



รายงานวิจัยฉบับสมบูรณ์

โครงการ

“จริยศาสตร์ของการแบ่งแยกดิจิทัลในโลก:
โลก: ความยุติธรรมในโลก การพัฒนา
และนัยยะเชิงนโยบายสำหรับไทย”

หัวหน้าโครงการ

รองศาสตราจารย์ ดร. โสรัจจ์ หงศ์ลดารมภ์

ศูนย์จริยธรรมวิทยาศาสตร์และเทคโนโลยี คณะอักษรศาสตร์

จุฬาลงกรณ์มหาวิทยาลัย

สิงหาคม 2549

รายงานวิจัยฉบับสมบูรณ์

โครงการ

“จริยศาสตร์ของการแบ่งแยกดิจิทัลในโลก: ความยุติธรรมในโลก การพัฒนา และนัยยะเชิงนโยบายสำหรับไทย”

สนับสนุนโดยสำนักงานกองทุนสนับสนุนการวิจัย

(ความเห็นในรายงานนี้เป็นของผู้วิจัย สกว. ไม่จำเป็นต้องเห็นด้วยเสมอไป)



สำนักงานกองทุนสนับสนุนการวิจัย

The Thailand Research Fund

รายงานวิจัยฉบับสมบูรณ์

โครงการ “จริยศาสตร์ของการแบ่งแยกดิจิทัลในโลก ความ
ยุติธรรมในโลกและนัยยะเชิงนโยบายสำหรับไทย”

หัวหน้าโครงการ

รองศาสตราจารย์ ดร. โสรัจจ์ หงศ์ลดารมภ์

ศูนย์จริยธรรมวิทยาศาสตร์และเทคโนโลยี คณะอักษรศาสตร์

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บทคัดย่อ

โครงการ "จริยศาสตร์ของการแบ่งแยกดิจิทัล" เป็นโครงการวิจัยในปรัชญา ที่มุ่งวิเคราะห์ประเด็นทางจริยธรรมของการแบ่งแยกดิจิทัล หรือ digital divide ในภาษาอังกฤษ สภาวะนี้ได้แก่การเกิดช่องว่างในการใช้และการเข้าถึงเครือข่ายเทคโนโลยีสารสนเทศ อันนำไปสู่ปัญหาในการพัฒนา เนื่องจากเป็นที่ยอมรับกันว่า เทคโนโลยีสารสนเทศอันประกอบด้วยเครื่องคอมพิวเตอร์ และเครือข่ายอินเทอร์เน็ตนั้นมีบทบาทสูงยิ่งในการพัฒนาเศรษฐกิจและสังคมของประเทศ อย่างไรก็ตาม แม้ว่าเทคโนโลยีสารสนเทศจะมีความสำคัญเช่นนี้ แต่ดูเหมือนว่าภาครัฐยังขาดแนวทางที่ถูกต้องและเป็นธรรมในการหาหนทางที่จะใช้เทคโนโลยีสารสนเทศได้อย่างมีประสิทธิภาพสูงสุด ที่เป็นเช่นนี้เห็นได้จากว่า แม้รัฐบาลโดยหน่วยงานที่เกี่ยวข้อง เช่น กระทรวงเทคโนโลยีสารสนเทศ จะมีเรื่องนี้เป็นนโยบายหลัก แต่เมื่อเวลาผ่านไประยะหนึ่ง ปัญหาที่ดูจะยังอยู่เหมือนเดิม สาเหตุหลักของปัญหายู่ว่า ผู้วางนโยบายยังขาดการมองที่มิติทางความรู้หรือมิติทางสังคมและวัฒนธรรมของชุมชนที่จะนำเทคโนโลยีไปใช้ ปัญหาที่สำคัญที่สุดคือ เราจะหาทางรวมการใช้เทคโนโลยีให้เข้ากับวิถีชีวิตและระบบคุณค่าต่างๆของชุมชนได้อย่างไร ซึ่งหากแก้ปัญหาตรงจุดนี้ไม่ได้ การพัฒนาประเทศด้วยเทคโนโลยีสารสนเทศก็ดูจะไม่สามารถเริ่มต้นได้

ผลการวิจัยในเวลาสามปีที่ผ่านมา มีการตีพิมพ์บทความวิจัยลงในวารสารวิชาการนานาชาติ และในหนังสือที่มีการตรวจคุณภาพ และตีพิมพ์โดยสำนักพิมพ์นานาชาติจำนวนหนึ่ง นอกจากนี้ก็มีการนำเสนอบทความในการประชุมวิชาการนานาชาติ รวมไปถึงการเป็นบรรณาธิการหนังสือที่จัดพิมพ์โดยสำนักพิมพ์นานาชาติสองเล่ม รวมถึงการบรรยายตามที่ต่างๆ และการจัดทำเว็บไซต์

Abstract

The project on "Global Digital Divide" is a philosophical research project aiming at analyzing some salient ethical issues in the digital divide, which is a phenomenon created by a gap in access and usage of information technology. It is commonly recognized that information technology and the Internet are playing a very important role in economic and social development. However, though this importance is acknowledged by the Thai government, especially the Ministry of Information Technology, it has seemed that policy makers have not grasped the crucial importance of finding ways to integrate the technology into the life-world of the communities. Although the government has performed rather well in delivering the hardware and the network to rural communities, they have yet to gauged fully the problem of how such introduction of technology, much of which is still alien to the rural villagers in remote areas. A key factor in the problem is that policy analysts and makers are still mired in the mechanistic mindset which presupposes that simply delivering hardware and software would automatically solve the problem. However, such an attempt at rural development would not even get off the ground if the question on how the lifeworld and the technology are to be integrated could not be satisfactorily answered.

Output of the project, many of which aim at providing answers to this key question, have been published in international journals and as chapters in internationally published books. Furthermore, some papers were presented at international conferences. The principal investigator also organized one international conference on computing and philosophy, in addition to giving lectures in many places and maintaining an active Web Site.

บทสรุปสำหรับผู้บริหาร

โครงการ "จริยศาสตร์ของการแบ่งแยกดิจิทัลในโลก ความยุติธรรมในโลกและนโยบายเชิงนโยบายสำหรับไทย" เป็นโครงการที่มุ่งหาคำตอบเชิงปทัสฐานและนโยบายเกี่ยวกับปัญหาต่างๆที่เกิดจากความเหลื่อมล้ำในการใช้เทคโนโลยีสารสนเทศในมิติต่างๆ หรือที่เรียกกันว่า Digital divide ในภาษาอังกฤษ ระยะเวลาของโครงการสามปี

สิ่งที่ได้ดำเนินการไปในรอบปีแรกของโครงการ ได้แก่

1. เข้าร่วมประชุม Computing and Philosophy ที่ Australian National University ระหว่างวันที่ 30 พฤศจิกายน ถึง 2 ธันวาคม พ.ศ. 2546 สิ่งที่ได้ทำไปคือเป็นผู้ประสานงานจัด panel เกี่ยวกับ the ethics of the digital divide โดยมีผู้เข้าร่วมได้แก่ Don Fallis จาก University of Arizona, Jeremy Moss จาก University of Melbourne และ ผศ. ดร. กฤษณา กิตยาคิตยจากจุฬาลงกรณ์มหาวิทยาลัย ผู้วิจัยยังได้เสนอบทความเรื่อง "Exploring the Philosophical Terrain of the Digital Divide" ในการประชุมครั้งนี้ด้วย

2. เข้าร่วมประชุม the First AsiaLICS International Conference, Bangkok, April 1-2, 2004 ที่โรงแรม The Arnoma Swissotel การประชุมครั้งนี้จัดโดยสวทช. มีจุดมุ่งหมายเพื่อระดมงานวิจัยเกี่ยวกับการพัฒนาวิทยาศาสตร์เทคโนโลยีเพื่อการพัฒนาประเทศ ผู้วิจัยได้เสนอบทความเรื่อง "The Digital Divide, Culture and Development: Enhancing the Capabilities through Culturally Aware Use of Information Technology" ในการประชุมครั้งนี้ด้วย โดยเสนอทั้งบทความเต็มรูปแบบและไฟล์จาก PowerPoint

3. เข้าร่วมประชุมวิชาการ Cultural Attitude toward Technology and Communication ที่เมือง Karlstad ประเทศสวีเดน วันที่ 27 มิถุนายนถึง 2 กรกฎาคม พ.ศ. 2546 เสนอบทความเรื่อง "The Digital Divide in Thailand: Past attempts to solve the problem and the need for consideration of culture"

4. เขียนบทความเรื่อง "Electronic Surveillance in the Workplace: A Buddhist Perspective" เพื่อตีพิมพ์ในหนังสือรวมเล่มที่มีการพิจารณาคุณภาพต้นฉบับ จัดพิมพ์โดย The Idea Groupw, Inc. สหรัฐอเมริกา มี Prof. John Weckert เป็นบรรณาธิการ คาดว่าจะออกวางตลาดเร็วขึ้น

5. เขียนบทความเรื่อง "Community-Based Technology and Rural Development: Rice Liquor and the Fight for Local Autonomy in Thailand" เพื่อรับการพิจารณาตีพิมพ์ในวารสาร The International Journal on Technology and Globalization จัดพิมพ์โดย Inderscience ขณะนี้กำลังรอผลการพิจารณาจาก reviewers

สิ่งที่ได้ทำไปในปีที่สอง ได้แก่

1. เป็นประธานจัดการประชุมวิชาการนานาชาติ The Second Asia-Pacific Computing and Philosophy Conference ที่โรงแรมโนโวเทล สยามสแควร์ ระหว่างวันที่ 7 ถึง 9 มกราคม พ.ศ. 2548 ขณะนี้มีผู้ตอบรับเข้าร่วมประชุมแล้วกว่า 25 คนจากหลายประเทศ การประชุมครั้งนี้มี The International Association of Computing and Philosophy เป็นเจ้าภาพ และได้รับการสนับสนุนจากองค์การ UNESCO ให้จัด panel discussion เกี่ยวกับ Computer Ethics in Asia-Pacific อีกด้วย

นอกจากนี้ ก็ได้จัดทำเครือข่ายจริยธรรมสารสนเทศในภูมิภาคเอเชีย-แปซิฟิก (The Cyberethics Network on Information Ethics in Asia and Pacific) มีเว็บไซต์อยู่ที่ <http://www.stc.arts.chula.ac.th/cyberethics/>

ผลงานตีพิมพ์จากการประชุมดังกล่าวได้แก่หนังสือเรื่อง Computing and Philosophy: Selected Papers from the 2nd Asia-Pacific Computing and Philosophy Conference จัดพิมพ์โดยสำนักพิมพ์จุฬาลงกรณ์มหาวิทยาลัย และ special issue จาก MANUSYA: Journal of Humanities สองเล่ม

2. เขียนบทความเรื่อง The Digital Divide and Global Justice เพื่อนำเสนอในการประชุมดังกล่าว คาดว่าเมื่อเสนอแล้วจะนำไปเสนอตีพิมพ์ในวารสาร Ethics of Information Technology

3. บทความดังกล่าวได้รับการตอบรับให้ตีพิมพ์ในหนังสือรวมบทความวิชาการเรื่อง Information Technology and Social Justice มี Dr. Emma Rooksby เป็นบรรณาธิการ บทความดังกล่าวชื่อ Global Digital Divide, Global Justice, Cultures and Epistemology ในระยะเวลาหลายเดือนที่ผ่านมา ผู้วิจัยได้ส่งบทความไป และบรรณาธิการก็ได้ส่งไปให้ reviewers พิจารณาและส่งข้อเสนอแนะหลายประการกลับมา ซึ่งผู้วิจัยก็ได้แก้ไขและส่งกลับไปแล้ว คาดว่าหนังสือเล่มนี้จะตีพิมพ์ออกมาในเร็ววัน

4. ผู้วิจัยได้ตีพิมพ์บทความเรื่อง "The Digital Divide, Epistemology and Global Justice" ใน Special Issue of the CSI (Computer Society of India) Communications on Information Ethics (K. Weber, R. Capurro Guest Eds.)

5. ตีพิมพ์บทความเรื่อง "The Asian Information Society and the Aims of Education" ใน The Journal of the Pan-Pacific Association of Applied Linguistics ขณะนี้ได้ส่งบทความฉบับแก้ไขจากที่ reviewers แนะนำให้ทางบรรณาธิการแล้ว คาดว่าจะตีพิมพ์ในเร็ววัน

6. ผู้วิจัยได้ร่วมมือกับ Prof. Charles Ess เสนอโครงการจัดพิมพ์หนังสือเรื่อง Information Technology Ethics: Cultural Perspectives เพื่อขอรับการตีพิมพ์จาก Idea-Group Publisher มลรัฐเพนซิลเวเนีย สหรัฐอเมริกา ผลปรากฏว่าสำนักพิมพ์ตอบรับให้ตีพิมพ์ได้ ในขณะนี้กำลังรอรับบทความจากนักวิชาการต่างๆทั่วโลก ซึ่งจะส่งบทความมาภายในวันที่ 30 กันยายนนี้ ส่วนตัวผู้วิจัยเองก็จะส่งบทความไปรับการพิจารณาตีพิมพ์ในหนังสือเล่มนี้ด้วย

สิ่งที่ได้ทำไปในปีที่สามของโครงการ ได้แก่

1. บรรยายเกี่ยวกับ The Asia-Pacific Computing and Philosophy Conference ที่ Stella Maris College เมือง Chennai ประเทศอินเดีย ผู้วิจัยได้รับเชิญไปเป็น resource person ของการประชุมระดับชาติเรื่อง Computing and Philosophy ที่ประเทศอินเดีย ในวันที่ 8 ถึง 11 กุมภาพันธ์ พ.ศ. 2549 นี้ โดยมี Prof. Sundari Krishnamurthy และ Stella Maris College เป็นผู้เชิญ วัตถุประสงค์ของการประชุมนี้เพื่อสร้างความสนใจในการวิจัยเกี่ยวกับ computing and philosophy ในประเทศอินเดีย และผู้วิจัยได้รับเชิญให้บรรยายเกี่ยวกับการจัดประชุม The Second Asia-Pacific Computing and Philosophy Conference ซึ่งได้จัดไปที่กรุงเทพฯ เมื่อต้นปี 2548 ที่ผ่านมา
2. เสนอบทความเรื่อง "Analysis and Justification of Privacy from a Buddhist Perspective" ในการประชุม National Seminar on Computing and Philosophy ที่ Stella Maris College ประเทศอินเดีย เมื่อวันที่ 9 กุมภาพันธ์ ได้รับเสียงตอบรับและคำแนะนำจากนักปรัชญาระดับนำของอินเดียหลายท่านเป็นอย่างดี
3. ร่วมมือกับ Prof. Charles Ess เป็นบรรณาธิการหนังสือเรื่อง Information Technology Ethics: Cultural Perspectives ซึ่งจะจัดพิมพ์โดย Idea-Group Publisher สหรัฐอเมริกา หนังสือเล่มนี้มีกำหนดส่งต้นฉบับในวันที่ 15 มีนาคม ศกนี้
4. เขียนบทความเรื่อง "Analysis and Justification of Privacy from a Buddhist Perspective" ลงในหนังสือเรื่อง Information Technology Ethics: Cultural Perspectives ที่ผู้วิจัยกับ Prof. Charles Ess เป็นบรรณาธิการ ขณะนี้บทความได้ผ่านการพิจารณาจาก reviewer เรียบร้อยแล้ว
5. เขียนบทความเรื่อง "Metaphysics of Change and Continuity: Exactly what is changing and what gets continued?" เพื่อนำเสนอในการประชุมทางวิชาการ International Conference on Change and Continuity: Perspectives from Science and Religion จัดโดย Metanexus Institute สหรัฐอเมริกา
6. เป็นบรรณาธิการหนังสือเรื่อง Computing and Philosophy in Asia ซึ่งได้รับการตอบรับตีพิมพ์จาก Cambridge Scholars Press ประเทศสหราชอาณาจักรเรียบร้อยแล้ว และลงนามในสัญญาแล้ว กำหนดส่งต้นฉบับทั้งหมดในราวเดือนกันยายน ศกนี้
7. เขียนบทความเรื่อง "Ethics of Bioinformatics: A Convergence of Computer Ethics and Bioethics" เพื่อเสนอลงพิมพ์ในวารสาร *Asian Biotechnology and Development Review* ซึ่งมี Prof. Leonardo de Castro เป็นบรรณาธิการประจำฉบับ
8. เขียนบทความเรื่อง "Ethics of Knowledge: Social Epistemology and Intellectual Property" เนื่องจากผู้วิจัยได้รับเชิญจาก Prof. Cushla Kapitzke และ Prof. Michael Peters ให้เขียนบทความนี้ลงพิมพ์ในหนังสือเกี่ยวกับทรัพย์สินทางปัญญาและจริยศาสตร์
9. เขียนบทความเรื่อง "Searle and Buddhism on the Mind and the Non-Self" ซึ่งจะตีพิมพ์

ในหนังสือเรื่อง Searle and Chinese Philosophy มี Prof. Bo Mou, San Diego State University เป็นบรรณาธิการ พิมพ์โดย Brill

9. ตรวจแก้ proof ของบทความเรื่อง Global Digital Divide, Global Justice, Cultures and Epistemology ซึ่งจะตีพิมพ์ในหนังสือรวมบทความวิจัย จัดพิมพ์โดย Idea-Group Publisher และมี Dr. Emma Rooksby กับ Prof. John Weckert เป็นบรรณาธิการ

เนื้อหางานวิจัย

The digital divide has been one of most talked about phenomena in recent years. Trying to bridge the gap has been on the agenda of virtually all public policy makers since the products of information and communication technologies started to become more common not too long ago. It is recognized almost universally that the digital divide, basically a gap in access to and use of information technology and the global network that it makes possible, and especially the global digital divide, represents a significant policy problem that governments at various levels in all countries feel the need to attend to. The amount of attention and more importantly of physical and intellectual resources devoted to the issue has been really staggering, and has been so intensive in recent years that the World Bank has announced a little while ago and the global digital divide is indeed disappearing ("Digital Divide Closing Fast - World Bank," 2005).

Hence it might seem that the topic of this paper is beginning to be outmoded. After all, if the digital divide is really closing, then why should we be concerned with its ethical or social implications? The exercise may cease to be relevant for current public policy formulation and may become indeed one on history—what kind social and ethical implications happened when the digital divide was prevalent in the world? However, I don't believe that discussing the ethical dimensions of the digital divide would become irrelevant, and in fact I don't believe that we would cease talking about the phenomenon even if it is really the case that it is indeed disappearing. For the reasons that will be made clear in this paper, the sheer fact that more and more households in the world are equipped with computer technology and are getting wired to the Internet does not automatically translate to the realization of all the goals and visions that the attempts to close the digital divide were aimed at. Simply having a tool does not always mean that one is using it in a way it is originally intended, and we are now just beginning to see how these tools of the information and

communication technologies are going to be used in the various localities around the world.

What I would like to do in this paper is to begin to explore the relations between the global digital divide, global justice, cultures and epistemology. This is pertinent to the discussion above in that attempts to bridge the global digital divide, I would like to argue, is a species of attempts to bring about global justice and that the attempts need first to start from an appreciation of the local cultures and how those cultures view their own epistemic practices, which are invariably part and parcel of their own cultures. Nevertheless, I can do no more than present a brief sketch of the relations here because to do justice to each of the aspects of the relations would take us further afield than the space of this chapter allows. The sketch is also intended as an invitation to further research. The World Bank report that the digital divide is disappearing everywhere may be convincing, but it does not lessen the urgency of making an effort to understand how these factors are related to one another. This is so because simply providing the population with hardware and software and access to the Internet seldom suffices to realize the kind of 'utopian' information society that the earlier pioneers and evangelists of information technology had in their visionary eyes.

THE NARROWING OF THE GLOBAL DIGITAL DIVIDE AND THE PERSISTENCE OF OLD PROBLEMS

It was just only slightly more than two decades ago that personal computers started to make their ways into our lives, and the Internet started to appear on the scene just more than a decade ago. Yet these seem to most of us like ages ago. This points to the extreme speed at which the technology is evolving and spreading throughout the world. When it was in its infancy, proponents of information technology usually hailed it as a harbinger of a time when time itself and distance were eliminated. A result of this would be, in their views, a complete merging of ideas and information in such a way that every piece of information would be at everybody's fingertips. Ideas such as democracy and freedom would float around the world and enter the consciousness of the people who would presumably take these ideas as a basis for changes in their own communities and societies. Knowledge would be readily available and the whole world will be blessed with better informed and knowledgeable global citizens.

However, it seems that even as the digital divide is closing, these visions have not been true in many parts of the world. Universal knowledge, for example, is still a dream, as

the near universal attempts at promoting the use of ICT's in schools can attest. Entz and Hongladarom argue that simply providing hardware and software to the people seldom suffices in bringing about any kind of desired changes in their worlds and communities (Entz and Hongladarom, 2004). In the late 1990's the Thai government tried to bridge the digital divide problem in the country through a direct injection of hardware and software to the local villages. Computers were provided to the village schools free of charge. What happened, however, was that many of the computers were not used to their full potentials, not least in such a way that would bring about any kind of universal knowledge or flow of information; many were not used at all. In many areas there was no electricity; in many others there was a lack of qualified personnel who could operate computers reasonably well. Giving away computers in this case became a symbolic act of the powerful and centralized government which acted on its own without consultation with the local schools (Entz and Hongladarom, 2004).

The problems remain because there is no simple equation between possession of hardware and software on the one hand, and being able to use that software and hardware to their full potential on the other. And it is difficult to say precisely what actually constitutes 'using the computers to their full potential.' This at least requires much more conceptual and empirical studies. Thus, one should not take the World Bank Report that the global digital divide is closing as an evidence that the problems are disappearing. It may be the case that the World Bank Report does not specifically refer to the Thai case or similar ones, because they may already have factored in the conditions that would make computer access and use a real possibility before they announced that the gap is indeed closing. Thus, they might not have counted the Thai case as a case of the divide closing. Nonetheless, even if the scenario they are reporting is true, even if a proportionally large number of people, say in Africa and Asia, are actually using computers which are wired to the Internet, that by itself does not mean that the utopian dream is automatically realized. The old problems, those of poverty, inequality and so on, seem to persist even in the face of virtually total diffusion of ICT's.

To see how this is the case let us look at the utopian dream in more detail. Early proponents of diffusion of information technology have pointed out that ICT's could facilitate and engender rapid development in various areas, such as education, health care, finance and taxation, and much more. It was envisioned that the diffusion, in integrating data and

information that are scattered in many places, would result in eradicating poverty in rural areas through providing needed information to the rural poor so that they could build up their capabilities and rise above the poverty line. The Ministry of Information and Communication Technology of Thailand (<http://www.mict.go.th/>), established in 2003, also subscribed to the idea, and has as one of its prime missions to facilitate development through bridging the digital divide within the country. In 2003, the Ministry had a plan of selling low cost computers to the Thai population, and it contracted a number of hardware manufacturers to produce machines according to its own specifications in huge number so that the economy of scale would drive the price down to make the machines become more affordable. The operating system was originally set to be a version of localized Linux developed by a research arm of the Ministry. However, the buyer could also choose to have Microsoft Windows XP installed in these systems after Microsoft offered to sell their products at a much reduced price (Entz and Hongladarom, 2004). And in early March 2005, the Ministry of Information and Communication Technology again declared a policy of providing 250,000 computers, together with broadband internet connection, to schools nationwide. The stated target is one computer for at most twenty students, and the fund from the national budget will be used. ("Lofty Plans for Schools," 2005).

Despite these efforts, however, the promise of the information society has not been fulfilled. Of course empirical research on the local Thai context here is necessary to substantiate the claim, but as the Thai examples alluded to above shows, providing hardware and software alone does not seem adequate. To date there have been no systematic studies yet to measure the effectiveness of these measures, and we can see the same line of thinking behind these policies, viz., the centralized government acting as if the entire country were a pliant mold that they can shape whatever way they want. In any case, many researchers have pointed out that attempts to bridge the digital divide require much more than hardware and software. In a background report to the InfoDev Symposium in Switzerland, Kerry McNamara says: "The presence or absence of ICTs (the "digital divide") is a symptom, not a cause. And the underlying causes of persistent poverty often have little to do, except indirectly, with the supply or absence of ICTs. By focusing on the "digital divide" (another in a long series of gaps that international development agencies have identified and sought to bridge over the past several decades) the proponents of ICT-for-development often misdirected their energies and weakened their own cause" (McNamara, 2003, p. 4) .

among the nations of the world, to the extent that it is existing in form that constitutes inequality, is thus an issue of global justice. Many discussions of global justice by social and political philosophers have typically tended to focus on the more abstract aspect of the issue centering around the justification of global justice. Onora O'Neill focuses on the more theoretical aspect of global justice, arguing that Rawls' conception of justice is too restrictive and calling for the international organizations to play their roles, even though as a rule these organizations do not have the same kind of power that is necessary to ensure justice in a 'bounded' society (O'Neill, 2000). Andrew Hurrell argues that the international organizations have a moral role to play in ensuring global economic justice and that they are 'dense' enough to do the job, but they "constitute a deformed political order", namely in distribution of advantages and disadvantages, in who sets the rules, in the capacity of states themselves to adjust to the economy, and in the "limited capacity of international laws and institutions to constrain effectively the unilateral and often illegal acts of the strong" (Hurrell, 2001, p. 43). Furthermore, Thomas Pogge argues that the Western nations have often placed their priorities regarding global justice in the wrong place. He deeply criticizes the new global economic order led by the US, which he sees to be responsible for mass poverty in the developing world. In her Olof Palme lecture, Martha Nussbaum calls for a new alternative theory of global justice to the dominant contractarian and Rawlsian one, or the one favored by Pogge, which attempts to broaden Rawls' conception across national borders (Nussbaum, 2004). She would like to base consideration of global justice on certain fixability of outcomes rather than fair procedure as is prominent in the contractarian theories. Following Amartya Sen, Nussbaum argues for a 'human capabilities approach' of global justice that focuses more on facilitating the realization of certain human capabilities rather than on sheer provision of economic goods. Hence, narrowing the digital gap might presumably be included in the list of Nussbaum's list of capabilities also. Perhaps Fred Dallmayr seems to be one of the rather limited number of philosophers who take up the gap in knowledge as a factor contributing to global injustice. In his paper (2002) Dallmayr issues a 'plea for global justice', an action that is needed as a result of globalization and its consequent social and economic inequality across the globe. He indicates three areas of global inequality, viz. power, wealth and knowledge (Dallmayr, 2002). And it is especially inequality in knowledge that is of particular concern in this paper, and the next section will be devoted to this in detail.

Lisa Servon argues that one needs to change one's thinking about the digital divide and broaden the conception to more than simple provision of hardware and software because when "we provide people with computers, we find that not much changes. IT on its own does not function as a ladder out of poverty" (Servon, 2002, p. 6). She indicates other dimensions of the digital divide problem than access, which have to do with training and content (Servon 2002, pp. 7-8). Her findings indicate that access is an "incomplete solution" and that "tech-fix is a myth" (Servon, 2002, pp. 222-223). Even though the gap is narrowing, this does not necessarily show that the problem is disappearing, for she found that many who are using the computer a lot are actually performing low-level tasks such as data input or other secretarial tasks (Servon 2002, pp. 222). In addition, it seems that the technology provides resources, freedom, flexibility and opportunities for the already powerful group in society (Servon 2002, pp. 223). It seems, then, that the old problems of social inequality still persist even though in a supposedly 'information-intensive' society where the global digital divide and the divide within countries are fast disappearing.

Much more, then, is needed to close the digital gap; however, it is surprising that many policy initiatives still aim at doing nothing more than providing for the hardware and software infrastructure and hoping that they alone can do the trick. In the attempt to reformulate how the digital divide problem should be conceptualized, Mark Warschauer sees the issue as a problem of social inclusion rather than a divide, which he regards as too restrictive and as presupposing a binary opposition between the 'haves' and 'havenots' which is not supported by the facts (Warschauer, 2003). According to Warschauer, the main aim of is not to narrow or to close the digital divide, but to find ways so that marginalized groups are included in sharing the benefits that information and communication technologies can bring about (Warschauer, 2003, p. 211). He spells out the need for thorough analyses of the social structures, problems, organizations and relations involved, which naturally are different from one context to another, as an important factor in any attempt to formulate policies in that context. Moreover, the capabilities of individuals need to be promoted (Warschauer 2003, p. 211). It is clear that Warschauer, too, does not see sheer provision of hardware and software as sufficient.

GLOBAL DIGITAL DIVIDE AND GLOBAL JUSTICE

The disparity between the amount of access to and usage of information technology

among the nations of the world, to the extent that it is existing in form that constitutes inequality, is thus an issue of global justice. Many discussions of global justice by social and political philosophers have typically tended to focus on the more abstract aspect of the issue centering around the justification of global justice. Onora O'Neill focuses on the more theoretical aspect of global justice, arguing that Rawls' conception of justice is too restrictive and calling for the international organizations to play their roles, even though as a rule these organizations do not have the same kind of power that is necessary to ensure justice in a 'bounded' society (O'Neill, 2000). Andrew Hurrell argues that the international organizations have a moral role to play in ensuring global economic justice and that they are 'dense' enough to do the job, but they "constitute a deformed political order", namely in distribution of advantages and disadvantages, in who sets the rules, in the capacity of states themselves to adjust to the economy, and in the "limited capacity of international laws and institutions to constrain effectively the unilateral and often illegal acts of the strong" (Hurrell, 2001, p. 43). Furthermore, Thomas Pogge argues that the Western nations have often placed their priorities regarding global justice in the wrong place. He deeply criticizes the new global economic order led by the US, which he sees to be responsible for mass poverty in the developing world. In her Olof Palme lecture, Martha Nussbaum calls for a new alternative theory of global justice to the dominant contractarian and Rawlsian one, or the one favored by Pogge, which attempts to broaden Rawls' conception across national borders (Nussbaum, 2004). She would like to base consideration of global justice on certain fixability of outcomes rather than fair procedure as is prominent in the contractarian theories. Following Amartya Sen, Nussbaum argues for a 'human capabilities approach' of global justice that focuses more on facilitating the realization of certain human capabilities rather than on sheer provision of economic goods. Hence, narrowing the digital gap might presumably be included in the list of Nussbaum's list of capabilities also. Perhaps Fred Dallmayr seems to be one of the rather limited number of philosophers who take up the gap in knowledge as a factor contributing to global injustice. In his paper (2002) Dallmayr issues a 'plea for global justice', an action that is needed as a result of globalization and its consequent social and economic inequality across the globe. He indicates three areas of global inequality, viz. power, wealth and knowledge (Dallmayr, 2002). And it is especially inequality in knowledge that is of particular concern in this paper, and the next section will be devoted to this in detail.

What these philosophers share in common here is that they look at global justice from a wider perspective, emphasizing not only the actual contents of the justice, but instead on the theoretical foundation or on how a particular version of global justice is to be justified. Pogge, for example, argues that the Western nations are bounded morally to rethink their priorities in ensuring global justice and he does not spend much time in his paper detailing what a particular developing nation, such as Thailand or Cambodia, might need in order to achieve a kind of parity in terms of information and communication technologies that presumably would alleviate the problem. Nussbaum offers an alternative theory of global justice, but her paper does not aim specifically at how information technology itself should figure in an attempt to delineate the list of capabilities that should be fulfilled. Consequently, time is due for an investigation of how the discussions on the global digital divide should have any bearings on those on global justice.

Taking the digital divide as an issue of global justice would mean that access to the benefits of information and communication technologies is a good, something, like health and opportunities, that should be equally shared among the population in the community. However, as it is by no means clear what actually constitutes these benefits of access to the information and communication technologies, more work still needs to be done to clarify this point. On the one hand, access to ICTs and the Internet should in itself be considered as a good because presumably having it enables one to realize one's own goals and desires, just like being in possession of good health enables one to enjoy one's life and to perform the activities that one would not have been able to do had one not been healthy. On the other hand, there are not a few people nowadays who choose not to get connected or not to use the computers at all and at the same time they are not considered unequal to others because they have the other social and economic goods such as an adequate level of income, education, welfare and so on. But there are not that many who would deny having good health. Hence it seems that having an access to ICT's alone is not the answer. Moreover, we have seen in the last section that hardware and software alone are not enough in achieving the kind of parity that would qualify it for there to be justice. Someone might counter that those who chose not to get connected did not out of their own choice. Since they are not unequal to their peers as mentioned, they could well get connected as soon as they wanted to, whereas those who are denied access, such as the rural poor in Thailand, would not get any access even if they really wanted to. But this only shows that

access to ICT's may not be a primary good, but a secondary good. A primary good is one such that being in possession of it satisfies some of the basic needs. Thus health is a primary good because just about everybody desires it for its own sake, as Aristotle said. Access to ICT's, on the other hand, appears to be more secondary since having it enables one to enjoy other kinds of goods, such as information (in the age where information itself is considered a good), income (through e-commerce), or others. This points to the extreme importance of the content of the flow of data facilitated by the network. In some way the content being transmitted through the network is itself a primary good, and the network is then a secondary good because it enables the former to be distributed to where it is needed. Thus, if one wants to tie this up with the global justice issue, one would then need to elaborate on what it is the possession of which would reduce global inequality. Here knowledge, or epistemic practices, and culture have a very important role to play, and attempts effectively to bridge the global digital divide would not be successful if these are not taken into consideration.

Talking about the global digital divide as an instance of global justice is a step down toward the more specific from the often highly abstract papers on theories that are on the offer in the literature. It seems that taking the digital divide as an issue of justice would need a special set of vocabulary because of the technical nature of the phenomenon. In fact, most policy analysts and researchers on diffusion of ICT's in Thailand are bureaucrats working for the government. Most of them have technical background and usually regard their jobs to be a technical one of studying and conceiving policies in a rather formulaic manner. In Thailand it is usually the case that policy researchers on a technical issue consist of technicians in that area. Thus, it is mostly medical doctors who formulate the country's health care policy, and usually it is engineers and computer scientists who propose policies for the government in IT area and the digital divide. This may stem from the Thais' belief that in technical matter, including policy studies on the matter, things are better left to the technicians or experts in question, since they know best about their own field. Hence, discourse on these topics are often couched in technical language and jargon, which further deepens the public's attitude toward such matter as a purely technical one requiring technical solution. Talks about the digital divide, in Thailand at least and presumably in other developing countries as well, are often couched in the technical jargon of computer scientists and network specialists. Thus a knowledge gap that is already in existence

between the educated urban elites and the less education majority in the countryside is exacerbated. The digital divide then becomes a symptom of a wider divide between the elites who seem to have everything and the poor who don't seem to have anything. And the use of specialist jargons by the authorities has become a symbol of power for them against the local villagers. If there is to be a solution to the digital divide problem, then language has to be considered too, and as we shall see in this paper, language is but one aspect of culture, which needs to be taken into consideration in any attempt to solve the problem.

At any rate, the issue of the use of computer and specialist jargon in policy formation and deliberation is related to another, more theory-oriented issue of which set of vocabulary is most suitable for discussion of the philosophical and ethical import of the digital divide problem. In fact, one might make a case that talking about the digital divide in this context does not require a special set of vocabulary, one that is specific about the technology in question and that is presumably makes its discussion different from talking about other goods such as income or education. In this sense, taking the global digital divide as an issue in global justice is no different in principle from taking the global divide in health care as an issue in global justice. Since what is being emphasized here is the provision of health care to the world's population in a just and equitable manner, so too the provision of access to information and communication technologies should be in the same vein. No special vocabulary needs to be involved. However, the issue of which set of vocabulary is suitable is a very complicated one and cannot be treated in full detail in this paper.

While this position is plausible, it is nonetheless the case that there are different levels of abstraction when one discusses global justice and its content, and these different levels make it necessary for there to be at least two sets of vocabulary to work on. This difference is not the same as that of the policy formulators mentioned in the above paragraph. On the one hand, there is the general vocabulary that discusses global justice; this is often found in the literature on the topic among social and political philosophers. On the other, there is the special set of vocabulary that pertains to information and computer technologies in particular. This set is not the exactly the same as that of the technicians discussed above, for it focuses not on the technical nature of the technology, but on the more conceptual problem of how the diffusion of information technology is related to the goals and values of a community and the life-world of a people. Thus this latter set is more in tune with the conceptual resources found in philosophy of technology. In this sense, a case could perhaps

be made that discussion of the global digital divide as an issue of global justice requires some set of vocabulary that is specific to the issue.

This set of vocabulary can be found, for example, in the works of philosophers of technology when they analyze the role technology plays in human life. One of chief problems in philosophy of technology concerns technological determinism—the view that infusion of technology in society invariably brings about certain changes in the attitudes and structures of that society. The view is well known to be subscribed by such philosophers as Martin Heidegger and Jacques Ellul. In the context of the global digital divide, the issue is whether the infusion of the technology, which is aimed at by proponents of attempts to narrow the divide, would bring in certain changes which are inevitable. The early proponents alluded earlier in the paper argued that the infusion would certainly bring about desirable changes, and it is clear that the belief is based on technological determinism. However, technological determinism is being challenged from many angles. Works by Charles Ess and Fay Sudweeks (Ess and Sudweeks, 1998, 2000, 2002, 2004; Ess and Sudweeks, 2001) have shown that the belief that computer-mediated communication will bring about certain inevitable changes in any culture where it is practiced is unfounded empirically. This is so mainly because cultures usually have within their resources the capabilities of ‘co-opting’ these influences to make them their own, and thus it has not been shown to be the case that all cultures will change in the same way as a result of their participating in the Internet and in the global communication network (Hongladarom, 2000, 2001a).

If this is indeed the case, then it is ultimately up to the cultures themselves to determine the course of their action regarding the Internet. The implication for the global digital divide issue is that at least a special set of vocabulary, that of philosophy of technology and analyses of computer-mediated communication and culture pioneered by Ess and Sudweeks, should be of value in aiding us to understand the complexities surrounding the global digital divide and global justice better.

INFORMATION TECHNOLOGY, EPISTEMOLOGY AND CULTURE

Ess and Sudweeks have done a lot to show that information technology, computer-mediated communication and cultures are interrelated to a great extent. We have already seen that information and communication technologies can indeed be considered a good, albeit in a secondary manner, and social inequality can indeed happen when one section of

the population has more of their products and benefits than another. In addition to these aspects, information and communication technologies do have their own special quality, which merits a separate type of discussion apart from the usual one in political and social philosophy when social inequality is discussed. Another reason for this is that information and communication technologies, including the Internet, are pliable and can be used in daily life in very diverse ways, and here is where the technologies share an intimate relation with culture. Apart from the older technological products, such as the tractor or the plough, which can be used only in a limited number of ways, computers can be programmed to do many tasks as many are of course familiar. Operating the tractor or the plough does not seem to require as much knowledge and skill as is needed for one to work on the computer efficiently.

In this sense the computer can be seen as a second-order technology, as opposed to the first-order ones exemplified by the tractor or the toaster oven. First-order technology, like the toaster, operates on a chunk of concrete reality, but computers do not directly do so, instead it operates on binary digits acting as symbols capable of referring to anything, including non-existent ones found in future plans, etc. It is true that the computers do actually operate on chunks of reality, namely the electronic signals representing ones or zeroes, but these do not mean anything and the binary digits always refer to something other than themselves. An older tool such as the abacus can actually do the same kind of work that the computer can do, though much more slowly. In this case the abacus can be considered a second-order technology also. But the immense speed and power of computers to operate on these electronic signals seems to make them a breed apart from the older tools, and even from the electronic calculator. Computers can be used in many ways, from playing video games to speculating on the stock market. The toaster or the automobile, as first-order technology, can do only limited things.

The epistemological implication of this is that, as a second-order technology, the computer's capability in manipulating symbols makes it a real sense an extension of the cognitive power of human beings. Traditionally, epistemologists are concerned with the normative problems of knowledge—what counts as knowledge, how a piece of information should be justified such that it becomes a piece of knowledge, and so on. However, with the influx of the information technology, these problems have expanded quite significantly in range. Goldman, for example, is calling for a revamp in how epistemology is done in that he

calls for a 'social epistemology' that takes into account the societal aspects of knowledge (Goldman 1999). Goldman writes:

In what respects is social epistemology social? First, it focuses on social paths or routes to knowledge. That is, considering believers taken one at a time, it looks at the many routes to belief that feature interactions with other agents, as contrasted with private or asocial routes to belief acquisition. This "social path" dimension is the principal dimension of sociality that concerns me here. Second, social epistemology does not restrict itself to believers taken singly. It often focuses on some sort of group entity—a team of co-workers, a set of voters in a political jurisdiction, or an entire society—and examines the spread of information or misinformation across that group's membership. Rather than concentrate on a single knower, as did Cartesian epistemology, it address the distribution of knowledge or error within the larger social cluster. Even in this second perspective, however, the knowing agents are still individuals. Third, instead of restricting knowers to individuals, social epistemology may consider collective or corporate entities, such as juries or legislatures, as potential knowing agents. This third approach will occasionally be taken in this volume, but only rarely (Goldman, 1999, pp. 4-5).

It is these aspects of social epistemology mentioned by Goldman, especially the one on distribution of knowledge across a group of population and societies, that most concern us here. Basically what Goldman has done is to relocate the focus of epistemology from the exclusive attention toward the individual knower to the wider array of individuals in groups and societies. Nonetheless, the normative interest of epistemology still remains. It is relocated in new problems concerning how the best approach in knowledge distribution across groups of individuals is to be effected, for example. Goldman's rough answer to this problem is that the distribution should be such that the amount of knowledge across the array of groups is maximized, where he defines knowledge roughly as 'true belief' (Goldman 1999, pp. 3-7). I will have no quarrel with Goldman's proposal in this paper (that was an occasion for another of my paper, see Hongladarom 2002), but I agree with his social epistemology project, especially on the normative problem of knowledge distribution, and it is here is most relevant to the topic of this paper.

The digital divide exacerbates the knowledge distribution problem in many ways. First of all, the divide clearly shows that knowledge distribution is skewed. As in individualistic epistemology, where the concern is on how to find the best route toward knowledge for an

individual. Here the concern is also on how to such a route for the society. The computer's role as the symbol manipulation tool for the modern age, its role as a second-order technology, makes it the key player in knowledge distribution. Secondly, when the discussion turns toward the global digital divide the focus then is on knowledge distribution across nations, hence the issue becomes intertwined that those in political philosophy. Thirdly, discussions of culture further complicate the issue because, as I will elaborate further in the essay, culture could be regarded as a sum total of the beliefs and practices of a group of people who have stayed together for a long time sharing a system of symbols, meanings and traditions together. Thus epistemic practice, which is the practice of the culture regarding production, dissemination and evaluating knowledge, plays an obvious role in the knowledge distribution and digital divide problems. A social epistemology that seeks to illuminate the digital divide problem needs to pay serious attention to cultures and their epistemic practices.

The computer's capacity to operate on anything that human beings can think of or talk about make it a very powerful tool. In this case computers can even operate on non-existent things like future plans and fictional works. As the works of Ess and Sudweeks show, culture permeates the use and design of information technology, and the second-order nature of information technology makes it the case that it functions as more as a transparent medium through which the content is transmitted, stored and processed. Since content depends largely on the goals and the agenda of all who are communicating through the medium, it is a perfect means by which the cultural traits of the people communicating with one another do emerge.

The capacity of computers to operate on symbols makes it a very powerful cultural tool. 'Culture' is taken here in the anthropological sense that refers to the sum total of a group of humans' symbolic and meaning-giving activities . Thus language is definitely part of human culture, as well as such all activities that have symbolic meaning attached to them, such as religions and ways of greetings. In this sense the computer can be regarded as a tool that facilitates and extends human symbol production and manipulation, in much the same way as the pencil and the paper, or the charcoal and the cave wall in the past. So there is a strong connection between computers and cultures. On the one hand, computers are a symbol manipulation tool par excellence, and human culture is nothing if not production and interpretation of symbolic representations. What Ess and Sudweeks have

found is that computers and computer-mediated communication have largely been co-opted into the worlds of the local cultures. Instead of computer use dictating how a particular local culture produces its own content and in what manner the computer itself is being used, computers and information technology have become integrated to the local cultures in such a way that the technology itself, the symbols being produced, and their meanings, are all included within the horizon of that culture.

Technological determinists may object to this, saying that it may be too simplistic to say that information technology is a transparent medium. After all, so the argument goes, operating a computer requires one to change many of one's habits. Firstly a stable source of electricity has to be installed, then the user has to have learned the skills needed to work on the computer, and then the computer itself requires one to work on it in a certain way which in a way limits the freedom of the user, such as when one has to follow the prescribed rules and choices of the operating system, and when the user seems to have no choice other than what is dictated them by the software. However, this does not necessarily mean that the user is constrained in such a way that her creative talents or her distinctive cultural traits that are not possible at all. Nowadays members of all cultures in the world do use pencil and paper as a matter of course and this older technology is so pervasive that one hardly pauses to think about it. Yet it does not seem that the identity of a particular culture does change as a result of the culture's adoption of pencil and paper. Furthermore, there is no denial that the culture itself also changes as a result of their adoption of the technology. The determinists in fact do have a point. Only that the technology and culture seem to determine each other, since one is part and parcel of the other, rather than one determining the other externally, so to speak (Warschauer, 2003, pp. 199-216).

This distinctiveness on the part of computers makes it the case that running it effectively requires much more knowledge and skill that is required for running the first-order technologies. Much more is needed before those who have not found a place in their lives for computers and the network to be fully 'computer literate' and to function in such a way that the inequality exemplified by the divide is alleviated. Education is of course important. The second-order characteristic of computer technology makes it the case that one needs to factor in epistemological considerations in a kind of philosophical endeavor to make sense of the whole phenomenon, as well as in any attempt to lay a foundation for a workable and effective policy for solving the digital divide problem. This is so because, in addition to the

fact that one needs to possess a certain amount of knowledge and skill in order to operate a computer relatively well, the second-order characteristic, the one that enables computers to work on symbols capable of referring to anything whatsoever, makes them prime epistemic tools which could prove to be instrumental in bridging the knowledge and information gap that undoubtedly exists in the world. And in this sense looking for ways to solve the digital divide should go hand in hand with solving the knowledge and information divide too. Furthermore, as the problem takes on a global dimension, the epistemological considerations become global too, and in the same manner, the digital/knowledge/information gap become global, which adds another dimension to the whole discussion. It is here that discussions on global/local epistemic practices have a role to play (Hongladarom, 2002).

THE DIGITAL DIVIDE AND THE KNOWLEDGE GAP

In "Globalization and Inequality: A Plea for Global Justice" (2002), Fred Dallmayr points out that there are three main areas of global inequality, namely power, wealth and knowledge. Thus he raised the knowledge distribution issue mentioned earlier as a serious problem facing the world today. The discussion on knowledge is the more interesting, since disparities in power and wealth are rather common place. According to Dallmayr, the global knowledge gap is exemplified by the fact that more than four-fifths of the world's output in science and technology comes from the West, that the vast majority of scientific and technological experts reside in the West, and that there exists in the West a policy guarding knowledge and information which has become highly precious commodity (Dallmayr, 2002, pp. 148-149). This gap is a result of the "expertocracy" and "Europeanization of the earth" (Dallmayr, 2002, p. 148). Dallmayr argues that the rise of globalization and the information and communication technologies has made it possible for the few who possess the technical know-how to rule over the majority of the world's cultures and population. These few who hold the power are the ones who manipulate the images and content of the mass media that is distributed via the global network, including satellite television, the print media and the Internet. The power exists through a manipulation of symbols and images through these media in such a way that the ordinary citizens of the world have become "image consumers and pliant tools of 'telegenic politicians and pundits' ruling over a 'televisual' or phantom democracy" (Dallmayr, 2002, pp. 149-150).

The technological determinist bent in Dallmayr's paper here is unmistakable. Taking a rather pessimistic stance, Dallmayr views the contemporary infusion of information and communication technologies as a system of control by which the world's population is mesmerized and virtually enslaved by the few manipulators of images and symbols who hold the real power. If the hold on the consciousness of the people through the 'information revolution' is a strict causal relation, then there are only two ways out—either abandon all information revolution altogether and build a protective shield around the people so as to prevent the effects of the technology from harming them, or staging another revolution and take the power of manipulating symbols and images to the people themselves. Following the first course sounds like one is trying to turn back the clock. Even today there are people who choose not to get connected to the outside world. But I think this is no longer a viable option for most people. The second alternative is a radical one. Looking at the mass media regime as a seat of political and psychological power and trying to destroy that power would mean that the people take the power of producing and distributing media images themselves. In fact this is already happening in case of the Internet. The problem is only that the images and stories being produced and disseminated are so huge in volume that the effects tend to cancel one another out. When there are billions of web sites to turn to, the power that one particular web site can hold on to someone's imagination is minimal indeed. More importantly, the technological determinist thesis is that it is the technology itself that is to blame; thus sharing the technology with a large number of population would just spread the blame to all over the place, and this does not seem to be a good solution.

The implication of Dallmayr's idea here on the global digital divide problem is that he reiterates the need for a critical stance on the media regime today. He reminds us that there still exists a huge knowledge gap between the West and the rest of the world in terms of production of scientific and technological output and other related measures, and that attempts to bridge the divide should proceed in an equitable and democratic manner. Bridging the divide, wiring the remote villages so that they have access to the Internet, should not be tantamount to ensnaring these people with the centrally produced media images so that they are forever addicted to them. Instead providing access to the Internet to the remote villagers should proceed in such a way that the technology needs to become integrated to the lives of the villagers themselves. According to Dallmayr, this does not seem possible because the premise of his argument is that the Internet is a kind of symbolic

manipulation on a grand scale by a few 'expertocrats'. But it is very important that the villagers, those on the receiving end of the divide, be helped so that they can stand on their own feet and take the Internet as yet another of their long list of tools that they rely on to make their living.

Another point is that Dallmayr seems to think that most knowledge comes from the West. The knowledge gap in modern science and technology may be the case, but this does not preclude there being systems of knowledge and technology that are indigenous to the local cultures. As I also pointed out in another paper, the digital divide problem can be solved partly through recognizing the knowledge potential in the local community and ways sought to make such knowledge and information 'transparent', meaning making it easier for the local knowledge and information to become a productive force (Hongladarom, 2001b). It is possible that such systems now lie dormant without being tapped fully for their potential. As philosophers and scholars in science studies such as Sandra Harding (1998) and Susantha Goonatilake (1998) have pointed out, there is a vast store of indigenous knowledge systems in the world's cultures and modern science itself owes its origin to these systems. Furthermore, locals have relied on these systems for centuries in their lives. It is only due to the mindset influenced by Western colonialism that regards modern, Western science and technology as the only possible knowledge and technological system. Moreover, Harding has also argued that Western science as it is currently practiced contributes to global inequality (Harding 2002). Hence, an account of how to bridge the knowledge gap should also include a recognition of the important role of indigenous systems, and, as Goonatilake has argued, such systems can indeed be 'mined' so that their treasures are revealed to the local people and the world at large (Goonatilake, 1998). In this sense, bridging the digital divide effectively also includes improving the local knowledge systems and the means by which the content of these systems can be effectively retrieved.

CONCLUSION

Some conclusions can be made from the previous discussion. Firstly, it is clear that the global digital divide is an issue of global justice. This is clearly a truism, but an implication is that deliberations on global justice needs also to pay attention to how the global digital divide problem is to be addressed. More specifically, one needs to find out exactly how the fruits of information and communication technologies are to contribute to global justice. If

provision of hardware and software is not enough, then what could be adequate? Are training and content sufficient? What kind of content? How should the training be developed? And what aim should the training be geared to achieve? These questions are all important, and obviously they cannot be answered satisfactorily in this paper. Much more work needs to be done.

Secondly, discussion of the normative aspects of the digital divide should also need to pay attention to the fact that computer technology is a second-order device, which makes it distinct from other, first-order social goods. The second-order nature of computer technology makes it the case that cultural epistemological considerations do have an important and necessary role to play; hence, policy deliberations on the global digital divide needs to pay attention to the role played by the epistemological considerations.

That is, the deliberation needs to consider the specificities of the culture and their epistemic practices. Hence I agree with Anthony Wilhelm's idea of the Digital Nation, especially when he says, "a Digital Nation is much more than industrial policy; it drives the social agenda as information, skills and knowledge become building blocks of a learning culture" (Wilhelm, 2004, p. 131). What this means is that a policy aiming at solving the digital divide problem first of all should start from the ground up. The locals themselves should be the ones who decide which kind of technology they will be using and according to what agenda. For example, for a rural village in Thailand, which is experiencing a host of changes and has become ever more tightly integrated with the world economy, attempts should be made toward computer literacy as well as installing the necessary infrastructure. But more importantly it is the emphasis on their own agenda, beliefs and values, that should take precedence. The villagers have their goals, their aspirations, as does everyone else. The problem is how to find a way, through the attempt to solve the digital divide problem, so that their goals and aspirations are realized. A necessary condition for that to happen is, I believe, that computers should be integral to their lives and not something foreign to them.

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ภาคผนวก

Chapter V

Global Digital Divide, Global Justice, Cultures and Epistemology

Soraj Hongladarom
Chulalongkorn University, Thailand

Abstract

The problem of global digital divide, namely disparity in Internet access and use among the various regions of the world, is a growing concern. Even though, according to some reports, the gap is getting narrower, this does not mean that the problem is disappearing, because the problem does not just consist in getting more people to become "wired", so to speak. This chapter investigates the various relationships among the global digital divide, global justice, cultures and epistemology. Very briefly stated, not getting access to the Internet constitutes an injustice because the access is a social good that can lead to various other goods. Furthermore, as information technology is a second-order technology, one that operates on meaning bearing symbols, access to the technology is very much an issue of social epistemology, an attempt to find out the optimal way to distribute knowledge across the social and cultural domains.

Introduction

The digital divide has been one of most talked about phenomena in recent years. Trying to bridge the gap has been on the agenda of virtually all public policy makers since the products of information and communication technologies started to become more common not too long ago. It is recognized almost universally that the digital divide, basically a gap in access to and use of information technology and the global network that access makes possible, and especially the *global* digital divide, represent a significant policy problem that governments at various levels in all countries feel the need to address. The amount of attention and, more importantly, of physical and intellectual resources devoted to the issue has been really staggering. It has been so intensive in recent years that the World Bank announced a little while ago that the global digital divide is indeed disappearing (*Digital divide closing fast*, 2005).

Hence it might seem that the topic of this chapter is beginning to be outmoded. After all, if the digital divide is really closing, then why should we be concerned with its ethical or social implications? The exercise may cease to be relevant for current public policy formulation and may indeed become one of history—what kind of social and ethical implications arose when the digital divide prevailed? However, I do not believe that discussing the ethical dimensions of the digital divide would become irrelevant; nor do I believe that we would cease talking about the phenomenon, even if it really is the case that it is indeed disappearing. For reasons that will be made clear in this chapter, the sheer fact that more and more households in the world are equipped with computer technology and are getting wired to the Internet does not automatically translate to the realization of all the goals and visions that characterized attempts to close the digital divide. Simply having a tool does not always mean that one uses it in the way that was originally intended. We are now just beginning to see how the tools of information and communication technologies are going to be used in the various localities around the world.

What I would like to do in this chapter is to begin to explore the relations between the global digital divide, global justice, cultures and epistemology. This is pertinent to the discussion earlier because attempts to bridge the global digital divide, I would like to argue, are a species of attempts to bring about global justice and that the attempts need first to start from an appreciation of local cultures and how these cultures view their own epistemic practices, which are invariably part and parcel of their own cultures. Nevertheless, I can do no more than present a brief sketch of the relations here, because to do justice to each of the aspects of the relations would take us further afield than the space of this chapter allows. The sketch is also intended as an invitation to further research. The World Bank report that the digital divide is disappearing everywhere may be convincing, but it does not lessen the urgency of making an effort to understand how these factors are related to one another. This

is so because simply providing the population with hardware and software and access to the Internet seldom suffices to realize the kind of “utopian” information society that the earlier pioneers and evangelists of information technology had in their visionary eyes.

Narrowing of the Global Digital Divide and the Persistence of Old Problems

It was just only slightly more than two decades ago that personal computers started to make their way into our lives; and the Internet started to appear on the scene little more than a decade ago. Yet these seem to most of us like ages ago. This points to the extreme speed at which the technology is evolving and spreading throughout the world. When it was in its infancy, proponents of information technology usually hailed it as a harbinger of a time when time itself and distance were eliminated. A result of this would be, in their view, a complete merging of ideas and information in such a way that every piece of information would be at everybody’s fingertips. Ideas such as democracy and freedom would float around the world and enter the consciousness of the people who would presumably take these ideas as a basis for changes in their own communities and societies. Knowledge would be readily available and the whole world will be blessed with better-informed and knowledgeable global citizens.

However, it seems that even as the digital divide is closing, these visions have not been fulfilled in many parts of the world. Universal knowledge, for example, is still a dream, as the near universal attempts at promoting the use of ICTs in schools can attest. Entz and Hongladarom (2004) argue that simply providing hardware and software to people seldom suffices in bringing about any kind of desired change in their worlds and communities. In the late 1990s the Thai government tried to bridge the digital divide problem in the country through a direct injection of hardware and software to villages. Computers were provided to village schools free of charge. What happened, however, was that many of the computers were not used to their full potential, and not in a way that would bring about any kind of universal knowledge or flow of information; many were not used at all. In many areas there was no electricity; in others there was a lack of qualified personnel who could operate computers reasonably well. Giving away computers in this case became a symbolic act of the powerful and centralized government, acting on its own without consultation with the village schools (Entz & Hongladarom, 2004).

The problems remain because there is no simple equation between possession of hardware and software on the one hand, and being able to use that software and hardware to their full potential on the other. Furthermore, it is difficult to say pre-

cisely what actually constitutes “using the computers to their full potential.” This alone requires much more conceptual and empirical study. Thus, one should not take the World Bank Report that the global digital divide is closing as evidence that the problems are disappearing. It may be the case that the World Bank Report does not specifically refer to the Thai case or similar ones, because they may already have factored in the conditions that would make computer access and use a real possibility before they announced that the gap is indeed closing. Thus, they might not have counted the Thai case as an example of the divide closing. Nonetheless, even if the scenario they are reporting is true, even if a proportionally large number of people, say in Africa and Asia, are actually using computers that are wired to the Internet, that by itself does not mean that the utopian dream is automatically realized. The old problems, of poverty, inequality and so on, seem to persist even in the face of the virtually total diffusion of ICTs.

To see how this is the case let us look at the utopian dream in more detail. Early proponents of diffusion of information technology have pointed out that ICTs could facilitate and engender rapid development in various areas, such as education, health care, finance and taxation, and many more. It was envisaged that the diffusion, in integrating data and information scattered in many places, would result in eradicating poverty in rural areas through providing needed information to the rural poor so that they could build up their capabilities and rise above the poverty line. The Ministry of Information and Communication Technology of Thailand (www.mict.go.th/), established in 2003, also subscribed to the idea, and has as one of its prime missions to facilitate development through bridging the digital divide within the country. In 2003 the Ministry had a plan of selling low-cost computers to the Thai population, and it contracted a number of hardware manufacturers to produce machines according to its own specifications in huge numbers so that the economy of scale would drive the price down to make the machines become more affordable. The operating system was originally set to be a version of localized Linux developed by a research arm of the Ministry. However, the buyer could also choose to have Microsoft Windows XP installed in these systems after Microsoft offered to sell their products at a much reduced price (Entz & Hongladarom, 2004). In early March 2005, the Ministry of Information and Communication Technology again declared a policy of providing 250,000 computers, together with broadband Internet connection, to schools nationwide. The stated target is one computer for 20 students and funds from the national budget are to be used. (*Lofty plans for schools*, 2005).

Despite these efforts, however, the promise of the information society has not been fulfilled. Of course empirical research on the local Thai context here is necessary to substantiate the claim, but as the Thai examples alluded to earlier show, providing hardware and software alone does not seem adequate. To date there have been no systematic studies to measure the effectiveness of these measures, and we can see the same line of thinking behind these policies, viz. centralized government acting as if the entire country were a pliant mold that they can shape whatever way they

want. In any case, many researchers have pointed out that attempts to bridge the digital divide require much more than hardware and software. In a background report to the InfoDev Symposium in Switzerland, Kerry McNamara says:

The presence or absence of ICTs (the "digital divide") is a symptom, not a cause. And the underlying causes of persistent poverty often have little to do, except indirectly, with the supply or absence of ICTs. By focusing on the "digital divide" (another in a long series of gaps that international development agencies have identified and sought to bridge over the past several decades) the proponents of ICT-for-development often misdirected their energies and weakened their own cause. (McNamara, 2003, p. 4)

Lisa Servon argues that one needs to change one's thinking about the digital divide and broaden the concept to more than the simple provision of hardware and software because when "we provide people with computers, we find that not much changes. IT on its own does not function as a ladder out of poverty" (Servon, 2002, p. 6). She indicates dimensions of the digital divide problem other than access, which have to do with training and content (Servon, 2002, pp. 7-8). Her findings indicate that access is an "incomplete solution" and that "tech-fix is a myth" (Servon, 2002, pp. 222-223). Even though the gap is narrowing, this does not necessarily show that the problem is disappearing, for she found that many who are using the computer a lot are actually performing low-level tasks such as data input or other secretarial tasks (Servon, 2002, p. 222). In addition, it seems that the technology provides resources, freedom, flexibility and opportunities for the already powerful group in society (Servon, 2002, p. 223). It seems, then, that the old problems of social inequality still persist, even in a supposedly "information-intensive" society where the global digital divide and the divide within countries are fast disappearing.

Much more, then, is needed to close the digital gap. It is, however, surprising that many policy initiatives still aim at doing nothing more than providing hardware and software infrastructure and hoping that they alone can do the trick. In an attempt to reformulate how the digital divide problem should be conceptualized, Mark Warschauer sees the issue as a problem of social inclusion rather than a divide, which he regards as too restrictive and as presupposing a binary opposition between the "haves" and "have-nots" which is not supported by the facts (Warschauer, 2003). According to Warschauer, the main aim of is not to narrow or to close the digital divide, but to find ways for marginalized groups to be included in sharing the benefits that information and communication technologies can bring about (Warschauer, 2003, p. 211). He spells out the need for thorough analyses of the social structures, problems, organizations and relations involved, which naturally are different from one context to another, as an important factor in any attempt to formulate policies in that context. Moreover, the capabilities of individuals need to

be promoted (Warschauer, 2003, p. 211). It is clear that Warschauer, too, does not see sheer provision of hardware and software as sufficient.

Global Digital Divide and Global Justice

The disparity between the amount of access to and usage of information technology among the nations of the world, to the extent that it exists in a form that constitutes inequality, is thus an issue of global justice. Many discussions of global justice by social and political philosophers have typically tended to focus on the more abstract aspects of the issue centered around the justification of global justice. Onora O'Neill focuses on the more theoretical aspect of global justice, arguing that Rawls's conception of justice is too restrictive and calling for the international organizations to play their part, even though these organizations do not, as a rule, have the kind of power needed to ensure justice in a "bounded" society (O'Neill, 2000). Andrew Hurrell argues that international organizations have a moral role to play in ensuring global economic justice and that they are "dense" enough to do the job. However, they "constitute a deformed political order," namely in distribution of advantages and disadvantages, in who sets the rules, in the capacity of states themselves to adjust to the economy, and in the "limited capacity of international laws and institutions to constrain effectively the unilateral and often illegal acts of the strong" (Hurrell, 2001, p. 43). Furthermore, Thomas Pogge argues that the Western nations have often put their priorities regarding global justice in the wrong place. He deeply criticizes the new global economic order led by the United States, which he sees to be responsible for mass poverty in the developing world. In her Olof Palme lecture, Martha Nussbaum calls for a new alternative theory of global justice to the dominant contractarian and Rawlsian one, or the one favored by Pogge, which attempts to broaden Rawls's conception across national borders (Nussbaum, 2004). She would like to base consideration of global justice on certain fixability of outcomes, rather than on fair procedure as is prominent in the contractarian theories. Following Amartya Sen, Nussbaum argues for a "human capabilities approach" of global justice that focuses more on facilitating the realization of certain human capabilities rather than on sheer provision of economic goods. Hence, narrowing the digital gap might presumably be included in the list of Nussbaum's list of capabilities also. Fred Dallmayr seems to be one of the rather limited number of philosophers who take up the gap in knowledge as a factor contributing to global injustice. Dallmayr (2002) issues a "plea for global justice," an action that is needed as a result of globalization and its consequent social and economic inequality across the globe. He indicates three areas of global inequality, viz. power, wealth and knowledge (Dallmayr, 2002). It is especially inequality in knowledge that is of particular concern in Dallmayr's paper and the next section of this chapter will be devoted to this.

What these philosophers share in common here is that they look at global justice from a wider perspective, emphasizing not only the actual contents of justice, but also the theoretical foundation—how a particular version of global justice is to be justified. Pogge, for example, argues that Western nations are morally bound to re-think their priorities in ensuring global justice. He does not spend much time in his paper detailing what a particular developing nation, such as Thailand or Cambodia, might need in order to achieve a kind of parity in terms of information and communication technologies that presumably would alleviate the problem. Nussbaum offers an alternative theory of global justice, but her paper does not focus specifically on how information technology itself should figure in an attempt to delineate the list of capabilities that should be fulfilled. Consequently, the time has come for an investigation of how the discussions on the global digital divide should have any bearing on those on global justice.

Taking the digital divide as an issue of global justice would mean that access to the benefits of information and communication technologies is a good—something, like health and opportunities, that should be equally shared among the population in the community. However, as it is by no means clear what actually constitutes the benefits of access to the information and communication technologies, more work still needs to be done to clarify this point. On the one hand, access to ICTs and the Internet should in itself be considered as a good, because, presumably, having it enables one to realize one's own goals and desires, just as being in possession of good health enables one to enjoy one's life and to perform activities that one could not do had one not been healthy. On the other hand, there are many people nowadays who choose not to get connected and not to use the computers at all, but these people are not considered unequal to others because they have other social and economic goods, such as an adequate level of income, education, welfare and so on. But there are not very many who would deny having good health. Hence it seems that having access to ICTs alone is not the answer. Moreover, we have seen in the last section that hardware and software alone are not enough to achieve the kind of parity that would qualify for there to be justice. Someone might counter that those who chose not to get connected did not get connected out of their own choice. They are not unequal to their peers, as mentioned, since they could easily get connected as soon as they wanted to, whereas those who are denied access, such as the rural poor in Thailand, would not get access to ICTs, even if they really wanted to. But this only shows that access to ICTs may not be a primary good, but a secondary good. A primary good is one that satisfies some basic need of those in possession of the good. Thus health is a primary good because just about everybody desires it for its own sake, as Aristotle said. Access to ICTs, on the other hand, appears to be more secondary, since having it enables one to enjoy other kinds of goods, such as information (in an age where information itself is considered a *good*) or income (through e-commerce). This points to the extreme importance of the content of the flow of data facilitated by the network. In some way the content being transmitted

through the network is itself a primary good, and the network is then a secondary good because it enables the former to be distributed to where it is needed. Thus, if one wants to tie this up with the global justice issue, one would then need to elaborate upon what it is that the possession of would reduce global inequality. Here knowledge, or epistemic practices, and culture have a very important role to play, and attempts to bridge the global digital divide effectively would not be successful if these are not taken into consideration.

Talking about the global digital divide as an instance of global justice is a step down toward the more specific from the often highly abstract papers on theories that the literature offers. It seems that taking the digital divide as an issue of justice would need a special set of vocabulary, because of the technical nature of the phenomenon. Most policy analysts and researchers on diffusion of ICTs in Thailand are bureaucrats working for the government. Most of them have a technical background and usually regard their jobs to be technical tasks of studying and conceiving policies in a rather formulaic manner. In Thailand it is usually the case that policy researchers on a technical issue consist of technicians in that area. Thus, it is mostly medical doctors who formulate the country's health care policy and it is usually engineers and computer scientists who propose policies to the government in the areas of information technology and the digital divide. This may stem from the Thais' belief that in technical matters, including policy studies on those matters, things are better left to the technicians or experts in question, since they know best about their own field. Hence, discourse on these topics is often couched in technical language and jargon, which further deepens the public's attitude toward such matters as being purely technical requiring technical solutions. Talks about the digital divide, in Thailand at least and presumably in other developing countries as well, are often couched in the technical jargon of computer scientists and network specialists. Thus a knowledge gap that is already in existence between the educated urban elites and the less educated majority in the countryside is exacerbated. The digital divide then becomes a symptom of a wider divide between the elites who seem to have everything and the poor who do not seem to have anything. And the use of specialist jargons by the authorities has become a symbol of power for them against the local villagers. If there is to be a solution to the digital divide problem, then language has to be considered too; and, as we shall see in this chapter, language is but one of the aspects of culture that needs to be taken into consideration in any attempt to solve the problem.

At any rate, the issue of the use of computer and specialist jargon in policy formation and deliberation is related to another, more theory-oriented, issue of which set of vocabulary is most suitable for discussion of the philosophical and ethical components of the digital divide problem. In fact, one might make the case that talking about the digital divide in this context does not require a special set of vocabulary, that is specific to the technology in question and that makes its discussion different

from talking about other goods, such as income and education. In this sense, taking the global digital divide as an issue of global justice is no different in principle from taking the global divide in health care as an issue in global justice. Since what is being emphasized here is the provision of health care to the world's population in a just and equitable manner, so too the provision of access to information and communication technologies should be in the same vein. No special vocabulary needs to be involved. However, the issue of which set of vocabulary is suitable is a very complicated one and cannot be treated in full detail in this chapter.

While this position is plausible, it is nonetheless the case that there are different levels of abstraction when one discusses global justice and its content, and these different levels make it necessary for there to be at least two sets of vocabulary to work with. This difference is not the same as that of the policy formulators mentioned in the previous paragraph. On the one hand, there is the general vocabulary that discusses global justice; this is often found in the literature on the topic among social and political philosophers. On the other, there is the special set of vocabulary that pertains to information and computer technologies in particular. This set is not the exactly the same as that of the technicians discussed earlier, for it focuses not on the technical nature of the technology, but on the more conceptual problem of how the diffusion of information technology is related to the goals and values of a community and the life-world of a people. Thus this latter set is more in tune with the conceptual resources found in philosophy of technology. In this sense, a case could perhaps be made that discussion of the global digital divide as an issue of global justice requires some set of vocabulary that is specific to the issue.

This set of vocabulary can be found, for example, in the works of philosophers of technology when they analyze the role technology plays in human life. One of the chief problems in philosophy of technology concerns technological determinism—the view that infusion of technology in society invariably brings about certain changes in the attitudes and structures of that society. It is well-known that this view is subscribed to by such philosophers as Martin Heidegger and Jacques Ellul. In the context of the global digital divide, the issue is whether the infusion of the technology, which is the aim of proponents of attempts to narrow the divide, would bring in certain changes which are inevitable. The early proponents alluded earlier in the chapter argued that the infusion would certainly bring about desirable changes, and it is clear that the belief is based on technological determinism. However, technological determinism is being challenged from many angles. Charles Ess and Fay Sudweeks (1998, 2000, 2001, 2002, 2004) have shown that the belief that computer-mediated communication will bring about certain inevitable changes in any culture where it is practised is unfounded empirically. This is mainly because cultures usually have within their resources the capability of “co-opting” these influences to make them their own. Thus, it has not been shown to be the case that all cultures will change in the same way as a result of their participating in the Internet and in the global communication network (Hongladarom, 2000, 2001a).

If this is indeed the case, then it is ultimately up to the cultures themselves to determine their course of action regarding the Internet. The implication for the global digital divide issue is that, at the very least, a special set of vocabulary, that of philosophy of technology and analyses of computer-mediated communication and culture, pioneered by Ess and Sudweeks, should be of value in aiding us to understand the complexities surrounding the global digital divide and global justice better.

Information Technology, Epistemology and Culture

Ess and Sudweeks have done a lot to show that information technology, computer-mediated communication and cultures are interrelated to a great extent. We have already seen that information and communication technologies can indeed be considered a good, albeit in a secondary manner, and that social inequality can indeed happen when one section of a population has more of their products and benefits than another section. In addition to these aspects, information and communication technologies do have their own special quality, which merits a separate type of discussion apart from the usual one in political and social philosophy when social inequality is discussed. Another reason for this is that information and communication technologies, including the Internet, are pliable and can be used in daily life in very diverse ways, and it is here that the technologies have an intimate relation with culture. While older technological products, such as the tractor or the plough, can only be used in a limited number of ways, computers can be programmed to do many tasks, as many are, no doubt, familiar. Operating a tractor or a plough does not seem to require as much knowledge and skill as one needs to work a computer efficiently.

In this sense, the computer can be seen as a *second-order* technology, as opposed to the *first-order* technologies exemplified by the tractor or the toaster oven. First-order technology, like the toaster, operates on a chunk of concrete reality. But computers do not directly do so, as they operate on binary digits acting as symbols capable of referring to anything, including non-existent things in future plans. It is true that computers do actually operate on chunks of reality, namely the electronic signals representing ones or zeroes, but these do not mean anything and the binary digits always refer to something other than themselves. An older tool such as an abacus can actually do the same kind of work that a computer can do, though much more slowly. In this case the abacus can be considered a second-order technology also. But the immense speed and power of computers to operate on these electronic signals seems to make them a breed apart from the older tools, even from the elec-

tronic calculator. Computers can be used in many ways, from playing video games to speculating on the stock market. The toaster or the automobile, as first-order technologies, can do only limited things.

The epistemological implication of this is that, as a second-order technology, the computer's capability in manipulating symbols makes it, in a real sense, an extension of the cognitive power of human beings. Traditionally, epistemologists are concerned with the normative problems of knowledge—what counts as knowledge, how a piece of information should be justified so that it becomes a piece of knowledge, and so on. However, with the influx of the information technology, these problems have expanded quite significantly in range. Goldman, for example, is calling for a revamp in how epistemology is done in that he calls for a “social epistemology” that takes into account the societal aspects of knowledge (Goldman, 1999). He writes:

In what respects is social epistemology social? First, it focuses on social paths or routes to knowledge. That is, considering believers taken one at a time, it looks at the many routes to belief that feature interactions with other agents, as contrasted with private or asocial routes to belief acquisition. This “social path” dimension is the principal dimension of sociality that concerns me here. Second, social epistemology does not restrict itself to believers taken singly. It often focuses on some sort of group entity—a team of co-workers, a set of voters in a political jurisdiction, or an entire society—and examines the spread of information or misinformation across that group's membership. Rather than concentrate on a single knower, as did Cartesian epistemology, it address the distribution of knowledge or error within the larger social cluster. Even in this second perspective, however, the knowing agents are still individuals. Third, instead of restricting knowers to individuals, social epistemology may consider collective or corporate entities, such as juries or legislatures, as potential knowing agents. This third approach will occasionally be taken in this volume, but only rarely. (1999, pp. 4-5)

It is these aspects of social epistemology mentioned by Goldman, especially the one on distribution of knowledge across a group of population and societies, that most concern us here. Basically what Goldman has done is to relocate the focus of epistemology from the exclusive attention toward the individual knower to the wider array of individuals in groups and societies. Nonetheless, the normative interest of epistemology still remains. It is relocated in new problems concerning how the best approach in knowledge distribution across groups of individuals is to be effected, for example. Goldman's rough answer to this problem is that the distribution should be such that the amount of knowledge across the array of groups is maximized, where he defines knowledge roughly as “true belief” (Goldman, 1999, pp. 3-7). I have no quarrel with Goldman's proposal in this chapter (that was an occasion for another of

my papers (Hongladarom, 2002), but I agree with his social epistemology project, especially on the normative problem of knowledge distribution, and it is this that is most relevant to the topic of this chapter.

The digital divide exacerbates the knowledge distribution problem in many ways. First of all, the divide clearly shows that knowledge distribution is skewed. As in individualistic epistemology, where the concern is on how to find the best route toward knowledge for an individual. Here the concern is also on how to find such a route for a society. The computer's role as the symbol manipulation tool for the modern age—its role as a second-order technology—makes it the key player in knowledge distribution. Secondly, when the discussion turns toward the global digital divide, the focus then is on knowledge distribution across nations; hence the issue becomes intertwined with those in political philosophy. Thirdly, discussions of culture further complicate the issue because, as I will elaborate further in this chapter, culture could be regarded as the sum total of the beliefs and practices of a group of people who have stayed together for a long time sharing a system of symbols, meanings and traditions together. Thus epistemic practice, which is the practice of a culture regarding production, dissemination and evaluating knowledge, plays an obvious role in knowledge distribution and digital divide problems. A social epistemology that seeks to illuminate the digital divide problem needs to pay serious attention to cultures and their epistemic practices.

The computer's capacity to operate on anything that human beings can think of or talk about make it a very powerful tool. In this case computers can even operate on non-existent things like future plans and fictional works. As the works of Ess and Sudweeks show, culture permeates the use and design of information technology, and the second-order nature of information technology means that it functions as more of a transparent medium through which *content* is transmitted, stored and processed. Since content depends largely on the goals and agenda of all who are communicating through the medium, it is a perfect means by which the cultural traits of the people communicating with one another emerge.

The capacity of computers to operate on symbols makes it a very powerful cultural tool. "Culture" is taken here in the anthropological sense that refers to the sum total of a group of humans' symbolic and meaning-giving activities. Thus language is definitely part of human culture, as well as all activities that have symbolic meaning attached to them, such as religions and ways of greeting. In this sense the computer can be regarded as a tool that facilitates and extends human symbol production and manipulation, in much the same way as pencil and paper, or charcoal and cave wall in the past. So there is a strong connection between computers and cultures. On the one hand, computers are a symbol manipulation tool *par excellence*, and human culture is nothing if not production and interpretation of symbolic representations. What Ess and Sudweeks have found is that computers and computer-mediated communication have largely been co-opted into the worlds of local cultures. Instead of

computer use dictating how a particular local culture produces its own content and in what manner the computer itself is being used, computers and information technology have become integrated to local cultures in such a way that the technology itself, the symbols being produced, and their meanings, are all included within the horizon of that culture.

Technological determinists may object to this, saying that it may be too simplistic to say that information technology is a transparent medium. After all, so the argument goes, operating a computer requires one to change many of one's habits. Firstly a stable source of electricity has to be installed; then the user has to have learned the skills needed to work on the computer; and then the computer requires one to work on it in a certain way which, in a way, limits the freedom of the user, because one has to follow the prescribed rules and choices of the operating system which means that the user seems to have no choice other than what is dictated them by the software. However, this does not necessarily mean that the user is constrained to the extent that her creative talents or her distinctive cultural traits are not possible at all. Nowadays members of all cultures in the world do use pencil and paper as a matter of course, and this older technology is so pervasive that one hardly pauses to think about it. Yet it does not seem that the identity of a particular culture does change as a result of the culture's adoption of pencil and paper. Furthermore, there is no denial that the culture itself also changes as a result of their adoption of the technology. The determinists do, in fact, have a point – only that technology and culture seem to determine each other, since one is part and parcel of the other, rather than one determining the other externally, so to speak (Warschauer, 2003, pp. 199-216).

This distinctiveness on the part of computers makes it the case that running it effectively requires much more knowledge and skill than is required for running the first-order technologies. Much more is needed before those who have not found a place for computers and the network in their lives can be fully "computer literate" and function in a way that alleviates the inequality exemplified by the divide. Education is, of course, important. The second-order characteristic of computer technology makes it the case that one needs to factor in epistemological considerations in a kind of philosophical endeavor to make sense of the whole phenomenon, and in any attempt to lay a foundation for a workable and effective policy for solving the digital divide problem. This is so because, in addition to the fact that one needs to possess a certain amount of knowledge and skill in order to operate a computer relatively well, the second-order characteristic, the one that enables computers to work on symbols capable to referring to anything whatsoever, makes them prime epistemic tools which could prove instrumental in bridging the knowledge and information gap that undoubtedly exists in the world. And, in this sense, looking for ways to solve the digital divide should go hand in hand with solving the knowledge and information divide too. Furthermore, as the problem takes on a global dimension, the epistemological considerations become global, too, and in the same manner, the

digital/knowledge/information gap becomes global, which adds another dimension to the whole discussion. It is here that discussions on global/local epistemic practices have a role (Hongladarom, 2002).

The Digital Divide and the Knowledge Gap

Fred Dallmayr (2002) points out that there are three main areas of global inequality, namely power, wealth and knowledge. Thus he raised the knowledge distribution issue mentioned earlier as a serious problem facing the world today. The discussion on knowledge is the more interesting, since disparities in power and wealth are rather commonplace. According to Dallmayr, the global knowledge gap is exemplified by the fact that more than four-fifths of the world's output in science and technology comes from the West, that the vast majority of scientific and technological experts reside in the West, and that there exists in the West a policy guarding knowledge and information as a highly precious commodity (Dallmayr, 2002, pp. 148-149). This gap is a result of the "expertocracy" and "Europeanization of the earth" (Dallmayr, 2002, p. 148). Dallmayr argues that the rise of globalization and ICTs has made it possible for the few who possess the technical know-how to rule over the majority of the world's cultures and population. These few who hold the power are the ones who manipulate the images and content of the mass media that is distributed via the global network, including satellite television, the print media and the Internet. The power exists through a manipulation of symbols and images through these media in such a way that the ordinary citizens of the world have become "image consumers and pliant tools of telegenic politicians and pundits ruling over a televisual or phantom democracy" (Dallmayr, 2002, pp. 149-150).

The technological determinist bent in Dallmayr's paper here is unmistakable. Taking a rather pessimistic stance, Dallmayr views the contemporary infusion of information and communication technologies as a system of control by which the world's population is mesmerized and virtually enslaved by the few manipulators of images and symbols who hold the real power. If the hold on the consciousness of the people through the "information revolution" is a strict causal relation, then there are only two ways out—either abandon all information revolution altogether and build a protective shield around the people so as to prevent the effects of the technology from harming them, or stage another revolution and take the power of manipulating symbols and images to the people themselves. Following the first course sounds like one is trying to turn back the clock. Even today there are people who choose not to get connected to the outside world; but I think this is no longer a viable option for most people. The second alternative is a radical one. Looking

at the mass media regime as a seat of political and psychological power and trying to destroy that power would mean that the people take the power of producing and distributing media images themselves. In fact this is already happening in the case of the Internet. The problem is only that the images and stories being produced and disseminated are so huge in volume that the effects tend to cancel one another out. When there are billions of Web sites to turn to, the power that one particular Web site can hold on to someone's imagination is minimal indeed. More importantly, the technological determinist thesis is that it is the technology itself that is to blame; thus sharing the technology with a large number of population would just spread the blame to all over the place, and this does not seem to be a good solution.

The implication of Dallmayr's idea here on the global digital divide problem is that he reiterates the need for a critical stance on the media regime of today. He reminds us that there still exists a huge knowledge gap between the West and the rest of the world in terms of production of scientific and technological output and other related measures, and that attempts to bridge the divide should proceed in an equitable and democratic manner. Bridging the divide, wiring the remote villages so that they have access to the Internet, should not be tantamount to ensnaring these people with centrally produced media images so that they are forever addicted to them. Instead providing access to the Internet to the remote villagers should proceed in such a way that the technology needs to become integrated into the lives of the villagers themselves. According to Dallmayr, this does not seem possible because the premise of his argument is that the Internet is a kind of symbolic manipulation on a grand scale by a few "expertocrats." But it is very important that the villagers, those on the receiving end of the divide, be helped so that they can stand on their own feet and take the Internet as yet another of the long list of tools that they rely on to make their living.

Another point is that Dallmayr seems to think that most knowledge comes from the West. The knowledge gap in modern science and technology may be the case, but this does not preclude there being systems of knowledge and technology that are indigenous to the local cultures. As I also pointed out in another paper, the digital divide problem can be solved partly through recognizing the knowledge potential in local communities and seeking ways to make such knowledge and information "transparent"—meaning making it easier for local knowledge and information to become a productive force (Hongladarom, 2001b). It is possible that such systems now lie dormant without their potential being tapped fully. As philosophers and scholars in science studies, such as Sandra Harding (1998) and Susantha Goonatilake (1998), have pointed out, there is a vast store of indigenous knowledge systems in the world's cultures, to which modern science itself owes its origins. Furthermore, locals have relied on these systems for centuries in their lives. It is only because of the mindset, influenced by Western colonialism that regards modern, Western science and technology as the only possible knowledge and technological system, that the potential of these systems have not been tapped. Moreover, Harding has

also argued that Western science as it is currently practised contributes to global inequality (Harding, 2002). Hence, an account of how to bridge the knowledge gap should also include a recognition of the important role of indigenous systems, and, as Goonatilake has argued, such systems can indeed be “mined” so that their treasures are revealed to the local people and the world at large (Goonatilake, 1998). In this sense, bridging the digital divide effectively also includes improving local knowledge systems and the means by which the content of these systems can be effectively retrieved.

Conclusion

Some conclusions can be made from the previous discussion. Firstly, it is clear that the global digital divide is an issue of global justice. This is clearly a truism, but an implication is that deliberations on global justice need also to pay attention to how the global digital divide problem is to be addressed. More specifically, one needs to find out exactly how the fruits of information and communication technologies are to contribute to global justice. If provision of hardware and software is not enough, then what could be adequate? Are training and content sufficient? What kind of content? How should the training be developed? And what aim should the training be geared to achieve? These questions are all important, and obviously they cannot be answered satisfactorily in this chapter. Much more work needs to be done.

Secondly, discussion of the normative aspects of the digital divide should also pay attention to the fact that computer technology is a second-order device, which makes it distinct from other first-order social goods. The second-order nature of computer technology makes it the case that cultural epistemological considerations do have an important and necessary role to play; hence, policy deliberations on the global digital divide need to pay attention to the role played by the epistemological considerations.

That is, the deliberation needs to consider the specificities of the culture and their epistemic practices. Hence, I agree with Anthony Wilhelm’s idea of the Digital Nation, especially when he says, “a Digital Nation is much more than industrial policy; it drives the social agenda as information, skills and knowledge become building blocks of a learning culture” (2004, p. 131). What this means is that a policy aiming at solving the digital divide problem first of all should start from the ground up. The locals themselves should be the ones who decide which kind of technology they will be using and according to what agenda. For example, in a rural village in Thailand, which is experiencing a host of changes and has become ever more tightly integrated with the world economy, attempts should be made toward computer literacy as well as installing the necessary infrastructure. But,

more importantly, it is the emphasis on their own agenda, beliefs and values, that should take precedence. The villagers have their goals and their aspirations, as does everyone else. The problem is how to find a way, through the attempt to solve the digital divide problem, for their goals and aspirations to be realized. A necessary condition for that to happen is, I believe, that computers should be integral to their lives and not something foreign to them.

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Section II:

Interdisciplinary Perspectives

Privacy, the Individual and Bioinformatics: A Buddhist Perspective

INTRODUCTION

Bioinformatics is a new field of study in which the power of computer technology is harnessed to process biological information; thus the field is an interesting one where the two major technological trends of the early twenty-first century, namely biotechnology and information technology, are fused together. The application of computers and information technology in biological science has been necessary because biological information is exploding at an exponential rate, and there are many applications that the utilization of computer technology could lead to breakthroughs. One clear area of the application is of course the use of computers to sequence the human genome, which would not have been even conceivable if not for the use of a large amount of raw computing power to crunch through all the information that is available. Moreover, as of now sequencings of many more animals and plants are being completed at a very fast rate.¹

¹ National Center for Genetic Engineering and Biotechnology (BIOTEC). 2001.

Bioinformatics and Computational Biology in Thailand: Outlook of Research and Infrastructure. Available at

http://knowledge.biotec.or.th/doc_upload/20041717159.doc and

Applications of these attempts at sequencing the genetic structure of organisms are rich and varied. Chief among them, of course, is the potential of using the information available in medicine. As many diseases can trace their origins to the genetic structure of the body, knowing what these structures are like is a very important first step toward successfully combatting them. Once the gene for a particular disease is found, it is thought that the gene can be manipulated in such a way that the disease is prevented, at least within a population. Another area of development is pharmacogenetics, which is the use of the available information to create new drugs that would zoom in only on certain types of individuals who are susceptible to certain kinds of disease.

A central concern among these new developments around the use of biological information and its manipulation by computers is on the individual and her relations to society around her. Bioinformatics has raised several ethical questions, and the discipline is a very interesting case that points to a possibility of an eventual merger of bioethics and computer/information ethics. Since genetic data are obtained from an individual, or a group of individuals, there is the question of who possesses the information in question.² Another issue concerns pharmacogenetics—the

<http://www1.stkc.go.th/stportalDetail.php?id=1560>, [Accessed 24 July 2006].

² G. Palsson & P. Rabinow. The Icelandic Genome Debate. *Trends in Biotechnol*

development and use of tailor-made drugs geared specifically on certain type of individuals according to their genetic predispositions, which has raised concerns about discrimination and others. Another, no less important issue, is centered around the information pertaining to an individual. Privacy is rightly a serious issue in both information ethics and in bioethics. In the former, there is a concern whether the privacy of an individual is compromised when, for example, the individual shares her personal information in a database, or when some information about herself or communicated by her is appropriated without her consent or knowledge. In bioethics, the concern is on the individual's biological data, and as computers have taken a more visible role in processing biological information, we are now seeing a convergence in information ethics and bioethics, as regards to the protection of the individual's biological information. It is a central concern of this paper to address this issue of privacy in the bioinformatic era.

Much work has been done on the topic of privacy in information ethics through cultural perspectives.³ What I intend to

2001; 19.5: 166-171, p. 167.

³ See, for example, C. Ess. 'Lost in Translation?': Intercultural Dialogues on Privacy and Information Ethics (Introduction to Special Issue on Privacy and Data Privacy Protection in Asia). *Ethics Inf Technol* 2005; 7: 1-6; R. Capurro. Privacy: An Intercultural Perspective. *Ethics Inf Technol* 2005; 7: 37-47; Hongladarom, S. Forthcoming. Analysis and Justification of Privacy from a Buddhist perspective,

do in this paper, however, is to present a group of questions that need to be addressed in order for one even to get off the ground in tackling the conceptual and normative questions surrounding privacy in bioinformatics. One of the most basic questions concern the status of the individual herself. Bioinformatics has indeed raised a very important metaphysical issue concerning the status of the individual. As it appears that the individual person is being reduced to a collection of bits of genetic information that could be stored and manipulated as any other type of data,⁴ there is the question of what an individual person is constituted by. Is it the case that the individual is constituted by the set of genetic and other type of

forthcoming from *Information Technology Ethics: Cultural Perspectives*. S.

Hongladarom, ed. Hershey, PA: Idea Group.; J. Moor. 2002. Toward a Theory of Privacy in the Information Age. In *Cyberethics: Social & Moral Issues in the Computer Age*. R. M. Baird, R. Ramsower & S. E. Rosenbaum, eds. Amherst, NY: Prometheus Books: 200-212; A. D. Moore Privacy: Its Meaning and Value. *Am Philos Q* 2003; 40(3): 215-227; and K. Kitiyadisai. Privacy Rights and Protection: Foreign Values in Modern Thai Context. *Ethics Inf Technol* 2005; 7: 17-26.

⁴ Dougherty, 2004, p. 280; Thacker, 2003, Wilson, 2002 See, for example, S. Dougherty. On Genetic Programs and Feedback Networks. *Configurations* 2004; 12: 263-285; E. Thacker. Bioinformatics and Bio-Logics. *Postmodern Culture* 2003; 13.2. Available at <http://muse.jhu.edu/journals/pmc/toc/pmc13.2.html> [Accessed 21 July 2006]; J. C. Wilson. (Re)writing the Genetic Body-Text: Disability, Textuality and the Human Genome Project," *Cultural Critique* 2002; 50: 23-39.

information that uniquely identifies him or her?

Considering that privacy is almost always taken to imply, more or less, protection of information *about* a person or an individual from prying eyes of the public or the authority, there is naturally a question concerning what kind of information and how much should information should be allowed. This is related to the metaphysical question concerning the status of the individual, which needs to be adequately addressed, and which is a subject matter of the rest of this paper. Moreover, I will address this topic through a perspective of Buddhism, which has a very interesting and potentially useful theory concerning the individual and her ontological status. Basically, I shall point out that, according to the Buddhist theory of Non-Self (*anatman*), the individual is more accurately understood to be a construct, and not something existing in and of itself. And there is an important sense in which the individual is constructed out of the whose set of information that uniquely identifies her. Hence there is an intricate interconnection among the individual, information and privacy, and I shall address this issue through a perspective on the Thailand SNP Project, which is an attempt by the country to join the bioinformatics bandwagon.

PRIVACY AND THE CORE SET OF GENETIC INFORMATION

How much genetic information should be allowed in the bioinformatic database in order that privacy of the individual is respected? In other words, in the attempt to gain the advantages that

come with retrieving and storing genetic information of individuals in a computer generated database while maintaining the principle of privacy rights, how much information pertaining to a specific individual, or to a group of individuals in a community, should be allowed? On the one hand, there seems to be a motivation behind an idea that *all* and *any* such information should be allowed, in order to make full use of the advantages, such as the potentials in biomedicine or biotechnology that would presumably benefit humankind as a whole. There might be an argument to the effect that *how much* information should not be the issue; what is the issue should instead be whether there are any mechanisms in place which allow only authorized people to have an access to the information.⁵ There does not seem to be anything related to how much information should be allowed.

However, there is a concern that such full allowance might lead to unscrupulous use of information, and the authority might find it tempting to use the information to their advantages, such as in genetic profiling and other discriminatory practices, or to seek political gains. If there were a core set of information that constitutes the heart of the individual, then such information should be handled with much care and sensitivity, for it is conceivable that this core information is nothing other than the very identity of the individual

⁵ J. Moor, *op. cit.* note 3.

herself. Moreover, in case of groups of individuals, the issue is also a parallel one, for a particular group might have its own identity, some set of information that defines the group as a unique one. For such a group, then, the core information is that which is shared by its members and whose possession entitles an individual to belong to the group. In certain socio-cultural cases, the core information that defines a group could well be much more important and politically sensitive than that of an individual alone. And it is here that bioinformatics, as an attempt to deal with genetic information of groups of individuals, comes to the fore as a potentially politically explosive enterprise.

The point is that, if such core set of information does exist, then care needs to be taken when information is obtained from individuals or groups of individuals in order that their privacy is maintained. It seems, moreover, that there is at least a case for the existence of such core information. Perhaps a core set of information for a group might be easier to define than that of an individual. One has to bear in mind that a core set of information is the set of information that defines an individual or a group of individuals to be that particular individual or that particular group alone and none other.

THAILAND SNP RESEARCH PROJECT

Starting in 2003, a team of researchers from the Ramathibodi Hospital, Mahidol University, initiated the "Thailand SNP

Discovery Project” (<http://thaisnp.biotec.or.th:8080/thaisnp>). The aim was to search for single nucleotide polymorphisms (SNP) in 64 selected general members of the Thai population (the number was then reduced to 32), in order to form a database on which other spin-off projects can be based, such as ones on pharmacogenetics, anthropological studies, genetic susceptibility to certain diseases, and so on. According to the words of the Term of Reference of the Project:

An SNP database will be completed of all genes identified in the whole human genome and their regulatory regions with allele frequency and LD block patterns in Thai and other (French, Japanese and African) populations. This database will also contain other information including genomic sequences, genomic structure, primer sequences, functional genomics etc.⁶

The database of the Thai population would be part of an international effort in creating like databases among the world’s population, which could spawn many further research works, both for clinical applications and for basic science, as well as further international collaborations.

In order to collect the blood samples for analysis, 32 ‘normal

⁶ National Center for Genetic Engineering and Biotechnology (BIOTEC).

Bioinformatics and Computational Biology in Thailand: Outlook of Research and Infrastructure, *op. cit.* note 1.

and healthy' Thai people were selected from around 6,000 volunteers. The selected underwent interviews of family history, health records, had some of their blood taken out, and the DNA from the blood samples were analyzed in a bioinformatics lab which was set up for the first time in Thailand as a part of this Project. It was hoped that some correlation might be found between the genetic structure available in the database and susceptibility to certain diseases, such as Thalassemia, which Thai people suffer more than the global population on average. There was also an interest in finding out "who the Thais really were" through physical anthropological research. Some of the samples were sent to France, which acted as the hub for the global SNP Project.

Essentially, the role of a SNP is to function as a marker for genetic disposition of a certain individual or groups thereof. A spin-off project of the Thailand SNP Project, as mentioned, is to find out whether there is a correlation between susceptibility to malaria and Thai people's genetic structure. According to the team,

[the] project aims to search for genes involved in genetic susceptibility to clinical malaria through genome screening linkage analysis. The study is based on a population from Suanpung village, Ratchaburi province, located near the Thai-Myanmar border. Its size is around 6,000, with 2,800 individuals having been followed up by the Faculty of Tropical Medicine, Mahidol University

since 1994 for parameters related to clinical malaria and other confounding factors. Family structures were established. The familial cases in the population studied have allowed us to perform a genome screening linkage analysis

(<http://thaisnp.biotec.or.th:8080/thaisnp/project>).

It is clear that there are ethical considerations in these endeavors. Firstly, the genetic profiling of the individuals in question need to be protected. In fact the research team has made sure that participants in their projects understood and signed their consent forms. However, there is another dimension regarding the amount of information that could be taken and stored that does not violate the principle of privacy. In this case, it is the aim of the project that provides a limit of the nature and the extent of information belonging to an individual that is obtained and processed. In the case of the malaria project, only the information pertaining to the individual's susceptibility to the diseases is relevant, and it would seem unethical to use the information in some other ways. However, since the individuals who participated in the project donated their tissue sample which naturally contains all the information about herself or himself, there is no natural barrier against the use of such information in some other ways. This perhaps explained why there are so many spin-off projects from the original SNP Discovery Project and this demonstrates the

tremendous power of genetic information and computational biology. Ethical guidelines need to be in place in this matter, and they should be unambiguously enforced.

Now the question is: To what extent does the privacy of the individual is threatened when she participates such a project like this one and donated her tissue sample? Is only the information that specifically related to genetic susceptibility to malaria relevant? Of course not, because there are many other diseases, and the genetic informational structure of the individual could point to other developments, such as a potential in developing tailor-made drugs, and so on. In most cases there is a delinking of the individual's social identity (her name, for example) and the genetic information belonging uniquely to her. But even though the information in question still is information *about* her, it uniquely identifies who she is. The information that uniquely identifies who she is as well as her identity is there. And in case of a group, the argument is similar. There should be a delinking of the identity of a group and the genetic information that identifies that particular group. For example, it is generally agreed nowadays that racial discrimination is ethically objectionable. However, genetic database might facilitate such discrimination through a system that links an ethnic group with certain genetic structure that belongs to individuals in the group. This linking is certainly not absolutely certain; it is always performed through statistical calculations—for example, this trait

could identify this ethnic group if members of the group show a higher concentration of the genetic trait than an average population.

In what follows I shall argue that any information that uniquely identifies an individual or a group of individuals is the 'core' information of that individual or that group, and as such the information needs to be protected if the individual's privacy rights, or the rights of the group, are to be respected. I will also present a brief Buddhist perspective and also a metaphysical analysis of the matter too.

THE CORE INFORMATION AND THE METAPHYSICS OF THE INDIVIDUAL

A formal definition of the core information of a person, p , might be given as follows:

A set of information, S , represents the *core* set of information regarding a person, p , just in case S uniquely identifies p .

Correspondingly, here is the definition for a group.

A set of information, S^* , represents the *core* set of information regarding a group of persons, G , just in case S^* uniquely identifies G .

Philosophers will immediately recognize this to be very similar to describing an *essential* property of an object or a group of objects. An essential property is just the property that uniquely identifies the identity of the object having it. The idea is as old as Aristotle. In the

contemporary context of bioinformatics, the idea about essential properties could become that of the *genetic* information possessed by an individual. The very idea of being able to link genetic information to the identity of an individual at all is based on the notion that genetic property is an essential property. It uniquely identifies an individual and more than that it seems to indicate *who* he or she really is. According to Eugene Thacker, “[b]ioinformatics is both a suggestive trope and a material practice which provides an example of the ways in which the scientific body is currently being reconfigured and reorganized, largely through an intersection of developments in biotechnology and the Web.”⁷ What is reconfiguring and reorganizing the scientific bodies of human beings are precisely the tools enabled by bioinformatics, which utilize computer technology to manipulate bodily data. In this case, there is an intriguing interconnection between the individual and her set of information, so much as, as I shall argue later, that the very putative self of the individual can be found in the information itself.

This is what is potentially very sensitive and controversial about genetic information. The idea behind the Thailand SNP Project, for example, very clearly shows this belief in genetic properties as essential properties. The SNP Project people would like to find a genetic trait of the Thai population that serves to identify

⁷ E. Thacker, op. cit. note 4.

the population as Thai and not, say, Burmese or Vietnamese or Japanese. Genetic information determines the very ethnic identity of a population.

BUDDHISM AND THE INDIVIDUAL

The distinction between essential and non-essential properties, or in the parlance of this paper, the core and the non-core set of information, has become suspect in recent days. Many philosophers, for example, have become disenchanted with the idea of essentialism and proposed arguments such that such a distinction is not based on objective facts at all, but instead on our own convenience in distinguishing things for our own purposes. Hence the distinction between what is essential and what is not depends more on whether we regard something as very important and indispensable (to our own context-bound agenda), or not. In this case, genetic structure that determines the identity of an individual thus is regarded more like something that serves the purpose of sorting individuals out based on genetic criteria, and not as a property that exists in perpetuity. The sorting is performed in a pragmatic and piecemeal fashion rather than in any sort of way that reflects objective reality.

This view is well in accord with that of Buddhism. A basic idea of Buddhism is that things in objective reality are 'empty of their inherent existence.' What this means is that there is no essence to anything. What a thing is, what separates it from other things, is just

a result of human being's convenient designation through concepts and language. According to the Buddhists, there is just no real distinction between essential and non-essential properties and thus between the core and the non-core set of information that we have talked about. This, as I shall show, has a profound implication on what we should take privacy to mean and on any system of justification of privacy.

There being no essential property beyond convenient designation points to an interesting conclusion that justification of privacy is based, not on the traditional mode of metaphysics of the individual, in which an individual is an atomic autonomous unit to be accorded with a group of rights, including the right to privacy, but on a 'convenient designation' based on the realization that a society that respects privacy of the individuals is somehow a 'better' place to live than the one that is not.⁸ In this case the distinction between the core and the non-core sets of information remains. It is only how the distinction is understood and justified that is changed. And my view is that, understanding the core/non-core distinction in this way might serve better to formulate concrete policies or guidelines regarding privacy and data protection than with the traditional conception. And here the Buddhist contribution is a clear

⁸ S. Hongladarom. 2005. Electronic Surveillance in the Workplace: A Buddhist Perspective. In *Electronic Monitoring in the Workplace: Controversies and Solutions*. J. Weckert, ed. Hershey, PA: Idea Group: 208 - 225.

one.

According to Buddhism, what is understood to be the self is a result of causes and effects and the conception of self arises out of a kind of grasping onto these disparate and juxtaposed episodes of causes and effects, resulting in an illusion that the self actually exists while in fact it does not. This point, known as the Doctrine of Non-Self (*anatman*) is unique to Buddhism among all the religions in the world. A passage from the *Guide to the Bodhisattva's Way of Life*, one of the most celebrated texts in the Buddhist world, has it as follows:

First, with your own intellect, peel off this sheath of skin,
and with the knife of wisdom loosen the flesh from the
skeleton.

Breaking the bones, look inside at the marrow and
examine for yourself, "Where is the essence here?"⁹

The idea here is that the essence of a person, or his or her individual self, is nowhere to be found. According to the passage, it is clear that the self, if it existed, is not something that can be directly perceived. In this case the self is clearly not identical with the body, but it is not identical with the mind either, for it is very difficult to pinpoint what exactly in the mind, which consists in series of mental episodes one occurring after another, that corresponds exactly with the self.

Furthermore, in the *Fundamental Wisdom of the Middle Way*,

⁹ Santideva. (1997). *A Guide to the Bodhisattva Way of Life*. Translated by Vesna A.

another well known text, there is a passage describing how what is understood to be the self is analyzed:

If the self were the aggregates,

It would have arising and ceasing (as properties).

If it were different from the aggregates,

It would not have the characteristics of the aggregates.¹⁰

Briefly, what this verse means is that, if the self were the same as the aggregates that all together constitute what is normally taken to be the self (one might understand the aggregates roughly to be the body and the mental episodes that make up a conception of a self), then the self would be subject to arising and ceasing.

However, this cannot be the case because one's own self does not just comes to be and ceases to be very rapidly, unlike what is in fact taking place in our bodies. When one understands the body to be one's own self, when one is pointing toward it, for example, what is being pointed to is then analyzed, and then a series of questions is asked. Is what is pointed to, which is understood to be the self, identical with the body? The answer is no because the body changes and replenishes itself in a relatively short period of time, whereas

Wallace and B. Alan Wallace. Ithaca, NY: Snow Lion: V: 62-63.

¹⁰ Nagarjuna. 1995. *The Fundamental Wisdom of the Middle Way: Nagarjuna's Mulamadhyamakakrika*. Translated by Jay Garfield. New York: Oxford University Press: XVIII: 1.

the self is taken to be constant. Then there is the question whether the self is identical with the mind, and the answer is again no because our mental episodes change even more rapidly than our own bodies. We think one thing a moment and then another thing in another moment, and it is characteristic of the mind in that it takes upon the characteristics of the things it thinks about. However, if one were to think that the self were different from the aggregates, one would also be laid in another dilemma because what is normally taken to be the self, what it actually is, is always in terms of body and mind, in other words in terms of the aggregates. Hence to understand the self to be separate from the aggregates is unacceptable either. Nagarjuna's conclusion is that the self does not actually exist, it only appears to exist due to our own grasping on to things. In any case, the Buddhist's conclusion is that what is understood to be the self is only a result of an illusion, not unlike the illusion one has when one sees a reflection on hot sand to be a pool of water.

BUDDHISM AND BIOINFORMATICS

Now, what relevance does this teaching have on the attempt to analyze and justify privacy and data protection in bioinformatics? The idea of privacy is based on the notion that there is a self and that the self is constituted through a system of information about it which needs to be protected from prying eyes. However, if Buddhism teaches that the self does not inherently

exists, then there seems to be a problem of how Buddhism could have a theory of privacy. Nonetheless, the idea that the self does not inherently exist does not imply that it does not exist at all. We can certainly refer to our own selves, only that in deeper analysis we find that such a self is merely a result of causes and effects and does not exist on its own. Nonetheless, that does not preclude there being such a self as a referent to normal use of language and normal understanding.

If this is the case, then for Buddhism there needs to be a system where the concept of privacy is analyzed and justified. In my previous paper, I have attempted to do precisely this.¹¹ The idea is that there is a theory of privacy in Buddhism which is a pragmatic one. Privacy is justified through its role in furthering and fulfilling certain sets of goals that human communities find important. One of these goals, for example is that individuals in a society should be protected as regards to the set of information which they find dear to themselves and which they do not want to divulge to the public. This is a matter of respect for individuals. The same also applies to groups sharing more or less the same genetic traits; they need to be respected too. The question then is how such respect is justified, and in Buddhism this is justified through the fact that the respect in question plays a large role in enabling certain kinds of things that

¹¹ S. Hongladarom, *op. cit.* note 3.

communities find enriching and satisfactory. Guaranteeing the privacy rights of the individual is part and parcel of a kind of society that respects individual integrity, where the authority is not given absolute power to do anything they please. And since these are now considered to be desired goals, and since it is a fact of the matter that privacy is necessary for furthering these goals, privacy is then justified according to Buddhism.

In other words, Buddhism teaches that the individual self is a construct, which does not mean that the self does not exist at all. Since it is a construct it is so constructed out of certain type of material, and here the role of information in constituting an individual is very important. Individuals are constructed out of information, and if this is the case, then the attempts in bioinformatics to manipulate genetic information of an individual or groups of them would risk endangering their very selves and identities. Even though the individual self does not, strictly speaking, exist, there does clearly exist the information pertaining to an individual, and since some kind of information could be regarded as the core for a particular individual, this information needs to be protected. Hence the need for privacy in bioinformatics according to Buddhism. The problem then is, for Buddhist societies at least, how to protect the privacy of personal information while not necessarily compromising the need for scientific progress and development.

INFORMATION AS PART OF THE (CONVENTIONAL) SELF

This need to find a balance between scientific progress and ethical, regulative requirements is as old as bioethics itself. Opponents to bioethics have pointed out that bioethics has raised false alarms, that they tend to cry out too loud when there is not so much danger, and so on. In the case of privacy, there is an obvious need to formulate clear guidelines and regulations on this issue, and it has been my purpose here to point that Buddhism has a role to play too. As the 'core' set of information is not, objectively speaking, out there (because since the individual is herself a construct, any differentiation of individual-constitutive information as 'core' or 'non-core' is a construct too), it exists nonetheless in the practical fashion out of the need to protect privacy. There seems to be a need to distinguish between what kind of information should or should not be allowed. And since it is ultimately the goals shared by members of a society that provide the final say, any such attempt should refer to these goals. More specifically, the Buddhist viewpoint is such that the individuals in question, whose genetic information is to be obtained and stored in a computerized database, should have a clear role to play in any kind of decision making on how such information is to be manipulated.

This point underscores the need for more democratization in decision making in bioinformatics. This is more than allowing the research participants the ability to 'recall' their own genetic information from the database as stipulated in some informed

consent forms. Often this is not possible unless the scientists maintain a linking system that could link up bits of genetic information to their owner. In many cases decisions in scientific enterprises such as a research project involving bioinformatics are made by the investigators without even bothering to consult the individuals whose tissue samples were taken for information. It is indeed true that there is a requirement for these individuals to read and sign informed consent forms, whose idea is based on the notion of fully functioning, autonomous individual. This idea, however, is being criticized by many, especially those coming from cultures which do not have such a tradition.¹² According to the Buddhist perspective, although the individual self cannot be objectively found to be essentially there, this does not preclude the fact that such a self does indeed exist. There is an important distinction in Buddhist teaching between the 'ultimate truth' and 'conventional truth'; the former is the kind of truth at the level of immediate perception of

¹² See, for example, R. Klitzman. Complications of Culture in Obtaining Informed Consent. *Am J Bioeth* 2006; 6.1: 2-21; C. C. Macpherson. Research Ethics Committees: A Regional Approach. *Theor Med Bioeth* 1999; 20: 161-179; L. London. Ethical Oversight of Public Health Research: Can Rules and IRBs Make a Difference in Developing Countries. *Am J Public Health* 2002; 92.7: 1079-1084; Turner, Leigh. From the Local to the Global: Bioethics and the Concept of Culture. *J Med Philos* 2005; 30.3: 305-320; and P. Walter. The Doctrine of Informed Consent: A Tale of Two Cultures and Two Legal Traditions. *Issues Law Med* 1999; 14.4: 357-375.

reality without the distorting medium of conceptualization; the latter, on the other hand, is the kind of truth which is familiar and based on linguistic categories. For Nagarjuna, the two truths point to one and the same basic reality, and it is a mistake to take one to be more prior or more basic than the other.¹³ What this implies in our case here is that there is indeed a self, conventionally speaking, and as a consequence such a self needs to be treated with respect. This is in accordance with another part of teaching of Buddhism, one that it shares with other religious traditions, on the dignity of the individual or the person. Since the information being manipulated in the bioinformatic database is part and parcel, indeed part of the very self of the individual whose tissue samples have been taken in the first place, it can be regarded that the information in the database consists of none other than the parts of the *selves* of these individuals. But if this is so, then the principle of respecting the individual self implies that this information needs to be respected, since it is the selves of the individuals, then they should have some roles to play in saying how these parts of themselves are to be processed and manipulated.

Putting the point differently, this implies that decision making regarding how genetic information is to be used should be more democratized. There should be a mechanism, beyond the

¹³ Nagarjuna, *op. cit.* note 10, XXIV: 8.

traditional informed consent form, by which individuals who in some substantial way do exist as genetic information stored in the database are respected. What this means for privacy is also clear. If the selves of the individuals do exist in the database as information, then their privacy needs to be respected too. And as there is no hard and fast distinction between the 'core' and the 'non-core' set of information (because such a distinction would entail that the individual is an inherently existing substance), the distinction is then based on practical terms and the principle of democratization described above implies that it should be the individuals themselves who by and large decide on what is the core or the non-core set of their own information.

CONCLUSION

To conclude, the Buddhist teaching on the identitylessness of the individual points to the fact that, although the individual does not possess her own individual essence or substance, she is still entitled to privacy rights regarding her genetic information in the bioinformatic database because part of her being is constituted by the very information that is stored there. Moreover, the Buddhist viewpoint is such that this conclusion is strengthened; the reason is that even though there is no objective, substantial essence to the individual, her empirical, conventional self is still there and there being no objective, substantial self means that she can be constituted by a set of information. When there is no essence to be found, she

can lay claim to the information in the database more forcefully because it is ultimately speaking the convention that determines the extent of her identity, and since values and norms are judged in Buddhism more in reference to pragmatic goals rather than to objective, transcendent rules, there is a clear way to show that the information is part of her own being. A consequence is, of course, that her privacy should be protected accordingly.

ACKNOWLEDGMENTS

Research leading to this paper has been made possible in part by a grant from the Thailand Research Fund, and from Chulalongkorn University in setting up the Center for Ethics of Science and Technology.

NB: Please do not use multiple footnotes in the text (i.e. 1,2,3). Use one footnote for multiple references, where required, for example:

J. Steiner & M.A. Earnest. The Language of Medication-Taking. *Ann Intern Med* 2000; 132: 926-930; C. Cameron. Patient Compliance: Recognition of Factors Involved and Suggestions for Promoting Compliance with Therapeutic Regimens. *J Adv Nurs* 1996; 24: 248; D. Lowry. Issues of Noncompliance in Mental Health. *J Adv Nurs* 1998; 28: 280-287.

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- Spell numbers one to nine inclusive; then 10, 11.....
- Include commas in 5 figure numbers, e.g. 21,000. This is not necessary in 4 figure numbers, e.g. 5600
- Percentages should be written as, e.g. 5%, 37.5%
- Dates should appear in the following form - 4 January 2006 (when located in body of text) and 4 Jan 2006 (when located in web access dates in footnotes)

Italics

- Use italics: for foreign words not in common usage; titles of published books, journals & organisational statements/declarations (e.g. Universal Declaration of Human Rights)
- Do not use italics for article titles, chapter titles. Enclose these in single quotation marks
- Government Acts and Bills should be in title caps. They should not

be in italics or within quotation marks

- Italics can be used for emphasis

Further Journal Conventions:

- 'et al.' should not be italicised
- References to US towns/cities should include state, e.g. Washington, DC.
- Standard abbreviations such as Prof, Dr, PhD, MA, BS do not require to be punctuated by full stops
- Do not use underlining or bold type - use italics for emphasis
- When referencing authors, their initials should be separated by a full point but no space, e.g. F.A. Chervenak
- Terms such as, e.g. government, cabinet, the court, editors, president, should be lower case unless part of official name
- Terms such as, e.g. north, south, enlightenment, holocaust, should not be capitalised unless used in the form of a proper noun, e.g. southern Africa; the disease had a greater impact on the west of the country; the effects of a nuclear holocaust; victims of the Holocaust during the period of WWII; the Enlightenment period that developed in the West

Some punctuation issues

- There may not be a 'sociology of ethics', (comma outside quotes)
- So it can be argued that there exists a 'theory of social and moral development'.³ (full stop outside quote/superscript outside full stop)
- When a quote is complete, the full stop should be inside the inverted commas. E.g. X argued that: 'The bioethical approach to research is mandatory when researching HIV/AIDS.'
- ...as a result of monitoring. (When such a circumstance occurs, it can be regarded as a direct effect of the bioethical gaze.) (full stop inside parenthesis when full sentence is enclosed within parenthesis)

Acknowledgements

Acknowledgements should be located at the end of the manuscript and not in the footnotes

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Turning Digital Divide into Digital Dividend: Anticipating Thailand's Demographic Dividend

Soraj Hongladarom

Department of Philosophy, Faculty of Arts, Chulalongkorn University

Achara Entz

College of Population Studies, Chulalongkorn University

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Introduction

In the near future, Thailand will enter a period in which the working age population will be the highest in proportion compared with other age groups. This situation, where the decline in fertility rate is accompanied by decline in mortality rate, yielding a period where the ratio of the working age group increases, is dubbed the 'demographic dividend'. It has a potential for a very strong economic growth, and what makes it so important is that it happens only once and lasts for a relatively short time. As the ratio of the working age population increases, there is a strong potential for high rate of return, provided that the right policies are in place. However, as this group ages, the benefit resulting from the dividend will enter a period of decline since the later generation will have to take care of them. Moreover, there is no guarantee that the increase in the working age population will invariably yield higher productivity and growth. This can be the case for a simple reason that if the increasing working age group does not have opportunities to turn their strengths into tangible results, then it is hard to imagine how such a boom in population will turn toward growth.

Thus it is imperative that Thailand search for her own ways to take fullest advantage of the coming demographic dividend. Since the working age group will undoubtedly underpin further economic growth as they lay a foundation on which further development is secured, the need for clear policies on how best to take fullest advantage of this situation is more than doubled. In this paper, we would like to offer another aspect of how to take advantage of the situation. We will show that one of

the most important ways to take the advantage is to find out ways to solve the digital divide problem. We will argue that there is a strong converse relation between the demographic dividend and the digital divide, and that the digital dividend that results from solving the digital divide problem will go a long way toward contributing to the demographic dividend. That is, we argue that preparing for the demographic dividend requires that we address the digital divide problem; the digital dividend would then need to be a part of the demographic dividend. This, we further argue, cannot be the case unless attention is paid to how culture and technology are intertwined, and unless attempts to solve the digital divide take into consideration both the 'hardware' problem of providing the physical infrastructure and the 'software' problem of inculcating the mindset, attitudes, skills and know-how that go hand in hand with effective use of computer technology.

The paper will be divided as follows: In the next section we provide a review of empirical studies done on both the demographic dividend and the digital divide. Specific attention will be paid to the debate on whether and how population growth or decline has an impact on economic growth. The current theory of Bloom, Canning and Sevilla (2003), who apparently coined the term 'demographic dividend' will be discussed. Afterwards we discuss the theories and debates on the digital divide. Then we go on to discuss past attempts of the Thai governments to solve the digital divide problem. We shall see there what lessons can be learned from these attempts so that we can formulate the right policies on this matter. And in the last section we provide our detailed argument based on the findings in the previous sections.

Key Concepts and Empirical Studies

The Demographic Dividend

In *The Demographic Dividend: A New Perspective on the Economic*

Consequences of Population Change (2003), Bloom, Canning and Sevilla introduces the concept as a way to refer to the phenomenon where the age structure of the entire population is such that it is conducive to a burst of economic growth.

According to them, "...if most of a nation's population falls within the working ages, the added productivity of this group can produce a 'demographic dividend' of economic growth, assuming that policies to take advantage of this are in place" (Bloom, Canning and Sevilla 2003: xi). These policies concern the areas of health, family, labor, finance, human capital and education, as well as policies that promote labor-market flexibility, openness to trade and savings (Bloom, Canning and Sevilla 2003: xiii). The authors are clear that the process that leads from the demographic boom in the working age population and economic growth is not automatic. It lies within the power and the capabilities of the relevant policy makers to lay out ways toward maximizing the available dividend.

There have been many debates among economists and demographers over the relationship between population change and economic growth. Three theories are supported by research evidence and widely publicized, including: (a) the Pessimistic Theory; (b) the Optimistic Theory; and (c) the Neutralist Theory. They are well described by Bloom, Canning, and Sevilla (2003: 2-20) and can be summarized as follows:

The Pessimistic Theory—This theory is concerned with the impact on economic-growth restrictions of the rapid population growth after World War II resulting from the gap between declining mortality and continuing high fertility in much of Asia, Latin America, and the Middle East. In the Late 1940s, the concept of excessive population growth as a threat to food supplies and natural resources was introduced by conservationists; however, this can be traced to Thomas Malthus,

whose pessimism about the pressures of a rapidly growing population and insufficient food production is well known. Not only can population numbers affect demand for fixed resources; they can also affect capital intensity, since a large part of investment is used to supply the needs of a growing population, rather than increasing the level of provisions per capita.

The Optimistic Theory—By the early 1980s, economists and demographers started to reject the Pessimist view. Evidence showed that during the time the world's population doubled, per capita income increased by about two thirds. In addition, rather than being constrained by fixed resources, there has been progress in technology, social and institutional innovations, and political participation. The views of a group of "Population Optimists" who promotes the idea that population growth can be an economic asset, have been supported. However, this group is not dogmatic about the positive impact of population growth; instead, they take a broader view, suggesting that a multiplicity of external factors is responsible for the consequences of population growth, and these factors can have either positive or negative economic consequences.

The Neutralist Theory—The statistical correlation between population and economic growth was analyzed, and little significant connection was found. It was found, however, that the portion of economic growth unexplained by factors such as country size, openness to trade, educational attainment of the population, and quality of civil and political institutions have little correlation to population growth rates. This means there is little cross-country evidence that population growth impedes to promote economic growth. This result seems to justify the Neutralist Theory, which was dominant since mid-1980s.

Bloom, Canning, and Sevilla (2003: 20-21) argue that all of these theories tend to ignore the important dimension of population dynamics: the changing age

distribution within population as they grow. These transitions of age structure are as important as population growth. Each age group in a population behaves differently, providing distinct economic consequences. Policymakers must pay attention to these effects of changing age structure into decisions about their countries' future.

In the next decade, the declines of both mortality and fertility will lead to an opportunity for most developing countries to improve their living standards, by capitalizing on the consequent demographic transition, where the number of working-age adults grows large relative to the dependent population. Thailand is one of the developing countries experiencing these transitions. According to Wongboonsin (2003:2), the proportion of Thailand's population aged under 15 will decrease from 24.65 percent in 2000 to 17.95 percent in 2025; while the proportion of population aged 60 and over will increase from 9.43 percent to 19.99 percent in the same period. However, after the increase of the proportion of working-age population (15-59) from 65.92 percent in 2000 to 67.08 percent in 2009, it will continuously decrease and reach 62.05 percent in 2025. These changes of proportions of Thai working-age population indicate that demographic dividend will take place only in the next six years.

The Digital Divide

In general, the term 'digital divide' refers to the inequality of access to and benefiting from the new information and communication technologies. Since these technologies have played tremendous roles in the development of economies, it has generated a lot of debates and discussion in today's world. According to Toby Arquette, there has been an explosion of talks, conversations, reports, research works, media coverage, and so on about the issue:

A convenience sample of newspapers, journal articles, newswires, and similar mass media sources in the Lexis-Nexis database from January, 1990 to December, 2000, reveals that 14,123 addressing the digital divide appeared. Even more revealing is the explosion in frequency in coverage of the digital divide issue: 1995, 3 stories; 1996, 31 stories, 1997, 43 stories; 1998, 316 stories; 1999, 2054 stories; 2000, 11,676 stories. This represents almost a 3000% increase in issue coverage since 1995. As of July 2001, 4,457 stories are devoted to the digital divide issue (Arquette, 2002: 9).

It is quite clear that stories about the digital divide have a strong appeal to the public imagination. This is perhaps due to the fact that information and communication technologies (ICTs) have pervaded very deeply in the lives of an increasingly greater number of people, especially in the poorer countries.

One rather popular way of characterizing the digital divide is maintain that there is a distinction between the 'information rich' and the 'information poor'. Basically the former are those who enjoy the fruits of the information and communication technologies, while the latter do not. The former is rich in information while the latter are the opposite. However, recent research has shown that simply looking at the phenomenon as a divide between the two is too broad since it presupposes that there is only one criterion that serves to distinguish the two groups whereas in reality there are a large number of available criteria. One might of course start off with the criterion of whether the population in question are 'wired' to the Internet or not. But this is too broad because there are many complex reasons behind one group's relative disadvantage regarding information use as opposed to another. For example, most Thai Internet users are located in the Bangkok area;

however, characterizing them as the information rich does not give much information beyond the fact that they enjoy the advantage of having better access to the technologies. Moreover, residents of the Bangkok area are a very diverse group. Among them, there are significant disparities among genders, age groups, levels of education, economic status, and so on. These factors have to be taken into consideration when one attempts to understand the disparity among the use of computers and the Internet.

In any case, the term 'digital divide' itself is a metaphor evoking the image of a gulf, a chasm, between those who enjoy the technologies and those who do not. Courtright and Robbin (2002) have analyzed the meanings of the term 'digital divide' and found that they vary according to how the phenomenon itself is viewed. If the intended meaning calls for the image of physical prowess and willingness of tackle actual problems, then the metaphors of muscle and motion are used. For example, 'bridging' the digital divide conveys the meaning that the divide can be crossed by constructing bridges. On the other hand, when the emphasis is on deeply held values that bind members of a society together, a different type of metaphors is used, such as to 'level the playing field' or to 'connecting to opportunities'. This shows, prima facie, the attitudes toward the digital divide phenomenon that stakeholders, in Courtright's view, do have, but since metaphors usually become frozen with normal use, these attitudes can be imprinted in how words are selected and used. Hence the meaning of 'digital divide' is charged with attitudes and beliefs and refers to some kind of obstacle between two groups of people that needs to be 'bridged' and 'connected'. Hence the point is that discussion of the digital divide already presupposes, through the use of the term 'divide', a chasm or a separation between two groups. This may be a straightforward way to identify the problem, but one needs to bear in mind that reality is much more complicated, and there is no such

simple division in reality, instead one finds a spectrum of different cases where the percentage of information use slides from one end to the other. Nevertheless, talks about the digital divide, as do those about the gap between the rich and the poor, are still a powerful means to illustrate the serious social problem requiring full attention and effort at solving it.

Moreover, the digital divide is very much mired within the complex relations among science, technology and social factors. Toby Arquette (2002) traces the intellectual root of talks or discourses about the digital divide and finds that the talks revolve around the triumvirate of development, globalization and society. Talking about the digital divide has become prevalent in development discourses, where the divide is regarded as yet another hurdle against development. It also figures rather prominently in talks about globalization, as it quite dramatically shows the inequalities among nations and cultures. Lastly, digital divide talks play a role in attempts to delineate the information society, thus putting them in the ongoing stream of scholarship in science, technology and society studies (STS). This shows that the digital divide is a social phenomenon. As an object of attention in discourses on development, globalization and society, talks about the digital divide show that the concept is deeply engaged with social scientific studies, and such talks do not seem to be able to distance themselves from talks in areas such as development, globalization, or society. In either case, it seems to show that talks about the digital divide cannot take place meaningfully outside the contexts of its relation to social and historical contexts. And if this indeed so, then talks about how to bridge or to solve the digital divide problem as well as concrete action aiming at realizing them cannot take place out of such contexts either.

Some scholars, furthermore, argue that the digital divide is not a unitary concept that can be applied to the same type of phenomenon. On the contrary, one

should more accurately talk about the digital divides, as there are many different kinds of the divide. Eszter Hargittai, for example, argues that there is the second-level digital divide, consisting of the gap between the skills people have when they are online (Hargittai, 2002). This is in contrast with the usual interpretation of the digital divide merely as the gap between those who possess or do not possess the technology. One can see that there are many types of the divide simply by looking at the situation in, say, the United States, where there is obviously a kind of divide and compare it to a country such as Thailand, where there is a divide too, but of a different kind. In the US, the divide can be seen quite clearly along racial lines, with a much higher percentage of whites enjoying the technology than blacks do. In Thailand, on the other hand, the divide is located along the urban and rural line, with urban, middle class people on one side and the rural farmers on the other. But even so this is still too crude a description of the actual conditions. It is clear that the difference here stems from, or could be explained by, the different historical paths that Thailand and the US took. But if that is the case, then talks of the digital divide as if it were a single phenomenon appearing all over the world would be too broad, and cannot do justice to the obvious role that cultures and historical paths play in policy deliberations on the digital divide.

Digital Divide in Thailand

While there is a tremendous amount of information on the digital divide in the West, especially the US, information and research on the phenomenon Asia, except Japan and the other Third World countries has attracted far less attention. The figures that most dramatically highlight the disparities between the West and the rest of the world can be found, inter alia, in the Information and Communication

Technology (ICT) Development Indices (UNCTAD, 2002). Here the ranking of ICT diffusion by countries, according to the statistics in 2001, shows that the first twenty top ranked countries in ICT diffusion are all Western countries, with the US at the top. Only three Asian countries make it to the list: Japan (10), Hong Kong (9) and Singapore (14), whereas among the twenty bottom-ranked countries, six are in Africa, and the rest are all in Asia and the Pacific islands (UNCTAD, 2002, p. 35). Thailand, for example, has only 2.27 million people online, or 5.64 percent of the whole population (Mekhopee, 2002, p. 150); Japan, on the other hand, has according to an estimate by her Ministry of Post and Telecommunications more than 56 million, or around 44 percent of the population (NUA Internet How Many Online, 2003).

As for the disparities within countries, Karsten Giese has documented the digital divide in China (Giese, 2002) and found that use of the Internet is concentrated on the coast and the big cities such as Beijing, Shanghai as well as Hong Kong and vicinities. World wide web users in these areas account for a staggering 60 percent, whereas the inland area has only 10 percent (Giese 2002, p. 50). In Thailand, 16 percent of population in the Bangkok Metropolitan Area have access to the Internet, while only 4 to 5 percent of the people in the rural areas outside of Bangkok do so (Mephokee, 2002, p. 150).

In Thailand the organization that has done the most for policies on information and communication technologies is the National Electronic and Computing Center (NECTEC). It has published annual surveys of Internet use in Thailand for the past three years, with the latest survey for the year 2002 just coming out earlier this year. However, the data that are freely obtainable over the Internet are those of 2000 (NECTEC 2000). The survey shows that there is a steady increase in the number of servers, both registered under the domestic .th and international domain name. The capacity of the bandwidth expanded into 316.375

Mbps incoming and 215.437 Mbps outgoing in January 2001, compared to only 118.25 Mbps incoming and 66.25 Mbps outgoing in January of the year before.

Servers registered under the co.th domain name, which is reserved for business organizations, rose to 4,747 in December 2000 from only 2,927 in December 1999. Even though this showed a marked increase, the survey reported that the majority of Internet traffic is still limited to the Bangkok Metropolitan Area (BMA). It said that more than 70 percent of Internet users in Thailand are residents of the BMA and reported a concern over this situation, which is a clear indication of the digital divide existing in the country.

The key indicators for Thailand's connectivity to the Internet are shown in

Table 1:

	<i>Number</i>	<i>Index</i>	<i>Source</i>
Number of Internet users in Thailand (estimate)	Approx. 2.3 million (November 2000)	3.6 users per 100 people	Formula by Vice Adm. Prasart Sripadung
Number of computers in Thailand (estimate)	1,127,550 (mid 2000)	18.19 per 1,000 people	Thai Computer Business Association
Number of Thai domain name (.th)	6,515 (December 2000)		THNIC
Number of computers under the .th domain that are connected to the Internet	71,995 (November 2000)	1.1 computers per 1,000 people	Internet Information Resource Center, NECTEC (www.nectec.or.th/internet)
International bandwidth	316.375 Mbps incoming 215.437 outgoing		Internet Information Resource Center, NECTEC (www.nectec.or.th/internet)
Number of schools wired to the Internet	2,184 (January 2001)	5.8 percent of schools nationwide	www.school.net.th
Number of universities wired to the Internet	82 (June 2000)		Ministry of University Affairs
Number of government websites	19 ministries and 158 departments		Information Technology Service for Public Sector Office, NECTEC
Number of fixed phone lines	7.66 million lines March 2000	12.3 lines per 100 people	TOT Corporation
Number of leased telephone lines	5.22 million lines March 2000	8.4 lines per 100 people	TOT Corporation
Number of mobile	2.56 million lines	4.1 lines per 100	TOT Corporation

telephone lines	March 2000 (Operated by TOT and private sector, 1.39 million; CAT and private sector, 1.17 million)	people
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*Table 1: Status of Telephone Network and Connectivity to the Internet in Thailand
(Source: http://www.nitc.go.th/document/publications/Internet_user2543.pdf)*

These numbers will be more significant considering that Thailand is lagging far behind her neighbors in many key areas. To illustrate, Thailand has only 8.4 fixed lines per 100 people, whereas the number is 48.41, 44.97 and 21.93 for Singapore, South Korea and Malaysia respectively. Moreover, there is a wide disparity between the ratio of available phone lines in the Bangkok area (54.2 lines per 1,000) and the countryside (5.8 lines per 1,000).

In sum, there are clear indications of the digital divide in many dimensions involving Thailand. Firstly, there is the disparity between Thailand and her neighbors and economic competitors such as Singapore, South Korea and Malaysia. Thailand cannot even start to compete with these countries if these indicators show that in many cases the numbers for Thailand are five times less than those for her neighbors. This disparity between countries or regions in the world is sometimes referred to as the 'global digital divide', pointing out the fact that there is still a wide gap between the so-called developed and developing world. Secondly, there is another dimension of the digital divide, one that happens within the national border. In the case of Thailand, there is a clear divide between Bangkok Metropolitan Area and everywhere else in the country. The NECTEC report shows that as many as 70 percent of all the users of the Internet live in the Bangkok area, and there is also a wide gap between the educational attainment and economic status of Thais who are connected to the Internet and those who are not. In this paper we would like to focus on the second, domestic aspect of the digital divide, since it lies fully within the power of the policy makers to formulate right policies to take advantage of the demographic

dividend and to tackle the digital divide problem, as well as to implement and to see that the policies are carried over to full implementation.

Past and Current Attempts to Bridge the Digital Divide in Thailand

During the Chavalit government (1996-1997), Education Minister Sukhavit Rangsitpol initiated the policy of providing all schools nationwide with computers. The idea was to use the government's budget to buy computers from the dealers and gave them away to the schools, including those in very remote areas. A large number of computers were bought out of public fund and distributed to the schools, each in equal number, as if there were no differences among the schools in the diverse regions of Thailand. There were no prior studies as to the needs of the schools and how the computers would fit into their ways of life. There was no participation from the schools or the village communities as to what kind of computers or how the computers were going to be used and to what purposes.

In this computers-for-school project, the receiving end was powerless. They had no opportunities at all to participate in the selection and procurement process of the computers that they themselves were going to use. This kind of paternalistic, 'father-know-best' scheme has been typical of the Thai government's dealing with its people for centuries. The stated intention was to bridge the digital divide through sheer physical means of giving away free computers. However, it has been a well known anecdote in Thailand that some schools which got the computers did not even have electricity with which to run them. As one would expect, the computer scheme opened up a wide range of leeways for corruption. The Education Minister was accused of doing just that.

While the intention might be good (if one is optimistic enough), the policy turned a disaster. Many computers sat in the remote schools unused. In many places there was no electricity as previously mentioned; a lot more schools did not

have telephone lines, so it was not possible to use the computers to connect to the Internet. Furthermore, many more schools lacked the personnel capable of running them effectively. The computers in effect became sacred objects symbolizing of the power of the government, and to our knowledge there was no scheme of checking the quality of the computers through independent means. Thus there was no way of ensuring transparency that the public money used to buy these computers was spent in such a way that benefited the public the most.

There have been also other projects aiming at closing the digital divide. In 1995, NECTEC initiated the SchoolNet project aiming to connect schools nationwide to a network that is linked to the Internet. News and information, as well as course material, would be distributed to the schools to facilitate learning. The aim was to enable schools throughout the country to connect to the Internet through phone lines at the same rate of 3 Baht per connection. Schools participating in the program can use their modems to call 1509 to connect to the central server of the project, which contains news and information related to on-line learning and acts as a forum where schoolchildren and teachers can communicate with their peers in the country. At present there are a little more than 2,000 participating schools, representing 5.8 percent of the total number of schools.

More recently, the Thaksin government, through the newly established Ministry of Information and Communication Technology, has instituted a scheme of selling computers to government workers and the general public at a very low price. The scheme, called in Thai 'Computer *Uea Aathorn*,' or 'Good Wish Computers' aims at selling computers to the population at 10,000 baht (250 US dollars) per computer, a very cheap price since most PCs in the market sell at 25,000 baht (625 US dollars) and up. The aim is the same as the previous policy by Sukhavit, i.e., to help 'enlighten' the Thai population and to bring up-to-date news and information to the population so that they are capable of fending for themselves in today's competitive world. This new policy is another aspect of many 'Good Wish' policies initiated by the Thaksin government to bring goods and services to the poor at a very low cost.

The computers were intended not only for the general population, many more were also earmarked for the country's large member of the bureaucracy. And there are many different models of computers to choose from, all running a version of the LINUX operating system developed by NECTEC. According to the country's first Minister of Information and Communication Technology, Dr. Surapong Suebwonglee, the government planned to distribute no fewer than one million such computers to the population, which should incur a considerable impact on the digital divide problem in the country. Other policies that are in place include CAT Telecom – the country's monopoly holder of Internet connection – 'Clean Internet' Project. The connection time is only one baht per hour. Users have to buy a special card and use their modem to call 1222 in order to connect to the project's central server located at <http://www.cat.net.th/cleannet/>. This site collects a number of links to government agencies, schools and other information holding sites, and it is publicized that the site is free from pornographic material. However, the catch is that users cannot connect to any other sites except through this central portal.

In sum, what these schemes of closing the digital divide share in common is that all are ways to bring the hardware and the physical infrastructure to the population, with little consideration given to how the population are knowledgeable enough to operate the machines to their best advantage. What the Sukhavit disaster clearly showed is that simply providing hardware as a way to close the digital divide is never enough, and the main reason is that the computers are pushed to the village communities with no regard to the question of how these computers are to be related to the socio-cultural and historical contexts of the particular communities. And it is very doubtful that the schemes thought up by the Thaksin government would also succeed since they employ roughly the same way of doing things. What differentiates the current policy of selling cheap computers and the previous government's policy of giving them away for free is only that in there is selling and buying the first case, where there is none in the latter. But that is only a superficial difference. The essence remains the same in that both schemes rely on sheer

provision of hardware to the population. Many computers in Sukhavit's policy lie there unused, thus the poor remain cut off from the benefits of information and communication technologies. In the same vein it is conceivable that the cheap computers sold by the Ministry of ICT will not be available to the poor either, as most buyers of the cheap computers are the urban dwellers who are already well versed in using computer technology to their advantage. So the digital divide appears nowhere lessened. In the next section we will discuss this point in more detail, focusing on how best to utilize the coming demographic dividend.

Anticipating the Demographic Dividend

The demographic dividend shows that the number of Thais entering workforce will peak in the near future. Thus it is imperative for the government and all concerned to find ways so that this workforce can perform at their maximum capabilities. In "Growing Science", Soraj Hongladarom (forthcoming) argues that capabilities in science and technology should be 'grown' from the ground up in the respective localities; these capabilities cannot be planted or transferred from one place to another without severe disruption in patterns of living which could prove counterproductive. Since economic development depends in many ways on development of scientific and technological capabilities, the growing workforce needs to become integrated into the attempts to develop these capabilities. Not only do they have to enroll in effective programs of study aiming to hone their skills in science and technology, but, as the Sukhavit case shows, a way needs to be found to integrate technologies, in this case the information and communication technologies, into the lifeworld of the village communities that form the backbone of the Thai economy and way of life. This can be accomplished when the goals, values and aspirations of the local communities are taken as among the top priorities when decisions regarding scientific and technological policies are taken. For example, a village may have perfected the traditional skills of producing rice wine through

centuries of experience. Science and technology can certainly help develop them further through research and development. Computer and Internet use enter and contribute to the scene when the villagers use it in relation to their production and marketing. Instead of connecting just to a central server with little useful content, the villagers can then connect to their peers in other villagers, sharing information and techniques of rice wine production as well as discuss about the market and other things related to their careers. Hongladarom (2002) has shown how this peer-to-peer networking should be an aim of policy toward effective computer use in the villages, since it will demonstrably strengthen the capabilities of the communities in many ways. This would not be possible if the overall aim of policy in science and technology remains attached to 'catching up' and imitating the path already taken by the industrial West.

We have seen that there are shortcomings in both the Chavalit and Thaksin governments' policies toward alleviating the digital divide. At first there might appear to be some advantage to Thaksin's and Surapong's policy of providing cheap computers and for selling Internet connection time at only one baht per hour, as opposed to Chavalit's and Sukhavit's action of giving away free computers with no supporting infrastructure. However, the advantage is only minimal. As we have mentioned before, selling computers at cheap price would only widen the gap between the rich and the poor, since it is only the rich who already know how to take full advantage of the available computers. Something has to be there already before a person can start to think about how to use computers to their advantage. The challenge is to find that something and enable it to the population.

So here is the challenge: There is the demographic dividend. The growing workforce obviously needs to be much more effectively educated. A reform in education system is in order. There has been much talk on teaching the students 'how to think', but since there has been no tradition of free and critical thinking in Thailand this is easier said than done. Encouraging free and critical thinking will open up new ideas which could prove tremendously beneficial in the long run. On

the other hand, the increase in knowledge and skills enabled by the improved educational system would be of no use whatsoever if the infrastructure within which these skills are put to best use remain underdeveloped. Thailand has more than a fair share of people who possess high academic achievement, but they usually work far below their full potential because there is simply not enough infrastructure to help them develop their potentials to the fullest extent.

Thus there is a two-pronged process. On the one hand, the skills and knowledge of the growing workforce need to be developed - let's call this the 'subjective' side; on the other, concrete opportunities have to be there to absorb these increased skills and knowledge - call this the 'objective' side. One can certainly imagine a virtuous circle where one reinforces the other. More specifically, the 'subjective' includes the much discussed ways of improving the quality of education for the growing workforce in the country such that the workforce possess required knowledge and skills. On the other hand, what is no less important is that there exist concrete opportunities for these skills and knowledge to be put to good use. What this means at a local, community level is that the knowledge and skills are possessed by the villagers, and what is no less important is that these knowledge and skills find ways to realization into products and services that lead to economic development of their communities. In the case of rice wine production, this includes the knowledge and skills required in producing the best tasting wine possible, the market savvy of finding a niche for their product in the domestic or international market, and the networking that is made possible through Internet technology that enables them to connect with their peers, sharing news and information without interference from the paternalistic central government.

Hence it is here that the digital divide problem has to be addressed, since information and communication technologies are among the most effective tools that can spread ideas and knowledge to the whole population, thus increasing effectiveness of education. The networking is not possible without the computer network, the infrastructure that supports it, and no less importantly the knowledge

and skill required to operate them efficiently. What we suggest is that there should be a policy whereby computers are integrated into the lives of the villagers themselves, in the same way as the use of older technologies such as the plowshare or tractors have become integral to the lives of rice farmers. This is clearly a difficult task, but one can start doing it by learning from history to find out how modern, diesel-based tractors have become part and parcel of the farmers' life and search for the pattern. Since the tractors can be demonstrated to be much related to the farmers' work, so can the computers and the network. If it can be shown that operating the computer is no less difficult than operating the tractor, then a good head start can be anticipated.

We contend that this is perhaps the only way to solve the digital divide problem effectively for the country. Addressing the digital divide helps at first sight with the subjective side of the issue. However, tackling the digital divide problem clearly requires changes in the environment, physical and otherwise; thus ties it with the objective side of the matter also.

More specifically, we recommend the following:

1. There should be more research into how ICTs are best utilized to facilitate development of localities. Active programs that encourage and support field research to find out how ICTs can help the localities should be put in place. The research should identify their needs and look for ways to accommodate them.
2. Another line of research should be to evaluate the past policies and attempts to bridge the digital divide. The research should also measure how much the Internet is actually used and in what form, as well as measure the effects of Internet use in schools and villages that are connected to the Internet through some of the past projects such as the SchoolNet and other projects.
3. Computer skills and literacy should be emphasized in school curriculum. Preparing for the demographic dividend obviously needs productive

workforce, and the ability of use IT effectively is necessary. IT use should promote lifelong learning and contribute to development of skills needed for the labor in the future.

4. The 'human' side of IT should be emphasized. The policy should not merely aim at providing hardware and physical infrastructure. More effort should be put toward finding out how the hardware is going to contribute to human resource development through effective and productive use.

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The Asian Information Society and the Aims of Education

Soraj Hongladarom¹

Introduction

There is no denying that today's rapidly advancing technologies have made their way into the way students all over the world are being educated. The spread of information and communication technologies, especially the Internet, has made information readily available and this has profound implications on education. Moreover, the Internet does not spread only in the West, where it first originated, but its spread throughout the entire world has spawn a host of questions concerning how the Net interacted with local cultures. This paper will then concern itself with trying to get a more comprehensive understanding of the interplay in various dimensions among the ICTs, education and culture.

More specifically, this paper discusses the intersection between technology, culture and the aims of education as these pertain to the problems surrounding on-line learning. The introduction of information technology into society prompted many to think that they have already found a panacea, a tool for educating the entire population effortlessly and effectively, all seemingly without the need for human teachers. However, as information technology actually begins to permeate the existing strata of society, problems start to emerge, ranging from the macro one of how to bridge the 'digital divide' between those who are able to enjoy the benefits of the technology and those who are not, to the micro-level one of how best to utilize

¹ *Department of Philosophy, Faculty of Arts, Chulalongkorn University, Bangkok 10330, Thailand. Email: hsoaraj@chula.ac.th.*

the technology in teaching and learning in the classroom setting.

All these problems, I contend, are but aspects of the larger problem of how to conceive of the aims of education in the context of the information society. To my mind there has not been much discussion of this very important topic among the educators, for it seems that the aims of education are often presupposed and they are left tacit without actually being spelled out for investigation.² However, in the context of the information society, which many societies in Asia nowadays are fast becoming, there should be more discussion of what we educators should aim at when we educate our younger generations. I contend that cultural factors have to play a significant role in our attempts to delineate the aims of education in the context of the information society. The chief question is: How should the aims of education in the context of the *Asian* information society be conceived? The answer, which will be spelled out in more detail later on, is that the particularities of each culture need to be taken into consideration in conceptualizing the aims of education for that locality. In the concluding section, an implication of my idea toward language education will be briefly spelled out too.

The Aims of Education

² There are exceptions, however. A recent article in the *Journal of Philosophy of Education* by Christopher Winch (Winch 2002), argues for an 'economic' aims of education, which he takes to mean the vocational aspect of education in contrast with the more traditional 'intrinsic' aim, which he takes to be something like the satisfaction of knowledge and understanding *per se*. Basically Winch argues that economic well being and individual fulfillment through employment made possible by the education should constitute the aims of education. In this paper I have no time nor space to argue either for or against this conception. Nonetheless, Winch seems to be confusing the *benefits* of education – what the education is useful for, and the constitutive aim of education itself, which does not have to be the intrinsic aim that he talks about, because an intrinsic aim might well not have anything to do with individual fulfillment.

In many discussions and studies on the role of contemporary technologies in education, the aims of education have often been left tacit. However, seriously rethinking the proper role of the technologies require that we take a fresh look at the age-old question on what such aims should be. It is rather obvious that the aims of education vary according to the socio-historical milieu in which the education takes place. Thus in a feudal society where social mobility was limited, the aim of education consisted largely of equipping the learners with the tools that serve his or her pre-assigned purpose in life. Book learning was rather limited to the monks who carried on the literary and scholarly tradition, whereas artisans and farmers carried on their trade and had a way of transmitting their skills through apprenticeship and so on. In the industrial era, however, such role of education could not serve the purpose of the society, and education was then reconceived so as to produce workers or managers or professionals. It has been claimed that the way education was conducted during the heyday of the industrial age in the West was more geared toward producing personnel to fulfill the demands of the industries rather than to produce citizens who could think independently and critically. That may be partly true, but the important point here is that the aims of education are clearly a function of the society and the age.

Consequently, in our present day of rampant globalization and seemingly ubiquitous communicative devices, the aims of education should accordingly change. But as there are many obvious differences between the older industrial age of some five or six decades ago and today's world where there are widespread Wi-Fi networks and mobile phones, it seems that relatively little attention has been paid to

the aims of education in the latter world. What should be assented to by all, in any case, is that the role of education for today's world can no longer be one that produces workers for the assembly lines in old-style factories. An obvious reason is that such factories are no longer around and the economy has transformed itself almost beyond recognition.

Let us look at what the demands of contemporary, information-based society are so that we perhaps can lay out what the aims of education should be. Characterization of the information society is a standard theme in most literature in the social science, such as in Manuel Castell's phenomenally influential study (Castells 1998), and it is hardly possible here to give more than a brief outline. Perhaps the single most outstanding general characteristic that distinguishes the new information society from the older industrial one is that the former is based on a web of entangled lines, whereas the latter is represented better by a group of single lines each separated from one another. The idea is that in the older technological society, movements and communication tend to be along single lines, each connected to the sender and receiver of the message. The metaphor here is the telephone switchboard, which connects senders and receivers together, but in the form of connecting separate lines so that communication is possible between the two ends. However, in the newer information society, the intensity of communication is such that the lines are all jumbled together, not unsystematically like a bunch of threads jumbled together, but with systematic precision enabled by computers. The metaphor is the Internet itself, which allows for the multitude to have the power of sharing their thoughts and ideas to millions of their peer around the world. The

communication is not between the sender and the receiver as in the old phone line metaphor, but from many to many, where anybody can participate and contribute to the ongoing discussions, like in blogging (a new system where one posts messages on the World Wide Web and others can add to them or even modify them) or in chat forum. Many people can communicate with many at the same time.

What this means is that the older industrial society is a much simpler one. The telephone in question is clearly the fixed line phone, not the mobile phone which is symbolic of the information society. Information in the older world moves at a much slower pace, and its production and distribution is much more limited. Information on the fixed line telephone can only travel from one end of a line to another, and its dissemination is usually through repetition of the same messages by one caller to their friends. In the new information society, on the other hand, one single click from the mobile phone can send one same message to potentially hundreds of recipients and perhaps more. In this new world, information is no longer something that carries the message, it is the stuff of reality itself. In the older industrial world, social reality is produced by the process of manufacturing industry. The automobiles, for example, is produced en masse through this process, but at least it is produced one by one. In the information society, on the other hand, products that define the era, such as computer software, are purely the products of the mind and it can be produced and disseminated very efficiently. Whereas it takes the same arduous process and the same amount of energy to produce another car just like the one before, it takes virtually no effort at all to produce another copy of the software.

Conceiving the aims of education in this new society is hence quite a

challenging task. As mentioned before, education during the older industrial era was a tool for producing personnel to 'fit in the assembly line,' so to speak. This does not pertain only to factory workers, but also to other occupation characteristic of the industrial age. In terms of education, this would mean that students are taught as if they were in an assembly line. There was an emphasis on mass production and mass standardization. This is in contrast with the even older system of education in the feudal era, where the emphasis was not on equality at all but exactly the opposite. Here 'mass production' stands for equality in education; everybody gets the same opportunity for education and is entitled to the *same* process. Moreover, equality also demands that there is a mass standardization, so that one school in the same system should not be privileged over another. One school should be the same with all others because if this is not the case the ideal of equality and justice for all would not be served. Students are taken to be the 'input' of the process, and the 'output' is those same students who graduate from the program of study. The process itself consists of setting up a list of behavioral 'objectives' so that the students' achievement can be measured and quantified. Then the students are taught according to a curriculum which, as the idea of mass standardization suggests, is the same throughout the whole community or society.

The overall aim for which these 'output' are produced are usually conceived of as producing graduates to serve the industrial society. In this case the emphasis is not on developing independent or critical thinking skills as much as on honing the professional skills that will be of use after school in the shortest time possible so as to reduce the cost. In Thailand this has long been recognized as a serious problem. As

the country is moving out of the older industrial era into the newer information age, many believe that the way Thai students are being educated needs to change. And the one thing that most urgently needs to change is rote learning and memorization. In the days when Thai education was modernized and transformed from its pre-modern roots, rote learning and memorization had their places as Siam (as the country was called before 1941) had to modernize herself very fast in order to avoid being swallowed up by the Western colonial powers. In these circumstances it might be arguable that the necessary knowledge and skills needed to be 'downloaded' onto the students in the shortest possible time. However, in the new information society, this downloading is no longer effective, as the world needs an altogether new type of students and education process. Hence the aim of education needs to be rethought.

The metaphor of the systematic web of entangled lines alluded to earlier could serve as a basis for thinking about how the aim of education in the information age might be. The intensity of information and the extreme speed at which information is produced, retrieved and disseminated, and the exceedingly huge volume of information that is being produced each minute points to the obvious necessity that students at least need to be able to sift through these pieces and find what is really meaningful. It has been reported that as much as five exabytes³ of information was produced through the four main media – print, film, magnetic and optical media – in 2002 alone (How Much Information 2005 - <http://www.sims.berkeley.edu/research/projects/how-much-info-2003/>

³ One exabyte is equal to 1,000,000,000,000,000,000 or 10^{18} bytes. Five exabytes is equal to all words ever spoken by all human beings (Source: "How Much Information", available at <http://www.sims.berkeley.edu/research/projects/how-much-info-2003/execsum.htm#summary>).

execsum.htm#summary) Furthermore, critical and creative thinking skills are very important.

Perhaps the differences between the aims of education in the two types of society can be shown in the following table:

Aims of Education in the Older Technological Society	Aims of Education in the Information Society
Emphasis on mass production - students are taught to fit the mass scale.	Emphasis on individualization and 'mass customization' - students are taught according to their individual needs.
Prescribed courses of instruction and teaching manuals.	More flexible and liberal program; decisions are made more 'on the spot.'
Specialized knowledge and skills for the specialized job market - students are taught according to the specific needs of the industry.	More generalized education geared toward ones who are capable of adapting themselves to rapidly changing circumstances.
Information is seen to be a tool toward achieving certain aims - hence the aim is to digest certain pieces of given information.	Information is actually ubiquitous - hence the aim is to be able to evaluate information independently.

Table 1: Differences between the aims of education in the older technological and information societies.

First of all, the emphasis on the aims of education in the older technological society is on mass production, as mentioned before. This contrasts with the education aims in the information society which emphasize mass customization and tailoring the education process toward individual needs. 'Mass customization' means that the mass has their products customized for them, and this is not actually the same as cottage industry in the pre-industrial era where each economic unit was self subsistent. On the other hand, the power of production in the information society is so powerful that each individual comprising the mass can have their own preferences and styles materialized. One can see this in the way teenagers today are customizing their mobile phones. The way education is delivered and how the

education aims are conceived also change, from establishing one set of aims and one way of achieving them as before, toward a more liberal way of educating where the students can have their own input to a certain extent on how their education is delivered, both in content and in the manner in which they learn. This was not possible in the older technological society because the means of production and delivery of knowledge was not powerful enough.

Secondly, in the older industrial model, knowledge and skills imparted in an educational process were meant to be *tools* for contributing in the industrial production later on when the student completes her program. And since the production process was rather rigidified the knowledge and skills also were the same at least to a certain extent. By contrast, in the newer information society, the aim of educating needs to change because everything is moving around at extreme speed. Hence, it is no longer adequate to prescribe certain courses of instruction and their manuals and to expect teachers and students to follow them. Instead education needs to be much more flexible; since everything is moving very fast, the decisions need to be more in the hands of the 'ones in the field', so to speak.

Thirdly, there is a renewed need for more generalized knowledge and skills in the information society. As the information society has become more complex, the aim of educating students in such a way that they acquire certain sets of knowledge and skills for their existing job markets would be called into question. This older way of educating worked well in an environment where the job market is more secure and well defined. However, in the rapidly fluctuating situation of the information society, it would be best to aim at educating students who are capable of

adapting themselves to the changing circumstances, and this calls for generalized education that equip students with such ability. This does not mean that the content is to be 'watered down'; on the contrary, teaching and learning will become much more intense and difficult. Since it is almost impossible to anticipate what the job market will look like, the content will need to be both general and specific at the same time.

Finally, in the atmosphere where information is everywhere, the key lies not in acquiring certain amount of information, that much can be taken for granted in the information society where information will become much like water for fish, but the key can be found instead in what kind of information is relevant to a specific place, time and purpose. Obviously there can be no general rule that can tell anyone beforehand what he or she has to do in a given situation; thus she has to rely on her own resources, which should be prepared through her education.

The *Asian* Information Society: The Role of Culture

There has been a tremendous amount of literature on the information society; however, discussions of the *Asian* information society are very rare. There are two possible explanations: Either there is nothing distinctive about the information society as it happens in Asia, so that there is nothing to be gained by talking about the Asian information society, or Asian society as a rule has not become an *information* society yet. In either case these are clearly untenable. The rapid growth of information and communication technologies in Asia is very well known and has

become a common phenomenon. Thus there is actually no need for a lengthy explanation as to why the latter explanation is not the case. The case for the first explanation, however, is more difficult and is not obvious at all. The idea here is that the reason why there is little talk about the Asian information society is that there is nothing that distinguishes what is happening in Asia with the same elsewhere. Information societies are the same everywhere, or so the argument goes.

This way of looking at things, however, tends to gloss over much of the difference that exists across the cultural boundaries and neglects the clear roles that culture plays in shaping up socio-cultural milieux even though the latter are permeated with the technology. Even though teenagers in Korea and in the US may be using mobile phones on a regular basis, but a deeper look may reveal that there are a lot of differences in the pattern of use and how the phones are used, etc. between a typical Korean and American teenager. In this paper there is no space to provide any kind of substantiation of this claim, but this is certainly a topic of many empirical works. In any case, the theoretical issue is that the term 'culture' is a very difficult term to be given a precise definition; nonetheless, we can take the term to refer to a set of practices and beliefs of a group of people such that they provide the people with meanings orientations in their dealings with both the social and the physical world that surrounds them. In other words, 'culture' is a collective noun for the sum total of the act of providing and interpreting meanings through both verbal and symbolic means. This type of definition of the term is common in the social sciences, especially in anthropology. Consequently, if this definition is accepted, it would mean that consideration of culture cannot be separated from any analysis of

the impact of information and communication technologies on society. If culture is the sum total of meaning giving and taking by a group of people, then the people also provide meanings to and interpret meanings from the information technology also. Much more so since the technology directly concerns manipulation of symbols, in which meanings are encapsulated.

If this is the case, then culture is inevitable, and since the cultures of Korean and American societies are different, then presumably there should be recognizable patterns of differences in the way teenagers of both culture use mobile phones too. And the same should also apply for other similar cases. One thing that may separate how mobile phones are used in both cultures may – and this is merely a hypothesis – be found in teenagers in Korea use their phones more to strengthen their belonging to the ‘in’ group – for example when they use the phones to chat with their friends in the same clique and when the list of the people they call to and receive calls from is quite limited; whereas American teenagers may perhaps have a wider list and do not talk just for the purpose of strengthening the feeling of being ‘inside’ as much as Asian teens do. This comes from the well known differences in the two types of cultures. Americans tend to be more individualistic; hence they hypothetically do not feel the need for belonging to the ‘in’ group as much as Asians do, or if Americans have their groups they tend to change their groups more often. Note that this is only a hypothesis and it would make for a very interesting social scientific study to substantiate or falsify this claim.

The point is, if it can be the case that there are substantive differences in how information and communication technologies are perceived and used in various

cultures, then this shows that the *Asian* information society is a real thing. There is a set of recognizable differences in Asia, at least enough of them for the information society in Asia to qualify as an Asian one. Our next consideration, then, is how or whether the aims of education and how education should be delivered should be different in Asia and in the West.

One way to answer the question is to say that there should not be any differences. In today's closely knit and globalized world, there is actually no possibility of one locality shutting itself off from others. The aims of education discussed in the previous section should be valid everywhere. When the societies in Asia are saturated with information and communication technologies – which they are fast becoming, how students in Asia and elsewhere should be educated cannot be too divergent from each other; otherwise globalization would not be possible. Nonetheless, this does not mean that we have to contend with the same flavor of education anywhere. We have seen that one aim of education that differs from those in the older kind of society is that education can and should be 'mass customized'. Hence education in one place should not be totally the same in another. So what exactly are the aims of education in the *Asian* information society?

The Need for Both Particularities and Universality

We have seen that there are a number of aims of education for the information society. These aims should be at least the lowest common denominator for all information societies, for they come straight from what it is like to be such a

society as opposed to, say, the older, assembly line type of society. In the context of the Asian information society, moreover, there should also be some aims that serve to accentuate the distinctiveness of the Asian information society.

However, one needs to be careful lest the accentuating of the distinctiveness fall into the trap of chauvinism or celebrating the distinctiveness for its own sake. That would clearly run counter to the aim of education that develops the mind and that promotes global cohesiveness. What I have in mind is much more modest; it follows logically from the idea of mass customization of education alluded to earlier. If education can be mass customized, then nothing can stop it from being so customized according to different cultures. This does not and must not be taken to mean that walls are being erected to cut cultures off from one another. Instead global cohesiveness and understanding are the goals and, ironically enough, seem to presuppose certain degree of distinctiveness in the way the more specific aims of education are delineated. In other words, we cannot have global cohesiveness if everything everywhere is the same. The reason is that this is impossible, and there would be intolerable conflicts. On the other hand, global cohesiveness is possible only within a context where some differences are entertained, enabling giving, taking, imitating, exchanging, all of which are necessary for the global system to be sustainable. But if everything everywhere is utterly different, global system is not possible either.

The implication is that the aims of education do not have to be exactly the same everywhere, even though some common core needs to be stable across all cultures. It is, however, not in the position of this paper to prescribe what should be

included in a list of the aims of education for each particular locale. That would be presumptuous. Still, at least some examples may be useful. For my own country, Thailand, this includes opening up channels for the students to re-examine their cultural and traditional roots and heritage. Perhaps this should be the same all over, but it is clear that the content of what should be re-examined does not have to be the same everywhere. For Thailand, and I think for other similar cases, the need arises from past mistakes in holding up the Western ideal of education and knowledge forms to be the only one that is real or that is worthy of attention. Many studies have shown that to be a mistake (Harding 1998, Goonatilake 1998, Hongladarom 2002). For one thing, it caused a neglect of the cultural roots of the Thai people, so much so that many indigenous and traditional knowledge systems have died out, and who knows in any of these systems there are treasures that could be very beneficial to humankind. Hence, the aims need to be reconfigured so as to allow for a flowering of different traditions of knowledge. The influx of today's information and communication technologies is very helpful in this regard, as they facilitate manipulation of information, which can readily encode these dying knowledge systems in digital format. The aims of education should not consist solely of mastering the system of knowledge and skills that originated from the West. There is no denial that this system is essential in today's world. Modern science, after all, took place first in seventeenth century Europe and then spread everywhere. However, as scholars such as Harding (1998) and Goonatilake (1998) have pointed out, the roots of modern science and technological practices lie not only in Europe, but Asia also had a lot of contribute. Thus the root of modern science is really

multicultural, a fact often forgotten by policy makers in knowledge management and in education in the so-called Third World countries who are often blinded by the power and the glitches of modern marvels in the West.

In real practice, what this means is not only classes where the Thai heritage is taught. This is now common in all Thai schools. There should also be real comparative perspectives between the cultural attitudes of the West and of Thailand or a particular Asian society for that matter, attitudes toward the outside world, toward technology, and other things. The aim here is to search for the kind of attitudes that best equip the students, who will undoubtedly be the ones who run society in the future, so that they cope with the rapidly changing world to their full advantage. There should be no pre-established assumption as to the superiority of any system beforehand; on the other hand, the atmosphere should also not fall into the trap of cultural or anthropological relativism that does not make any evaluative assumptions or judgments whatsoever. As previously mentioned, the global system works best in the environment where there are some differences and similarities, but not all differences or all similarities. Hence, the aim of education proposed here is that students should be given opportunities to make evaluative assumptions and judgments regarding these knowledge systems and cultural propositions. They should not be taught in such a way that the Western conception of things, for example, is taken as a given or as the underlying truth.

This aim goes hand in hand with the call for critical and evaluative thinking discussed earlier in the article. Only that it is here that the call is closely examined and radicalized. In this case Thailand is not alone. The aims of education for the

Asian information society should incorporate this radicalized critical thinking skills where nothing is left unturned, including the assumption that there is only one true knowledge system, that of modern science. Indigenous and traditional systems do have a role to play too.

Conclusion: An Implication for Language Education

This call for a blend of indigenous, traditional systems with the more universal one represented by the globalized modern science will not be possible unless language education is involved. This is so because, as everyone knows, communication, either within cultural boundaries or across them, is only possible through language. Hence, there is a need to protect minority languages in one way or another, for they represent in a substantial way the ways of a culture, and it would be sad indeed to see languages dying everyday (Crystal 2002). I would contend that the aims of education should also include raising awareness for the protection of these languages, and this also goes hand in hand with the 'mass customization' idea mentioned earlier. The aim of language education should not only be to facilitate students to be fluent in more than one language—that much is really necessary in today's world, but the aim should also include some kind of critical awareness and reflection, so that students realize that language is invariably part of culture and that there should be a way of fruitful and equal interaction between the global and the local knowledge and cultural systems discussed earlier in this paper.

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The Digital Divide, Culture and Development

**Enhancing the Capabilities through Culturally
Aware Use of Information Technology**

Soraj Hongladarom

*Department of Philosophy
Chulalongkorn University*

Presented at the First AsiaLICS International Conference, Bangkok, April 1-2, 2004

Outline of Talk

- Digital divide in Thailand
- Current government's policy to combat the DD
- My plan: To critique the policy and to reflect upon what is actually needed.
- Argument: Cultural factors play a crucial role.
- 'Culturally aware' use of technology

Digital Divide in Thailand: Key Indicators

- Telephone lines for 100 people: 8.45 (Singapore: 48.41; South Korea: 44.97)
- PCs for 100 people: 4.04 (Singapore: 39.09; South Korea: 18.13)
- Internet users: 2.3 million, or 1.6% of population (Singapore and South Korea: ?)

Source: *Internet User Profile of Thailand 2000*, Bangkok: National Electronic and Computing Technology Center, B.E. 2543.

Key Indicators

- Total .th domain names: 6,515
- Total number of computers registered under .th which are connected to the Internet: 71,995
- Total bandwidth: 316.375 Mbps incoming and 215.437 Mbps outgoing

URL of Source: <http://www.nectec.or.th/>

Key Indicators

- Gender gap: Ratio of male to female internet users significantly decreased (65/35 in 1999 and 51/49 in 2000).
- *More than 70% of the entire Internet users in the country live in the Bangkok Metropolitan area.
- The 20-29 year old age group still dominates the internet users.

Key Indicators

- *More than 72% of internet users are holders of bachelor's degrees or higher.
- Most internet users describe themselves as being 'fair' or higher for their English proficiency (88%).

Key Indicators

- The NECTEC study concludes that there is still a clear digital divide between the residents of the Bangkok area and all others.
- The divide also exists between groups with different educational background and English proficiency.

Government Policy

- Increase communication infrastructure so as to increase competitiveness with other leading countries in the region.
- Increase internet penetration
 - Goal → More than 70% of the population can get access to the Internet.

*Source: Policy of the Ministry of Information and Communication
Technology: <http://www.ict.go.th/>*

Government Policy

- Increase IT literacy
 - Goal → To increase the percentage of population who can use ICT to 60 percent.
- Determine an acceptable cost of internet access.
 - Goal → The price must be such that 80% of the population can afford it.
- Develop 'Digital network system' to facilitate information flow among the government agencies.

“Compassionate Computers”

- This year the Thaksin government has instituted a policy of selling desktop and notebook PCs to the general population at a much reduced price. The most basic kind sells at around 10,000 baht (240 USD), and around 20,000 baht for a notebook. The operating system was a version of Linux developed by NECTEC.

“Good-Wish Computers”

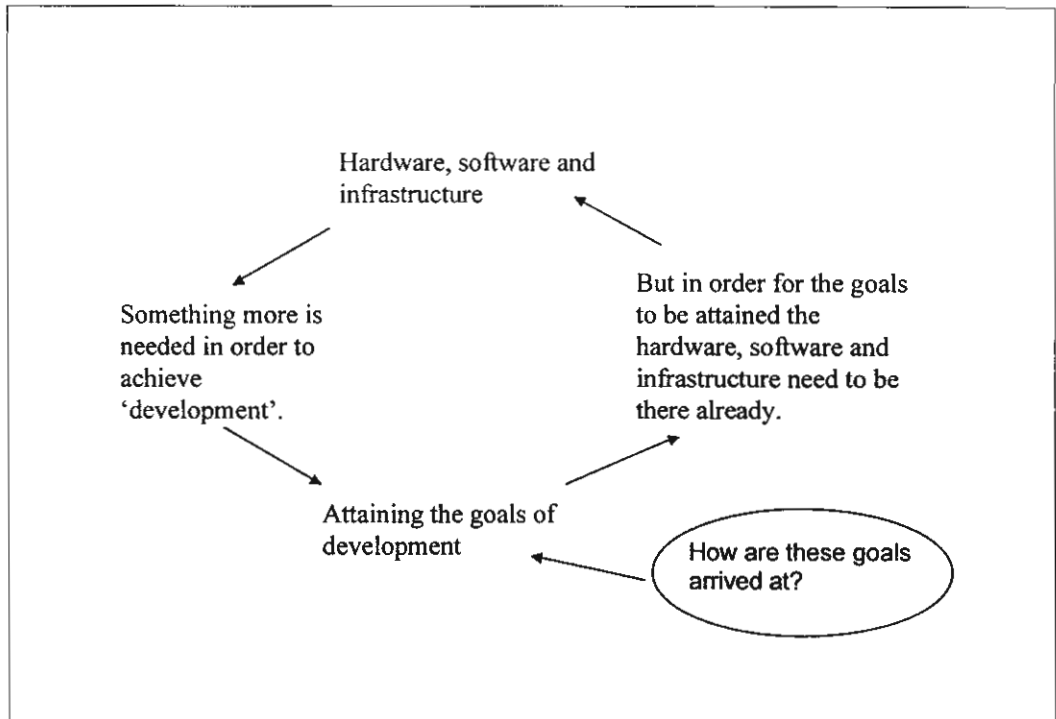
- The policy was dubbed ‘good-wish computers’ following the earlier policy of selling cheap land plots and houses to the poor.
- The ‘good-wish policies have been very popular. And it almost certainly will guarantee Thaksin another term in office.

Some Past Experiences

- In 1996, the Chavalit government initiated a policy of giving away computers to schools nationwide. The scheme was much criticized for lack of transparency and corruption. It seemed only those benefiting from it were the hardware dealers. Many complained that the computers were not used; some villages did not have electricity; some lacked qualified teachers.

- The incident showed how much was needed in order to implement this kind of policy fully. Thus it appears that this government's policy might end up in the same way.
- So the aim of my project is to investigate this question in lights of recent findings and theories in philosophy and other disciplines.

- The thinking behind the Chavalit and Thaksin governments appears to be that the development can be effected by just pushing hardware, software and physical infrastructure to the people.
- This yields tangible results, which is good for reelection prospects.
- But experiences show that this does not work.
- There seems to be a circle.



What else is needed?

- Since merely pushing the hardware and the physical infrastructure does not work, we need to think hard on this issue.
- The root of the discourse about the digital divide stems from the belief that technology can solve all problems.
- This has been known to fail.

- The policies of successive Thai governments toward the poor is almost always to push things to them.
- Many times those things are not wanted or needed.
- There is no concerted effort at learning what the people in the rural areas really want out of the technology.

- This is where cultural factors become crucial. What is meant here is the specificities of the people's or communities' beliefs, desires, agendas, etc. that altogether make up the totality of their identities.
- The question then becomes: How should the ICTs be adapted such that they fit in with these factors?

- So research agenda: In what way should the ICTs be adopted such that they become merged with the lifeworld of the people?
- My thesis: My previous research has shown that there is a distinct possibility that ICTs and possibly other technologies can be 'co-opted' into the lifeworld. The technologies become subservient to the already existing agenda of the communities.

How?

- Local communities could use ICTs to forge stronger ties that bind their members together.
- The Thai government thinks that knowledge goes one way only:
West → Bangkok → countryside
- But that is way too simple.

How?

- But in order for the villages to be able to do that, they must be given the opportunities first.
- Education plays a key role.
- The vicious circle mentioned above can be broken with attacks from many sides.
- Infusion of capital could be key. (Here the Thaksin govt. does deserve some credit.)

‘Culturally Aware’ Use of Technology

- Use of technology becomes culturally aware when it is realized that technology is embedded in the social and cultural contexts, and that ways need to be found to integrate the newly introduced technology to the traditions and ways of life of the people.
- For the digital divide issue, this means finding a way to integrate ICT with Thai culture.

How to do that?

- Local content
- Relations between computers and social use
 - Attitudes toward computing technology
 - Emphasis on strengthening local values and traditions rather than on emulating Western ones.
 - Need for the people to get connected with the outside world.
 - Others...

Thank you very much!

CULTURAL POLITICS OF THE DIGITAL DIVIDE IN THAILAND

SORAJ HONGLADAROM

Department of Philosophy, Chulalongkorn University

Abstract: The digital divide is a growing, worldwide concern among policy makers, development specialists and scholars in various fields. However, most of these concerns are expressed in terms of simple provision of hardware and software to those who lack them, and to date there seem to be rather inadequate studies geared toward finding out how these simple provision policies are effective in a local context. I present an empirical survey of what Thailand has done to solve the digital divide for the past few years. What happened was that the government tried to push hardware and software to the people, either through giving away free computers to schools or through selling very low cost computers to the public. However, I demonstrate that these policies have not been effective in solving the problem. This experience shows that simply providing hardware infrastructure to the people is not enough, and one needs to consider social and cultural factors in a formulation of policies which are effective in solving the problem. This shows how the digital divide and socio-cultural factors are interrelated.

1. Introduction

Seemingly, computers and information technological devices have become ubiquitous. One hardly passes a day without hearing new stories about the latest development in the technology or without using them oneself. It seems that the whole world is totally permeated with the products of these technologies. Of course, this is an illusion, and a large section of the global population, including the majority of those in the developing world and even those in the developed world who are somehow marginalized, have yet to enjoy the benefits that these technologies are supposed to bring to them. The situation, known as the 'digital divide', is a phenomenon created by the unequal or uneven diffusion of information technology. There have been a lot of talks about the digital divide, and in most of these talks it is assumed that the divide is a problem needing to be solved. The underlying idea is that the divide is a kind of inequality or an instance of injustice, and what usually appears in the literature and discussion on the topic, mostly from those who are involved in the information technology industry, seems to be that the solution is simply to connect these people to the global network, and to provide them with the hardware. The divide for them can simply be 'bridged' through sheer provision of the physical infrastructure such as computers, telephone network, network routers, and so on.

In this paper I would like to contribute to the growing awareness that simple provision of the physical infrastructure, while obviously necessary for solving the digital divide problem, is never adequate to accomplish the task. What more is needed, however, is not a simple matter, for that would require thinking hard about the contexts in which the computers and the network are going to be used. Thus my contribution in this paper would be to suggest what is required in this regard. Through observation of the policies of successive Thai governments to solve the digital divide problem, I would like to show exactly how and why mere simple provision of infrastructure is not going to work, since it does not take culture into consideration. Moreover, the goal of attempts to bridge the digital divide should be to enhance the imaginative, creative or cognitive capabilities of the population, rather than just to provide them with means to obtain information as seems to be presupposed by the many available discourses on the issue. Basically the idea is that education and understanding of the technology are necessary, but these are still not enough. One has to find a way such that the technology become integrated into the way of life as well as the attitudes of the population in question. In roughly the same way as technologies such as the telephone have largely become integrated into the life worlds of the people, so too can the computers, though with some added respects which are peculiar to computers themselves.

2. Digital Divide in Thailand

While there is a tremendous amount of information on the digital divide in the West, especially the US, information and research on the phenomenon Asia except Japan and the other Third World countries has attracted far less attention. The figures that most dramatically highlight the disparities between the West and the rest of the world can be found, *inter alia*, in the Information and Communication Technology (ICT) Development Indices (UNCTAD, 2002). Here the ranking of ICT diffusion by countries, according to the statistics in 2001, shows that the first twenty top ranked countries in ICT diffusion are all Western countries, with the US at the top. Only three Asian countries make it to the list: Japan (10), Hong Kong (9) and Singapore (14), whereas among the twenty bottom ranked countries, six are in Africa, and the rest are all in Asia and the Pacific islands (UNCTAD, 2002, p. 35). Thailand, for example, has only 2.27 million people online, or 5.64 percent of the whole population (Mekhoopee, 2002, p. 150); Japan, on the other hand, has according to an estimate by her Ministry of Post and Telecommunication s more than 56 million, or around 44 percent of the population (NUA Internet How Many Online, 2003).

As for the disparities within countries, Karsten Giese has documented the digital divide in China (Giese, 2002) and found that use of the Internet is concentrated on the coast and the big cities such as Beijing, Shanghai as well as Hong Kong and vicinities. World wide web users in these areas account for a staggering 60%, whereas the inland area has only 10% (Giese 2002, p. 50). In Thailand, 16 percent of population in the Bangkok Metropolitan Area have access to the Internet, while only 4 to 5 percent of the people in the rural areas outside of Bangkok do so (Mephokee, 2002, p. 150). According to a recent study by the National Electronic and Computer Technology Center (NECTEC), 55.2 percent of the total users of the Internet in the country reside in the Bangkok; 14.4 in the neighboring provinces; 10.9% in the Central Region; 8% in the North; 5.7% in the Northeast and only 4.7% in the South (NECTEC, 2000: 36). This illustrates how much the percentage of the Internet users are concentrated in the Bangkok metropolitan area, which is close to 70 percent.

In addition, the NECTEC study shows that there is no significant different among the genders. In 1999, the ratio of men to women Internet users was 65 to 35 percent, but in 2000, the number was down to 51/49, which is about the same as the ration in the general population. However, there is still the 'age gap'; the 20-29 years old group still dominates the users. However, the number was down from 58 percent in 1999 to 50 in 2000 (NECTEC, 2000: 29). Another significant indicator of the digital divide in Thailand is the correlation between it and the education divide. As many as 72 percent of the users in the country possessed bachelor's degree or higher in 2000; however, the number has decreased from 89% in the year before (NECTEC, 2000: 29). Nonetheless, this is still a cause for concern, considering that the number of college-educated Thai people is no more than one fifth of the entire population.

As for the statistics on the hardware infrastructure, the NECTEC study shows that there is a steady increase in the number of servers, both registered under the domestic .th and international domain name. The capacity of the bandwidth expanded into 316.375 Mbps incoming and 215.437 Mbps outgoing in January 2001, compared to only 118.25 Mbps incoming and 66.25 Mbps outgoing in January of the year before. Servers registered under the co.th domain name, which is reserved for business organizations, rose to 4,747 in December 2000 from only 2,927 in December 1999. Even though this showed a marked increase, the survey reported that the majority of Internet traffic is still limited to the Bangkok Metropolitan Area (BMA). It said that more than 70 percent of Internet users in Thailand are residents of the BMA and reported a concern over this situation, which is a clear indication of the digital divide existing in the country.

The key indicators for Thailand's connectivity to the Internet are shown in Table 1:

Table 1: Status of Telephone Network and Connectivity to the Internet in Thailand (Source: http://www.nitc.go.th/document/publications/Internet_user2543.pdf)

Number		Index	Source
Number of Internet users in Thailand	Approx. 2.3 million (November 2000)	5.6 users per 100 people	Compiled by Vitee Adin Prasat-Sripadung

(estimate)			
Number of computers in Thailand (estimate)	1,127,550 (mid 2000)	18.19 per 1,000 people	Thai Computer Business Association
Number of Thai domain name (.th)	6,515 (December 2000)		THNIC
Number of computers under the .th domain that are connected to the Internet	71,995 (November 2000)	1.1 computers per 1,000 people	Internet Information Resource Center, NECTEC (www.nectec.or.th/inter net)
International bandwidth	316.375 Mbps incoming 215.437 outgoing		Internet Information Resource Center, NECTEC (www.nectec.or.th/inter net)
Number of schools wired to the Internet	2,184 (January 2001)	5.8 percent of schools nationwide	www.school.net.th
Number of universities wired to the Internet	82 (June 2000)		Ministry of University Affairs
Number of government websites	19 ministries and 158 departments		Information Technology Service for Public Sector Office, NECTEC
Number of fixed phone lines	7.66 million lines March 2000	12.3 lines per 100 people	TOT Corporation
Number of leased telephone lines	5.22 million lines March 2000	8.4 lines per 100 people	TOT Corporation
Number of mobile telephone lines	2.56 million lines March 2000 (Operated by TOT and private sector, 1.39 million; CAT and private sector, 1.17 million)	4.1 lines per 100 people	TOT Corporation

These numbers will be more significant considering that Thailand is lagging far behind her neighbors in many key areas. To illustrate, Thailand has only 8.4 fixed lines per 100 people, whereas the number is 48.41, 44.97 and 21.93 for Singapore, South Korea and Malaysia respectively. Moreover, there is a wide disparity between the ratio of available phone lines in the Bangkok area (54.2 lines per 1,000) and the countryside (5.8 lines per 1,000).

These numbers will perhaps make more sense if compared with the same type of numbers in the countries neighboring Thailand. Table 2 shows such a comparison on the availability of telephones among the population in Asia:

Table 2: Telephone numbers per 100 people in Asia

Country	Telephone numbers per 100 people
Japan	55.8*
Taiwan	54.5*
Singapore	48.2
South Korea	46.4
Malaysia	21.1
Thailand	12.5
China	8.6*
Asia average	8.4

Philippines	3.9*
Indonesia	3.1
Laos	0.7*
Burma	0.6*

Source: ITU (<http://www.itu.int/ti/industryoverview/index.htm>); Number for Thailand from the Telephone Organization of Thailand. *1999 figures. (Table obtained from Pooparadai, 2003)

The next table shows the number of personal computers per population in the same groups of Asian countries:

Table 3: Personal computers per 100 people in Asia

Country	Personal computers per 100 people
Singapore	48.3
Japan	31.5
Taiwan	22.5
South Korea	19.0*
Malaysia	10.5
Asia average	2.9
<i>Thailand</i>	2.4
Philippines	2.0
China	1.6
Indonesia	1.0
Laos	0.2*
Burma	0.1*

Source: ITU (<http://www.itu.int/ti/industryoverview/index.htm>). *1999 figures. (Table obtained from Pooparadai, 2003)

Table 4 provides the absolute numbers of Internet uses in the Asian countries per 10,000 people:

Table 4: Number of Internet users in Asian countries

Country	Internet users per 10,000 people
Korea	4,025.4
Japan	3,044.4
Singapore	2,986.8
Taiwan	2,246.5
Malaysia	1,504.7
<i>Thailand</i>	371.6**
Asia average	293.0
China	176.1
Philippines	132.8
Indonesia	68.4
Laos	3.8
Burma	0.1

Source: ITU (<http://www.itu.int/ti/industryoverview/index.htm>). **Number for Thailand from <http://www.nectec.or.th/internet/>, *1999 figures. (Table obtained from Pooparadai, 2003)

In sum, there are clear indications of the digital divide in many dimensions involving Thailand. What the numbers in the tables above show are the extent to which the divide exists, in many dimensions, within the country, as well as between Thailand and her neighbors in the Far-east region. In the following section, I shall outline some of the attempts by the government of Thailand to address the digital divide problem. Then I shall present my analysis and philosophical critique of the attempts.

3. Past and Current Attempts to Bridge the Digital Divide in Thailand

3.1 COMPUTER-FOR-SCHOOL PROJECT

During the administration led by Prime Minister Chavalit Yongchaiyuth (1996-1997), Education Minister Sukhavit Rangsitpol initiated the policy of providing all schools nationwide with computers. The idea was to use the government's budget to buy computers from the dealers and gave them away to the schools, including those in very remote areas. A large number of computers were bought out of public fund and distributed to the schools. There were apparently no prior studies as to the needs of the schools and how the computers would fit into their ways of life, and there was no participation from the schools or the village communities as to what kind of computers or how the computers were going to be used and to what purposes. The government in fact bought a very large number of computers and gave them to the schools, each in equal number, as if there were no differences among the schools in the diverse regions of Thailand.

The scheme resembled the currently existing policy of distributing milk to schoolchildren nationwide, which is another policy of the government aiming to reduce the disparity between the rich and the poor, in this case the 'health divide' between the schoolchildren in the urban, Western-oriented middle class area who enjoy drinking milk, and those in the countryside who would otherwise not be able to, or would not want to in any case. The idea is that the government uses public funds to buy a huge quantity of milk from local producers and then distributes it to the schoolchildren everyday. The schools are only required to receive their quota of the milk and to make sure that their students actually get to drink it everyday. The parallel with the computer-for-school project is that the schools and the children do not take part in the decision making as to what kind of computers, what software, what kind of milk, how much in quantity, or how the milk should taste. They were only required just to be there when the computers or the milk were sent over to them. There was no discussion of how the computers would be used or how they would fit with the lives of the villagers and their children in those schools. In the milk case, this is striking because milk is not a natural ingredient in the Thai cuisine, and there are many other ways to become healthy without drinking it. However, the policy is that the schoolchildren are *required* to drink milk everyday, so a dissonance is created between the policy and the typical way of life of the people. A typical picture in Thai schools is that the children sit in a long row drinking milk under watchful eyes of the teachers. They don't seem to enjoy it as much as their favorite diet, and it is apparent that the milk bears no relation to their diet at all, and if they were not required to drink the milk, then it is very difficult to imagine that they would choose to do so voluntarily. As for the computer-for-school project, the stated intention was to bridge the digital divide through sheer physical means of giving away free computers. However, there is also no connection between the way of life of the villagers and their children, and the computers brought to them by the government. In fact many schools which got the computers did not even have electricity with which to run them. It is as if the central government knows best what kind of diet the schoolchildren should take, and what kind of computers and software they should be using. This kind of paternalistic, 'father-know-best' scheme has been typical of the Thai government's dealing with its people for centuries.

While the intention might be good (if one is optimistic enough), the computer-for-school policy turned a disaster. As previously mentioned, there was no electricity; a lot of schools did not have telephone lines, so it was not possible to use the computers to connect to the Internet. Furthermore, many more schools lacked the personnel capable of running them effectively. The computers in effect became sacred objects symbolizing of the power of the government, and to our knowledge there was no scheme of checking the quality of the computers through independent means. Thus there was no way of ensuring transparency that the public money used to buy these computers was spent in such a way that benefited the public the most.

3.2 "GOOD-WISH COMPUTERS" PROJECT

More recently, the current Thaksin administration (2001-), through the newly established Ministry of Information and Communication Technology (Ministry of ICT), has instituted a scheme of selling computers to government workers and the general public at a very low price. The scheme, called in

Thai “Computer *Uea Aathorn*,” or “Good Wish Computers” aims at selling computers, both notebooks and desktop versions, to the population starting at 10,000 baht (250 US dollars) a piece for a basic desktop machine and the top range is around 35,000 baht for a notebook. These are in fact very cheap prices since most PCs in the market sell at 25,000 baht (625 US dollars) and up. The computers run a version of the LINUX operating system developed by NECTEC, which contributes to the lower cost, since to use the more popular Microsoft Windows operating system would mean that the manufacturers have to pay stiff royalties to Microsoft, whereas LINUX is open source, meaning that it can be obtained free of charge from the public domain. The version of LINUX developed by NECTEC is geared toward the Thai language environment, and since NECTEC is a public agency it does not retain any copyright to its development. Moreover, the manufacturers are persuaded to participate in the program since the government promises that the huge volume of sales will offset any loss in their profit. To date more than twenty thousand ‘Good Wish’ computers have been sold to the public, and this has resulted in a healthy state of competition in the Thai computer market, as leading manufacturers either have to stress their quality to maintain their profit margins, or to reduce the price in order to stay competitive with these computers.

The main objective of the project is the same as the computer-for-school project initiated by the previous government, namely, to bridge the digital divide, ‘enlighten’ the Thai population and to bring up-to-date news and information to them so that they are capable of fending for themselves in the globalized competitive world. The computers are intended not only for the general population, but many more have also been earmarked for the country’s large number of civil servants. Since the government relies on the economy of scale, it is understandable that the civil servants would be requested to buy these computers because they are almost a captive market. Besides, the government also has a policy of upgrading the skills of its workers, meaning that the civil servants are required to be able to use computers in their work anyway. According to the country’s first Minister of Information and Communication Technology, Dr. Surapong Suebwonglee, the government planned to distribute no fewer than one million such computers to the population. If this could become a reality, then this would presumably create a considerable impact on the digital divide problem in the country.

This new policy is in fact another version of many ‘Good Wish’ policies initiated by the Thaksin government to bring goods and services to the poor at a very low cost. The current government is well known for its policy of providing for the poor through its various schemes of selling goods and services at very low cost. Apart from selling cheap computers, the government also sells cheap houses and land plots through its ‘Good Wish’ Housing Project. The idea here is to help the poor to be able to have their own houses and pieces of land by selling cheap land plots and single houses at around 300,000 baht (7,500 US dollars) per 25 square wah of land (100 square meters). This project is managed by the Housing Authority of Thailand, a state enterprise in charge of providing housing for the urban population. Moreover, there are many other ‘Good Wish’ projects, such as ‘Good Wish’ insurance policy (where one can buy life and accident insurance for only one baht or 2.5 US cents a day), ‘Good Wish’ taxi, where one can rent a car to drive around as a taxicab at a very low price, and so on, so many that the term ‘*Uea Aathorn*’ in Thai has become a household word meaning cheap goods and services to the poor.

3.3 OTHER PROJECTS

There have been also other projects aiming at narrowing the digital divide. In 1995, NECTEC initiated the SchoolNet project, which aims at connecting schools nationwide to the Internet. News and information, as well as course material, was channeled to the schools to facilitate learning. The overall objective was to enable schools throughout the country to connect to the Internet through phone lines at the same rate of 3 Baht per connection. Schools participating in the program can use their modems to call 1509 to connect to the central server of the project, which contains news and information related to on-line learning and acts as a forum where schoolchildren and teachers can communicate with their peers in the country. At present there are a little more than 2,000 participating schools, representing 5.8 percent of the total number of schools (NECTEC website).

In addition, there is the ‘Clean Internet’ Project, organized by CAT Telecom —the country’s monopoly holder of Internet connection to the outside world. This project aims at reducing the cost of internet connection to only one baht per hour, which is very cheap compared to what an average user

has to pay to a typical ISP in the country, which is around . Users have to buy a special card and use their modem to call 1222 in order to connect to the project's central server located at <http://www.cat.net.th/cleannet/>. This site collects a number of links to government agencies, schools and other information holding sites, and it is publicized that the site is free from pornographic material. However, the catch is that users cannot connect to any other sites except through this central portal.

4. What Do These Projects Tell Us?

The computer-for-school project was a disaster precisely because there was no attempt to understand the contexts in which the computers are going to be used. Many studies have shown that computers, as is the case with other technologies, do not exist in a vacuum, but are interconnected in various ways with the times, places and people they are in contact with (Tiles, 1995: 116-142). In this case, nonetheless, it could be said that there is a sense in which the computers do actually exist in a vacuum. Since they are not used and in many places cannot be used, the computers are nothing but an expensive piece of furniture. They are 'used', if at all, to symbolize the power of the central government vis-à-vis the state schools, to show how deeply centralized the system is. They bear no relation whatsoever with the villagers, their children, and the schools they are supposed to serve. Moreover, in the cases where they are actually used, they are so in such a way that does not foster creativity. For example, they are mostly used for clerical tasks such as producing memos. When the students use it, they often do in the context of classroom study where the teacher tells the students how to operate certain application programs. Very rarely are the students allowed to let their imagination roam freely on a computer or an application program of their choice, or to wander around in cyberspace just to see what is there that satisfies their interests.

This phenomenon is typical of a Thai school in that there is little motivation for the children to have inquiring minds and to explore and to search for knowledge on their own. Hence when they use computers, most Thai schoolchildren use it either as a tool for entertainment or for completing assigned projects that are largely routinized, without relating to it in a way that genuinely enhances their imaginative and cognitive abilities. Moreover, my experiences with Thai Internet cafés show that most Thai children were more interested in playing online games rather than with surfing the Internet. In a typical café in a seaside resort town popular with tourists, most Thai users are in school age, and they almost always come to the cafés to play online games with their friends, whereas those who actually connect to the Internet are the foreign tourists. If this trend continues, then it would be very surprising if the policies outlined above would work at bridging the digital divide. If the term 'digital divide' is conceptualized, not in terms of the sheer disparity in numbers in many dimensions that I briefly sketched in the previous section, but instead as an inequality in the capacity to make full use of the Internet in a way that contributes to intellectual or emotional growth, then it is quite obvious that a lot more need to be done to address the problem. Simply providing these students with new computers would not work, because the students will end up doing either games or boring school-assigned projects which they don't enjoy.

On the other hand, the current government's attempt with the 'Good Wish' computers does not improve the situation significantly either. What we have with this project is a scheme whereby one can buy computers at very low price. However, it is doubtful whether this scheme can actually bridge the digital divide, at least in the sense outlined above, for those who buy the computers are usually those who know how to use them already. Even though there has been no specific study on this topic, it is understandable that most buyers of the cheap computers either own one already and are buying a second one, or are using them quite extensively at school or at work. In short, most buyers of the cheap computers are already computer users. This runs counter to the government's intention in the first place because they intended that the computers would help reduce the digital divide through bringing in more users who have not used computers before. What has seemed to happen, on the other hand, is that these potential users are mostly kept on the outside. Thus, instead of bridging the digital divide, this current project threatens to widen it further by making it easier for those who are already computer literate to enjoy using computers at very low cost.

What these two schemes of closing the digital divide share in common is that they focus more on bringing the hardware and physical infrastructure to the population, with rather little consideration

given to how the population are knowledgeable enough to operate the machines to their best advantage. These schemes are also similar to the other Good Wish projects in that they are all ways of providing for the poor, but without the latter's active participation as to what they really need and what kind of historical and socio-cultural contexts the goods and services are to be put into. What the computer-for-school disaster clearly showed is that simply providing hardware as a way to close the digital divide is never enough—it almost missed the point. Actually what differentiates these two policies is only that in there is selling and buying the first case, where there is none in the latter. But the difference is only a superficial. The core remains the same in that both schemes rely on facilitating people to obtain the hardware. These policies would work very well if the computers are actually needed and people know them intimately enough to harness full power and potential from them. So the digital divide appears nowhere narrowed.

In "Growing Science in Thai Soil: Science, Globalisation and Cultural Identity in Thailand" (Hongladarom, forthcoming), I argue that capabilities in science and technology should be 'grown' from the ground up in the respective localities; these capabilities cannot be planted or transferred from one place to another without severe disruption in patterns of living which could prove counterproductive. Since economic development depends in many ways on development of scientific and technological capabilities, the growing workforce needs to become integrated into the attempts to develop these capabilities. Not only do they have to be enrolled in effective programs of study aiming to hone their skills in science and technology, but, as the Sukhavit case shows, a way needs to be found to integrate technologies, in this case the information and communication technologies, into the lifeworld of the village communities that form the backbone of the Thai economy and way of life. This can be accomplished when the goals, values and aspirations of the local communities are taken as among the top priorities when decisions regarding scientific and technological policies are taken. For example, a village may have perfected the traditional skills of producing rice wine through centuries of experience. Science and technology can certainly help develop them further through research and development. Computer and Internet use enter and contribute to the scene when the villagers use it in relation to their production and marketing. Instead of connecting just to a central server with little useful content, the villagers can then connect to their peers in other villagers, sharing information and techniques of rice wine production as well as discuss about the market and other things related to their careers. I have also shown how this peer-to-peer networking should be an aim of policy toward effective computer use in the villages, since it will demonstrably strengthen the capabilities of the communities in many ways (Hongladarom: 2002a). This would not be possible if the overall aim of policy in science and technology remains attached to 'catching up' and imitating the path already taken by the industrial West.

Thus there are shortcomings in both the Chavalit and Thaksin governments' policies toward narrowing the digital divide. At first sight there might seem to be some advantages to these policies of providing free or cheap computers and of selling Internet connection time at only one baht per hour. However, the advantages are only minimal. As mentioned before, selling computers at cheap price would only widen the gap between the rich and the poor, since it is only the rich who already know how to take full advantage of the available computers. Something has to be there already before a person can start to think about how to use computers to their advantage. The challenge is to find it and make it a reality to the majority of the population.

5. Digital Divide and Culture

Before we discuss what more is needed in order to solve the digital divide problem in Thailand, some philosophical reflection is in order. We found that existing habits and tendencies play a large role in adoption of computers and using them to their full potential. Thai school children who go to the Internet cafés mostly do so for entertainment reasons. There is of course nothing wrong with that. After all one cannot study all the time. But what is happening with them, as previously mentioned, is that they focus almost exclusively on playing games and do not connect to the Internet for other reasons. There may be some development in the future where these students learn the skills of navigating the Internet through playing these games, since the popular online games are on the Internet anyway. But what concerns me here is that in order for that to be a reality something has to be done. Otherwise these

students will end up becoming no more than faceless cogs in the wheels run by the few who possess power, which scenario does not bode well for the lofty goal of enhancing the creative, imaginative and cognitive capabilities of the people through information technology and network, which should be the real goal of attempts to bridge the digital divide.

This is where culture comes into the picture. The term 'culture' here is used in the anthropological and sociological sense of the sum total of a group of people's beliefs, habits, practices that provide them with symbolic understanding that can be transmitted chiefly through language. The idea is that these sum totals of beliefs and practices cannot be ignored when the question of how information technology and its diffusion could be best utilized is raised. Borgida and others (Borgida et al., 2002) have shown how culture plays such a significant role in how the digital divide problem is viewed and addressed in their study at what happens in two different rural Minnesota communities. Their result is that the civic and political culture of the two communities, which are different resulting from different historical paths they took, could explain the differences in how these communities address the digital divide problem. In one community, the problem is regarded as a civic matter requiring the whole community to find ways to help each other, whereas in the other the problem is viewed more as belonging more to the responsibility of individuals (Borgida et al., 2002: 138).

What is significant in the findings of Borgida and his team is how cultures affects the way the digital divide is viewed and how it is solved. This shows that the digital divide is located fully within the domain of culture. Not only is the question of how the digital divide problem is viewed by a community or what their attitude is toward it dependent on their culture—that much is rather obvious, but rather the whole issue of the digital divide—the phenomenon itself and how it is going to be addressed—is also dependent. To date there has been no systematic study on how Thai culture plays a role in how Thai communities view and address the digital divide, but my rather informal survey of the matter seems to show that what is normally understood as elements of Thai culture are strongly visible in how the problem is viewed and addressed in this context too.

At first sight it may seem that the two policies of the Thai governments outlined above do not have anything to do with culture. After all they are both policies of providing the hardware to the people only. But the decision, the implementation, the design of the policies, the thinking behind it all, are clearly dependent upon traits of Thai culture. As I have previously mentioned, the thinking behind the policies seems to be that the government sees themselves as the father who has the responsibility of taking care of their 'children'. And the government tends to think that they know more and better than their citizens. In addition, a Thai citizen typically looks at their government as one who has to take care of them and has to help them whenever they are in trouble. This attitude in fact is not peculiar to Thai culture at all, for governments all over the world has the responsibility to look after their citizens, but what is quite distinctive about Thai culture is that the citizens view themselves as rather helpless and that the government has the duty to provide for them. This is well known in the literature as the 'patron-client' relationship. The patron gives the protection, and the client gives submission and loyalty back in return (Robertson, 1996; Jumbala 1973).

What ties the culture of patron-client relationship and the digital divide in Thailand is that the government, viewing themselves as the patron who know better, initiates a policy, be it the computer-for-school or 'Good Wish' computer project, intending to solve a problem as they see it without any attempt to get input from the people. Another aspect of Thai culture that is relevant is the attitude, fostered by a system of education that totally separates the technical from the non-technical side of education, that the digital divide is a technical matter that can be solved only through technical means. Thus there has been very little discussion on the socio-cultural aspects of the digital divide in the Thai context, and most policies in this area originate from technicians such as engineers and computer scientists. (An exception is the IT Policy Research Project [<http://www.nitc.go.th/itpolicy.html>], which is part of NECTEC and is headed by a sociologist.) An effect is that the policy orientation tends to be based on a rather narrow perspective, which we have already seen in the policies discussed here. And we have seen that the policies are not effective in narrowing the digital divide. The policies originate from a certain cultural context, and when they are implemented in other cultural contexts, most visibly those of the Thai rural villages, they do not work since they create strong cultural dissonances.

6. What More is Needed?

So the question is: What more is needed? More specifically: How should the ICTs be adapted and utilized in such that they fit in with the cultures of the local people so that they can make use of them to their fullest potential? The question presupposes that the fitting with the cultures is necessary for the making use to the fullest potential. This is so because, since cultures are the sum total of beliefs and practices in the sense outlined above, introduction of new technology means that a new set of practices is brought to the existing pattern of practices that constitute the culture of a locality, hence if the new set is not well integrated with the existing ones, then a dissonance is created and the full potential thus cannot be realized. This is perhaps the reason why the computer-for-school project in particular did not work. Computers are more than chunks of plastic and silicon; they form part of a new set of practices that could create dissonances with the existing cultural pattern. Since there was no attempt to integrate them, together with the accompanying beliefs and new patterns of practices that are required in order to work with computers and the Internet effectively, it is understandable why the policy turned a disaster.

In my previous research on science in Thai culture (Hongladarom 2002b), I contended that the way to integrate modern science into Thai culture was to develop a real partnership between modern science and the grassroots of Thai localities. Merely importing scientific knowledge from abroad and trying to impose it on the Thai culture did not work because in many cases science was the partner of large, multinational business interests which do not always benefit the local communities, thus the real partnership here means that modern science should provide real and lasting benefits to the grassroots through science helping them to develop according to their own needs and priorities, rather than those of the central government or the multinational businesses. In this sense, the digital divide could be narrowed through plans to let computers and the network become real partners with the local communities too. What goes for science in Thai culture actually goes for technology, since we are focusing, not on the essential characteristics (if there are any) of the two, but on the fact that both are constituted by a set of beliefs and practice patterns that form a culture, and which would create dissonances if transplanted in toto into a culture where they did not first take root.

It is not possible in the space provided for this paper to outline in any detail how to make computers become real partners. For this to become possible the villagers need to possess the relevant knowledge and skills, and what is no less important is that these knowledge and skills find ways to realization into products and services that lead to economic development of their communities as well as satisfaction of their other goals, values and priorities. In the case of rice wine production as mentioned before, this includes the knowledge and skills required in producing the best tasting wine possible, the market savvy of finding a niche for their product in the domestic or international market, and the networking that is made possible through Internet technology that enables them to connect with their peers in order to share news and information among themselves. The villagers already possess many skills related to their making a living, thus it is not too far fetched to imagine that computer literacy would become one of those skills too if they realize that it is necessary for them and is relevant to what they do best too.

Hence it is here that the digital divide problem has to be addressed, since information and communication technologies are among the most effective tools that can spread ideas and knowledge to the whole population, thus increasing effectiveness of education. The networking is not possible without the computer network, the infrastructure that supports it, and no less importantly the knowledge and skills required to operate them efficiently. Computers and ICTs should be integrated into the lives of the villagers themselves, in the same way as the use of older technologies such as the plowshare or tractor have become integral to the lives of farmers. This is clearly a difficult task, but one can start doing it by learning from history to find out how the tractors have become part of the Thai farmers' lives and search for the pattern. Since the tractors can be demonstrated to be much related to the farmers' work, so can the computers and the network. If it can be shown that operating the computer is no less difficult than operating the tractor, then a good head start can be anticipated.

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**ANALYSIS AND JUSTIFICATION OF PRIVACY FROM A BUDDHIST
PERSPECTIVE**

Soraj Hongladarom

*Center for Ethics of Science and Technology, Chulalongkorn University
Bangkok 10330, Thailand*

Tel. 66(0)2218-4756

Fax. 66(0)2218-4755

Email: hsoraj@chula.ac.th

ANALYSIS AND JUSTIFICATION OF PRIVACY FROM A BUDDHIST PERSPECTIVE

Abstract

The perspective of various Buddhist traditions offer an illuminating insight into the nature and justification of the concept of privacy in information ethics. The paper begins by outlining the major literature in the West dealing with the issue. What has emerged in the literature is a common assumption of a separately existing individual whose privacy needs to be protected. Then I present the thoughts of two Buddhist thinkers, Nagasena and Nagarjuna, who are, respectively, representatives of the two major traditions, Theravada and Mahayana. The two Buddhist saints agree that the concept of privacy is a construct since it presupposes the inherently existing individual, which runs contrary to the basic Buddhist tenet of No-Self. However, this does not mean that there can be no analysis and justification of privacy in Buddhism, because there is the distinction between two views regarding reality, viz., the conventional and the ultimate views. Both are indispensable.

Keywords: Buddhism, privacy, no-self, Nagarjuna, Nagasena

INTRODUCTION

Privacy has become a key issue in today's information society. It is well known that the power of information technology is such that information about an individual or indeed the entire population can now be easily obtained and manipulated. This can bring about tremendous convenience and benefit, such as when one puts an ATM card into a machine and gets out money, or when one does business with public authorities and can avoid the hassles involved in seemingly endless amount of paper and filings. However, it is also well known that the potential for misuse of the information is a real one. In Thailand there has been much discussion about the government's plan to issue a digital national identification card to each citizen. This idea is not new in Thailand at all, as each citizen has been accustomed to having a national ID card for a long time. What is new is the digital nature of the new type of card, called 'smart cards', which will be implanted with a microchip and supposedly would contain much more information about the card holder than before. There were talks about putting such information as health records (so that the holder does not have to bring with him or her all their health information and medical history when seeing a doctor anywhere in the country), tax ID number (for convenience when contacting Revenue Department), and other forms of information in one card so that the Thai citizens do not have to carry too many cards in their wallets. While clearly offering conveniences of this sort, it is equally clear that there is the tremendous potential for the authorities to use this huge database in ways that may not be in accordance with the rights and privacy of the population.

This situation is exacerbated by the fact that Thailand still does not have a specific law protecting personal information. Thus in principle the government can decide to do whatever they want with the information contained in the smart cards. Examples of such misuse are discrimination against certain population groups, such as minority ethnic groups, or perhaps those who are more liable to get certain diseases which would put a heavy burden on the public health service system. It is conceivable that the health records, should they be contained in the smart cards, might lead to a situation where citizens are denied their rights, or are discriminated against. This can happen when the health records in their cards show that they are more likely to contract certain diseases than the general population and thus may have to pay more for their insurance, and so on.

Another serious potential misuse is to use the information and communication technologies for surveillance purposes. The political unrest in southern Thailand has led some politicians to voice their opinions that closed circuit cameras should be installed in key places so that, in the event of violence, the culprits could be identified. In cyberspace itself, there have been talks of recruiting a number of volunteers who would prowl cyberspace searching for websites or

email messages containing unlawful content. It is only a short distance from these good intentions to turn into actions that could destroy civil liberty and individual rights of the people. All this was not even conceivable a few decades ago, but with the proliferation of information and communication technologies, these actions are not only possible, but are being performed in certain places.

The threat of these misuses of the information underscores the need for a sustained reflection on the nature of privacy and its justification. What in fact is privacy? What is being guarded when one wants the government to curb their power of gaining information? Another related set of questions is: What justifies the need that privacy of individuals be protected? What kind of principle lies behind the justification attempt? It is the purpose of this paper to begin to investigate these sets of questions through the Buddhist perspective, especially that of Mahayana Buddhism. The reason why I believe the Buddhist perspective is important in this area is that Buddhism has a very interesting claim to make about the self and the individual, on whose conception the whole idea of privacy depends. Furthermore, Buddhist ethics also has quite a lot to say in the area of information ethics, especially regarding privacy. As Buddhism finds itself in the early twenty-first century, where there are widespread potentials to violate individuals' privacy, Buddhism has to find a way to accommodate itself in the new environment, and to provide answers to the normative questions that naturally emerge. Hence, in Buddhist cultures at least, one stands in need of answers from the Buddhist tradition that could provide effective guidelines on these matters.

Here is what I would like to accomplish in the paper: Nagasena and Nagarjuna, two Buddhist saints whose writings form the very basis of both Theravada and Mahayana Buddhism, have a very interesting conception of the self (or lack thereof, as we shall see), which can be applied to contemporary discussions of privacy in information ethics. According to Nagarjuna, the self as an inherently existing entity does not, strictly speaking, exist, but as an empirical entity it certainly does. The conception of privacy prevailing in Western information ethics is predicated upon the conception of the self, and a critique of privacy has to begin with conception of the self. The idea for this paper is that if one considers Nagarjuna's conception of the self, then privacy is a contested concept. It does not exist *per se*. On the contrary, the conception of privacy exists only in accordance with its value. This seems to point toward a more pragmatic conception of privacy. Privacy talks are useful ones, but that does not mean, nor is the talk presupposed by, the putative fact that privacy is already there in some strongly objective sense. While this Buddhist alternative will thus dramatically alter our understanding of the nature of the 'self' underlying privacy, I will further argue that there are in fact a number of advantages to this conception, in contrast with the prevailing 'realistic' ones (i.e., that take the self to be an essential reality).

So here is the outline of the paper. I will begin in the next section with a brief survey of the existing literature on the analysis of the concept of privacy and its justification, both from the West and the East. Then I discuss the Buddhist conception in more detail. The next section will present the key role of compassion in Buddhist ethics and its particular relevance to the discussion on privacy. The basic question is what kind of an analysis of the meaning of 'privacy' and what kind of justification could be offered when the premise is that of the Buddhist idea on the self. This leads to some very interesting conclusions. The idea of justifying privacy on grounds of the ontology of the individual—that there actually exists such a thing as an 'individual' whose rights and privacy are to be respected—is not tenable in Buddhism. There is, however, a way to justify privacy which does not rely on such an ontology. I hope to make this point clearer in the course of this essay.

PRIVACY IN INFORMATION ETHICS: EAST AND WEST

In the philosophical literature on privacy, much emphasis has been put on the definition of the concept and its justification. That is to be expected, because it is of course the task of

philosophy to analyze concepts and to provide justification. In any case, what is interesting is that the majority of the works on the topic have been from the perspective of the West, and it is only recently that there is interest in what the East has to say on definition and justification of privacy. The volume of *Ethics and Information Technology* edited by Charles Ess (Ess, 2005) is a pioneering attempt in filling this lacuna. In what follows I shall lay the background for my own argument by first detailing what the major published works in the West have to say on privacy, and then we will have a look on some of the articles in the Ess volume. The discussion in this section will then lead to my own argument in the next section.

In "Toward a Theory of Privacy in the Information Age", Jim Moor (Moor, 2000, pp. 200-212) has established what is perhaps a now classic conception of privacy. According to Moor, privacy consists in an expression of a core value that are held by all human groups; hence it is a universal value because being a part of the core values means that privacy is shared by all human groups. These core values are "*life, happiness, freedom, knowledge, ability, resources, and security*" (p. 204). Thus for Moor privacy is a universal value and he disagrees with attempts to ground privacy as something that has only instrumental value (pp. 202-205). Privacy, for Moor, is not part of the core values, but it stands along side them since it is presupposed at least in the value of security. Moor claims that it is an expression of one of the core values, namely security. Privacy is an expression of the value of security because it protects us from unwanted intrusion that would rob us of the information that we hold dear to ourselves. For example, having somebody wiretapping a person's phone conversations would be a blatant violation of her privacy, because we regard phone conversations as a private matter and a society that does allow wiretapping to be widespread would not protect the security of its members at all. Moreover, the authority that does the wiretapping would violate the democratic ideal because protection of private information is crucial in ensuring the authority does not gain an unfair advantage over access of information which could well lead to abuse of power. For Moor, privacy is justified through its being an expression of the core values which all human groups and communities share. Its justification is based more on empirical grounds, that privacy is presupposed in the core values that, empirically, all cultures seem to share, than on purely a priori grounds.

In addition, Moor calls for a "control/restrict access" conception of privacy where the individual has control over his or her own information through the principle of informed consent, and only those who are authorized to gain access to personal information can do so (pp. 208-209). His example is a tax investigator who looks at tax records of certain individuals. So far as the investigator acts in his capacity as an investigator, he is authorized to do so, but only to the extent allowed by his work as investigator. As soon as he is snooping around and looks at the records just for curiosity, then he violates the principle of informed consent, even though no new information is obtained (p. 208). For Moor, privacy is more complicated than the simple "Either I know or nobody knows" scheme. The level of access that a person is allowed to gain access to another's information is defined through a complex of situations. Moor states: "Ideally, those who need to know do, those who don't, don't" (p. 209).

Another conception is that of Adam D. Moore (Moore, 2003). He agrees with Jim Moor in that privacy is an empirically grounded concept and is universal in all human cultures. In support of this claim Moore cites a number of empirical studies in anthropology and cultural studies claiming that privacy is empirically grounded in all cultures, and thus is part of cultural universals (Moore, 2003, p. 222). He adds that though privacy is universal, its specific form does vary across cultures (p. 223). This topic of universality and empirical grounded of privacy will be the subject of the next sections. He differs from Moor in that he advocates the control based definition of privacy, where privacy is "our ability to control patterns of association and disassociation with our fellows" (p. 215). Moor would disagree

with this, for he believes that it is not possible to control all the 'greased' information about ourselves that is available through all the electronic means. Hence Moor's is a weaker conception that allows for some space in which personal information can be obtained, but only through authorized personnel.

In another well known article, W. A. Parent defines privacy as "a condition of not having undocumented personal knowledge about one possessed by others" (Parent, 1983, p. 269). The idea is that if the personal knowledge in question is documented then presumably it is in a public domain in the sense that anybody can look it up and learn about the information without thereby violating the privacy of the person whom the information is about. Parent disagrees with those, such as Fried (1970, p. 141) and Wasserstrom (1979, pp. 148-167), who argue more toward a 'control' conception of privacy where privacy is defined more as the control an individual has over the information related to himself or herself. According to Parent, an individual should be entitled to reveal as much or as little information concerning herself to those she trusts as she likes. She has control over the information about herself, but it does not seem that her privacy is then either threatened or protected, because she voluntarily reveals her private information to others. She has control, but not necessarily privacy. Another important point in Parent's view is his justification of privacy. The reasons why privacy should be valued are threefold, according to Parent. Firstly, if others have information about us, they have power over us. Secondly, people are generally intolerant of others' lifestyles and so on, so privacy protects this, and lastly privacy is among the values that taken together constitute the 'liberal ethics'. In Parent's words, "individuals are not to be treated as mere property of the state but instead are to be respected as autonomous, independent beings with unique aims to fulfill" (Parent, 1983, p. 276).

Hence it seems that Parent subscribes to the 'instrumental' view of privacy as a value, since he believes that privacy is valuable because it brings about desired values, such as individual autonomy and protection against abuse of power by others, protection of diversity in lifestyles and so on, and the need for individuals to be treated as ends, not mere means, as Kant would say. This instrumental view accords with that of Fried, who argues for privacy as a necessary ingredient of intimacy among persons (Fried, 1984, p. 209). Their views thus contrast with those of Moor and Moore, both of whom look at privacy as a more or less universal concept. We will discuss this point later on when we look at how the Buddhists look at the problem of privacy.

What is common in these conceptions of privacy, even though there are many differences among them, is their presupposition of the existence of the individual or the self whose privacy is the object of analysis here. For people like Moor, Moore, Fried or Parent, privacy is that of the individual. The question is what it means for an *individual* to have privacy as well as *why* privacy is valuable or important to him or her. I would like to call this the 'individual-centered' view of privacy because it seems to take for granted the existence of the individual self. Parent's definition, for example, presupposes that there be *personal* knowledge which should be protected from others. Moor's idea that information about oneself needs to be controlled and only restricted personnel are authorized to gain it in relevant contexts also shares the presupposition that it is information about *oneself*, that is, about the individual self who subjectively purviews the information about herself and decides which information could be divulged to others and which not.

This does not mean that privacy does not exist at the broader levels. According to Westin, there are three levels of privacy, that of political privacy, socio-cultural privacy and individual privacy. The first is the kind of privacy that citizens in a political entity enjoys and can be violated only when the interests of the whole polity is at stake (Westin, 2003, p. 432). The second level concerns privacy in lifestyles, beliefs, and behaviors - privacy that should be protected from undue intrusion by the authorities. In other words, cultures can also have their

privacy as do individuals. The third level is that of the individual, whose private life should be accorded some space which would allow her to make decisions and express her ideas, which are necessary for democracy (Westin, 2003, p. 434). Thus Westin sees privacy to be a “social good,” which requires “continuous support from the enlightened public” (Westin, 2003, p. 434).

To turn to the *right* to privacy, Judith Jarvis Thomson (1975) famously argues that there is no such right; instead there are a group of rights related to the person which are more basic. Her argument is that the right that is usually considered as right to privacy is in fact right to some more basic conditions such as property or person. A quarreling couple, for example, might not enjoy having their quarrels listened in on through a bugging device, but Thomson sees this more as the right not to be listened to, which is a part of the right over the person, not the right to privacy. Cutting someone’s hair while she is asleep does not harm her, but her right is violated nonetheless, and that is the right over the person according to Thomson. The basic idea, then, is that any putative instances of violation of the right to privacy turn out to be, on closer analysis, to be violation of the right to person or the property (Thomson, 1975, pp. 305-306). Against this, Thomas Scanlon (1975) argues that there is indeed a common ground to the right of privacy, and that is the condition of “being able to be free from certain kinds of intrusions” (p. 315). And it is the intrusions of our bodies, behaviors and interactions with others are some of the clear examples of intrusions that violate the norm of privacy (p. 315). From this brief review of the numerous literature on privacy in the West, it should be clear that the common thread that runs through all these differing conceptions is the presupposition that the individual exists objectively and distinctly from other individuals. The control theory of privacy assumes that it is the individual that should be in control of her information. The restricted-access view is also based on the belief that the individual exists access to whose information should be restricted. Parent views privacy as a protected given to personal knowledge, which is the kind of knowledge *about* an individual who, from her own first-person perspective, does not want others to share with her. The key issue here is the individual and the first-person perspective which is its defining characteristic.

This has not always been in the case even in the West. Tamás (2002) details the development of the conception of privacy in the West, and found that before the advent of modernity, privacy consisted mostly in the ‘private’ life in one’s own house or among one’s own family. It is only with the modern emphasis on the pure subjectivity of the individual (evidenced in René Descartes’ famous “Cogito, ergo sum” statement) that the conception of privacy changed toward something based on the point of view of a single individual who is defined solely through her *personal* viewpoint, her idiosyncratic perspective which can be shared by no one.

In a critique of the modern conception of privacy, which clearly contrasts it with the ancient conception, Tamás (2002) has the following to say:

Privacy as subjectivity hurts [sic] itself at the unchanging public sphere and at its political might, which makes the subject feels inessential, politically irrelevant; the subject still remains free to be herself, indeed the more herself she is within her private moral homestead, the freer she is; but in the public realm she is increasingly unprotected as long as rebellion is redefined as dissent and, of course, she has a “right” to dissent (p. 220).

So the ancient conception concerns having authority in one’s homestead, and according to modernity, such a homestead has receded to lie solely within the limit of pure subjective consciousness, which as Tamás points out here, runs the risk of being eroded by the kind of politics which destroys the “public sphere” in which citizens exercise their right to take part in

governance. What is interesting in our case is that all the key figures in contemporary debates and analyses on privacy in the West seem to subscribe to this modernist idea of “privacy as subjectivity”. It is thus highly interesting to see how works on privacy from the Asian perspective compare with this Western conception.

As previously mentioned, Charles Ess has made an important contribution to this comparative perspective on privacy in his special issue of *Ethics and Information Technology*. The papers in the volume point to an emergence of a new perspective on privacy which does not rely solely on the metaphysics of ‘pure subjectivity’ that we have seen to be presupposed by the Western conception. For Ess, the most salient difference between the Asian and Western conception is this basing of privacy on the individual subject, and he points out that this runs counter to the teaching of Buddhism:

In particular, in those countries such as Japan and Thailand where Buddhism plays a central role in shaping cultural values and identity, the Buddhist emphasis on “no-self” (*Musi* in Japanese) directly undermines Western emphases on the autonomous individual as the most important reality (at least since Descartes), the source of morality (in Kant), the foundation of democratic polity, and in all these ways the anchor of Western emphases on *individual* privacy. As Buddhism stresses instead the importance of overcoming the ego as the primary *illusion* at the root of our discontent – it thus provides a philosophical and religious justification for doing away with “privacy” altogether, as in the example of Japanese Pure Land Buddhism (*Jodo-shinsyu*), which inspires some authors to move towards salvation by voluntarily betraying private, even shameful personal thoughts (Ess, 2005, p. 5).

Moreover, when the awareness of the need for privacy enters the lifeworld of the cultures of the East, Ess sees that what happened is a kind of ‘hybridization’ where the elements of the West (individualism, emphasis on pure subjectivity) and of the East (emphasis on community and dissolution of the individual self) are mixed up. It is a purpose of this present paper to elucidate the nature of this mixture, and it shall be seen in the next section how a theory of privacy according to the Buddhist perspective could be started.

For more specific perspectives of privacy in the East, Lü provides a detailed analysis of Chinese culture in terms of privacy (Lü, 2005). What is notable is that Lü states that for the Chinese, privacy is regarded as having an instrumental, rather than intrinsic value (Lü, 2005; see also Ess, 2005, p. 2 and note 3). And this will also be an important topic in the discussion of the Buddhist view which I shall develop in the next section. Furthermore, Kitiyadisai (2005) presents a powerful critique of the Thai government’s recent attempt to issue ‘smart ID cards’ to all its citizens, cards which have strong potential to violate the right to privacy of all Thai citizens. As much more personal information can be contained in the microchip that is implanted in the smart card, the potential for abuse is much greater than before. And more alarming is perhaps the tremendous power over the citizens that the Thai government could have once all the cards are issued to each citizen. (By law, each Thai citizen above 15 years old is required to have a national identity card.) This power includes population profiling, criminal records, genetic categorization and so on. Kitiyadisai (2005) correctly points out that the lack of legal mechanisms against such abuse remains a thorny issue, and it appears that the government is not much interested in sponsoring a law which would restrict their own power. Hence this is one of the many issues which the Thai citizens need to be constantly aware of so that the democratic ideal of checking and balancing the political power can be realized.

Another perspective comes from Japan. Nakada and Tamura (2005) say that privacy as practiced nowadays in Japan has its roots in traditional Japanese culture. What is emphasized here is the contrast between the Western notion of the individual as somehow atomic, where one is more or less separated from another, and the Eastern notion of the individual as defined in terms of the relations the individual has with other individuals and of roles he or she has within the society (Nakada & Tamura, 2005; see also Ess, 2005). This is a standard Confucian teaching on the individual in society (For more detail, see Ames & Rosemont, 1998). The idea, broadly construed, is not unlike that of Buddhism. Even though there is no explicit rejection of the individual self in Confucianism (in Confucianism the self is constituted through networks of relation, but that by no means implies that such a self does not in fact exist), the thrust of both traditions seems to be that social relations among individuals both define the identities of the individuals themselves (only conventionally in Buddhism) as well as define their expected roles. Hence it would be instructive to see how Buddhism and Confucianism would view the notion of privacy and compare this with the modern conception as put forth in the Western literature (such as those by Moor, Parent, or Moore and so on). In any case, a broad picture emerges from this comparative review of the literature on privacy: On the one hand, the West tends to view privacy in terms of a property of an atomic individual. Being *atomic* seems to imply that the individual is accorded some degree of privacy. This can also be compared with the ancient conception where one's private domain is the estate which one possesses and no outside influences are to intervene (within certain limits). Breach of privacy is tantamount to trespassing one's property. The difference is that for the modern conception, the domain in question has receded to the individual consciousness or 'pure subjectivity'. This is not to say that the estate or the individual possession such as land and other property has no role to play. Obviously, these have a large role to play in modern societies, but it points to the fact that in the modern consciousness, the justification of privacy ultimately relies on pure subjectivity or private reasoning. Here one is reminded of the ethical principles of Kant, in which the ultimate linchpin of ethical judgment is the individual reasoning mind itself (See also Capurro, 2005, pp. 39, 45 ff.). On the other hand, the situation in the East, at least as emerged from the above discussion, tends to be one where the line separating one individual from another is fuzzier. One might want to compare this situation with the general social condition in Asia where individuals tend to live together in large family groups, sharing many things together, and where the need for private space is not emphasized. One might also imagine a large family house, where the boundaries among individual members are close to non-existent (Kitiyadisai, 2005; Ramasoota, 2000). As for the private subjectivity, there is not much emphasis on it in the philosophical traditions of the East. Buddhism treats it as parts of the five constituent elements (*skandhas*) of the self, consisting of bodily form (*rupa*), feeling (*vedana*), perception (*samjña*), disposition (*samskara*), and consciousness (*vijñana*). The private self is thus composed of four basic elements in the Buddhist thought, and the idea of personal subjectivity is that it consists of these more basic elements. Hence one can see from the beginning that in Buddhism the personal self is broken down into these elements and there is no assertion that such a self exists as a self-subsisting entity. In more mundane terms, this could be taken to mean that in the East the emphasis is on the interrelation of one self with others, as seen in the Japanese examples mentioned in Nakada and Tamura (2005), rather than on the *atomic* or substantial characteristic as in the West. Nonetheless, one should not be persuaded to have an idea that things are entirely black and white. The West has its understanding of the interrelatedness of individuals as well as emphasis on the role of communities, and the East also has its way of emphasizing the separatedness of individuals. For example, the communitarian tradition, based largely on the works and thoughts of Hegel, is a clear indication that the idea that individuals are interrelated

is not lost in the West. And in the East, today's globalized world has dictated that the idea of privacy is to take root and find ways of concrete realization (see Lü, 2005 for example). The task for the theorist is then to search for a system of justification of privacy which respects these diverse cultural traditions, but at the same time is powerful enough to command rational assent of all involved. In order to start to do this, I discuss in the next section the Buddhist view on the self and its implication for privacy.

THE BUDDHIST VIEW OF THE SELF AND PRIVACY

Ess' attempt at bringing in the perspectives of the East into the contemporary discussion and debate in information ethics is highly commendable. However, as is the case with pioneering attempts, more details need to be put in so that the account is more complete. It is the argument of this paper that Buddhism itself does not reject privacy; on the contrary, one could rely on its teachings to justify its continued use and its enforcement, even in Asian and especially in Buddhist polities. One should not be persuaded by a hypothetical and simple argument that, since Buddhism rejects the individual self (more on this difficult topic later), and since the individual self is the linchpin of privacy, then Buddhism rejects privacy. This is so because one needs to distinguish between the *absolute* and *conventional* levels of assertion. *Conventionally* speaking, there is privacy. That the individual does not exist in the absolute sense does not imply that he or she does not exist in empirical reality, and if this is so, then his or her privacy is there also as a consequence of the individual's social roles. From the *absolute* point of view, there is no distinction that can be made between subject and object, for such a distinction presupposes that there be an inherently existing self, whose very existence is denied in Buddhism. Thus the proposal is that privacy is grounded on the *conventional* idea of the self and individual, and the justification of privacy cannot be conceived separately from the democratic ideal. Privacy is necessary for democracy. Loss of privacy typically leads to abuse of power; privacy, hence, appears more an instrumental value rather than an intrinsic one (and here I find myself in broad agreement with at least the contributors to the Ess special issue mentioned earlier). However, the distinction between intrinsic and instrumental values rests on a presupposition that there exists some kind of 'cores' in the values such that when the core possess a property inherently in a value then the value is said to be 'intrinsic', but if not then it is regarded as 'instrumental'. The idea here is that talks of values being intrinsic or instrumental is just a way to argue that some values are those we do not want to part from and some are more adventitious. But if we realize that the reason why we do not much want to part from those values we call 'intrinsic' is no more than our attachment to it then we can begin to see how the whole distinction is constructed. The upshot is that one should not be worried about values being intrinsic or instrumental, because the distinction appears to rest on a rather insecure foundation, or so I would argue. The argument in the previous paragraph naturally needs quite a lot of explication. So let us flesh this out step by step. First of all let us look at the Buddhist analysis of the self, and then the different levels of perception and analysis as conventional and ultimate. In *The Questions of Milinda*, one of the best known texts in all of Buddhism, Ven. Nagasena, in reply to questioning by the Greek King Milinda, has the following to say:

The king said: 'Is there, Nagasena, such a thing as the soul?'

'What is this, O king, the soul?'

'The living principle within which sees forms through the eye, hears sounds through the ear, experiences tastes through the tongue, smells odours through the nose, feels touch through the body, and discerns things (conditions, "*dhamma*") through the mind—just as we, sitting here in the palace, can look out of any window out of which we wish to look, the east window or the west, or the north or the south.'

The Elder replied: 'I will tell you about the five doors, great king. Listen, and give heed attentively. If the living principle within sees forms through the eye in the manner that you mention, choosing its window as it likes, can it not then see forms not only through the eye, but also through each of the other five organs of sense? And in like manner can it not then as well hear sounds, and experience taste, and smell odours, and feel touch, and discern conditions through each of the other five organs of sense, besides the one you have in each case specified?'

'No, Sir.'

'Then these powers are not united one to another indiscriminately, the latter sense to the former organ, and so on. Now we, as we are seated here in the palace, with these windows all thrown open, and in full daylight, if we only stretch forth our heads, see all kinds of objects plainly. Can the living principle do the same when the doors of the eyes are thrown open? When the doors of the ear are thrown open, can it do so? Can it then not only hear sounds, but see sights, experience tastes, smell odours, feel touch, and discern conditions? And so with each of its windows?'

'No, Sir.'

...

'Then, great king, these powers are not united one to another indiscriminately.'

'I am not capable of discussing with such a reasoner. Be pleased, Sir, to explain to me how the matter stands.'

Then the Elder convinced Milinda the king with discourse drawn from the Abhidhamma, saying: 'It is by reason, O king, of the eye and of forms that sight arises, and those other conditions—contact, sensation, idea, thought, abstraction, sense of vitality, and attention—arise each simultaneously with its predecessor. And a similar succession of cause and effect arises when each of the other five organs of sense is brought into play. And so herein there is no such thing as soul.'

(Nagasena, *Questions of Milinda* Book II. Chapter 6, retrieved Feb. 20, 2006 from http://www.sacred-texts.com/bud/sbe35/sbe3506.htm#page_86).

Nagasena is refuting the King's belief that there exists the "living principle" which is supposed to be responsible for our understanding of the sense data coming to us and for our self-consciousness as a separate entity as opposed to other individuals. It is this principle, so the King appears to believe, that is one who sees, hears, tastes, remembers, feels, and so on. This is perhaps comparable to the Western individual self that we discussed earlier. At least the notion that the living principle here is one who does the seeing, hearing, tasting, thinking, feeling, makes it a very strong contender for the Western individual, private self. Nagasena, however, argues that such a living principle does not in fact exist, because all it does is seeing, hearing, thinking, etc. and these actions are always performed in relation with the relevant faculties. If there were the living principle, then, on analogy with the King and Nagasena as capable of looking through any window in the palace, this living principle would presumably be able to see through the ear or think through the nose, since the eyes, the nose, etc. are the doors through which the living principle (or the soul) comes to contact with the outside world. But since the seeing function of the soul is always connected to the eye, an essential part of the living principle has to rely on this bodily part. Seeing is part of a chain of causes and effects that arise from light reflecting from a surface, travels to the eye, falls on the retina, gets changed to electrochemical signals and transmitted to the brain, and so on.

Nowhere is this 'living principle' found. And this is the case also for the other faculties. As for the thinking faculty, one might think 'This is me' and gets a notion that the individual self actually exists. (This is the basis of Descartes' famous argument that the 'I' that does thinking actually exists because it is always found in any act of thinking or being conscious, and Kant's argument that the 'I think' always accompany any act of thought such that the thoughts are able to be related to the same individual. See Descartes, 1986 and Kant 2003, B131-132.) But when analyzed by Nagasena, "thinking" here is just one episode in the series of "thinkings" and feelings that occur in rapid succession one after another. Nowhere in these episodes is the living principle or the soul found either. Hence it is concluded that there is no soul, and thus no inherently existing self. And this argument against the inherent existence of the self is accepted by all schools and traditions of Buddhism.

One should bear in mind, nonetheless, that this analysis of the self does not imply that what is commonly understood as the self does not exist at all. To do so would be a blatant denial of empirical reality. The self in the *conventional* reality does exist, and it is only after analysis that the conventional self is shown to be a mere illusion in *ultimate* terms. Let us look at the following text from the *Mulamadhyamakakarika* (The Fundamental Verses of the Middle Way - MMK) by Nagarjuna:

The Buddha's teaching of the Dharma
Is based on two truths:
A truth of worldly convention
And an ultimate truth

Those who do not understand
The distinction drawn between these two truths
Do not understand
The Buddha's profound truth.

Without a foundation in the conventional truth,
The significance of the ultimate cannot be taught.
Without understanding the significance of the ultimate,
Liberation is not achieved.
(MMK XXIV, pp. 8-10)

Understanding the difference and distinction between the two truths is crucial in the whole of Buddhism. What Nagarjuna is saying is that the Buddha's teaching is based on two levels. Firstly, there is the level of *conventional* truth. It is the basic teaching that language as being used in everyday life, together with its system of meaning and its way of dividing up the world to correspond to the meaning, is conventional in the sense that one cannot grasp reality as it really is through language alone. In this, Nagarjuna is on roughly the same wavelength as Immanuel Kant (2003), who famously argues that ultimate reality consists in things-in-themselves which cannot be known save through the system of categories that are essential to the understanding. It is only when the conventional reality – in Kant's terms, *phenomenal* reality – which is necessarily based on language and concept, is understood in its very nature to be nothing more than an illusion, something that is projected by the mind out of the more basic, ultimate reality, that the distinction between the conventional and the ultimate level of understanding is grasped. Just as for Kant, the phenomena as the appearance of things-in-themselves *to us* represent two sides of a unitary reality, so Nagarjuna is clear in pointing out that the two levels of truth here do not imply that there are two separate realities. On the contrary, there is only one reality, the one with which we are all accustomed. But when this

familiar empirical reality is analyzed and found to be not as it appears to be, it is understood to be merely conventional.

The case of the self, or the individual 'I' is no exception. The referent of the word 'I' in statements such as

(1) I weigh 76 kilograms.

is nothing but my own body. I may weigh 76 kgs. at the time of writing this article, but just a few years ago I weighed less and there is no guarantee that I'll weigh the same in the future. But the 'I' may also refer to mental states, such as in

(2) I am trying to understand what Nagarjuna means by the two truths.

In this case the 'I' refers to my thinking at the moment, which naturally changes quite rapidly. In both cases, the 'I' in (1) and (2) refer to the empirical or conventional I, whose existence Buddhism has no qualm in recognizing and accepting. It is only when there is an inference from a collection of empirical statements such as (1) and (2) to an affirmation that there exists an overarching *I* that somehow binds all these empirical episodes together that Buddhism disagrees, since it is this overarching *I* that is the object of analysis and is found to be non-existent. At the conventional level, then, there are many episodes of empirical I's such as in (1) and (2), but at the ultimate level, one cannot find the overarching *I* or the 'living principle' that has been refuted by Nagasena in the passage that we have already seen. Hence Nagasena's analysis contrasts with that of Kant, who argued for a 'transcendental unity of apperception' which accompanies all episodes of thoughts of an individual that provide a fulcrum point for the individual being *one* individual (See Kant 2003, B131-132).

The implication for the analysis and justification of privacy is that: On the one hand, privacy, being a concept that is used in everyday life and is part and parcel of normal understanding of the (social, cultural, legal) world, is not denied in Buddhism at all. *Conventional* reality is as true and as real as the *ultimate* one. In fact they are one and the same. As the conventional, individual-based self does exist, so too is his or her privacy, which is a normative notion established to safeguard his or her personal information from the prying eyes of other individuals or the political authority.

On the other hand, privacy is justified in Buddhism through its being a necessary element in realization of the democratic ideals that require that individuals are respected and are accorded with certain number of rights that would allow them to function effectively in the task assigned to citizens in a democratic polity such as deliberation and participation in public policy process. In such a scenario, violation of individual privacy would mean that the violator gains an unfair power over the individual, thus the basic underlying principle of democracy would be undermined, the principle that individuals are equal in power in need some space within which they can live, think and communicate freely. For example, a society that routinely checks their citizen's email communication would not be democratic in this sense because email communication is private and the information gained from such snooping might be used against the senders and receivers in an unjust manner. At the practical level, as Buddhist cultures find themselves in the twenty-first century where such uses of technologies have tended to become common place, they would need to find out how their religious tradition could serve as a foundation for democracy. This can be done, for example, on the premise that Buddhism accords a lot of importance on the capacity of each individual to gain Liberation by himself or herself. Since achieving the ultimate goal relies on individual effort and even the Buddha himself can do no more than showing the way, there is the idea of equality that is pervasive. Each individual (of course, this is taken in the conventional way)

has to rely on herself or himself for Liberation; no one is better or worse than another in this regard. One can then extrapolate from this and argue that, for Buddhism, democracy is ingrained since democracy relies on the notion that individuals possess equal degree of rational capabilities that would enable him or her to function effectively in deliberation. Surely this line of argument would need to be developed further.

I think this is a strong enough justification, and one does not seem to need arguments to the effect that privacy is ingrained in the individual self such that it is 'inalienable' from the individual, in the same way some philosophers argue that rights are inalienable. If one subscribes to the Doctrine of Two Truths, and realizes that the individual self exists firmly on the conventional side, then one realizes that the self, as well as the rights which are but corollary to the self, are merely conventional, that is, do not exist *tout court* on their own right. When the self does not exist in the ultimate sense, neither do the rights, which belong to the self. In this light, talk of rights being 'inalienable' seems to be merely a way of speaking so that the justification looks strong (See also MacIntyre, 1984, esp. Chapter 5), but in fact there is really no need, and if the Doctrines of Two Truths and of No-Self are accepted, such a justification would be incoherent. This is so because, as the self may exist at the conventional level, it does not at the ultimate level. At this ultimate level, the walls separating an individual self from other selves break down, and it makes no sense to talk about this or that self anymore. At the ultimate level, when the usual empirical self is analyzed and found to be nothing but juxtaposing episodes of mental states, there is not much sense in saying that these states do belong to one individual (what is there that remains the same such that it could justify there being *one* individual?), and when that is the case, there is not much sense in saying that there is a difference between one individual and others either. The upshot is that, from the ultimate perspective of a Buddha, privacy just makes no sense whatsoever. Since a Buddha is omniscient, he (or she!) can actually read the thoughts and minds of anybody, but that is of course no cause for concern, for a Buddha is full of love and compassion and there is no possibility that any harm would arise from that.

So how about the attempts by Moor and Moore, both of whom would like to base privacy on empirical facts of the matter which are allegedly shared by all cultures? Both Moor and Moore want to find a firm foundation for privacy in such a way that it does not vary too much from one culture to another. For Moor, privacy is an expression of the universal value of security, which is shared by all cultures. The Buddhist, I believe, would have nothing against this. She might point out, though, that the inference of privacy as a value from these core values should not be taken to mean that the individual self actually does exist inherently. So long as one bases one's argument on the conventional side of reality, keeping in mind that the individual self that underpins the notion of privacy is nothing but a construct for the purpose of living harmoniously or in accordance with the democratic ideals, things would be fine (Kitiyadisai, 2005). It is only when there is a reification of the self that problems seem to arise, including those that gave rise to the whole problem of privacy in the first place. When one wants to gain an unfair advantage on others, then one would want to encroach upon others' private, personal information. But that is only because those who want to gain the information mistakenly believe that these advantages will bring what they believe to be useful to themselves, such as when the unfair advantages gained from violating privacy of others translate into material benefits (as is always the case). Here is the root of all the problems. Violating privacy is motivated by what Buddhists call 'mental defilements' (*kleshas*), of which there are three—greed, anger and delusion. Since violating privacy normally brings about unfair material benefits, it is in the category of greed. In any case, the antidote is to cultivate love and compassion. Problems in the social domain, according to the Buddhists, arise because of these mental defilements, and the ultimate antidote to social problems lie within the individuals themselves and their states of mind.

THE IMPORTANCE OF COMPASSION

But one might then ask: What is the benefit of trying to eliminate suffering through getting rid of the defilements? And why should one strive to attain Liberation when the subject matter at this moment is justification of privacy, which seems a very long way from nirvana? The answer is that realizing the importance of Liberation and the way toward it is an important Buddhist contribution to the current debates on the nature of privacy in information ethics. The key here is compassion. Realizing that there are in fact no walls that separate one individual from all others is a crucial step toward realizing the universal interdependence of all individuals and indeed all things. And compassion naturally arises from this realization, when one realizes that other beings are no different from oneself. All want to get rid of suffering, and all do want happiness. The benefit of this realization for information ethics is that compassion is the key which determines the value of an action. In my earlier paper (Hongladarom, 2005) on electronic surveillance in the workplace, I emphasized the role of compassion in using surveillance technologies in the workplace. The idea is that if the employers and the employees are compassionate toward each other, there is really no need for surveillance devices. The implication for information ethics is that ethical issues such as surveillance in public places, or violation of privacy in general, arise because those involved lack compassion. On the one hand, the employers, believing that their employees might spend time idly or nonproductively, install surveillance devices; this shows a lack of compassion and trust toward the employees. On the other hand, some employees may not use their working time in a fairly productive manner, which gives rise to the need for installing surveillance devices in the first place. All these show that both parties lack compassion toward the other. The key is to develop a set of virtues that would prevent one from doing bad things rather than subscribing to universal rules. In that paper and this one, I would venture to say that virtue ethics is more in accord with Buddhism than the more mainstream liberal ethics of Kant or Mill.

The upshot is that: Instead of relying on the Enlightenment project of founding ethical judgments on rational capability of human beings or on maximizing 'utilities', whatever that means, I believe ethical deliberation is better served by recognizing that value judgments are more like tools that purport to get us what we need or what we believe to be desirable. Purists may say that this line of thinking robs ethics of its supposedly universal and objective foundation, but if we, perhaps following pragmatists like Richard Rorty (1979), realize that these talks about ethical objectivity are but devices to give ethical judgments a firm foundation so that it have some force, then we are, I believe, on the right track. Purists might also add that, basing ethical judgments on what we actually desire would render ethical values 'merely' instrumental, hinting that the values may not be objective and that judgments may be relativistic. If privacy is considered to be an instrumental value only, then there might be circumstances in which strict observance of personal privacy is not justified, and hence information ethics would be relativistic. But we do not need to follow this line of thought.

The Buddhist views on the two truths and the no-self teach us that this distinction between values being instrumental and intrinsic is only a construction, something imputed by the mind on the raw, unconceptualized reality. Once it is realized that the distinction between values being instrumental and intrinsic relies on the values being, mistakenly, considered to exist in and of themselves, then things should be all right. This is so because, when values are seen to be mere tools which can change more or less to the circumstances, then they can be considered instrumental, and when they are fixed, for example when people view them as something that should be applied across a broad range of situations and cultures, then they are considered to be intrinsic. In any case, values are only tools, and ethical deliberation based on the Buddhist teachings should reflect this.

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