Preface

The sudden and immense rise of information and communication technologies (ICTs) to prominence in almost every aspect of life has prompted a great deal of thought and discussion about the moral significance of new ICTs. Books and articles, in what became known as computer ethics, have been written on topics ranging from computer fraud to the ethics of artificial life, and with every outlook from the optimistic to the apocalyptic (see Bynum, 1999, for a detailed discussion of the development of computer ethics).

This book treats what the editors believe may be one of the most serious moral problems associated with the new ICTS: the issue of justice in their distribution and in the distribution of the benefits of their use. This issue first rose to prominence in the nineteen nineties, and the phenomenon of brute inequalities in the distribution of ICTs—that some people have much greater access to ICTs than others—came then to be known as the "digital divide." The tag has stuck, despite significant conceptual developments in thinking about the relationship between inequalities in distribution of ICTs, and social justice more broadly, that make the term sound somewhat simplistic. Interestingly, in 1969 Joseph Weizenbaum, one of the founders of artificial intelligence, wrote of a potential "new cleavage in society" between those who could benefit from using computers and "that segment of the population that cannot use computing power for lack of training." It is worth noting that he did not talk of inequalities based simply on access to computers, but of inequalities based on *lack of training* to use the computers

In the last five years, with contributions from authors such as Norris (2001), Steyaert (2002) and van Dijk (2004), facts about the distribution of new ICTs are beginning to be analysed within a broader context of new and existing theories of equality and social justice. The term "digital divide" is still used regularly to characterize phenomena of injustice associated with inequalities in access to ICTs, but as the debate develops, contributors' understanding of this term is becoming more varied

and nuanced. As things stand, many contributors to the debate about the digital divide share the awareness that the best way to articulate digital divide is to relate it to other aspects of social and distributive justice, using a mixture of pre-existing theories within moral and political philosophy, complemented with contributions from sociology, communication studies, information systems and a range of other disciplines.

Increasingly, as the debate continues and becomes more sophisticated, more and more aspects of the distribution of ICTs are singled out as relevant to characterizations of the digital divide, and of its moral status. These include:

1. Information relevant to various spheres of life (van den Hoven, 1995), such as:
    - health information, which may be more readily (and more affordably) available online than off-line;
    - information associated with opportunities for financial gain, including information about employment opportunities, information about economic trends, and investment information. This broad category has been addressed from many angles, including by government policy documents (such as the "Falling Through the Net" report produced by the U.S. Department for Commerce [1999]), which point to the strong potential for social exclusion resulting from a migration of these kinds of information to an online environment;
    - education of various kinds and at all levels; and
    - citizenship information (such as legislation and information about government services), which are increasingly delivered online by governments keen to cut the costs of printing and distribution.
2. The value of ICTs for participation in local and distributed communities, including:
    - political participation, such as contribution to political debates at all levels;
    - communication with friends, and establishing new relationships;
    - academic and knowledge-based conversations, such as are facilitated by online discussion groups dedicated to particular topics.
3. But there are also other aspects of digital divides that are rather less well explored. Two, highlighted in this volume, one by Bill Wresch's chapter on ICTs in Africa, is the value of being able to *provide* information; the other, in Kenneth Himma's chapter on intellectual property, is the value in restricting access for reasons of justice:
    - Sending/being able to distribute relevant knowledge to others. Closely related to participation, but not quite the same.

- In some cases, restricting access to intellectual property in order to protect the interests of its creators.

How Philosophy Might Help

It might seem at first glance that the most abstract of the social-scientific disciplines might be the one with the least to offer to a real-world debate about the use and distribution of information and communication technologies, a proposition entertained by Stahl in this volume. Even if we accept that philosophy *might* have something useful to say about how *best or most fairly* we should distribute information and communication technologies, we still face a further problem. This problem results from the open-endedness of philosophical debate itself: the internal wranglings among moral philosophers about how best to characterize ethics and justice suggest that there can be no easy way of applying ready-made philosophical concepts to the digital divide debate and coming up with neat and uncontroversial answers. Perhaps the best way to view this open-endedness is as a spiral. Philosophers continually return to old problems that have not been solved, but on each return they build on the previous arguments. Therefore, while the digital divide is still discussed, it is at a higher or deeper level, than it was previously.

The conceptual and analytical resources of philosophy are, the editors believe, useful for understanding and tackling digital divides in three primary ways. First, philosophy can provide conceptual clarification, that is, it can help us determine what exactly the subject we are concerned with is when we talk and write about the digital divide. Second, it can help to clarify what is at stake in debates about the digital divide; that is, it can help us determine what questions we need to ask about that subject. And third, it might even provide us with answers to those questions, or at least point us in the right direction for finding answers to those questions.

Conceptual Clarification

"Digital divide" is a notoriously muddy term. Hundreds of pages of discussion already, both for and against the moral significance of digital divide, have already appeared but so much of it not clearly argued or stated. For example, there is a tendency to *assume* that lack of computers is *the* problem, pure and simple (if there is a problem at all), and that everything will be all right once laptops are given to every primary school. Or the tendency to assume that everyone would benefit from access to new ICTs, whatever else they would like, which is patently untrue of the very poor (see al-Saggaf, this volume). Philosophical resources have the potential to contribute to conceptual analysis of the digital divide in a number of ways:

- Philosophy contains the analytical and conceptual tools to clarify the term, and to sort out the different ways in which technology and social justice are interrelated.
- There exists a substantial body of writing on social justice issues, relating to both national and international contexts, which can be adapted or extended to cover societies in which ICTs are used. Concepts such as equality, justice and fairness articulated and explained.
- Resources in epistemology are potentially very useful for understanding the nature and value of knowledge, a key aspect of digital divides.
- There is a substantial body of political theory relating to the nature of the state, democracy and other political forms, which can be (and have been) applied to the new electronic forms of political participation.

Hence, whatever other steps are taken to understand or to combat digital divides, philosophy is likely to be very important in the initial stages of clarifying the nature of the problem—is it a problem of justice or not? Is it a single problem or a range of related problems? And so on.

Question Clarification

Second, philosophy can help us to work out what sort of questions we should be asking about digital divides. The questions asked by policy-makers and the designers of computer hardware and software inevitably structure the answers that they give, and the policy responses that they provide. Hence, it is of vital importance that the right questions be asked. And philosophical theories of justice and equality can assist in this regard. Should we, for example, be concerned only with the distribution of ICTs in isolation, or also with the relationship between the distribution of ICTs and that of other social goods, such as education, money and well-being? Existing theories of justice, by illustrating how different aspects of social advantage and disadvantage are linked and interact, tell us that the distribution of ICTs is *not* an independent justice issue, to be tackled on its own. And should we be concerned at all? Perhaps this unequal distribution is just an inevitable part of life. Further, if it is a real concern, is it a matter of justice or rather one of pragmaticism related to the efficiency of the economy?

Answers

Only once these kinds of conceptual and analytical clarification have been performed can we be confident that policy development is taking place on a firm and at least relatively settled terrain, and is not mistaking the nature of the problem to which it is applied. The conceptual resources of philosophy are thus highly relevant to

understanding the moral significance of digital divides, and potentially to articulating practical solutions to the moral problems associated with inequalities in access to new information and communication technologies. But it does not do to be too optimistic about the potential of a notoriously abstract discipline to gain traction on a practical problem, such as the digital divide. A number of challenges need to be met in bringing philosophical research and ideas to bear on discussions of digital divides, if the philosophical contribution is to be practicable and applicable:

- There is a need to integrate philosophical research with vast body of empirical research, much of it conducted with unarticulated presuppositions about the nature of digital divides.
- The inherently interdisciplinary nature of research in this area poses problems to the philosopher, as it does to any researcher. Contributions from a wide range of disciplinary perspectives, different conceptualizations of the problem/s, and the sheer volume of material all make for a daunting research task. Working on moral issues associated with the digital divide involves appreciating research from a wide range of fields including law, sociology, anthropology, psychology, cultural studies, and media studies, as well as philosophy.
- A related hurdle is the need to provide philosophical research that can be used easily and effectively by policy-makers. This is absolutely essential if philosophy is to be accepted as relevant and useful in tackling the digital divide, whether it is conceived of as a form of social inequality or injustice, or in some other terms.
- Finally, the diversity of philosophical research itself can also be considered a challenge to be addressed. As one author in this volume (Charles Ess) points out, different philosophical traditions in different countries mean different approaches to analyzing digital divides may be required, depending on the cultural-philosophical context. As another contributor, Bernd Stahl, points out, many of the deepest problems in moral and political philosophy remain, if not unsolved, at least deeply contested.

This book cannot hope to address all the above challenges at the depth and length that they deserve. But the contributions it contains do address all four of these issues. From the empirically informed work of al-Saggaf to the interdisciplinary reach of the chapter by Hacker, Mason, and Morgan and the efforts by Ess, Hongladarom, and Raghuramaraju to present some of the global diversity of philosophical research, the chapters in this volume develop philosophical positions and arguments in ways that relate to the broader social context in which digital divides unfold.

The editors believe that sophisticated conceptual frameworks are of vital importance for understanding and for tackling digital divides. Distinctions mapped to date include those between access and skills, access and motivation, various levels of access, and ever-more detailed analysis of what the benefits of access might be, and how these might be differentially valuable to different people. But there is much

more work to be done. We offer this book as a contribution to the debate on what such frameworks should look like.

Organization of the Book

The book contains 13 chapters, organized into three separate sections. A brief description of the organization of the sections and chapters follows.

The organization of the chapters follows a trajectory from more general to more specific topics, beginning with chapters concerned primarily with philosophical and conceptual issues, and moving from there to more interdisciplinary, but still theoretical, approaches to the digital divide, approaches that utilize empirical research from a variety of disciplines beyond philosophy. The third and final section of the book contains chapters that focus on particular instances of digital divides, namely divides existing within particular countries, or the impact of the global digital divide on particular countries.

Section I: Philosophy and the Digital Divide

The first section of the book addresses specific conceptual and philosophical issues associated with the notion of the digital divide. This section contains the most abstract and conceptual contributions to the volume, grouped together to provide the reader with a sense of the conceptual and philosophical issues most closely associated with the digital divide today. While some chapters seek to further clarify the nature of the digital divide as it is popularly understood, or to articulate in more detail some aspects of the divide, others take a more critical approach.

In Chapter I, Sirkku Kristiina Hellsten develops an approach to the digital divide based on Amartya Sen's capability theory. Hellsten's argument is that capability theory can be more or less straightforwardly extended to include the capabilities associated with new information and communications technologies, and she takes some steps to extend the theory in this direction. Hellsten pays particular attention to the issue of knowledge, and its relationship to information. She observes that information is not valuable in itself, but rather as a means to knowledge and to wisdom, and argues that approaches to the digital divide that treat access to information as an end rather than a means are liable to make distributive errors.

In Chapter II, Don Fallis takes up the challenge of providing an answer to one of the questions that Hellsten deems so important to any adequate response to current levels of global social inequality in the context of the digital divide: what is a just distribution of knowledge? Like Hellsten, Fallis takes knowledge to be the key good, inequality of which is indicated by terms such as "digital divide," and in relation to

which further theoretical work needs to be done. His chapter addresses the question of how to determine a just distribution of knowledge (whatever means are used to distribute the knowledge). As Fallis writes, "The *digital divide* refers to inequalities in access to information technology. Those people who do not have access to information technology are at a significant economic and social disadvantage. As with any other policy decision, in order to evaluate policies for dealing with the digital divide, we need to know exactly what our goal should be. Since the principal value of access to information technology is that it leads to *knowledge*, work in epistemology can help us to clarify our goal in the context of the digital divide." Fallis then goes on to argue that *epistemic value theory* can help to determine which distribution of knowledge to aim for, and he maps out how the determination might be made.

In Chapter III, Kenneth Einar Himma continues the theme of the just distribution of knowledge, but from the perspective of intellectual property protection. Intellectual property is not so commonly seen as a factor in the just distribution of goods but Drahos (2002) for one demonstrates that it does play an important role. Himma's argument is that creators of intellectual property deserve protection for their creations because they introduce things of value into the world and this involves both their time and effort. Creators then have an interest in their intellectual creations that ought to be protected. Others also have interests in these creations and on occasion these override the interests of the creators. In many cases however, the creators' interests ought to be protected and he presents general guidelines to show which cases there are. This protection limits distribution of the intellectual goods but not, Himma argues, in a manner that violates any principle of just distribution. There is no "intellectual commons" that is diminished by this protection.

Chapter IV, by Charles Ess, takes up a range of theoretical and practical issues associated with the discipline of information ethics, or computer ethics, as it has been called by some in the past. The issues that Ess includes under the rubric of "information ethics" are broad. They include the familiar issues of social justice associated with the distribution of ICTs, and the distributive impact of ICTs on societies more broadly. But they also include a range of interesting issues that are not often accorded a place in standard monographs and textbooks on information ethics, associated with the ethical status of the global spread of new ICTs, and of standardized (read: Western) discourses of information ethics. Ess addresses the question of "how may we develop information ethics and computer ethics that

a. address *both* local *and* global issues evoked by ICTs/CMC, etc.;
b. in ways that *both* sustain local traditions/values/preferences, and so on; *and*
c. provide (quasi-) universal responses to central ethical problems?"

Ess's chapter illustrates, by its example, how the conceptual and analytical tools of philosophy, coupled with careful empirical research, can help to shed new light on moral status of the digital divide.

Chapter V by Soraj Hongladarom provides grist to Ess's mill, indicating how the discourse of computer ethics is taken up in particular cultural contexts, namely in Thailand. Like the later chapter by Raghuramaraju (Section III), Hongladarom uses the existence of cultural differences and particularities to criticize the claim that there will be any wholly universal answers to moral questions associated with digital divides. He illustrates how the discourse of computer ethics had developed in Thailand, adapted to cultural norms and expectations associated with knowledge and technology. He starts from the observation that more is required, to bridge digital divides, than the mere provision of computers and Internet access. Of course, as he observes, this statements is in some ways a platitude, since many theorists of the digital divide agree that training, computer-literacy and other skills are required to make good use of computers and Internet access.

But in another sense, Hongladarom argues, this statement is anything but platitudinous. This is because the very characterization of the digital divide, like the ideals associated with the many possibilities that new ICTs open up is many, various, and deeply dependent on the cultures in which those ideals are articulated and pursued. That is, the "more" that is required is not in any sense determined, either by the nature of the technology or by any other single factor. ICTs are, in Hongladarom's terms, "second-order tools" that can be used for an indeterminate number of purposes. In this, they are unlike "first-order tools", such as toasters that can be used only for one or two specific purposes. The example of Thai culture is used to illustrate Hongladarom's position.

Section II: Interdisciplinary Perspectives

Chapter VI, by Kenneth L. Hacker, Shana M. Mason, and Eric L. Morgan provides a trenchant introduction to this section, taking a strongly critical line on the impact of structural inequalities in access to and usage of CMC/ICT on digital democracy. Drawing on both political theory and cultural studies research, the authors argue that the inequalities in access to and usage of CMC/ICT differentially affect the level of power that different individuals (and networks of individuals) can assert within the political process. As they write, "The inequities in power may become more severe as those who are able to obtain the most advantages from digital communication are those who can conduct politics both online and offline." Their chapter points to a vicious cycle between digital exclusion and other forms of social exclusion in current socio-political settings, while also setting out the case for the democratising potential of information and communication technologies.

In Chapter VII, Bernd Carsten Stahl takes a critical look at the potential of philosophical research to contribute to resolution of digital divides, either within countries or across countries. Stahl argues from the key premise that, despite centuries of debate, philosophy as a discipline has failed to reach agreed-upon answers to a range of key questions, including questions about justice and the nature of the just society. How, then, he asks, can philosophy hope to solve the problems of justice associated with new information and communication technologies? What is needed, Stahl argues, is political action rather than more theory. Despite his critical stance about the capacity of philosophy to resolve justice questions associated with new information and communication technologies, Stahl concludes by suggesting that philosophy may still have a useful role in relation to digital divides. That is, "philosophical and conceptual analysis are useful bases upon which to build political action."

The next two chapters, VIII and IX by Sheila French and Darryl Macer respectively, form a bridge between Sections II and II. Sheila French approaches the digital divide in the context of computer science in the UK using discourse analysis. Despite government initiatives to encourage greater female participation in ICT nothing has changed significantly and female participation is still substantially lower than that that of males. The basic reason, she argues, is that the initiatives assume that women "if the conditions are right, will want to be involved in the field of technology." This assumption is wrong, she contends, and demonstrates this through analyses of various discourses. This lack of female participation is not so much a result of lack of computing resources or opportunities to use them, but more a matter of perceptions of our identities and of our experiences with ICT. Her studies suggest that young males identify with the technology in a way that young females do not. The females see the technology as providing useful tools but not as part of their identities. The issue of gender segregation in ICT is just as much about "gendered attitudes and identities in relation to technology" as it is about equality. Darryl Macer, in Chapter IX, discusses the results of a number of surveys conducted in Japan and in Thailand, in the early 1990s and again about a decade later. He compares the attitudes to and perceptions of various new technologies in both countries and also looks at how these attitudes and perceptions changed over the period between the surveys. This kind of empirical he argues informs the ethical discussions of global social justice.

Section III: Regional and Country Perspectives

In Chapter X, William Wresch tackles similar issues to those addressed by Hellsten, but in his case from a more applied perspective, specifically that of the African experience of the global digital divide. As an emblem of the global digital divide, Wresch writes of the "million missing websites" in Africa: that is, the Web sites that would exist were Africa not already so disadvantaged relative to the rest of the world that its citizens have few resources to put into ICTs. One of Wresch's key

points is distinctive, and makes rather different use of Sen's theory of capabilities than does Hellsten. He argues that Africa's lack of ICTs results, not only in Africans being unable to *receive* information of various kinds; importantly, it also means that many Africans are unable to *transmit* information of various kinds—for example, info relevant to other Africans (trade, culture, and so on) and relevant to people from non-African countries.

A. Raghuramaraju, in Chapter XI, looks at how the discipline of computer ethics has evolved in India. Like Hongladarom (Chapter V), Raghuramaraju relates Indian computer ethics to the Western philosophical tradition. But Raghuramaraju's approach is to critique the "standard" Western philosophical approach to computer ethics, and to argue for an alternative approach to computer ethics, more suitable for the Indian socio-cultural context. He holds that computer ethics can learn from the Indian philosophical tradition, as well as from the Western tradition that has proven so fruitful to date.

Chapter XII is another case study, this time set in Australia. Emma Rooksby, John Weckert, and Richard Lucas consider a digital divide that has captured public and media imagination in Australia, namely the divide between rural Australians and their urban counterparts. The authors argue that the rural digital divide in Australia is indeed of moral concern, and discuss a range of current funding initiatives that have been designed to overcome it.

Yeslam Al-Saggaf, in Chapter XIII, presents an unusual approach to the digital divide, looking at forms of informational exclusion that are not typically discussed in the literature on the digital divide. Al-Saggaf's empirical research base, online discussion groups in Saudi Arabia provide him with a window into the use of ICTs in a non-Western non-liberal country, and the kinds of informational exclusion he discovers are related to the nature of the Saudi polity. He finds that political censorship, threatened or actual persecution, and strict gender roles rather than social and economic inequalities, are key drivers of who has access to, and (perhaps more importantly) who can make use of ICTs to further their interests.

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