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Cyborg: a human-machine hybrid; the Bionic Woman;
Robocop; the 21st century Buddhologist.

Profound changes in intellectual culture are heralded by pundits everywhere now that the use of computers is taken for granted throughout the academic community. Of course, from the point of view of the sociology of knowledge the cybernetic fact of knowledge production is old news, dating at least as far back as the first time human communication skills were augmented by any form of pictorial or writing technology. Still, it does seem true that we are on the threshold of great changes, even if not quite as great as proclaimed by the pundits and computer evangelists. At the same time, the academy has rarely been as self-conscious about its own role in this production of knowledge as in its (somewhat self-consciously postured) postmodern present, so it seems appropriate to ask whether or not the "computer revolution" has had any particular effect on the way Buddhologists do their work. What, if anything, has changed about the way we do our research, our teaching, and our unsung life as administrators to both salary-granting institution and professional discipline?

The three major aspects of computer technology that most visibly have taken over older technologies are word processing, electronic communication, and the development of large scale archives of both text and visual materials. These in turn have led to many other changes that raise interesting questions about our professional life, including aspects of pedagogy (using computers in the classroom for everything from interactive exploration of manuscripts to the creation of virtual classrooms), intellectual community (the wired society of electronic discussion groups and conferences), economics (the access to these technologies and their relation to the publishing field, the tenure and promotion process, and other aspects of institutional life), ownership of our work and our texts

(copyright and intellectual property issues), and, perhaps most importantly, the quality of our work. A Committee on Buddhist Studies and Computers was formed at the 1983 meeting of the IABS in Tokyo, and so it seems appropriate to ask, more than a decade later, what sort of impact technology has had on our work of studying Buddhism. With this in mind, then, I would like to take this opportunity to think about some of these larger questions while meandering over some of the terrain (virtual and otherwise) that we have traversed so far.

Text and document processing

I still vividly remember when, back in 1980, my colleague Bill Kirtz showed me how he used his Apple II to write his Ph. D. examination, for I was appropriately envious of the time he saved editing and preparing his answers. Of course, getting the dots underneath the vocalic-r's in Sanskrit romanization was not so easy, but I was immediately taken by the soul of this new machine, and before long I too had become totally dependent on my word processor. Now I cannot imagine writing anything much longer than a shopping list by hand, and in hindsight it often seems that the most worthwhile course from my highschool days was the typing course that I took in order to escape calculus. Indeed, the manipulation of text *is* easier than ever, idea processors help at both the heuristic and the organizing stage of writing, Chinese and Japanese characters are readily mixed with English and French (though the damn dot under the vocalic-r is still giving me problems), spell checkers fix our mistakes, grammar analysis tells us just how impossibly complex our prose is, templates mold our writing into the format of either the MLA or Chicago style sheet as we wish and a new recension of an article is but a few keypresses away. It is hard to even imagine the dark days of typewriters and carbon paper, much less be nostalgic for them. It is also hard to imagine where this will all lead.

Some say that this new relationship to our written work indicates a profound epistemic shift, a shift in the way that we "know" our work, though not unlike other shifts and drifts in the relationship between thought, language, reality, and representation that were occasioned by the advent of woodblock printing, moveable type, and broadcast media.[1]

1. See, for example, Michael Heim, *Electric Language: A Philosophical Study of Word Processing* (New Haven: Yale University Press, 1987), esp. ch. 2 and 3; Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991), esp. ch. 8, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century";

This may all be true. For me, however, it sometimes seems that the most noticeable difference that word processing has brought to my day to day activity is to have "upped the ante." That is, it is now *expected* that a scholar's work is beautifully formatted, not using Chinese characters bespeaks a lack of tech savvy, and don't even think about leaving out the Sanskrit diacritics (especially that vocalic-r). Publishers expect disks in one format or another, and sometimes even camera-ready copy is demanded—so forget dot-matrix printing, and 300 dpi laser output already seems rather old-fashioned. Students, ever ahead of their professors in the technology game, have been especially quick to make the switch (perhaps thinking that the very slickness of the product will enhance their grades), and so I haven't seen a hand-written assignment in almost a decade. Thus the expectation for our written word has increased in a way related more to the presentation of information than to the information itself. Why do I even know what a font is, much less how to design one that incorporates Sanskrit diacritics? I am sure that I am not the only one to have spent inordinate amounts of time wrestling some new piece of software or hardware into shape, and in fact studies indicate that if training and implementation time are calculated, the purchase cost of new technology is only about 20% of the total cost. But even after this learning curve is left behind, the expectation of a productivity increase is not.

Indeed, in the corporate world it goes without saying that the entire *raison d'etre* for the huge investment in computer technology is increased production, and although some would like to think that the humanities are immune to such a commodified view of scholarship and the knowledge it produces, such is hardly the case. Just as the ability to churn out correspondence faster doesn't mean that the secretary gets to go home any earlier (he just has to be more productive, i. e., write more letters), so too the advent of word processing hasn't necessarily meant that the academic suddenly has more time on his hands to think about things. Whether articles, books, e-mail, administrative memos, or on-line discussions with students, it is hard to escape the increased expectations for greater productivity, including those new expectations about the visual appearance of that product (what does your home page on the Web look like?).

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for a wider view of these issues consult Arturo Escobar, "Welcome to Cyberia: Notes on the Anthropology of Cyberculture," *Current Anthropology* 35.3 (1994): 211-231.

The Jeweled Net of Indra

Nowhere is this huge increase more evident than in the daily deluge of electronic communications—I am greeted every day by e-mail, electronic conferences, discussion lists, administration memos, student questions, correspondence with colleagues and publishers, grant proposals, weather reports from Mexico City, the latest electronic version of the *Mahābharata* or *Heart Sūtra*, and even tips on how to get the dot under the vocalic-r! In spite of severely limiting my participation in electronic discussion groups, my day usually begins with the perfunctory yet paralyzing salutation from my computer, "you have forty unread mail messages queued;" if I am gone for a week I despair of ever digging my way out.

Many techno-elites like smugly to assert that 90% or more of this effluence is garbage best handled with the delete key, but I don't find this to be true (at least not always). There is, in fact, a lot of very high quality information available on the net, and this connectivity within our field also has implications for the academic community. Although at present many of the senior members of our field are not part of this virtual community, this will necessarily change over time, just as the entire area of electronic discussions has grown exponentially in the past four or five years. About ten years ago, for example, the International Association of Buddhist Studies sponsored IndraNet, an online discussion forum co-sysoped by myself and Bruce Burrill (the name was proposed by Alan Sponberg). Bruce donated all of the equipment and a good amount of his time to the running of the system, but, with the exception of a handful of dedicated callers, nobody was interested and it folded after about two years. Ten years later, BUDDHA-L (buddha-l@ulkyvm.louisville.edu) has over 600 subscribers from some forty different countries, and has generated over fifty messages per week this year (all of those glowing computer screens, like the jewels in Indra's net, infinitely and instantly reflecting the thoughts of scholars everywhere). Of course, and this is the punch line, just because the information is interesting and often of high scholarly caliber it still doesn't mean that 90% of it should not be deleted without reading.

One example of the benefits that the online community of scholars enjoy is the *Journal of Buddhist Ethics* (http://www.psu.edu/jbe/jbe.html).[2] Established a little over one year ago, the journal has already

2. See also "Indra's Net and the Internet: Three Scholars Launch New Electronic Serial on Buddhist Ethics," *Religious Studies News* (1995): 14.

published more than a dozen refereed articles, freely available online within mere weeks of being submitted (and once online they are but a few seconds from residing fully formatted on your desktop). In addition to articles, the *Journal of Buddhist Ethics* has also hosted an electronic conference, spread out over a two week period, with paper presentations, panelists, and discussions. With over 700 participants world-wide, this experiment in electronic publishing and conferencing, the first of its kind in the field of religious studies, heralds new directions for our field. This form of virtual scholarly community is perhaps especially important for colleagues in more remote locations or otherwise without access to the intellectual stimulation of one's peers in the field.[3]

The network explosion is nowhere more visible than in the growth of the "cybersangha," the online communities of Buddhist practitioners. Sometimes representative of one or another traditional communities but more often than not virtual communities existing only in cyberspace, most every sort of discussion group and resource can now be located online, from the "alt.buddha.short.fat.guy" usenet group and "#technozen" Internet Relay Chat line (real-time conversation channel), to the Tiger Team Buddhist Information Network (info@tigerteam.org), and various electronic journals (*Gassho* and *CyberSangha*, to name but two). These groups generate an immense amount of discussion, polemic, and information about contemporary Buddhism. Because these online communities are almost exclusively Euro-American in constitution and provide a forum for Buddhists outside of the academy, they are also immensely fascinating to anybody interested in the transmission of Buddhism to the West (though of course the highly selective demographics of these communities should not be forgotten).

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3. Beyond its own publishing and conference activities, the *Journal of Buddhist Ethics* is also designed as a jumping off point for further exploration of network resources related to the study of Buddhism, and so its Web page contains links or pointers to over eighty other net sites, such as the Indology gopher server (where you can get machine readable copies of the *Mahābhārata* or *Buddhacarita*, Sanskrit fonts, and the like), Sakyadhita (the International Organization of Buddhist Women), the Asynchronous School of Buddhist Dialectics and many more. All of this makes the Web a bit easier to navigate, and the *Journal of Buddhist Ethics* is the recommended first stop for the Buddhist scholar just beginning to explore the net.

The classroom

Another area in which electronic communication is changing the way we do things is in the classroom. Many instructors now make regular use of netnews, lists, simple e-mail, the Web, and other such resources in order to extend the class well beyond the physical walls of the classroom.[4] The most common tactic is simply to create a virtual discussion group which, like BUDDHA-L and other lists, allow participation at any time of day or night and from most any location. In addition to allowing more discussion than classroom time permits, this medium also can get students who don't often contribute in class into the discussion (particularly useful if your student body includes many non-native speakers). I have also used programs that allow electronic discussions in real time, which, although somewhat chaotic and counter-intuitive (why have a group of students sitting in a room in front of computers *typing* at each other instead of talking?), actually do produce more discussion and involve more students. These virtual classrooms can also be combined with peer writing review, in which students post their shorter writing assignments to the entire class for comment and discussion.

In addition to the discussion group, another way that computers and the net are used in the classroom is to get the students "out there" into the real world of religious communities and religious studies as an academic discipline. Students can browse the hundreds of Web sites devoted to topics relevant to the class, make contact with other students, get bibliographical information from far-flung libraries, take field trips to "virtual sanghas" of most every sort of Buddhist practice, and even ask questions of the authors whose books they read. There are numerous other classroom uses of computers as well—my students have played the roles of shamans, empresses, and monks in a role simulation program written for a Japanese religions class, and years ago Dr. Robert Miller worked on the

4. See, for example, John McRae, "Closing report on ASREL-L," posted to the Buddhist Academic Discussion Forum (buddha-l@ulkyvm.louisville.edu) 25 May 1994; Charles T. Tart (cttart@ucdavis.edu), "Web Uses for Teaching Religion," posted to the Buddhist Academic Discussion Forum (buddha-l @ulkyvm.louisville.edu) 26 September 1995; Elizabeth S. Burr, Mary Ann Clark, and Edith Wyschogrod, "Integrating the Net into the Religion Classroom: Some Notes from the Field," *Religious Studies News* (May 1995): 24; Jay Greco, Jamie Hubbard, and Hugh Burns, "Building Collaborative Spaces: Software Tools for On-Line Collaborative Writing," *The Proceedings of 1994 National Conference on Problem Solving Across the Curriculum* (Hobart / William Smith, June 1994).

computer simulation of Central Asian monastic institutional life. Another interesting development is "demand publishing," in which custom textbooks are immediately created from full text databanks of journal articles and specialized research materials. This approach can also be used to produce CD-ROMs that incorporate video and audio into the course materials as well. With the addition of links within the material and the naturally serendipitous process of text searches and browsing, this latter technology can become a particularly powerful addition to the instructor's toolbox, able to wean students away from a passive and linear approach to their assignments and inculcate more of the dynamic engagement—*heurisis*—that scholars bring to their research.

Of course, there is a price to pay for all of this, especially in terms of one's time. Giving over any significant amount of time to discussion, for example (even electronic discussions pursued outside of the classroom), takes time that could be used to other purpose. While many might think the worth of discussion beyond question, the matter is never so simple, in either pedagogical or practical terms. Another difficulty is the entirely chaotic nature of the net and the experience it provides. Again, while to some this is precisely the "decentered" postmodern experience that they desire in students initial encounter with Asian religions, the practical effect of hoisting the sail while pulling both rudder and keel can be overwhelming for the student trying to navigate that first encounter (the oft-heard comparison likens the vast resources of the net to a huge library with its card catalog dumped on the floor). For these and other reasons I have found that the best way to bring, for example, the net into the classroom is to actually schedule "lab" sessions in addition to the regular lecture, colloquium, or seminar meetings. The ante is upped a bit more.

Indeed, the issue of the instructor's time commitment for all of this is not trivial. My experience is that using one or another form of electronic discussion in the classroom increases my time obligation almost 40% or more. Keeping up with the online discussions, commenting on electronic paper submissions (it is rather hard to "mark up" electronic copy as you would paper), helping students as they learn the technology, negotiating with your local academic computer support staff, perhaps learning the vagaries of listserve management or even a programming language—all this takes a significant amount of time and planning over and beyond that required for a traditional class. In many quarters, however, it seems that such vigorous commitment to the latest trends in educational technology is now expected of faculty, especially as institutions fight for the tuition

dollars of their students and against the image fostered by politicians and the media of a higher education that is elitist, overpriced, and out of touch with the needs of their students and vocational realities. I have no doubt whatsoever that state-of-the-art computer facilities and faculty who deploy technology in the classroom are very important in the planning of educational marketeers. Over 25 years ago Newt Gingrich understood this well: "We must design our campus to be computer-rich," Gingrich wrote, for

> we must train our students so they can function in an increasingly computerized world.. . . Any steps toward a new library ought to consider the incredible speed of development in this field. It might be cheaper to keep our present building and spend any new building funds on the development of campus—or even community—wide communications systems.. . . The communications revolution has made isolation impossible.. . . West Georgia College cannot expect to prosper simply because it is the only college in town . . . students can move to the college of their choice or away from a college that displeases them.[5]

As with the expectation of a productivity increase discussed above, there is definitely a commodity and sales value attached to the use of technology in the classroom. Computers might have snuck in through the back door of the liberal arts as fancy typewriters, but with very little attention to pedagogical and institutional implications they have quickly come to be showcased as front-page items in the promotional literature.

Text archives

The aspect of computer use that promises to have the most impact on our work as research scholars is the development of large archives of machine readable materials that may be searched, collated, and otherwise manipulated in ways unimaginable even a few decades earlier. Concordances, for example, have always been an important tool of text research but have rarely been produced in Buddhist studies due to the huge corpus

5. From a report written by Newt Gingrich in 1971 as an assistant professor at West Georgia College, published in "Friend and Foe: The Wired Interview," *Wired* 3.08 (1995): 111 and 162; also available at http: //www. hotwired.com/Lib/Wired/). Related to this is the equally undeniable fact that many administrators have become enamored of technology as a possible way to control faculty costs wherever possible. This seems especially true of language instruction, which has traditionally made heavy use of temporary and part-time staff and TA's, but it is not limited to those fields.

that we work with, funding priorities, and other factors. Back in the early 1970's, for example, Robert Thurman wrote an NEH proposal to begin a collective project to input Buddhist materials, but, as with several later proposals to begin the input of scriptural canons, it was never funded. Thus this most promising aspect of computer use has been rather slow in getting off the ground, especially when compared to the progress made in other fields similarly concerned with texts—the *Thesaurus Linguae Graecae* project, as but one illustration, now includes over 57 million words of ancient Greek text material on CD-ROM.[6] Fortunately, this is beginning to change and several large projects are beginning to bear fruit, most notably the Asian Classics Input Project begun by Michael Roach (http://acip.princeton.edu),[7] the text input projects of Urs App at the International Research Institute for Zen Buddhism (detailed information can be had at *The Electronic Bodhidharma* Web site, http://iijnet.or.jp/iriz/irizhtml/irizhome.htm), the Coombspapers collections of the Australian National University (start with their Buddhist Studies World Wide Web Virtual Library, http://coombs.anu.edu.au/WWWVL-Buddhism.html) and, growing out of Thurman's proposals, the various canon input projects of Lew Lancaster's international Electronic Buddhist Text Initiative.[8] One particular success of Professor Lancaster's efforts is that Mahidol University's textbase of the entire Thai edition of the Pali scriptures is now available on CD-ROM from Scholar's Press, and other canon input projects are underway in Korea, Taiwan, Thailand, and Japan.[9]

The sort of philological analysis and other studies that these archives will for the first time allow means that the extensive application of the methods of higher criticism (applied to the vastly more compact Biblical

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6. For rough comparison, the Thai edition of the Pali canon contains over six million "morphological words," and an average Taishō volume contains approximately 1.2 million Chinese characters.

7. See also "A Diamond-Cutter Like No Other: The Many Facets of Michael Roach," *Tricycle* 3.4 (1994): 64-69.

8. For descriptions of all of the various input projects and much more check the resources at *The Electronic Bodhidharma* site (http://iijnet.or.jp/iriz/irizhtml/irizhome.htm).

9. Professor Lancaster is also chair of the Electronic Publications Committee of the American Academy of Religion which, through Scholar's Press, has published the *Multimedia Dictionary of Shinto and Japanese Life: Interactive Introduction to Japanese Culture and Classics* by Shigeru Handa (Atlanta: Scholars Press, 1994).

materials long ago) will soon be possible in the field of Buddhist studies as well. Author attribution studies, stylistic inquiry, historical, institutional and demographic analysis—research that used to require a lifetime of familiarity with a single text or author's *ouevre* will indeed be accomplished with almost the press of a single key, and when all occurrences of a term, phrase, or textual variant in a given corpus can immediately be accessed and compared online the very notion of printed concordances and even critical editions necessarily changes. Translator's lexicons, dictionaries, and even human-assisted machine translation are likewise all on the horizon.[10] On top of this is the promise of greatly lowered costs associated with electronic distribution—after all, there are tremendous savings to be had when a sixty volume set of books can be reproduced on CD-ROM for a dollar or so (and with the quad density CD-ROM, terabyte storage systems, and fractal compression algorithms of next year's technology revolution it is not unreasonable to contemplate *all* known canons of Buddhist materials online *and* portable).

One important aspect of the input of texts is the wide-spread recognition of the need to "mark" or tag texts as part of the input process. "Markup" means to mark the text for content and structural elements, elements as basic as title, author, page, and paragraph or as complex and detailed as morphological and syntactic (e. g., Sanskrit *saṃdhi*). As a simple illustration of how helpful this could be, imagine that you have a full text database of all epigraphical records from the T'ang dynasty. A lot could be done with the plain text alone in such a database, but you would still have no way of searching for, say, all of the donors, or all of the calligraphers, or even all of the sites of the monuments unless each of these elements were somehow tagged within the text itself; this is what a "markup" language provides.[11] The most common markup language at present is SGML (Standard Generalized Markup Language), while the related *Guidelines for Electronic Text Encoding and Interchange* of the Text Encoding Initiative (TEI) provide specific standards for literary and humanities markup.[12]

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10. See, for example, the online dictionary of Buddhist Chinese terms at http://www2.gol.com/users/acmuller/.

11. Markup can also be used with visual or graphic materials, and I, for one, think that the inclusion of images of the original texts should be an integral part of the archival process.

12. Cf. http://www.sil.org/sgml/sgml.html for full descriptions of both SGML and TEI, as well as pointers to various sites that archive SGML software, detail various text archive projects, and the like.

Still, the process of making machine-readable archives of texts available is slow and filled with pitfalls for the unwary, often involving thorny and divisive copyright issues as well as technological challenge and traditional editorial wisdom.[13] Flaunting many of these conventions, I was able to publish electronic versions of the Sanskrit and Tibetan editions of the *Prajñaparamitā-hṛdaya-sutra* a number of years ago[14] but many other projects (including the CD-ROM edition of the Pali Text Society corpus) have run into considerable snags on this front. Further, it is often hard to make publishers realize that electronic distribution of texts is significantly different than printed books, conceptually closer to licensing than to outright sales and resembling video and audio production and distribution rather than book publishing. So, for example, because of the great cost of inputting text materials and the ease with which they can be copied, publishers often resort to protection schemes or exorbitant fees to guard their investment. As but one illustration, recent reports put the impending electronic version of the Taishō canon at almost $300.00 per volume, exactly the opposite of the reduced-cost benefit that technology is supposed to confer. In this regard the Asian Classics Input Project and the International Research Institute for Zen Buddhism should be praised for their commitment to the free distribution of their work.

The technological hurdles involved in the creation of these archives are also formidable.[15] Questions of coding, for example (the format the computer uses internally to store the text) have long been among the most intractable in the field of Asian studies generally, due in large part to the many and competing national and market standards.[16] How will

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13. See the *Electronic Bodhidharma* site mentioned above for discussion of some of these issues.

14. Included on the *Packard Humanities Institute / Center for the Computer Analysis of Texts CD-ROM* (Philadelphia: University of Pennsylvania, 1989); the Tibetan text was supplied by Bill Kirtz.

15. The Rutgers / Princeton Center for Electronic Texts in the Humanities maintains information on all aspects of this endeavor; they may be reached at http://cethmac.princeton.edu/CETH/ceth.html

16. See *The Electronic Bodhidharma* (http://www.iijnet.or.jp/iriz/irizhtml/multilin.htm) for a discussion of different formats and the importance of retaining as much information as possible in the master data set, the solution implemented at their institute, and various tools for converting among the Chinese and Japanese standards; see also the files on the Indology gopher (start from http://www.ucl.ac.uk/~ucgadkw/indology.html) for a description of the

Japanese publishers encode Chinese texts? How will mainland Chinese scholars read texts input with the Taiwanese standards? Although new standards such as Unicode promise to solve these questions (and eventually they will be solved), the situation at present is still a mess. In an International Association of Buddhist Studies presentation over ten years ago I noted that "the internal storage of CJK [i. e., Chinese, Japanese, and Korean] characters is an issue that is difficult but one whose solution is essential to the wide-spread use of computers in all fields of Asian studies."[17] It amazes me that so little has changed on this front, even with regard to the vastly easier problem of Sanskrit diacritics: if I move a text from my PC to my Mac, the latter still cannot handle the dot under the vocalic-r without significant effort on my part!

We have a long way to go before the promised fruits of the technology revolution are fully realized, for until the technology is truly transparent and does not require a separate study in its own right it will remain more of an impediment than a boon; it is therefore understandable that many scholars complain that time spent learning technology is time detracted from the business at hand and are hence suspicious of the extravagant claims made by the savants of the future. There are also, as I have tried to indicate, numerous issues related to the commodification of knowledge that demand our attention, because those same savants are no doubt correct in predicting that every aspect of our life will indeed be affected by computers (if it isn't already). It is an interesting fact that in spite of the importance of technology to the corporate, industrial, and military world, it is the academy that is pushing the edge forward, particularly in the realm of electronic communications. How we harness the power of networked resources and how it affects the quality of our life, therefore, is something that we definitely need to think about. The International Association for Buddhist Studies, for example, is a global network of Buddhologists, yet as I write these words I wonder if my survey of computer technology is equally relevant to all, or if we too are ending up as part of a global culture of technology haves and have-nots? What role do we as scholars play in the changing face of knowledge production, and how does that role interface with our institutional and educational responsibilities? After serving for many years on my college's advisory

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Classical Sanskrit and Classical Sanskrit Extended (CS / CSX) standards adopted at the 8th World Sanskrit Congress (Vienna, 1990).

17. "Chinese, Japanese, and Korean Language Processing: The Present and Future of the Electronic Buddhologist," Seventh Conference of the International Association of Buddhist Studies, Bologna, 1984.

committee for academic computing I am convinced that while these are neither easy questions nor solely of interest to Buddhologists, neither are they matters that we can safely ignore. As Richard Hayes put it, cyberspace "is not a karma-free zone."[18] And so I think it important that as we harness technology to the needs of our field we in fact resist the simple rhetoric of product and commodity and instead remember that as educators, research scholars, and yes, even as administrators, we have a deep responsiblity to critical thinking and learning, regardless of how that fits into the assembly-line procedures of technology implementation advocated by politicians and cost-cutting administrators alike. The cost of playing the game—the ante—needs to be considered.

Where, then, does all of this lead? Although we don't yet have the wetware version of the tripitika (the DNA-encoded "canon on a strand"), we do have the software version of at least one Buddhist canon—but has anything really changed about the way Buddhologists go about their business because of it? In a very important sense, of course, the answer is "no." Whether we peruse ancient manuscripts, xerox copies, microfiche, or CD-ROMs, the method of investigation stays basically the same, though technology will hopefully provide new tools to make some of our chores easier. Perhaps it won't be so far off that some of the text-critical research that has eluded our field will be undertaken, but this is more a matter of depth of coverage or analysis than a different method altogether. Indeed, I have always thought that one of the reasons that I am so enamored of computers is because they enhance the excitement of being very close to the text itself, for the virtual reality of online text has its own physical reality as well—whether ASCII code or an ancient

18. "[The Internet] is anything but environmentally friendly, economical, democratic and egalitarian. Much delusion surrounds this toy of the rich. When I occasionally rail against the Internet, the main thing I am trying to do is to make people a little more aware of the fact that this is not a karma-free zone. Even here in cyberspace we have to think carefully about the consequences of our actions." Richard Hayes, "The Perception of 'Karma-Free' Cyberzones" *CyberSangha* 6 (summer, 1995): 17. Lest anybody mistake Professor Hayes for one of the so-called "neo-Luddites" that are gathering headlines these days (cf. "Return of the Luddites," *Wired*, 3.06 [June, 1995]: 162 ff, and "Interview with the Luddite," *ibid.*: 166 ff), it should be noted that he has been a long-time moderator of the BUDDHA-L discussion list (and one of the most frequent contributors to both BUDDHA-L and BUDDHIST), is on the editorial board of the electronic *Journal of Buddhist Ethics*, and is a member of his university's committee for computer policy (which prompted the above remarks).

codex, code, after all, is code. To be sure, ink, palmleaf, and the Sanskrit language are very different media from mouse, computer display, and the Japanese Industrial Standard encoding system, but it is nonetheless equally true that working with fonts, diacritics, archives, and text markup is quintessentially the work of the textual scholar, and I, for one, look forward to more of it in the years to come.