THE INFLUENCE OF INFORMATION TECHNOLOGIES ON THEOLOGY

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[Information systems affect theology in many ways. The Internet makes texts easily searchable and linked—but without any internal guideposts. Anyone can put up a theological Web page, appropriating the name "Catholic" without any official sanction. The media audience is not passive; it draws conclusions quite different from those who create the messages. Logical patterns of analysis have given way to image, word, sound, and movement. E-mail, chat rooms, videoconferencing, Web sites now merely replace regular mail and typewriters; they can develop into something quite different.]

INEVITABLY, COMMUNICATION SYSTEMS have an influence on theology, just as they affect every other aspect of human life. Orality and literacy studies, for example, have shown how a basic cultural practice such as writing affects how cultures frame knowledge and organize the world.[1] Oral narratives, with their focus on the concrete and specific, give way to

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[1] Walter J. Ong, S.J., *Orality and Literacy: The Technologizing of the Word* (New York: Methuen, 1982).

more analytic thought: the Greek gods fell victim to textual scrutiny.[2] Similarly powerful transformations occurred with the introduction of the printing press into early modern Europe,[3] or with the rise of telegraphy in the United States.[4] The former led to an increase of literacy through an increase of books; the latter, to instant communication across wide distances. In each case, the larger cultural wave washed over theology: the multiplication of theological texts and copies of corrected biblical manuscripts in the 16th century; the immediate contact between religious groups in the 19th century.

This article explores some of the ways that current information technologies now influence theology and religious expression, and ways that such influence might move in the future. Explorations into the influence of communication suggest, not a technological determinism, but reflection on the contexts of teaching and studying theology.

Communication technologies have wide-ranging interactions with the cultures that foster them. Past research has shown how communication systems connect with cognitive practices,[5] human relationships and interactions,[6] educational systems, entertainment, business, trade, intercultural influences, power arrangements,[7] political systems, and religious practices.[8] That communication systems and practices should influence theology today comes as no surprise.

Walter Ong in a 1969 article, argues that communication does indeed bear on the state of theology.[9] His concern remains primarily at the level of the oral substance of the Bible, the formulaic structure of Latin theology, the polemic economy or argumentative framework of medieval theology, and the growing circle of contemporary scholarship, increased by

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[2] Eric A. Havelock, *Preface to Plato* (Cambridge, Mass.: Harvard University, 1963).

[3] Elizabeth L. Eisenstein, *The Printing Press as an Agent of Change: Communications and Cultural Transformation in Early-Modern Europe* (Cambridge: Cambridge University, 1979).

[4] James W. Carey, "Technology and Ideology: The Case of the Telegraph," in his *Communication as Culture: Essays on the Media and Society* (Boston: Unwin Hyman, 1989) 201–30.

[5] Walter J. Ong, S.J., *The Presence of the Word* (New Haven: Yale University, 1967).

[6] *Inter/media: Interpersonal Communication in a Media World,* ed. Gary Gumpert and Robert Cathcart (New York: Oxford University, 1979).

[7] Stanley Deetz and Dennis K. Mumby, "Power, Discourse, and the Workplace: Reclaiming the Critical Tradition," *Communication Yearbook* 13 (1990) 18–47.

[8] Gregor Goethals, *The Electronic Golden Calf: Images, Religion, and the Making of Meaning* (Cambridge, Mass.: Cowley, 1990).

[9] Walter J. Ong, S.J., "Communication Media and the State of Theology," *Cross Currents* 19 (1969) 462–80.

interdisciplinary communication. All reflect structure. We hope to show that, in fact, the role of communication in (and on) theology runs much deeper. For example, the international communication network, rooted in telephony, has now acquired a low cost, easily accessible, easily recoverable means of storage. Where the printing press made texts plentiful, the World Wide Web and Internet technology make plentiful texts searchable and linked. Where the telegraph gave instantaneous, though mediated, communication, the Internet hides the mediation, giving seemingly direct access to millions of pages. Where the telephone increased one-to-one contact, the Internet allows seamless many-to-many interactions. Even something as simple as Napster's distributed database of digital music files stored on personal computers suggests that our cultural notions of privacy and separation may need rethinking in the face of this (economically driven) willingness to share, not only files, but also computer access.

What will all of this do for theology? The initial extrinsic effect will later give way to a more powerful intrinsic change. We examine this phenomenon in four steps, asking "How will new communication technologies affect theology?" They will do so by affecting the context for and of theology, the resources theologians work with, the communication methods linking people, and the cognitive processes with which we approach any intellectual work. After exploring these questions, we will speculate about their impact on theological education.

THE CONTEXT

The world that people inhabit affects them—their religious outlook, the questions they judge important, and their religious practice. Obviously, theology shares in this. Yet the new media are not yet triumphant. While the Internet and information technologies play a role today, most people still live in a world defined by the relatively old media of print, television, radio, and film. Most of what we know about the influence of communication technology comes from an examination of the old media.

Knowledge. Most knowledge comes through the mediation of our communication systems. We have a vast but indirect experience of the world—reading about current events, seeing far-away places on television, hearing distant voices on the radio. This knowledge is real, but it *is* mediated and hence filtered through reporters, camera operators, news organizations, and other intermediaries. These mass media shape world views, probably as powerfully through entertainment as through news and information. This is evidenced by the vast popularity of a program like *Touched by an Angel.* Who would have guessed that angelology would be part of the cultural mix at the end of the millennium?

Information technologies such as the Internet allow different and wider

access to cultural knowledge, but the major information and entertainment systems—and the Internet itself—still follow a centralized, hierarchical model dominated by large companies and various levels of management. This will most likely change in the future regarding content origination and management if not operating structures. More people will place materials online and share files directly in a Napster-like fashion. When this happens, our culture will face a change in who defines knowledge as great as did 16th-century Europe faced with a flood of books from the newly invented printing presses.

Time. While statistics vary, media use typically ranks third after sleep and work. We could refine this measure by asking about how people spend their time with television or online: For knowledge? For play? For interaction with others? How does this compare with the portion of time people spend on religious activities or questions?

Concerns. During last year's election, we became more aware of shared concerns or issues as part of our cultural context. People regularly express concerns about education, international relations, the economy, violence in society, and so on. Less consciously adverted to is the fact that our public life has become a media life: these concerns come to us. Even our current fascination with new or digital media comes to us via the mass media that set the agenda for our political and cultural worlds by reporting on one issue rather than another. Bernard Cohen pointed out almost 40 years ago that the news media "may not be successful much of the time in telling people what to think, but it is stunningly successful in telling [them] what to think *about.*"[10] Concerns about globalization or about the spread of AIDS in Africa, for example, stay in our consciousness because the communication media return to those stories over and over again.

Knowledge vs. practice. In 1975 James Carey made the distinction between communication as a transmitter of messages and communication as a ritual.[11] An attention to the former concentrates on content and message meaning; a focus on the latter highlights how people live with communication practices. In religious terms, these two describe the difference between theology as a discipline, a body of knowledge or doctrine, and theology as morality, worship, or prayer. Most theologians might well define their professional work in the former category; most believers might opt for the latter. Thomas à Kempis put it best, "I would rather feel compunction than be able to define it." Many agree. This accounts for what strikes observers as a disjunction between people's beliefs and practices.

[10] Bernard Cohen, *The Press and Foreign Policy* (Princeton: Princeton University, 1963) 13.
[11] James W. Carey, "A Cultural Approach to Communication," reprinted in his *Communication as Culture* 13–36.

Considered as ritual, communication practices powerfully define the way people live and act. Content matters less than the participation in the communication activity: going to the movies, watching a television show regularly, surfing the Web. Yet all of these communication activities do yield knowledge—indirectly as well as directly. A sizeable amount of ritual anthropology in the last three or four decades has pointed to the formation of personal and social identity as a product of ritual behavior. Victor Turner's work on liminality and identity formation has certainly been a landmark of the new approach. However, he is not alone in his explorations. As Theodore Jennings remarks, "ritual may be understood as performing noetic functions in ways peculiar to itself. Ritual is not a senseless activity, but is rather one of many ways in which human beings construe and construct their world."[12] As texts and books once shaped both religious and intellectual self-definition in Western culture, the media and the Internet are gradually shifting the foci of both expression and explanation as they become a primary location of communication and symbolic connection.

Connection with the world. New communication technologies link us more tightly than ever before and lead to a curious mix of Marshall McLuhan's global village and accidental tourism. We know, for example, the happenings in distant places; we often become emotionally engaged. But we cannot really do much. Such global knowledge may well lead to distancing rather than connection because we cannot act on our knowledge.[13] For example, learning about persecution of Christians in Indonesia or China may give us a strong sense of solidarity. Does it allow any follow-up action?

Effective expression. The old media still dominate our lives and have shaped what we do with what we know. Oral forms, like sound bytes and scripted dialogue, encapsulate issues for the majority of people. Only an élite looks to books or to the information-based parts of the Internet. As we move in a world of secondary orality, that is, oral exchange based on written texts as well as the oral practice of literate people, effective communication becomes what entertains, what moves quickly to conclusion. In this world, culturally serious questions work best when they receive attention in popular culture forms like television, film, and the graphical formats of the World Wide Web. These media do consider substantive issues, either in dramatic form or in news reports. Television, for example, helps people to wrestle with serious issues like domestic violence by presenting dramas

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[12] Theodore Jennings, "On Ritual Knowledge," *Journal of Religion* 62 (1982) 111–27.

[13] Benjamin Symes, "Marshall McLuhan's 'Global Village'," (1995). Available at *http://www.aber.ac.uk/media/Modules/ED10510/benmcl.html.* Accessed March 14, 2001.

in which the characters suffer abuse and seek help. In this way these communication media become a "cultural forum" in which we discuss and debate current issues.[14]

Shifting place. Joshua Meyrowitz argues that media such as television and radio (and we would add the Internet) have changed our sense of place for good.[15] When we can physically see what earlier ages could not (under the ocean, the surface of the moon, the other side of the earth, inside people's homes, the intimacies of the lives of others, behind the scenes of power), we also change our social expectations. We have lost a sense of privacy, particularly as it applies to others: why should we not know about the president's sex life, for example, when film and television look behind almost every other curtain? This access removes our sense of mystery and respect and can undermine authority. By changing our place, television changes our perspective and affects our judgment. We become suspicious of all authority, including religious authority, and that places theological authority in question as well.

Audience. As the reach of the mass media has increased, more and more of society has become an audience. Media studies have shown that this audience is not passive: it actively negotiates meaning from its own perspectives. Audiences view information from specific social and economic positions: A working class audience, for example, sees shows differently from managers; women interpret programs differently from men. Audience members (often unconsciously) draw conclusions quite different from those intended by the people who create the messages.[16]

Control. Governments, corporations, and churches seem slow to grasp that even centralized digital technologies can decentralize knowledge and governance, making it impossible to manage what others know and how they live. Past contexts included a whole apparatus of evaluation and control. The Church had its *nihil obstats* and *imprimaturs*, but who bothers with these in the mass media, much less on the digital frontier? Governments guarantee copyrights, but many young people feel these do not apply to digital music, for example. Most people (apart from those directly affected) find such practices oppressive, quaint, or simply irrelevant. The digital world works against such control another way, too: Anyone can put up a theological Web page, appropriating the name "Catholic" without any

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[14] Horace Newcomb and Paul Hirsch, "Television as a Cultural Form," In *Television: The Critical View*, ed. Horace Newcomb, 4th ed. (New York: Oxford University, 1987) 455–70.

[15] Joshua Meyrowitz, *No Sense of Place: The Impact of Electronic Media on Social Behavior* (New York: Oxford University, 1985).

[16] Shaun Moores, *Interpreting Audiences: The Ethnography of Media Consumption* (London: Sage, 1993).

official sanction.[17] Despite hierarchical domain-name structures and other centralized organization, the Internet provides no information vetting or reliability checking of its content. In this way it massively destabilizes the knowledge structures established by centuries of print (editorial direction, peer reviews, governmental or ecclesiastical approvals, and so on).

These are just a few aspects of the context in which theology lives today. This snapshot of the context for theology today reveals some of the factors influencing how people experience their culture. The media, whether old or new, shape knowledge, social concerns, connection with the world, expression, and place and raise questions of interpretation, control, and time. The newer digital media and information technologies will continue to affect these elements, perhaps most powerfully by realigning the production hierarchies that mass communication established. It is no surprise that the "old media" companies (AOL-Time-Warner, NBC, Disney, News Corporation) are quickly seeking partnerships in the digital world. They understand what shifting the communication infrastructure will do to their monopolies.

RESOURCES

The changes in our context result from changes in resources. Much as the printing revolution increased the resources of an earlier generation, the digital technologies have begun to connect contemporary resources on a vast scale. We now have online repositories of all kinds. Electronic word and theme searches improve text-based research. Perhaps more to the point, these resources become instantly available; soon they will appear pre-indexed, searchable, and linking personal computers. They will also continue to appear without any internal guideposts or evaluation.

As the linking of digital resources grows, more and more people will have access both to the material and to the creation of materials. Criticism and discussion will occur less in journals and more in site evaluation. The possibilities here are wondrous and somewhat scary. We do not yet know how to live with this kind of wide-open world of information. Like Plato, we need a system to evaluate it; like Ramus, we need a system to organize it; like McLuhan or Ong, we need a system to understand it. From a sociological perspective, the categories by which we define our theological thinking and processes will begin to shift. Practice will definitely influence function. The social and ritual practice of scholarly research and interaction will move from the probative, text-driven, sequentially conceptual base of the "book" to the associative, imagistic, and nonlinear information net-

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[17] Richard Gaillardetz, "The New E-Magisterium," *America* 182 (May 6, 2000) 7–8.

works of the Internet. This new "rite" of scholars as cyber-practitioners will allow for more fluidity of signification in theological thought and argument (as in many other conceptually driven disciplines). As Pierre Bourdieu observed[18] regarding the ritual practice of communities, there will develop a more "fluid or fuzzy abstraction," a practical logic by which symbols (that is, concepts) operate in varied relationships without the need for as many distinctions or categories to promote understanding. As he notes, practice makes possible a level of "necessity which is not that of logic."

METHODS

E-mail, chat rooms, videoconferencing, discussion boards, ListServs, desktop video, Web pages, distributed databases, and electronic publication so far merely extend or enhance current practice, replacing typewriters and regular mail. They have the possibility to develop into something significantly different. Moving beyond the spoken and written word to other communication forms relativizes the importance of texts and clarifies the distinction between essentials and accidentals. Graphics, a truly international language, allows people from many countries to interact. The growing use of multimedia, including voice commands, lessens the need for linear literacy.

For example, VRML—Virtual Reality Modeling Language—can integrate what the *Catechism of the Catholic Church* divides. The Catechism is divided into four hermetically sealed sections, with few if any cross-references between them: doctrine, prayer, liturgy, morality. In fact, doctrinal changes in trinitarian theology, Christology, and ecclesiology affect prayer, liturgy, and morality—and vice versa. Liturgy is a form of prayer. The way we live affects the way we pray—and the way we think and talk about God. These interactions can be charted and displayed graphically with VRML. All of this can engage theology in fruitful interdisciplinary, cross-cultural, and interreligious interaction and reflection.

We must still invent the uses of the new technology. This, of course, happens with every new communication technology. It took 20 to 40 years for the motion picture to discover its narrative form. Radio needed to invent its programming, financing, and production structure before it played the role it plays today. Television lived for 30 years before it took its current shape. Information technology is still too new for us to know how its methods will fully develop. This provides an opportunity for theologians to shape how they themselves will use these new tools and new forms of communication.

[18] Pierre Bourdieu, *Outline of a Theory of Practice,* trans. Richard Nice (New York: Cambridge University, 1977).

COGNITIVE PROCESSES

Most of us over a certain age spent years in school learning linear, sequential patterns of expression; we were taught verbal arts and written style. Knowledge came from argument, and analytic organization led to mastery of the world. Educational systems and theories derived from an essentially epistemological ground. We would "think about thinking," and the fruits of such efforts were universalized as the baseline for human learning and knowing. The fundamental premise for centuries, since the Renaissance, has been that the conceptual/analytic capacity of the human mind is the benchmark and the parameter of applied intelligence.

Today, people live more in a communication process that includes image, word, sound, and movement. Montage matters nearly as much as logic. We have shifted from left-brain exclusivity to a more equilibrated employment of the right-brain: using imagination, association, creativity, art, and music. As learners mature, they become less propositional, more holistic and organic, integrating linear with nonlinear thinking, learning data and theories in order to apply them. Howard Gardner[19] has called attention to this by emphasizing the multiple intelligences that all humans possess: not only the linear, logical, and linguistic intelligence fostered by print, but also kinesthetic, musical, and interpersonal intelligence that new technologies call forth and reinforce.

With the development of the printed text, European-based traditions moved into the arena of what might be termed the Gutenberg hologram, a cultural paradigm in which knowledge and learning were absorbed into the linear text with its intrinsic leanings toward propositional and probative modes of expression. Statements are proven before they are illuminated. In such a hologram, "truth" or factuality supplants wisdom as a learning model. In the contemporary intellectual community, many have moved closer to a paradigm that is less focused on proving truths via win/lose debates than on mutual enrichment via win/win dialogues—from legal briefs to hyperlinks. Concepts and thought become more complex as they encompass more avenues of expression.

IMPACT ON THEOLOGICAL EDUCATION

Because our current synthesis of human communication is so new, education has not yet taken full advantage of it. New information technologies can lead to new opportunities, but most of us lack a systematic ability to use them. Future theological textbooks (if indeed there will be textbooks!) will

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[19] Howard Gardner, *Multiple Intelligences: The Theory in Practice* (New York: Basic Books, 1993).

surely contain CD-ROMs, integrating music, video, and animated graphics with the printed text. How can we best express the thoughts of our hearts, using collaborative, interdisciplinary methods to communicate the whole Christian message via videos, MTV, CD-ROMs, and Web sites? While experimentation may frighten us, the best course for theology would be to try.

The new digital information technology will improve storage, facilitate community, give new means of expression, and expand the abilities of students and faculty to elaborate and illuminate their theological perspectives. At the same time, it must be acknowledged that these technologies do have some limits.

Will technology replace human instruction in theology? No. Databases can provide more information than most brains could store. Word and theme searches are much more complete and accurate. But technological interaction is limited to what programmers had foreseen. Information itself does not equal knowledge nor solve problems; it supplies the basis for these. Human beings are much more flexible and creative and can range over many fields in one discussion. Leaving the storage and retrieval to machines frees teachers to teach analysis, synthesis, creativity, and critical thinking.

A situation with no human instruction (i.e., technology replacing teachers) has limited advantages: In certain fields that require mechanical repetition to acquire skills there may be some new opportunities. One could learn foreign languages from videotapes. In some universities, large classes of 1000 students at a time are being taught by the computer equivalent of videotapes, mostly to transmit factual information. This is highly impersonal, inflexible, with very little real interaction in depth with students, and little adaptation to their backgrounds, needs, and levels of understanding. Thus, it hinders creativity. It is hardly suitable for theology, which aims at more than amassing information.

Technology can certainly provide more information faster. But education involves critiquing and using that information. The more actively the students are involved, the better. And this best happens in community, virtual or real. E-mail and chat rooms can be useful to involve people at their convenience. Students can interact with teachers and other students, using sight (text, charts, maps, PowerPoint with video clips, LCD projectors), hearing (audio clips), and touch (dragging and dropping objects, creating pop-up boxes, checking answers online). An interactive community can be stimulated by requiring students to respond critically (beyond agreeing or disagreeing) to other students' interventions via ListServs and threading. But learning must also be supplemented by face-to-face contact.

The great advantage of face-to-face contact is the multiplicity of means of communication—tone and pace of voice, facial and bodily expression, and other nonverbal cues all convey enthusiasm and provide feedback in a

way not possible in E-mail or chat rooms. They may be available in interactive television, but there should be some opportunity to mix in personal, on-the-spot contact. Television news and talk shows are more effective when all the speakers are in the same studio.

Students now use books, articles, computers with spell check and grammar check, and printers. They may use audio and videotapes. They use E-mail and newsgroup participation as homework; they Web browse to research resources for papers (books, articles, word-searches as well as data banks). They may test themselves, using on-line materials.

A classroom with no books, no chalkboard, no video monitor, no overhead projector has low overhead, and may be adequate for highly abstract philosophical analysis and synthesis. But it is seriously handicapped for both teaching and learning. Use of videos and films, even tape recorders, broadens the quantity and quality of material presented, appealing to both hemispheres of the brain, engaging head and heart, presenting new lines of thought for discussion. Computer technologies open up new sources of data and also encourage new forms of student input.

Films and videos appeal to the right side of the brain, give a more rounded picture of a subject, and are excellent discussion starters. E-mail keeps conversation going outside of class and enables people who are shy or do not want to dominate class discussions to express their ideas carefully, even revising them before sending. Teachers now can shift from preparing long lectures to integrating more media and discussions. But they must also prepare students to use the media critically, teaching them what to look for, and how to evaluate these media, both for content and style of presentation. They have to design intriguing discussion questions. A mix of human instruction and technological methods allows for maximum flexibility. Teachers can adapt their material to the age, ethnic mix, intelligence, experience, and values of very different groups of students.

It must, however, be acknowledged that there are also disadvantages to technology in education. Some limitations include:

(1) Electronic media are quickly dated and become obsolete, leading to expensive replacements.

(2) Studio classrooms demand a lot of space and furniture.

(3) Motivating distant learners may be more difficult.

(4) Assessing distance learning may be more difficult.

(5) Developing an online course may take significantly more time, so more incentives for teachers may be needed: release time, hardware, software, training, support.

(6) Intellectual property rights become an issue.

(7) Teaching at a distance may be more rewarding in terms of the number of people reached, but less rewarding in terms of personal nonverbal feedback.

(8) Formation of habits takes time, learning through trial and error, and is more important than assimilating information. So, at least some course curricula should not be compressed into the shortest possible time.

(9) Some older students resist computers with checks for spelling and grammar, E-mail, and newsgroups, because of the need to learn new skills. They say, "I signed up for a course in theology, not in computers." Eventually, experience teaches them the value of the new technologies.

THE FUTURE

Theologians already collaborate world-wide in research, publication, conventions, and workshops. They sponsor joint projects, courses, and programs, cutting across institutional lines. They put books, articles, bibliographies, even video clips, online. And they maintain Web sites like InSECT and CTSA. But the new technologies offer even greater possibilities as they learn to work collaboratively via E-mail, ListServs, and chat rooms, and team up with experts in communications, graphics and sound to present theology in enticing and accessible formats.

Will theologians go beyond an initial awareness and attempt to produce attractive presentations that entertain as well as inform—much like film, video, and MTV producers? Jesus told stories to give new insights into God and human life. Are narrative theology, storytelling and communication beneath the dignity of academics—or beyond their reach? Following Jesus' example, no theologian wants deliberately to make theology inaccessible in the interests of prestige or control. Will theology remain inaccessible, or with theologians put their talents at the service of God's self-communication, to invite the whole world to become theologians, pondering the meaning of revelation, in order to respond with fullness of mind and heart?