

LOVE IN THE AGE OF HIGH TECHNOLOGY: HOW ARE *METTA* AND *KARUNA* STILL POSSIBLE?*

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Abstract

The tremendous advances in science and technology today need not deter us in promoting and sustaining love. This may seem surprising to some, at least because such advances have resulted in pessimism concerning the survival of love. On the contrary, not only is love possible, but it has become more necessary in today's world. The paper will focus on the kind of love that Buddhism pays particular attention to, namely metta (Skr. maitri) and karuna. The two terms are generally translated as 'loving-kindness' and 'compassion' respectively. It is the teleological character of Buddhist thought that makes metta and karuna possible in today's world.

I. Introduction

The fact that today's world is so thoroughly pervaded by technology scarcely needs comment. By 'technology' here I do not mean merely the kind of technology that has existed since there were human civilizations, such as the plough or the water mill. The technology that concerns me in this paper is much more powerful, and has the potential to transform not only our ways of living and conceptualizing the world, but they have the potential power to transform the constitution of our very being. One is well aware now that the first steps toward cloning of full human beings are now a reality. Genetic manipulation of living organisms is growing rapidly, prompting concerns over the use of such technology in ways that exacerbate existing inequalities and perhaps create irreversible changes to the environment. On the other hand, information technology is poised to transform human beings and societies just as dramatically. The Internet,

many believe, has the potential to transform the ways people think and what they believe. Some have even gone so far as saying that it is an instrument of ‘colonizing consciousness’.¹ People all over the world are communicating with cellular phones and computers, but it seems that the more cellular phones and computer networks are used in communication, the more isolated people become from one another. These two major strands of contemporary technology are also merging together,² thus making each strand much more powerful than it can be alone. On top of this, the manipulation of matter has progressed to such a level that the individual molecules themselves being arranged and rearranged according to the manipulator’s desires. The implications of this nanotechnology could well be very serious.

In this paper I would like to reflect upon these phenomena in order to find tentative answers to the question: How love is possible at all in such an age? I believe this question has become all the more pertinent because biotechnology, information technology and nanotechnology, each in its own way but in a structurally rather similar manner, have the power to transform human society and relationships in such a way that love could become extinct altogether. This is so because, as the technologies advance, there is a real possibility that traditional ways of living and ways of relating to one another will be severely threatened, and this of course includes love.

I have to mention at the outset that ‘love’ in this paper does not mean merely erotic love or romantic relationships. While the subject of romantic love’s relation with technology is interesting and itself deserves a treatment in a series of papers, what I feel to be a more urgent topic is love in the broader sense of *agape*, or, as Spinoza says, *amor intellectualis Dei*, or *metta* and *karuna* in the Theravada Buddhist tradition. That is, I would like to focus on love as an unconditional devotional attitude toward the Supreme Being (in the theistic religions) or unconditional well wishing of other sentient beings (in the case of Buddhism). While there are important similarities and differences among *agape*, *amor intellectualis Dei*, *metta* and *karuna*, I will focus on the latter two in this paper. These two Pali terms are translated as ‘loving-kindness’ and ‘compassion’ respectively. I will mention only briefly how the Buddhist and the Western concepts are similar or different from each other, and concentrate the bulk of the paper

on the question how I feel *metta* and *karuna* seem to be threatened in this age of high technology and what we can do about it.

In the next section I will discuss some key texts surrounding these two terms. Then, in Section III, I present my tentative answer to the question in the title. The idea is that *metta* and *karuna* must be possible—that much can be taken for granted, and the more important question is how. And key to an answer to that lies in the role of mental and character development, which plays a crucial role in Buddhist ethics. Another key is the emphasis on the *teleological* nature of Theravada Buddhist thought, where everything is geared toward attainment of *nibbana*. In the age of high technology, *metta* and *karuna* are possible through education, practice and transformation of the consciousness of the people. This implies also that the kind of technological enterprise being conducted currently mostly in the West but is spreading fast elsewhere needs to be reconsidered. Then Section IV concludes the paper.

II. *Metta and Karuna*

According to the Theravada tradition, *metta* and *karuna* are two of the four ‘Abodes of the Brahma’ (*Brahmavihara*’s) that characterize the mental attitude of one who practices the path of purification leading ultimately to *nibbana*. The other two are *mudita* and *upekkha*. *Metta* means ‘wish for all beings to become happy’; *karuna* means ‘wish for all beings to cease from suffering’; *mudita* is ‘to feel happy when the others are happy, and finally *upekkha* is the feeling of equanimity or non-attachment toward worldly happenings. These are important attitudes to cultivate for those who would like to enter the path toward Liberation. That love (or loving-kindness) and compassion are very important in Buddhism is underscored by Richard Gombrich, according to whom it was out of these two sentiments that Buddhism itself first originated.³

Furthermore, the *Karaniya-metta Sutta*, a popular *paritta* chant in the *Khuddaka-patha*, has the following to say about the benefits of *metta*:

He who is skilled in good, and who wishes to attain that State of

Peace [i.e., nibbana] should act thus: he should be able, upright, perfectly upright, of pleasant speech, gentle and humble, contented, easy to support, unbusy, with sense controlled, discreet, modest, not greedily attached to families. He should not commit any slight wrong on account of which other wise men might censure him. 'May all beings be happy and secure, may they be happy-minded! Whatever living beings there are—feeble or strong, long, stout or medium, short, small or large, seen or unseen, those dwelling far or near, those who are born or those who await rebirth—may all beings, without exception, be happy-minded! Let none deceive another nor despise any person whatever in any place; in anger or ill-will let them not wish any suffering to each other. Just as a mother would protect her child at the risk of her own life, even so, let him cultivate a boundless heart toward all beings. Let his thoughts of boundless loving kindness pervade the whole world: above, below and across, without obstruction, without any hatred, without any enmity. Whether he stands, walks, sits or lies down, as long as he is awake, he should develop this mindfulness. This, they say, is divine abiding here. Not falling into wrong views, virtuous and endowed with insight, he gives up attachment for sense-desires. He will surely not come again to any womb.'⁴

In *Buddhadhamma*, which is arguably Thailand's most outstanding contribution to Buddhist scholarship in modern times, Venerable Payutto has the following to say about *metta*, which is reminiscent of the Western conception of *eros* and *agape*:

Metta is a well known topic of Dharma. However, there may be some problems understanding it. The usual translation of '*metta*' is love, having good wishes toward others, wishing others to be happy and to find only good and beneficial things. This translation sounds easy enough to understand. But problems arise when one confuses this meaning with love that is *metta* and love that is unwholesome. Love that is unwholesome is often referred to as '*sineha*,' which means love or infatuation only to certain individuals.... This kind of love only results in the mind becoming narrowed down and clouded, or heated and excited. On the contrary, *metta* is pure love that one has toward one's earthly friends and sentient beings, who are all friends that suffer together under the *samsara*.... This results in the mind becoming wide open and clarified.'⁵

This wide open and clarified characteristic of the mind, which is cultivated through practicing *metta* and actually the other three elements of the *Brahmavihara*'s is key toward the realization of *nibbana* later on. Payutto places much emphasis on *metta*, which is directed at all beings

without exception, as opposed to the particular nature of *sineha*, or love informed by egoistic desire, which is only directed at particular individuals or objects. The key here is the role of the ego. Since cultivating *metta* is among the first steps toward the realization of the truth that the ego is only a construction and is not there substantially in reality, whereas cultivating *sineha* brings about the exact opposite, the two are thus natural opposing members of each other, and one should remind oneself how the two are thus opposed so that one remains steadfast and becomes clear what *metta* actually is.

The key in all this is that the practice of *Brahmavihara*’s serves to rid oneself of the defilements that block the path toward *nibbana*. With the attitudes of loving-kindness, compassion, sympathetic joy and equanimity, one purifies the mind, with the result that not only does the individual self become purified, but the world will become literally a better place. The canonical texts may present the *Brahmavihara*’s as techniques for stilling the mind, thus helping an individual to practice it gain insights that lead to his or her own attainment. However, that is not to say that Buddhism pays attention only to individual well being and not to the well being of the society as a whole. On the contrary, the emphasis is on the development of mental character in such a way that the mind is thoroughly pervaded by these four attitudes, and it is easy to imagine that most of the ills in the world, at least all ills that are caused by malevolence or harmful intentions, will be eliminated if everybody has a loving-kindness and compassionate attitude toward one another. It is true that each individual needs to practice the *Brahmavihara*’s for his or her own individual benefit—that is a basic tenet of Theravada Buddhism, but that does not mean that social concern should altogether be neglected. The idea is that changes at the social level come from the volition and intention at the individual level.

In terms of individual ethics, then, what is ‘right’ is constituted by an individual’s practice, that leads to the dissolution of the wrongful views connected with the ego, and which leads finally to attainment of *nibbana*. One can cultivate that kind of practice through the practice of the *Brahmavihara*’s. In terms of social philosophy then, a ‘right social practice’ is constituted by the ability of individuals in that society to practice and develop their inner capacities so that they can attain *nibbana* in the end.

Thus Sue Hamilton is correct when she writes that “love, or compassion, is inseparable from the efficacy of one’s action.”⁶ Accepting personal responsibility, in her view, involves that one needs to help oneself, and acts of love and compassion should always include the aim of helping one to be able to help oneself.⁷ Such practice and development does not limit themselves only to individual practice of meditation, but also include social action such as charity work and, I may add, destruction of unjust social structure. In short, love as *metta* and *karuna* (and also *mudita* and *upekkha*) is not only an instrument for individual benefits alone, but through that individual benefit one gains a kind of society and community that best exemplifies the ideals of justice and benevolence, an ideal society or community.

There is also a tendency among some scholars to pronounce a distinction between ‘kammic’ and ‘nibbanic’ Buddhism. According to Melford Spiro⁸ and Winston King,⁹ ‘kammic’ Buddhism is associated with the lay followers and involve such things as making merits in order to attain better next lives. The emphasis is on performing action in order to reap the rewards in the future. On the other hand, ‘nibbanic’ Buddhism focuses exclusively on the cessation of suffering and involves practices such as meditation and intellectual studies of the canonical texts. This brand of Buddhism is found more in the monasteries than in the lay households. Furthermore, Spiro and King view this latter to be the correct practice of Buddhism.

However, according to Harvey Aronson¹⁰ such a distinction is mistaken.¹¹ One can bring about nibbana also through the development of what is understood as ‘kammic’ Buddhism. Through the ‘kammic’ practice of developing the four *Brahmavihara*’s, the Theravada text also states that one is equally able to attain *nibbana*. Through the meditation on loving-kindness, compassion, sympathetic joy and equanimity, one thereby gains admission to the high heaven, the abode of Brahma. That is, by itself, within the realm of kammic Buddhism. However, Aronson states that there are many references in the texts that show that this practice of loving-kindness and so on enables one to gain a penetrating insight into the nature of all beings, which brings about attainment of *nibbana*.¹²

This is relevant in our case because if *metta* and *karuna*, are efficacious in bringing about the supreme goal of Buddhism, then they,

together with the other two elements of the *Brahmavihara*'s, are endorsed at the highest level of Buddhism itself. In fact the so-called 'kammic' and 'nibbanic' Buddhisms are not really separable from each other. One starts one's practice toward the ultimate goal of *nibbana* through the development of one's own physical, vocal and mental characters. One continually refines one's bodily action, speech and mental thoughts, until one finally achieves the ultimate goal. These practices of following the *Brahmavihara*'s inevitably bring about positive karmic results—this much is in accordance with Spiro's 'kammic' Buddhism. However, the texts are unequivocal in guaranteeing that this type of practice leads one quite directly to the ultimate goal, which is the domain of 'nibbanic' Buddhism. And since the practice of the *Brahmavihara*'s are inseparable from right social action in order to found right social structuring, then it can be quite plausibly argued that, contrary to popular belief, social concern is built into the highest teaching of Buddhism itself.

III. How are *Metta* and *Karuna* Possible in a Technological Society?

On St. Valentine's Day this year, it was reported that as many as 17 million "I love you" messages were sent in Thailand through the short message service systems on mobile phones. Many altruistic activities are organized through the use of information technology, and many websites have sprung up focusing on disseminating the Buddhist teachings, with the explicit aim of fostering loving-kindness and compassion. These examples seem to show that *metta* and *karuna* are alive and well with technology, as the latter is used to serve the purpose of propagating the former. Furthermore, they also seem to support the position of technological neutralism or instrumentalism, where technology is perceived to be a neutral force lacking its own ethical and evaluative character. The influx of information technology apparently, according to the above examples, did not obviate the Thai people's strong attachment to *metta* and *karuna*. On the contrary, novel ways to utilize the technology are being devised, apparently to follow the key Buddhist teaching of engendering loving-kindness and compassion. The saying is that it is not the technology that is the culprit, but the people who use it—"Guns do not kill people, people

do,” so the saying goes. However, this idea is deeply problematic because technology allows for possibilities which hitherto have not been there before, and it is these possibilities that open up ways of performing action that could have been prevented or could not have been conceived before if there had not been the technology in the first place. In the case of guns, many actual killings could have been prevented only through keeping guns out of people’s hands. In the case of information technology, instrumentalism seems to be saying that all the ills that are accorded to the technology, such as the proliferation of pornographic material and its perceived threat toward the minds of children and youths, are rooted in the volition of those who propagate the websites, and the technology itself is not responsible.

On the other hand, attempts to promote the use of information technology, such as the attempts of the Thai government to connect each and every village in the country through communication networks, seem to be based more on the belief that it is the technology itself that is efficacious in bringing about desired changes in these villages. To the Thai government, the problem of rural development appears to be simple: Give the villagers computers, software and infrastructure, then development will happen. I have presented my opinion in another paper that this is far from being the case.¹³ The policy makers responsible for the Thai government’s approach appear to be under the spell of technological determinism, the belief that the path of technologization is an inevitable one. And what is more startling is that this belies the belief that there is only *one* such path that societies in the Third World need to take in order to ‘catch up’ with the West.¹⁴

It seems to me, however, that both technological neutralism and determinism are in the wrong, and perhaps they are but two opposing sides of the same coin. Thus I am in a broad agreement with Charles Ess, who argues essentially the same thing.¹⁵ Both neutralism and determinism seem to be based on the presupposition that technology and its surrounding contexts are distinct. For neutralism or instrumentalism, technology is perceived as a neutral *force*. In this case it is clear that the two are perceived to be entirely distinct from each other. On the other hand, the idea of determinism, that technology is an autonomous force which cannot be channelled or controlled, also presupposes that technology can stand aloof from its contextual domain. Many works in science and technology studies,

however, have contradicted this assumption of distinctness of technology from its social, cultural and historical contexts.¹⁶ The details are too numerous to list here. Nonetheless, the main idea is not too difficult to grasp. Technology, and I emphasize here the ‘high’ technology of our contemporary era, cannot be conceived apart from its socio-historical context. What I mean that technologies such as nanotechnology or biotechnology are part and parcel of our contemporary, late capitalist, early twenty-first century societies, so much so that it is not conceivable to imagine another possible society, where these kinds of technology flourish in a very different social and cultural environment. This is so because all technologies arise from human needs and wants.

Information technology, for example, first arose out of the need for the military to find a machine that could perform calculations powerful enough to crack the secret codes of the enemy. The Internet, furthermore, also has its origin in the military, as is well known. We can conceive of a different kind of social environment where there is no need for the military to devise such a scheme, or where there is no need for the military to innovate at all. An example would be the case of Ming China, where the major policy was mainly to withdraw oneself and to build protective shells as a response to external threats, the Ming emperors ordered the Great Wall to be built, which still stands today, and they ordered their Chinese subjects to stay away from the coast in order to avoid the threats of Japanese pirates. There are of course many factors involved, but it seems clear at any rate that if technologies are humans’ answers to the challenges that they face, then in the environments where the threats are different, then the technologies can be entirely different. We can even imagine life on an alien planet as having developing a completely different technology based upon the particulars of its alien environments and cultures.

Of course it can also be imagined that in a different environment, a similar kind of technology can well emerge that resembles what we have today. The fact that technologies such as nanotechnology could not have arisen in 15th century Ming China does not entail that no such technology can ever take place in another, different environment. It seems plausible, so the argument goes, that technologies can converge. Different environments can produce same kinds of technology. Suppose in a different planet something like the Internet. Let’s call it ‘Shaman-Net’ was not born

with the military, but was invented as a tool for priests and shamans to store and categorize information and to allow them to communicate with their peers. Then it can be easily imagined further how that technology could be much similar to what we have today. But this argument looks really too simple. What does it actually take for priests and shamans in that context to communicate with their peers and to categorize and store information? What kind of equipment is used? What kind of attitude toward the network that the priests have which presumably do not resemble our own (remember that the Internet was once associated with the ‘tech culture’ and libertarianism here.) To what kind of society and culture do the priests and shamans belong? If the example provides more details then in order to make the Shaman-Net more like our own, the kind of social and cultural environment perhaps needs to be more like our own too.

This serves to show how technology is inextricably linked up with socio-historical contexts. But if this is so, then the presupposition of both neutralism and determinism does not seem to hold, with the result that both positions are not actually tenable.¹⁷ Technology is not a neutral power, depending solely on human volition and motivation; but neither is it an autonomous force capable of its own internal movement and logic. Information technology, for example, is only capable of transforming belief and consciousness because certain socio-cultural contexts do obtain. Without those contexts, there would be no such power of transformation. Among the Buddhist *arahants*, who have already attained *nibbana* and are totally free from *kilesas* or defilements, information technology has no power over them at all. Furthermore, in a kind of social condition where the people are educated well enough to become immune to these negative influences, the power does not take hold either, as can be seen when many cultures find creative and novel ways of using the Internet to serve their own agenda, which are internal to their own values and goals.

On the other hand, new kind of technology often produces a series of changes in the socio-cultural contexts where it is introduced. Today it seems every teenager in Thailand is toting a mobile phone. It is a very fashionable item. Changes, some of which are rather profound, are taking place each minute, and it seems undeniable that these changes are caused by the introduction of the technology. However, this does not mean that the path of development of a society can be totally determined by

technology. As societies are changing as a result of introduction of various types of technology, it remains within the power of the individuals or in the collective judgment and decision of the society as a whole to put the forces of technology under control. Since technology is inseparable from context, the two do influence each other. Humans control technology through volition, and societies are in turned influenced by technology through the latter's being an important part in the logic of capitalism and world order, as well as its internal characteristics.

What is pertinent in our case here is that, in this very own context of early twenty-first century earth, how are *metta* and *karuna* possible? If technology is inextricably bound up with socio-cultural contexts, then *metta* and *karuna*, in short, are not possible without changes in these contexts, or at least without some corresponding conditions being possible in the contexts themselves. The trick is to find what features in the contexts should be responsible for them to be viable. Since *metta* and *karuna*, wish for other beings to be happy and to cease from suffering, are fundamental to human relationships and their care toward one another, they are thus possible to the extent that the contemporary technological society does foster that kind of caring relationships. That fostering would not be possible if the structure, the way society is constituted, did not allow that to happen. In a kind of technological society where inequalities are ingrained, where there is exploitation of the poor by the rich and powerful, marginalized is rampant. And where the technology is only used to benefit those who are in power, this widens the gap even further. The growing concern over the digital divide issue, both between groups of nations, and within nation states themselves, clearly attests to this problem. Without concerned effort and concrete measures of all those involved, it appears that love as *metta* and *karuna* would be doomed.

Though the political and economic structure of society is vitally important in bringing about love and caring relationships, according to the Buddhist thought it is not sufficient. What more is needed is the kind of mental and character development which fosters loving-kindness and caring attitudes that will make *metta* and *karuna* lasting concrete realities. In *IT under the Culture of Wisdom*,¹⁸ Ven. Payutto writes that the typical Buddhist attitude toward such things as information technology is that the latter should not be allowed to take hold of the awareness and imagination

of the people in such a way that they lose sight of what really matters to them, namely their attempt to get rid of *dukkha* and attain *nibbana*, or at least starting to practice in the right direction in order that suffering is eliminated in the end. Payutto also stresses that education and character development should play a central role in any attempt to harness the power of technology to benefit humankind to the fullest:

All this means that, if used in the wrong way, technology is poisonous. In the West they are paying a lot of attention on violence, which is very harmful indeed, as well as advertising, which is a kind of baiting for those who are gullible. Our Thai society is also facing the same problems, including indulgence in the power and material benefits of technology, dependence on it, and indolence. In short, if people do not know how to use the technology, then there are problems, including deterioration of physical and mental health and worsening relations among the people in the world, such as competition and lack of warmth in the family.... As for the intellect, the flood of information has no benefits. It only increases delusion (*moha*). We need to find a solution for all this.

....

I would like to emphasize that what is needed in coping with information is education.... We need to develop people so as they are above technology. No matter how far the technology has progressed, people need to be developed to be above it. Do not let people become slaves of the technology. If technology is above people, then there are dangers. But if people are above technology then there is a way out to safety, because people would then be able to protect their freedom.¹⁹

The idea is that technology needs to remain under control of people who are wise enough to see through it and who remain free despite its powers.

This emphasis on character development needs not conflict with the influx and diffusion of high technology, as we have seen. Since neither technological instrumentalism and determinism is tenable, social context and technology in fact determine one another in a dynamic relationship. This means that character development should be part of society's response to the influx of high technology, and the two can go along with each other. Moreover, since the influx of technology means that at least some characteristics of the social environment will change to a certain degree, what we also need is then a kind of technology that allows for loving-

kindness and compassion to be possible. Hence, the kind of technology that is predicated upon exploitation of the poor and on widening the gap between the richer and poorer nations of the world would not contribute to promoting *metta* and *karuna*. These technologies include those pushed forward by multinational corporations that focus exclusively on their own profits rather than on contributing to bridging the gap. Microsoft's practice of effectively monopolizing operating system software, which lies at the core of almost all the machines embodying the information technology we have today, and Monsanto's technology of producing seeds that prevent farmers from replanting them after harvest would be two clear examples of the technologies that worsen the existing inequalities. They are, in short, examples of technologies that lack *metta* and *karuna*.

IV. Conclusion

Perhaps we can start imagining what it would be like for high technology to incorporate *metta* and *karuna* by imagining first what kind of socio-cultural environment it would be like for the technology to co-exist with or even to be supportive of the two. It has often been said, in Buddhist Thailand and elsewhere, that to attain the *arahant* or *nibbanic* ideal is a very difficult task that few could achieve, thus it seems a utopian dream to imagine that such a society that realizes the ideal could ever be achieved in reality. However, to think in such a way is to follow the lines of those who propound that *nibbana* is a remote and almost impossible goal, and the task of human beings should focus more on performing ethical conduct and on collecting merits for the next lives, without having to bother to think about the Ultimate Goal. This kind of attitude goes against the very core of Buddhism itself. For without the realizable and imminent *nibbana* there is no real impetus toward the dissolution of the ego which is necessary for conducts to be genuinely ethical and to be efficacious to bringing about a kind of society in which the ideals are concrete reality. Since *nibbana* is imminent, a kind of society envisioned here is not a fantastic dream. And the Buddha has shown clearly how that is to be achieved. The first steps involve cultivating *metta*, *karuna* and the other

Brahmavihara 's. Needless to say, here the role of education and character development is crucial.

ENDNOTES

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¹ See Peter Hershock, *Reinventing the Wheel: A Buddhist Response to the Information Age* (Albany: SUNY Press).

² Cf. Susantha Goonatilake, *Merged Evolution*.

³ Richard Gombrich, *How Buddhism Began* (London, 1996).

⁴ *Khuddaka-patha*, transl. with its commentary, Bhikkhu Nanamoli, *Minor Readings and Illustrations* (London: Pali Text Society), Verse 8-9, quoted in Peter Harvey, *An Introduction to Buddhism: Teachings, History and Practices* (Cambridge: Cambridge University Press, 1990), pp. 209-210.

⁵ Prayuth Payutto, *Buddhadhamma* (Bangkok: Mahachulalongkornrajavidyalalai, 1986), p. 507.

⁶ Sue Hamilton, *Early Buddhism: A New Approach* (Richmond, Surrey: Curzon Press, 2000), p. 213.

⁷ Sue Hamilton, *Early Buddhism*, p. 507.

⁸ Melford Spiro, *Buddhism and Society: A Great Tradition and Its Burmese Vicissitudes* (New York: Harper Paperbacks, 1972).

⁹ Winston King, *In the Hope of Nibbana: Theravada Buddhist Ethics* (LaSalle: Open Court, 1964).

¹⁰ Harvey B. Aronson, "The Relationship of the Karmic to the Nirvanic in Theravada Buddhism", *Journal of Religious Ethics* 7.1(1979): 28-36.

¹¹ See also Harvey B. Aronson, *Love and Sympathy in Theravada Buddhism* (Delhi: Motilal Banarsidass), 1980.

¹² Harvey B. Aronson, "The Relationship of the Karmic to the Nirvanic in Theravada Buddhism," p. 34.

¹³ Soraj Hongladarom, "Cultural Politics of the Digital Divide," Paper presented at the Third International Convention of Asia Scholars, Singapore, 19 to 22 August, 2004.

¹⁴ A. Gershenkron, *Economic Backwardness in Historical Perspective* (Cambridge, MA: Harvard University Press, 1962). See also Steve Fuller, *Science* (Buckingham: Open University Press, 1997).

¹⁵ Charles Ess, "Cultures in Collision: Philosophical Lessons from Computer-mediated Communication," in James H. Moor and Terrell Ward Bynum eds., *Cyberphilosophy: The Intersection of Computing and Philosophy*. Malden, MA: Blackwell Publishing, 2002, pp. 219-242.

¹⁶ See, for example, Sandra Harding, *Is Science Multicultural?: Postcolonialisms, Feminisms, and Epistemologies* (Bloomington, IN: Indiana University Press, 1998); Steve Fuller, *Science*, (Buckingham: Open University Press, 1997).

¹⁷ Charles Ess, “Cultures in Collision: Philosophical Lessons from Computer-mediated Communication,” pp. 222-227.

¹⁸ Prayuth Payutto, *IT and the Culture of Wisdom* (Bangkok: Buddhadhamma Foundation, 1997 [in Thai]).

¹⁹ Prayuth Payutto, *IT under the Culture of Wisdom*, pp. 47-50.

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