear that using technologies that are both easy and intuitive for students is a sensible strategy. Second, there clearly appears to be a useful role that such a system can play in enhancing teaching, subject to certain limits. That was the web-based forum was used was to provide an informal context for discussion. However, it was also used as a context for providing ‘value added’ material that was not covered in the class. This appears to have been a popular and important function that helped promote the popularity of the system with the students. In addition, the possibility of interacting with people outside the normal confines of the regular institutional setting seems to have also been a popular feature.

The success of the system described above does not however ensure that such a system will work in every pedagogical context. The fact that the class was made up of senior students and that the class was relatively small, were probably both very important to making the exercise a success. In the near future, I plan to try using a web-based forum with a large Introduction to Philosophy class. This will doubtless raise new issues and challenges. In particular, it may prove necessary to include some mandatory contribution component in the final grade to ensure that students read and post to the forum. How this will turn out, we shall have to see. In the meantime though, there are some interesting possibilities and challenges that seem to emerge.

The significance that the students placed upon being able to interact with off-campus experts is worth keeping in mind. This may suggest that there may be a place for national or even international forums, devoted to particular philosophical topics. The problem though would be to determine which organizations or institutions would be most suitable to host such forums. In addition, there are also issues to do with workload credit assigned to faculty members who would host and oversee such forums. Running a forum for a small class is relatively easy. Managing a much larger system would almost certainly prove an onerous burden, unless the responsible faculty member was given some form of recognition for the effort.

One of the purposes of describing the various experiences discussed here is to try and stimulate both discussion and further experimentation. Perhaps someone reading this may have the time, the resources and the inclination, to try setting up a web-based forum on a larger scale. I, for one, would be very interested in the outcomes of similar exercises. Does anyone feel like stepping up to that particular plate?

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**Critical Thinking: A Computer-assisted Introduction to Logic and Critical Thinking**

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When I took intro to logic in college, I didn’t catch on very quickly. As we were going over the midterm in class, however, everything fell into place. All I needed was one more practice sheet. But there was no way my prof could grade all the homework I needed to understand the material—he was overworked already. I aced the final and ended up with a C for the course—no indication of my final competencies.

When I began teaching critical thinking, I vowed not to let this happen to any of my students. That’s why I developed a computer-assisted, work-to-competency curriculum.

Critical thinking can be roughly analyzed into various skills:

- Identifying arguments
- Dissecting arguments into premises, conclusions, and subconclusions
- Taxonomizing arguments as deductive or inductive
- Assessing the cogency of arguments
- Identifying informal fallacies
- Assessing the validity of categorical and propositional arguments
- Critically reviewing definitions and analyzing concepts
- Applying these competencies so as to construct and assess position papers

These skills are discussed at length in *Critical Thinking*, which comes bundled with the *CT Software*, and *Self-Defense: A Student Guide to Writing Position Papers*, all on a CD-ROM. Both texts are in PDF format, for easy access on screen using *Adobe Acrobat Reader*. They are also available in paperback. These substantive texts have a conversational style, many examples, hands-on directions, and lots of humor. One student recently emailed me admitting that he got hooked on his roommate’s copy of *Critical Thinking*: “I must say, this textbook is the closest any school book has come to being an ‘edge of the seater’.”

The *CT Software* has a total of 15 modules, designed to develop and assess each of the critical thinking skills listed above. *CT* has approximately 3,300 exercises that it uses to create, correct, and grade practice sessions and exams. All practice, homework, and exams can now be done on computer. *CT* also keeps track of incorrectly answered exercises and provides immediate feedback on them.
CT’s exercises are real-life examples, from editorials and op-ed letters, for instance. It is reliable, easy to use, attractive, and installs in moments off the CD on either Windows or Macs (so there is no need to be online to use it).

Prof. Patrick Grim, of SUNY at Stony Brook, called CT “the best intro to logic software around. I think the exercises are wonderful...so good, so many, and so deep.”

With such reader-friendly texts, virtually unlimited practice sessions and exams, and immediate feedback at their disposal, students can hone their critical thinking skills at their own pace in light of their individual needs, talents, and schedules.

Gone are the days of having my students’ grades determined by their one-time attempts at two or three exams. Instead, I’ve been using Critical Thinking in a work-to-competency approach. After each portion of the curriculum is discussed in class, students do practice exercises, using the corresponding CT Software module, until they reach a score of at least 50% on a session of at least 20 exercises. A printout of this score is the student’s “ticket” to begin taking exams on that module in our Critical Thinking Computer Lab. The CT Lab is monitored by student Lab Assistants who previously aced the course. They not only collect exam scores and make sure students don’t cheat, they also tutor the students. I can thereby provide 190 students each semester with over 30 hours of peer tutoring and testing services per week, and I could accommodate many times more.

Students must achieve an exam score of at least 60% on each module by its assigned deadline. Exams can be retaken as often as necessary to do so. If the students reach minimum competency by the deadline, they can keep taking exams to improve their scores for the rest of the term. The exam mode in the CT Software keeps track of incorrectly answered questions, which are then made available in review mode, so students can learn from their mistakes. CT also creates and grades cumulative exams of whatever size and contents desired.

With this self-mastery approach, students always know where they can improve their skills so as to improve their course grades. Non-traditional students, distance learners, and students with reading disabilities are also greatly facilitated by the accessibility of Critical Thinking. And even though I’ve increased my enrollments sixfold, I am now able to lecture less and address individual questions more during class periods.

This is just one of many, many ways Critical Thinking can be used.

Things have certainly changed since the days when I took intro to logic—more freedom, more responsibility, more learning, and more fun.

Critical Thinking CD 0-9712355-1-1
Critical Thinking CD with paperbacks 0-9712355-0-3
The Critical Thinking Lab www.Critical-Thinking-Lab.com
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**Platform**

**Horsemen of the Apocalypse**

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Terry Bynum once remarked that the internet may generate new religions. I believe he is right, though I am not aware of where it is occurring. What we do see is a rise in the forms of occult thinking that have computing as a core element. These are conspiracy theories, paranormal phenomena, alternate histories, prophecy, and so on. The trend to develop paranormal beliefs about computing is important because the computing and philosophy community is in the best position to address misconceptions and fallacious beliefs that people have about computing. If you have read this far, stick with me – this has interesting and important practical consequences.

A primary instance of the paranormal computing trend is a best selling book *The Bible Code* (NY: Simon & Schuster, 1997) and its sequel *Bible Code II: Countdown* (NY: Viking, 2002) by Michael Drosnin. He claims to have uncovered coded prophetic messages in the Bible using numerology techniques. The prophecies include the attack on the World Trade Towers on 9/11/2001, the defeat of Saddam Hussein’s regime, and the secret hiding place of Osama Bin Laden. Most significant, Drosnin claims that the Bible code reveals the coming nuclear war that will unleash the apocalypse in 2006.

patterns of words and phrases when a skip pattern is applied to the text. A skip pattern is a rule where every nth letter is extracted, assembled into a sequence, and searched for meaningful words. If you wanted to conceal a message within a text, you could make the letters of the message occur at regular intervals within the large text, say every 10th letter or every 52nd letter. The interval that is chosen is the skip pattern of the code. If you suspected that a text contained a skip pattern code and did not know the skip pattern interval, you could try all of the possible intervals and search each result for meaningful strings. If there were a relevant message hidden in the text, you would probably know it when you found it. Witztum et al. are testing Genesis for skip pattern encoded messages. Computing makes it possible to perform the brute force analysis required. Using skip pattern analysis, the authors claim to have found meaningful strings in Genesis. Peer reviewers for *Statistical Science* presumably found the math used in this research to be sound, and other researchers have reported confirming results. But beyond the existence of the phenomenon, the matter of interpretation is open. A possible interpretation, of course, is that the Bible was deliberately coded with hidden messages by its author(s). Witztum et al. do not give that interpretation in their paper. Rips comments; “The only conclusion that can be drawn from the scientific research regarding the Torah codes is that they exist and that they are not a mere coincidence.” [http://www.thei.aust.com/torah/coderips.html](http://www.thei.aust.com/torah/coderips.html). Yet many people do suppose that the code is deliberate and Drosnin’s *Bible Code* goes much further out. *Stay with me – stranger things are coming.*

Drosnin asserts that skip code analysis proves that the Bible is purposely encoded and that these coded messages are designed for prophecy. He has a field day with discovered predictions of assassinations, wars, disasters, and the coming Armageddon. Numerous attempts to debunk this weak reasoning have been made, such as finding similar results in texts like *Moby Dick* ([http://cs.anu.edu.au/~bdm/dilugim/moby.html](http://cs.anu.edu.au/~bdm/dilugim/moby.html)). Witztum and Rips have denounced the *Bible Code* as unrelated and detrimental to their efforts. Witztum’s argument is interesting:

Mr. Drosnin’s book is based on a false claim. It is impossible to use Torah codes to predict the future. There are several reasons why it’s impossible. I will give the most basic reason. In general, we always have difficulty understanding a text where we don’t have any syntax or punctuation. In the plain Hebrew text of the Torah, without punctuation, I could easily read the ten commandments as telling me to steal and murder. There’s a verse that describes Moses being commanded to bring incense. I could easily read it as a commandment to use drugs. All we have is a few isolated encoded words of a hidden text. Maybe we’re missing some very critical words. It’s literally impossible to learn a coherent story out of the juxtaposition of a few words that may be somehow related. Additionally, just like there is a code that Rabin will be assassinated, I also found a code saying that Churchill will be assassinated! [http://www.thei.aust.com/torah/codewitzum.html](http://www.thei.aust.com/torah/codewitzum.html). Despite all evidence to the contrary, Drosnin and major publishers continue to promote the *Bible Code* fallacy. Millions of believers propel the trend of paranormal computing, for it is on the proposition that only with 21st century computing power is it now possible to decode the hidden meaning. *Here is the amazing part. The New York Times* reports that Paul Wolfowitz (Deputy Secretary of Defense) hosted a one-hour briefing by Michael Drosnin on the *Bible Code* for ten top Pentagon officials (Bill Keller. “Is it Good for the Jews?” *New York Times*. March 8, 2003, Saturday, Section A, Page 17, Column 1). Drosnin says that he advised the war council on where to find Bin-Laden, how to fight Iraq, and on the role of the U.S. in the coming nuclear Armageddon. Now, one might think that just a few weeks prior to the start of the first U.S. pre-emptive war, Pentagon chiefs would be mighty busy. Yet, not too busy to pass over a consultation on occult end-of-the world prophecy.

Drosnin says he has been sending letters of warning and predicted doom to U.S. and Israeli officials for several years. In *Bible Code: The Countdown* he writes;

I tried to reach Deputy Secretary of Defense Paul Wolfowitz, who had strong ties to Israeli intelligence, February 19, 2002. My fax stated: “The base, if it exists, may be linked to Bin Laden, and may be a source of danger to the United States as well as Israel.” Wolfowitz replied to me through his assistant Linton Wills, March 19, and declined to meet with me. (p., 265)

He chronicles repeated letters and faxes to National Security Advisor Condoleezza Rice, Secretary of State Colin Powell, Secretary of Defense Donald Rumsfeld, Vice President Dick Cheney, and President Bush among others. His communications warn of imminent death and destruction. I’d think that at least the Secret Service has given Drosnin some consideration. So, if Drosnin really has sent these letters and faxes and *The New York Times* report is accurate, then the Pentagon knew full well what they were getting when they contracted with Drosnin to advise them in February 2003. The question would then remain, what were they after?

Recall the flap in the 1980s over Nancy Reagan’s consultation with Astrologer Carroll Righter. Times have certainly changed when a major Pentagon briefing that engages in apocalyptic Bible prophecy just two weeks prior to the war on Iraq passes with hardly a ripple in the media *zeitgeist.*

The Koran is also the subject of number code speculation. Proponents of this approach to Islamic scripture promote the “Miracles of the Koran” which include skip code reading and numerical interpretation. Taking such ideas seriously can have serious consequences. On March 5, 2003 a suicide bomber destroyed a bus in Haifa, Israel killing 17 and wounding 53. The bomber was Mahmoud Amadan Salim Kawasme, a computer-science student from the Hebron Polytechnic Institute. The Israel Ministry of Foreign Affairs reports that Kawasme carried a note which included the following:

The World Trade Center situated on a New York street corner on the edge of the water collapsed on 11 September 2001. Allah said 1,400 years ago that the end of the world will come on that street in that building.

Is one who establishes his building on the basis of reverencing god and to gain his approval better, or one who establishes his building on the brink of a rushing river, that falls down with him into the fire of hell? God does not guide the infidels. (Verse 109, Surah 9, *Repentance*).

In searching the Koran, we find: Verse 109 in Surah Repentance, which is found in the first part of the Koran – this is the day of collapse. The number of the Surah Repentance is 9 – this is the month of the collapse. The number of words in the Surah from its beginning to its end is 2001 – this is again the year of the collapse. [http://www.mfa.gov.il/mfa/go.asp?MF AH0n5r0](http://www.mfa.gov.il/mfa/go.asp?MF AH0n5r0)

Like Drosnin, Kawasme finds predictions of the 9/11 tragedy encoded in scripture. Kawasme did not need a computer to
make his calculation, but with computer-assistance he could have broadened his miracle base extensively. If he had played his cards right, perhaps he could be a best-selling author and get an audience with the Pentagon inner circle.

People believe all sorts of weird things and philosophers have traditionally taken on the task of applying critical thinking to point out fallacies and unwarranted claims. Weird thinking is taking a computational turn by supporting implausible claims with references to computers. A new fallacious form – *ad computum* – may be developing as a subset of *appeal to authority*. The computing and philosophy community should make it a point to detect and defuse such fallacies. Especially when they turn up in the citadels of power.