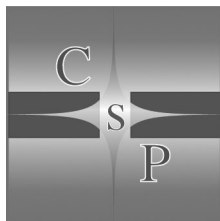


Computing and Philosophy in Asia

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Edited by

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PREFACE

COMPUTING AND PHILOSOPHY IN ASIA

This volume is a collection of selected papers from the Second Asia-Pacific Computing and Philosophy Conference, which was held at Chulalongkorn University in Bangkok, Thailand from January 7 to 9, 2005. The conference is one of the series of conferences, now being in all major parts of the world, that are organized by the International Association of Computing and Philosophy (www.iacap.org). This conference was the first time that a computer and philosophy conference was held in Asia proper, the first being held in Canberra, Australia in late 2003.

Among the more than 75 papers presented at the conference, 18 are chosen for this volume according to their quality as well as relevance to the theme. One might wonder what is peculiar about Asia that merits a book on computing and philosophy of its own. Does the title “Computing and Philosophy in Asia” mean that this is a book only about computing and philosophy that only happens to be in Asia, or is there anything peculiar to Asia that makes computing and philosophy to be somehow a different kind, perhaps an “Asian” one? This is not an easy question, and in fact both are partly true. On the one hand, the fact that the chapters in this book had their origins as paper presentations in a conference held in Thailand in one sense makes it the case that this is a book on computing and philosophy in Asia. As the world is becoming more integrated, many kinds of activities tend to involve people from different countries; travelling to another part of the world to engage in networking with colleagues from all parts of the globe has become commonplace. In this sense, “computing and philosophy in Asia” presupposes such networking activities. More specifically it presupposes the kind of collaborative action that is the hallmark of academic endeavours since the medieval times (one is reminded of seats of learning such as Paris or Bologna, which were attended by scholars from all over Europe, or the Buddhist Nalanda University in northern India, which was truly cosmopolitan, receiving students from far away places such as China, Korea and Southeast Asia.). According to this way of looking, the content of “computing and philosophy” is truly universal, in much the same way as Christian theology or Buddhist philosophy was regarded as universal in Bologna and Nalanda respectively. That a topic is universal means, of course, that it transcends borders, and it does

make no difference whether the persons engaging in its practice hail from France or Italy or Korea. Much of today's scientific enterprise is still true to this ideal.

On the other hand, there is another sense of the title "Computing and Philosophy in Asia" could mean that there is something peculiar about computing and philosophy; here the noun referring to the geographical location becomes an adjective, specifying that there is a difference, not only of the perhaps adventitious geographical location in which an activity takes place, but in its very being. One might talk, of course, of Asian computing and philosophy. The sense being conveyed here is that Asian computing and philosophy is of a different type from, say, the European one, and hence there is nothing universal about the endeavour. An analogy could perhaps be made with food. Among all items that are parts of our daily lives, none is more attached to locality and culture as food. Note that even in this era of globalization in the early twenty-first century, there is still no truly universal or cosmopolitan food, food that could claim allegiance to no particular culture or traditions. The food being sold in fast-food chains all around the world are derived from food in the European tradition. Hamburgers are alien to most Asians, so much so that these fast-food chains have to adapt their menus to suit local tastes in order to compete with the local food stalls (there is an item called "samurai burger" in the MacDonaldd's chains in Thailand; the burger is made of pork, instead of beef). There is no universal food (thinking about that one seems to have in mind the kind of food that is technologically produced, intended only for nutrition of human beings, and has no taste whatsoever), but Chinese, Japanese, French and Italian food, or food made by one's grandmother.

Interpreted thus, "computing and philosophy in Asia" could mean that there is something unique about it that Europeans might benefit from, in the same way as Europeans have enjoyed Asian food. Perhaps the joining together of "computing" and "philosophy" makes an interesting case here. Computing seems to be a kind of activity that can become truly universal. After all, computing is what is performed on representations of bits and bytes, and as such there seems to be nothing that pertains to a particular cultural tradition. Philosophy, on the other hand, is much involved with culture. Thus one talks of Greek philosophy, Scottish philosophy, Japanese philosophy, and so on. There has been much talk about "universal philosophy," but when analysed this supposedly universal philosophy seems to be derived from one or another existing tradition. The positivist attempt to promulgate a kind of scientific philosophy which does away with metaphysical questions and rigorous verificationist methods appears nowadays to be rather quaint and much tied to its special place and time. Looking back toward history, one finds that the positivists were rather naïve in their belief that philosophical problems could be

solved once and for all by eliminating assumptions that were not justifiable through empirical means. Their failure, shown many times over by such philosophers as Sellars, Putnam, Rorty and others, is based, among other things, on the rather simple fact that the key tenet of the positivists itself does not pass their own verificationist justification. This is because the judgment itself is a philosophical one and is not based on any kind of empirical verification or logical analysis. Hence, the idea that philosophy could be based on a foundation that transcends cultures and traditions should, according to its own criterion, be rejected. This shows that the tenet itself is a product of a particular time and place, since it cannot be found on any locality-transcendent foundation at all.

The upshot is that for philosophy itself culture appears to be very much involved. But what about computing? Computer and information technologies are products of a certain kind of society and a certain time and place. They, as are other types of modern technology, evolved as a response to the needs of modern societies, needs which did not happen before in the past. It is also conceivable also that, if the future were very much different from what we are accustomed to right now, the technologies that we are familiar with might not be around then, and the people in the future might look at our contemporary technologies with a curious, distant look. But if this is the case, then computing itself is bound with culture. Nonetheless, talking about “Asian computing” seems rather strange, while “Asian philosophy” is a common term accepted everywhere. Computing as an activity that is much bound up with technology seems to transcend cultures better than philosophy, but since the theoretical foundations of computing are parts of philosophy (as well as much of the work of the computing and philosophy conferences), computing and philosophy are invariably bound up with each other. Hence the fact that philosophy seems to be bound more with cultures than its counterpart is always a problematic one. At least there is a perplexing issue of how these three major concepts—philosophy, computing and culture—are interconnected with one another.

The papers in this volume fully attest to this perplexity. They deal in many different dimensions how culture, computing and philosophy are woven with one another and how many issues and topics in philosophy and related disciplines arise out of these interconnection. Seen in this way, the title, “Computing and Philosophy in Asia” points both to the fact that there could be something substantially different in both computing and in philosophy, when the context in which they are practiced is different from the familiar terrain of the West, as well as that both the computing and the philosophy took place in Asia. We have arranged the chapters in four main groups as follows:

Social and Cultural Concerns

There are four papers dealing with social and ethical issues, as well as with cultures explicitly. The paper by Robert Cavalier deals with e-democracy and the public sphere. Cavalier illustrates how technology, in this case the internet, could be used to enhance the public sphere where citizens in a democracy deliberate on a variety of issues relevant to their communities. In *The Structural Transformation of the Public Sphere*, Jürgen Habermas notes that the role that coffee houses and salons played an important role in the development of a public voice at the intersection of civil society and the state. Such gathering places and the print media that permeated them then became part of the “institutions of the public sphere” that gave rise to an informed “public opinion” in matters of interest to the emerging bourgeois societies of the seventeenth and eighteenth centuries.

It is thus not surprising to see various proponents of “e-democracy” also see connections between internet cafés and a newly emerging internet-based public sphere, and hence there is a profound connection between this public sphere and the very foundations of democracy. Cavalier notes that a critical task for e-democracy is to find ways to model the discursive potential of civil society in such a manner as to provide useful feedback to public policy makers from the local to the national level, and he focuses on an attempt at Carnegie Mellon University in the US which expands both the design and the use of online tools for deliberative polling.

The next paper situates itself in a very different setting. Yeslam Al-Saggaf explores political online forums in his native Saudi Arabia. Faced by strong pressure from the public, the government of Saudi Arabia in 1999 decided to allow its people access to a censored version of the Internet. The reason for the late introduction of the Internet to the country is the Saudi authority’s concerns over the arrival of objectionable material, such as pornography and sexually explicit material, in the hands of the public. Most individuals participating in these forums post topics to exchange ideas, discuss their public affairs, and analyse political events. Political online forums have become exceptionally popular in recent years, particularly after the September 11 attacks on the US and the wars against Afghanistan and Iraq. While freedom of expression in Saudi Arabia is limited and content disseminated from traditional media is censored, the decentralised nature of the forums and their many-to-many communication feature make them effective in enabling people to express their views and reach others.

Al-Saggaf finds that television, radio and press are, to some extent, in the hands of the government and content broadcasted from these sources has always been geared towards government’s plans. He shows that the forums are the new

media that people now have in their hands. Reformists, terrorists, Islamic fundamentalists, moderate liberals and government supporters, are all using these forums to communicate their ideas and plans to others. Their use of political online forums is not only making them authors of media content instead of being a passive audience, but also making these tools a valuable source for information about politics and a perfect medium for people to express themselves and influence the political public sphere in their country.

The next paper takes us across the Indian Ocean from Saudi Arabia to Australia, though its content does not really take us that far away. Aaron Quinn writes in his paper on how technology and journalism play a role in exposing corruption of the press itself. By examining post-September 11, 2001 cases involving Qatar-based satellite news service *Al-Jazirah*, Quinn shows how this news service, once dubbed “the mouthpiece of Osama bin Laden,” may be more balanced than many “free” Western news agencies reporting on the war in Iraq. *Al-Jarirah* has documented numerous violations of human rights, including tenuous issues such as women’s rights, and similar issues often considered taboo in several primarily Islamic nations. Quinn thus illustrates how technology, in this case, helps us identify through comparison who the free press actually is in terms of covering the Iraq war, and in so doing one can then look with a critical eye at the Western press through this juxtaposition. This is a startling conclusion since it seems to be commonly accepted that the Western press is the epitome of professional journalistic standard. Quinn thoroughly examines and criticizes the Western press that, according to him, not only commissions obvious unethical acts, but also, either directly or not, omits duties central to their profession. Here one finds that “computing and philosophy” takes a very critical turn, and looking what the people at one part of the world are doing might well enable those in other parts realize their mistakes which are perhaps hidden by their self serving attitude.

In her paper on the “computerized generation” in Thailand, Chulanee Thianthai explores the lives of Thai teenagers who are wired to modern gadgets such as mobile phones and the Internet. Thianthai presents a clear glimpse into the lives of Thai teenagers whose lives are so permeated with technology that it is hard to distinguish them from their counterparts, say, in the US or Europe. Thianthai catalogues the daily lives of Thai teenagers from waking up until going to bed, and she finds that, although on the surface the lives of these teenagers do not look different from their counterparts in the West, there are indeed elements of “hybridization” in their lives, and here her paper resonates with Ess’ in this volume. Their cultural influences are still there, only that they are modified by the technology. Thianthai’s work is thus an interesting case study for those who would like to know more about how technology and culture interact with each other.

Ethical and Religious Perspectives

The next group of papers concern ethical and religious perspectives as they pertain to computing. Charles Ess' paper is a philosophical attempt to found a kind of ethical pluralism that does service both to the diverse cultures as well as the need for shared judgments. According to Ess, "while these pluralisms can be seen in emerging ethical guidelines for research that straddle considerable cultural differences ... , we find that the even greater cultural and ethical differences marking Western and Eastern approaches—most centrally, to issues of privacy and data privacy protection—nonetheless likewise allow for an ethical *pluralism* that holds together important ethical norms alongside the irreducible ethical traditions and approaches that define diverse cultural identities around the globe."

As in the case of the empirical study by Thianthai, Ess argues for a way for a reconciliation of cultural differences and shared norms and judgments, which is a kind of hybridization. While there are sharp differences along cultural lines, for example in terms of how data protection should be understood and enacted, nonetheless there are agreements on such broad terms as the need for protecting the individuals in society. What we are seeing here is then a critique of dichotomous thinking that seems to bifurcate between ethical particularism and universalism. Such a bifurcation, according to Ess, rests on a mistaken assumption that ethical judgments are founded upon a system of justification that belongs to one particular cultural tradition only. With such a narrow viewpoint, it becomes conceivable how one might judge the traditions of others to be alien and perhaps to be inferior to one's own. Ess spends considerable time in the paper detailing the Confucian ethical system of judgment in order to show how a system that looks foreign to most Westerners could yield insights which, while clearly different from that of the West, nonetheless does function just as effectively as a system of computer ethics in today's world. Hence Ess has made an important contribution in the understanding of how the diverse cultural traditions could make a contribution to the global attempt at providing a normative foundation for our computer age.

Remaining with the spiritual traditions of the East, Ken Herold goes to the teaching of Buddhism to find out what is "an informational person." Herold is offering a Buddhist theory of information where information is a construct and is not there objectively in reality. According to Herold, what he calls "informational entity" includes both persons and non-persons. What this means is that both subjects and objects (both are only results of construction and the subject-object distinction does not exist "out there" according to Herold's interpretation of Buddhism) are constituted by information. An upshot of this is, then, that the person herself is an informational entity, which when realized by

the person herself leads toward the release from suffering, which is the supreme goal of Buddhism. From his Herold argues that the informational person is the ethical person.

Perhaps we could understand Herold's position better by starting from the basic Buddhist teaching on the nature of reality. According to Buddhism, things do not exist inherently; instead their existence does depend on cognition in an important way. Since existence depends on cognition, things that are cognized as existing are thus informational. This includes persons and selves too. Realizing this, one experiences a kind of release from the hold one has on things and persons that, according to the Buddhist teaching, are the source of suffering. This, for Herold, is a way toward an "onto-ethics" where ontology and ethics are fused together.

The next paper takes us back to Europe and the familiar tradition of the West. In one of the two papers in the volume, Lorenzo Magnani argues for an ethics which is contrary to the Kantian spirit in that it takes into consideration decision making behaviours of human beings. The Kantian spirit, one may recall, is such that there is no need for either science and philosophy in order to become morally good. Knowledge, whether practical or theoretical, has to relevance to ethics according to Kant. On the contrary, Magnani is proposing that ethics and decision-making behaviour should continually and carefully be accompanied by knowledge that is related to an understanding of various problems and situations. In this sense knowledge is considered to be a duty, and hence the problem of how the knowledge is disseminated and distributed becomes morally significant. The knowledge Magnani is proposing is that of model-based rational structure that represents how human beings think ethically and he argues how this type of knowledge contributes to the problem of ethical evaluation. Moreover, he also touches upon the practical problem of privacy and identity in today's cyberworld.

In a reflective paper, John Weckert asks what a good life is for the technological society. The key question in his paper is whether there is such a thing as good life as enhanced by computers. Underlying this question is the question whether technology has any role to play in good life. Starting from Aristotle's view on *eudaimonia*, good life as defined through a metaphysical assumption of the human *telos*, or the end that defines what a human being actually is, Weckert goes on to reflect upon the effects brought about by computer technology on the environment of human beings and our very beings. Computer technology can enhance the lives of us human beings in various ways; for example Weckert asks what we would do if we had the vision of an eagle, and more poignantly, what would happen if only some human beings were so enhanced while others were not. This points to a special situation in which enhanced and unenhanced human beings would become so different from

each other that conceptions as to what constitutes good life and happiness for one group may not be fully applicable to the other. Weckert leaves us with the question of what is the point of technological development if enhancing the very being of human beings lead to a radically new way of figuring out what is happiness and good life. It would seem to be a different thing all together.

Metaphysical and Epistemological Perspectives

The next group of selected papers deal with the core issues in philosophy, namely reality and knowledge. Larry Hinman explores how to build a robot that understand Kant's Transcendental Turn. Never mind the fact that there are very few human beings who actually understand Kant's writings, let alone robots, Hinman's point is that building such a robot is an effective thought experiment in getting students to understand what Kant is really up to in his notoriously difficult epistemology. Hinman shows that the problems faced by Kant in the first half of the first *Critique* is not unlike that of a computer scientist in designing a robot. Understanding the basic steps in designing a robot can help students in understanding the Transcendental Analytic and the Transcendental Deduction of the Categories in the first *Critique*. All incoming visual data needs to be stamped with a time and place stamp if they are to be meaningful, or, to put it in Kant's language, space and time are a priori forms of intuition. Furthermore, individual pieces of data then must be related to one another according to certain basic rules. For example, there must be some basic rule that various pictures of an object are pictures of the same object; in Kant's words, the concept of a physical object is an a priori category of the understanding and a necessary condition of the possibility of any meaningful experience at all.

Hinman's point is more than pedagogical, however. Thinking about designing an elementary robot can help us understand Kant's transcendental turn. In so doing, we can begin to understand Kant as a precursor of the computational turn that has characterized recent work in information philosophy. Moreover, thinking about Kant's transcendental turn in terms of elementary robotics allows us to understand the magnitude of the challenge that faced Kant: Imagine if we were robots, how could we discover and prove the validity of our own a priori structures of sensation and understanding?

In his other paper in the volume, Lorenzo Magnani discusses computation abduction as an epistemic mediator and the extra-theoretical dimension of scientific creativity. The common views associate to creativity unusual and mysterious qualities that drive the concept of creativity to a confused verbosity. This conclusion has also been supported by many philosophers of science who studied conceptual change in science during the second half of the last century. Some of them argued that a logic of discovery (and a rational model of

discovery) could not exist; scientific conceptual change is cataclysmic and sometimes irrational. Magnani is referring, of course, to Thomas Kuhn's tremendously influential view of scientific change. Against this, Magnani argues that we can overcome many of the difficulties of creativity studies and develop a theory of abduction, in the light of the works of Charles Sanders Peirce.

Magnani maintains that the "computational turn" gives us a new way to understand creative processes in a strictly pragmatic sense. Conceptual tools from Artificial Intelligence and Cognitive Science do allow us to test concepts and ideas previously conceived in abstract terms. It is through the perspective of these actual models that we find the central role of abduction in the explanation of creative reasoning in science. What is called "theoretical abduction" illustrates much of what is important in abductive reasoning, especially the objective of selecting and creating a set of hypotheses that are able to dispense good (preferred) explanations of data. However, it fails to account for many cases of explanation occurring in science or in everyday reasoning when the exploitation of the environment is crucial. Magnani then devises the concept of "manipulative abduction" which captures the role of action in many interesting situations, action that provides otherwise unavailable information that enables the agent to solve problems by starting and performing a suitable abductive process of generation or selection of hypotheses. Many external things, usually inert from the epistemological point of view, can be transformed into "epistemic mediators," namely objects in the external world that serve to facilitate cognitive tasks.

Returning to the theme of human enhancement, Albert Gatti talks about sensing and thinking through technological tools. Having working in an Italian hospital, Gatti shows how cognitive processes are distributed between the individual agent and her external environment, as well as that the physical interaction between the body and the environment plays a fundamental cognitive role. Hence, Gatti agrees with Magnani in that the external environment does play a constitutive role in epistemological and cognitive tasks. The knower is no longer held to be a solitary mind reaching out toward the object, but instead performs many interactive activities in order to gain knowledge.

Taking a case study of laparoscopic video-surgery in the hospital, Gatti explores how this theoretical account plays out in reality. In such a surgery, the surgeon's bodily relation with her patient complete changes, and Gatti shows how the change effects the surgeon's cognitive processes.

In "Growing Minds, Computability, and the Potentially Infinite," Darren Abramson argues for the existence of a set that is neither finite nor infinite. Such a set, according to Abramson, is "potentially infinite." At no point can one traverse all members of such a set, yet it is always possible to traverse more

members at any given moment. The idea is that the mind has the capability of contemplating the infinite. Not the actual infinity, which is patently impossible, but the potentially infinite in the sense that the mind always has the capability of extending its store of memory or the time it needs to compute a function, even though at any given time it is limited to finite amount of time or numbers. The upshot of Abramson's idea is that, about the only way to avoid Kripkean finitism, a rather well known skeptical idea derived from his interpretation of Wittgenstein that computing any finite amount of natural numbers is always open to wild interpretations, is to accept that the mind can comprehend the potentially infinite in this way. Here "growing minds" refer to this capability of the mind to grow and to comprehend infinity.

Philosophical Issues in Programming

The next group of papers discusses philosophical and foundational issues in computer programming. Gerald Khoury and Simeon Simoff discusses some philosophical foundations for a unified enterprise modelling language. Khoury and Simoff contend that the ability to create effective Enterprise Architectures (EA's) rests on the ability to create "simple models that are easily communicated" However, current EA's are complex, difficult to produce and hard to understand, because EA's are produced using a variety of heterogeneous modelling languages and because there is no widely accepted language that can be used to model all aspects of an enterprise. The development of a unified EA modelling language, hence, is a highly coveted goal. What Khoury and Simoff attempt in the paper is to lay the groundwork for an understanding of organization and system structures that is couched within the framework of philosophic, linguistic and cognitive theories. This understanding is used as the basis for a novel approach to developing a unified EA modelling language. Key to their idea is that there is no difference between a model and a metaphor. As comparison of properties makes sense only in reference to a more abstract, higher level type of property, this higher level is then termed "supertypes." Enterprise models then include supertypes, as they themselves are viewed as metaphors. Thus a way is proposed in which a philosophical unified modelling language.

The next paper takes us back to the enhancement of human beings. Ludmil Duridanov and Simeon Simoff explore the hearing dimension of three-dimensional world. Sometimes old ideas in the history of civilization could be applied in computing technology in the appropriate moment with the aim to have a new impact. Virtual worlds are not a new concept. Since the early days of its known history, humankind has sought to shape its environment. In the process of modelling their physical world, humans tend to create alternate

worlds, which are subject to the rules of the human creators—even pretending to be a sacred space “created by God.” Those “philosophical” virtual worlds exist only in the minds of their originators (hence the name “virtual”). Technology-mediated virtual worlds are manifested and shared with others through a particular medium “in mind.” These worlds can be designed to be experienced through more than one medium.

Duridanov and Simoff then consider computer-mediated virtual worlds. Current emphasis in the representation construction in these virtual worlds is mostly on the richness and efficiency of information visualisation. World developers and designers do not pay enough attention on their audio counterpart. A holistic approach is discussed that moves toward the design of virtual worlds integrating the sound dimension in the virtual architecture of cyberspace. In summary, the work extends the dominating principle “What you see is what you get” to “What you hear and see is where you really live.”

The last paper in the group is an example of a fine mixture of conceptual tools from the humanities, that of deconstruction derived from Jacques Derrida, to help with solving problems in computer science. Derrida discusses the notion of program as a form of writing. Writing is essentially a process of “scratching marks” on a physical space and medium. In this regard, the computer is no longer simply a calculating machine; rather, it has become a medium for human communication, a writing space.

One of the most distinctive functions of writing is separation process. The foremost factor of writing in terms of separation is deemed to be the division between the known and the knower. But separation can also be seen not just as simple and static division, but as a process that also joins. Writing is what Derrida's concept of “*différance*” deals with. The motion and fluidity of writing as *différance* is equivalent to the denial of static separation and represents the affirmation of separation as temporary, active difference which seeks to join up with what it has been separated from. Following Derridean logic, Jang applies several deconstruction analyses to computer programming. Computer programming as “electronic writing” institutes its own kind of *différance* in the way in which the computer is able to make its own differences. Taking computer programming as a genre of writing promotes the possibility of deconstructive practices more readily than does the traditional writing of graphic marks. In conclusion, computer programming can be said to be the same process of deconstruction.

Issues in Teaching

We end the volume by offering three papers related to computers and teaching, beginning with a paper on Tiki by Michael Byron. Byron worked on

implementing technological enhancements of the traditional pedagogical model, called TikiWiki, or Tiki for short. Byron used this software to create an entire website environment for his philosophy classes, and this environment has allowed his students to learn the course content in ways quite different from the traditional model. The learning is different because (as Dewey emphasized) we learn what we do. Byron describes the Tiki, presents some considerations in favour of deploying it in philosophy courses of very different kinds, and explains how the software is used in classroom settings.

Panee Suanpang discusses her students' online learning experience in a Thai university. She explores students' experiences in learning in an online course on business statistics course and examines the qualitative reflections that they provided throughout the course and as part of the course evaluation. The research project compared online learning with traditional teaching conducted over sixteen weeks. Qualitative methods used in this study included in-depth interviews, student diaries, messages from the discussion boards and comments on course appraisals. Her findings indicated that the majority of the students used the online mode for reading course materials, doing exercises, searching for information, taking quizzes, and communicating with other students and online instructors. Such an online course can support and assist them to learn more effectively, and enhance their attitude to business statistics. Online students would benefit from increased access to technology in order to assist their learning. The results of this study will be used to develop more effective online learning systems.

Last, but not least, Hulpke and To begin their paper by asking the age-old philosophical question: Can ethics be taught? Put another way, how can students be led to think about ethics, especially in Asia where memorisation is favored over thought? Next question they consider is: How can sense of community, team learning, be fostered in big classes? Finally, how can ideas of individual participation be encouraged in Asia, especially in big classes? As in many places around Asia our university faced exactly these challenges and turned to computer technology for answers. To assess results it may be helpful to first review some frameworks to assess teaching ethics. Then a look at our classroom experiences may give insights into the three questions above.

Conclusion

How does one conclude such a diverse group of papers? Perhaps first by recognizing its diversity and admitting that any kind of overall summary of the whole is closely impossible any way. Nonetheless, one can get a glimpse of what is being offered here. On the one hand, one finds papers that deal specifically with cultural issues in computing as well as with reflections on the

underlying foundational and philosophical issues involved. On the other hand, we also have more technical papers that deal with matters in logic and set theory, as well as practical ones that focus on, say, teaching university students and on how the media should reform themselves. Be that as it may, I believe one thread that ties these papers together is that they, collectively, show that cultural dimensions in computing and philosophy are an important factor, one that cannot be ignored in scholarly pursuit in the field. Of course the term “culture” itself is notoriously elusive to pin down, but that only adds to its attractiveness and its fertility in fostering novel interpretations and perspectives that have sustained philosophical investigation and made it flourish.

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CHAPTER ONE

E-DEMOCRACY AND THE STRUCTURAL TRANSFORMATION OF THE PUBLIC SPHERE: CARNEGIE MELLON'S PROJECT PICOLA (PUBLIC INFORMED CITIZEN ONLINE ASSEMBLY)

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The Conversational Turn in Political Philosophy

Liberal democracies of the kind we see forming around the world are only the beginning of what Benjamin Barber has called strong democracies (Barber 1984). Thin, liberal democracies provide the constitutional essentials of universal suffrage, freedom of press and assembly, etc. but this in no way guarantees that the citizens of these societies will see themselves as any more than isolated individuals who periodically vote (if they choose to do so). Recent work in “Citizenship Theory” has made clear that “the health and stability of a modern democracy depends, not only on the justice of its basic institutions, but also on the qualities and attitudes of its citizens” (Kymlicka 2002, 285). These qualities and attitudes are often highlighted by proponents of Deliberative Democracy and emphasize the role of the citizen in becoming a truly informed and engaged individual, a person willing to listen to all sides and willing to let the force of the better argument (in all its richness) become a guide to opinion formation.

Over the past 20 years, this concept of Deliberative Democracy has emerged as a major contribution to democratic theory. With philosophical foundations in the later writings of Jürgen Habermas and John Rawls, the concept has also received considerable attention within the social sciences.¹

¹ See Rawls “Justice as Fairness: Political not Metaphysical” and “Constitutional Liberty and the Concept of Justice” in *John Rawls: Collected Papers*, ed. Samuel Freeman, *Political Liberalism*, and *Public Reason Reconsidered*. See Habermas *Between Facts and*

Put briefly, the citizens of the modern liberal state manifest an irreducible plurality of visions of the good that encompass all but the most basic principles of justice. In turn, the principles of justice that make up the “constitutional essentials” ensuring “life, liberty and the pursuit of happiness” provide the political horizon wherein the diverse visions of the good can be pursued. Much of the work of Habermas and Rawls is devoted to defending the rational foundation of liberal constitutional democracies through arguments revolving around notions of “normative validity” and “overlapping consensus.” Fundamental to both of their arguments is what Habermas calls “Dialogical Reason.” In this view, Practical Reason moves through conversations characterized by the fact of plurality and the richness of perspectives. Ideally, it reaches consensus on “constitutional essentials” through the uncoerced conversation of rational beings pursuing the stronger argument or the overlapping interests of diverse populations in their desire to live their lives in the light of their own comprehensive worldviews.² We see these elements of deliberative democracy in the recent creation of constitutions for the Republics of Afghanistan and Iraq.

“Open and informed” conversations on the part of the citizenry are essential to the concept of deliberative democracy. “Openness” refers to the ability of all perspectives to be allowed a voice in the discussion and “informed” refers to the need for the discussion to be based upon the best information and arguments

Norms: Contributions to a Discourse of Law and Democracy; and “Citizenship and National Identity: Some Reflections on the Future of Europe” (Praxis International) (cf. quote from Kymlicke, p. 285). The relation of deliberative democratic theory to the social sciences has often taken the form of a debate with standard rational choice and social choice approaches to democratic theory: See *The State of Democratic Theory* (Sharpiron). The classic works in social choice theory are Anthony Downs’s *An Economic Theory of Democracy* and William Riker’s *Liberalism Against Populism*. A social history of the evolution of social choice theory and its connection to democratic theory can be found in S. M. Amadae’s *Rationalizing Capitalist Democracy: The Cold War Origins of Rational Choice Liberalism*.

² Borrowing heavily from the later Rawls and Habermas, I view the citizen as a complex person capable of being (1) “rational” in the sense of being able to use means/ends reasoning in a self-interested way and (2) “reasonable” in the sense of being able to compromise on such self-interested calculations if it seems that others may have alternate views that seem worth supporting or at least acknowledging. For example, I may take a higher rate of property tax if you convince me that an extended bike trail may bring a good quality of life to others even if I don’t benefit from these trails or I may assent to the policies that others adopt even though I opposed them with my vote. Furthermore, I follow Rawls in ascribing to this person two “moral powers:” (1) a sense of reciprocity/fairness (empathy) and (2) the capability of generating a vision of the good. The latter accounts for a significant part of “pluralism” and can be seen, for example, in the different political platforms of the American Democratic and Republican parties.

available. These broad requirements of practical reason have been adopted by advocates of deliberative democracy with the goal of achieving a strategy for democratic decision-making on a range of practical political problems.³

While there is considerable debate within the literature over the appropriate scope and epistemological nature of these conversations, there is general agreement about the Deweyan belief in social intelligence and the hope that we “think best when we think together.”⁴ Indeed, unless you are an anti-democrat like Karl Popper’s Plato, you would hope that the “voice of the people” (*vox populi*) could be brought to bear on policy decisions that affect the people. And it is here that the role of “public opinion” enters the discussion.

The Rise of Modern Public Opinion

The age-old argument against public opinion (*doxa*) goes back to Plato’s critique of the Sophists and his distinction in the *Crito* and elsewhere between “true” opinion and “false” opinion. The distinction itself and the path toward true belief are characterized by philosophical dialectic – a practice developed and refined in the education of the philosopher. For surely it does not follow from the fact that “everyone says the earth is flat,” that the earth indeed is flat. Anyone arguing in this manner—in court or in private—is simply committing the Ad Populum Fallacy.

But these ancient distinctions conceal as much as they reveal. The history of “public opinion” is far richer and more complex than the Ad Populum fallacy might imply. In his work on *The Structural Transformation of the Public Sphere*, Habermas describes the rise of a more forceful meaning of public opinion in the bourgeois societies of the 17th and 18th centuries. Here the appearance of the press and its demands for more freedom along with the growth of coffee houses and salons gave rise to a new “public sphere” capable of questioning and arguing with the established State and its aristocratic trappings. (Habermas 1989, 14-34) Throughout the 18th Century this new Civil Society developed its own voice, which first found expression in newly coined terms such as “*opinion publique*” (Habermas 1989, 95).

³ See Samuel Freeman, “Deliberative Democracy: A Sympathetic Comment” (*Philosophy and Public Affairs* (29, No. 4) for an overview of perspectives on deliberative democracy and Bohman and Rehg *Deliberative Democracy* along with *Debating Deliberative Democracy* ed Fishkin for more individual articles and essays.

⁴ See James Campbell’s *Understanding John Dewey* “The process of living in democratic community requires a recognition that our political life “is essentially a cooperative undertaking, one which rests upon persuasion, upon ability to convince and be convinced by reason; or, in ordinary language, upon public opinion’ (p. 200; the quote from Dewey is from his *Democracy and Education* Middle Works 10, p. 404).

As the sphere of the political expanded to include more and more of “the people,” so too did the need to listen to that voice, at least the voice cultivated by the information and discussions of this new, bourgeois civil society. In analyzing a passage from Edmund Burke, Habermas writes: “The opinion of the public that *put its reason to use* was no longer just opinion: it did not arise from mere inclination but from private reflection upon public affairs and from their public discussion” (Habermas 94, my emphasis).⁵ This opinion, Burke and many others during this period noted, should and could not be ignored.

On the one hand, public opinion could be the source of “wisdom and sagacity” and, on the other, a source of check and balance.⁶ Please provide complete reference for Bentham. On both counts, it is now perceived to be essential to the proper running of government. A government, moreover, that now had to make its own deliberations public. An order of the Prussian King in 1804 proclaimed “that a decent publicity is for both government and subjects the surest guarantee against the negligence and spite of subaltern officials and deserves to be promoted and protected by all means” (Habermas 1989, 84). Related to these proto-“sunshine Laws” were constitutional movements pointing the way toward greater suffrage and freedom of expression. Regarding the former, Madison wrote “who are the electors of the federal representatives? Not the rich, more than the poor; not the learned, more than the ignorant ... The electors are the great body of the people of the United States” (Hamilton 2004, 57); for the latter, see the *Declaration des Droits de l'Homme et du Citoyen* “The right to communicate one’s ideas and opinions, whether through the press or in any other manner, the right to assemble peaceably... cannot be refused” (quoted in Habermas 1989, 70).

Correlating these constitutional guarantees with social decision making, Fox, in a 1792 speech before the House of Commons, said: “It is certainly right and prudent to consult the public opinion...if the public opinion did not happen to square with mine; if, after pointing out to them the danger, they did not see it in the same light with me ... I should consider it my due to the king ... to retire, that they might pursue the plan that they thought better, by a fit instrument, that is by a man who thought with them...” (Habermas 1989, 66). Today, we call that “fit instrument” an election. For Habermas, “Fox’s speeches were made

⁵ Habermas quotes Edmund Burke on this page: “In free countries, there is often found more real public wisdom and sagacity in shops and manufactories than in the cabinets of princes....”

⁶ See Bentham: “The Public Opinion Tribunal is to the Supreme Constitutive what the judiciary is to the Supreme Legislative ... Public Opinion may be considered as a system of law, emanating from the body of the people...To the pernicious exercise of the power of government it is the only check; to the beneficial, an indispensable supplement.” (Bentham, *Constitutional Code in Harrison* 98)

with the public in mind; “they,” the subjects of public opinion, were no longer treated as people whom, like “strangers,” one could exclude from deliberations ... step by step the absolutism of Parliament had to retreat before their sovereignty....” (Habermas 1989, 66) Here it is critical to note that for Habermas the term public opinion implied that “it was formed in public discussion after the public, through education and information, had been put in a position to arrive at a considered opinion.” (Habermas 1989, 66). Habermas later draws from Peel’s Tamworth Manifesto (1834) concerning the need for political parties to publish their programs (i.e., platforms) and writes that “Public opinion was formed in the conflict of arguments concerning a substantive issue, not uncritically based on common sense in either naïve or plebiscitarily manipulated assent to or vote about persons. Hence [public opinion] needed a defined issue as its object more than it needed prominent persons” (Habermas 1989, 66-67).

The Formation of Contemporary “Public Opinion”

In no other place was this link between public opinion and public institution more clear, than in the American experiment. Alexis de Tocqueville perceived it in his tour across the continent. And for James Bryce, who wrote *The American Commonwealth* in 1888, the radical equality of all men⁷ was turning the United States into what he called “Government by Public Opinion.” In ways that would have shaken Madison and the early Federalists, Bryce said: “Towering over Presidents and State governors, over Congress and State legislators, over conventions and the vast machinery of part, public opinion stands out, in the United States, as the great source of power, the master of servants who tremble before it” (Bryce 267 quoted in Fishkin 1995, 73).

The emergence of *opinion publique* from the public sphere had now taken on a life of its own. Bryce saw the need to harness it, but also to be wary of it. In a brilliant psychological reading of modern “opinion formation,” Bryce wrote of a hypothetical voter:

His original impression was faint and perhaps shapeless; its present definiteness and strength are mainly due to what he has heard and read. He has been told what to think, and why to think it. Arguments have been supplied to him from without, and controversy embedded in his mind. Although he supposes his view to be his own, he holds it rather because his acquaintances, his newspapers, his party leaders all hold it. (Bryce 253 quoted in Fishkin 1995, 75).

Yet, despite the suspect and malleable origins of contemporary public

⁷ The latter designation was all too true until 1920 when the 19th Amendment was passed, granting women the right to vote (See Fishkin 1995, 122-126).

opinion, the democratic process now needed to gauge these opinions. Enter George Gallup and the statistical means to measure public opinion in an almost continuous stream.⁸ And whatever the initial democratic hopes of Gallup and his Opinion Poll, it is now a basic fact of political life that such polls serve as constant barometers of “the people’s will and interest” in matters as diverse as gay marriage and tax reform.

Moreover, recent social science studies show that people answering Gallup and Gallup-like polls—taking place spontaneously on one’s home phone—are prone to produce “pseudo-opinions” that may not even be grounded in reality.⁹ Given the growing movement toward “equality” of input in liberal democracies and the extension of this input to direct democratic institution like referenda, this lack of deliberation on the part of the public is cause for concern. Add to this the omnipresence of 24 hour entertainment infused news media, 10 second sound bites, and the large amounts of money being put into special interest advertising, and the problem of public opinion approaches the crisis stage.

Combining Equality with Deliberation: Jim Fishkin’s Deliberative Poll[®]

This crisis is characterized by James Fishkin as a multifaceted dilemma. The problem goes back to the debate between the Federalists and the Anti-federalists in post-revolutionary America. For the Anti-Federalists, American Democracy should be as close to the people as possible. They feared the aristocratic tendencies of a government centered in a capitol far from the everyday concerns of ordinary Pennsylvanians or Virginians. Madison and the authors of the Federalist Papers argued for a strong central government of representatives (Senators) who could deliberate on the common good and avoid the heat of the moment. In broad outline, the Anti-Federalists emphasized a direct democracy in which each citizen had an equal voice in the activities of their government; the Federalists emphasized a representative democracy in which democratically elected members of Congress (and selected members of the Senate) could deliberate as peers on matters of national importance. Behind the desire for deliberation was the Madisonian concern with the tyranny of the Majority (those greater numbers who vote in their own self-interest). The one side emphasized equality; the other deliberation and fear of majority passions. The more you

⁸ See “How “Public Opinion Became the Voice of the People” for an engrossing discussion of this phenomenon (Fishkin 1995, Chapter 3).

⁹ Fishkin reviews studies by Eugene Hartly and Philip Converse in this regard. He also refers to a study in “Public Opinion Quarterly” that sought opinions on the “Public Affairs Act of 1975.” Despite the fact that there was no such act, about one-third of the respondents offered opinions. (Fishkin 1995, 80-84).

have equality, the less you have deliberation; the more you have deliberation; the less you have equality. The dilemma can be broken only if you have an institution that manages to combine majoritarian equality with informed deliberation, and does so, moreover, in a consulting rather than plebiscitary way. Recently, James Fishkin has given this approach a concrete and practical instantiation through his concept of a Deliberative Poll.¹⁰

Deliberative Polling is a process whereby background information on an issue of local or national importance is developed and presented to a scientific random sample of the population. The sample then gathers in small groups, with a moderator, to discuss and deliberate upon the topic. Questions are invariably generated by the discussions and these questions are given to a panel of experts for response. The groups gather again and then answer a list of survey questions. As Fishkin wrote in *Deliberation and Democracy*, “A deliberative opinion poll models what the electorate would think if, hypothetically, it could be immersed in an intensive deliberative process.” (Fishkin 1991, 81) In addition to ancillary benefits such as educating and engaging citizens on the issues, the results of these polls can form the basis from which sound policy-making can result.¹¹

A central element in the protocols for a deliberative poll is the random sample. Gallup had demonstrated that you need not have very large numbers of people in order to determine the public’s views on a matter. A carefully stratified random sample can actually yield a representative sample of the population. This representative sample can in turn satisfy the demands of “equality.” The protocol further stipulates that this representative sample (of a City, State, or even Nation) be given background information on the issues to be discussed. Considerable care needs to go into this “issue representation” to ensure that it is fairly presented and that all relevant sides have a voice. Finally, the selected individuals gather in small groups to discuss and deliberate. A moderator guides the flow of the conversation (so that no single voice can dominate, etc.).

Given the random nature of the selection, people naturally encounter others

¹⁰ See James Fishkin, *Democracy and Deliberation* (1990) and *The Voice of the People* (1995). The phrase Deliberative Poll is trademarked by James Fishkin and will be assumed throughout.

¹¹ Fishkin points to the adoption of conservation policies based on a number of deliberative polls sponsored by utility groups in 1996 (See Appendix D in *Voice of the People* p. 220). In this regard, Vincent Price and Peter Neijens raise a number of important methodological concerns in their article “Deliberative Polls: Toward Improved Measures of ‘Informed’ Public Opinion?” *International Journal of Public Opinion Research* (Summer 1998; 10, 2). While hopeful that these kinds deliberative polls might actually contribute to better public opinion, they argue for more social science research into the area, research that will seek to isolate the various effects that occur in the deliberative process so as to demonstrate the virtues of the process more accurately.

from different socio-economic backgrounds. This causes the group to engage in a respectful dialogue with citizens different from themselves and their group. The result is often a lively exchange of ideas and stories that are refreshing in their variety and sincerity.¹² As questions come up that require more information, the group determines how these questions will be formulated and who will ask them when the time comes to address a panel of experts. The experts are chosen for their background knowledge and represent a range of interpretations of the issues at hand. They are to function as “teachers” rather than “debaters” during the plenary session. The group then returns for one more deliberation before filling out a detailed survey.

“A deliberative opinion poll gives to a microcosm of the entire nation the opportunity for thoughtful interaction and opinion formation that are normally restricted to a small-group democracy,” continues Fishkin in *Democracy and Deliberation*. “It provides a statistical model of what the electorate would think if, hypothetically, all voters had the same opportunities that are offered to the sample in the deliberative opinion poll.” (Fishkin 1991, 4)

Over the course of the last 17 years, Fishkin has argued that deliberative polling leads to increased objective knowledge of, more engagement in, and better decision-making about social and political issues.¹³ Deliberative Polls have been conducted in Britain, Australia, Denmark, and the US, both at the national and local level.¹⁴

Augmenting Deliberative Polls with Online Tools

In the Fall of 2001 Fishkin gave a presentation at Carnegie Mellon in which he expressed the hope that the Internet could one day support online versions of these polls. The costs in terms of time and expenditures for the National Issues Conversation in 1996 came to 4 days and 4 million dollars. Holding nation-wide deliberative polls on a regular basis was not feasible. And even at the regional level, the additional features of an online version such as asynchronous forums

¹² See Iris Young, *Democracy and Inclusion*. Empirical research seems to confirm this (see, for example, Peter Muhlberger “Stealth Democracy, Apathy Rationales, and Deliberation” at communityconnections.Heinz.cmu.edu/papers/abstracts/html).

¹³ Deliberative polls do not usually alter fundamental values (Democrats do not become Republicans, for instance), but often views change on “specific policy attitudes, factual knowledge, and what we have called ‘empirical premises’ (typically, assumptions about causal connections between policy choices and valued outputs.” (*Debating Deliberative Democracy*, p. 30). As John Rawls might say, deliberative polls tend to widen one’s reflective equilibrium.

¹⁴ See Stanford’s Center for Deliberative Democracy (<http://cdd.stanford.edu/>).