Welcome to the Always-On World

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These days our culture is trying to digest several new technologies at the same time. The controversy over cell-phone etiquette is part of this process, and it portends much greater controversies to come. How can we think about it? You are sitting in the theater and your cell phone rings. The theater performance has been disrupted, but the caller is innocent. Instead, everyone is mad at you: you could have turned your phone off or switched it to vibrate instead of ringing. It's your fault.

But something deeper is going on. Think about it: anyone in the world can reach into the theater and cause a machine to emit a loud noise. In the old days, the theater was a more controlled space than that. The theater, in its very architecture, reflects a set of social relationships: between the players and the audience, between those who have been admitted into the seating areas and those who haven't, between the people with the expensive tickets and the people with the cheap tickets, between the bartenders and the customers, and so on. Everyone plays his or her part in this institutional drama, and so the play can get performed.

The cell phone blows this picture up. Suddenly a whole world of activities and relationships can insert itself into the controlled spaces of the theater. In the old days, you would deal with your doctor at the doctor's office, and with the bank tellers at the bank. Every activity and relationship had its place. The doctor's office might call you on the telephone, but telephones were restricted to a small number of places. Now telephones are everywhere, and the mapping between activities and places is starting to break down. So is the mapping between relationships and places. Of course, you might bump into your doctor or bank teller in the theater lobby, but you don't try to do any medicine or banking there. Everybody understands the context, and they stick with the script that the theater as an institution provides.

Now look at the situation from the point of view of relationships. You have a wide variety of relationships in your life: with your family members, your doctor, your fellow employees, your bank, and so on. With the growth of new information and communications technologies, each relationship is becoming a continual presence. You can exchange a dozen brief cell phone conversations with your spouse every day. You can keep track of your money through on-line banking. Your computer-mediated work activities can always be visible to your co-workers. This is a tremendous shift in human relationships: from episodic to always-on.

Juggling self and others

The always-on world presents a series of challenges:

● Interruptions. The ringing cell phone in the theater is just the start. The whole idea of a vacation is already breaking down as employers and others learn how to reach out and burden you at a distance.

● Divided attention. When every relationship is present everywhere, all the time, it becomes necessary to juggle. This will require lots of local negotiation; many lunch dates now begin with the parties agreeing to pull out their cell phones and get their lives in order before they start to converse.

If everyone has a device that continually displays the stock prices, the ball scores, and the video feed from the day care center, then the social problems that are already caused by glancing at one's watch in the midst of a conversation will get much worse. Our various involvements will become omnipresent, always laying claim to a corner of our awareness.

● Addiction. Some people can't stop reading their e-mail. Other people can't stop gambling, trading stocks, or shopping. Depending on their severity, these addictions can be annoying or catastrophic.

● Boundaries. Parents often give their children beepers or cell phones to keep track of them. The children don't throw the devices in the trash because they are useful for other childhood purposes. Even so, the idea that your parents can always find you is disturbing to many children. Other new technologies—for example, electronic payments—make other kinds of tracking possible as well. How can anyone become a separate, autonomous human being if they can always be monitored in this manner? What kinds of architectures are needed to help individuals to develop and maintain a sense that they control their own personal boundaries?

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So what will happen? Places will surely change, and many of the changes will amplify changes that are already in the works. Hospitals, for example, have long tried to get patients out of hospital beds. They do this in part by moving medical activities to other places and training patients to care for themselves.

The bottleneck, however, is communications. Telephone consultations do not communicate the structured information a doctor needs. Emerging technologies, however, allow doctors to monitor their patients' bodily functions remotely through wearable devices with wireless data links. Electronic miniaturization and microelectromechanical systems will allow patients to take ever more complex medical devices home with them, including devices that can be activated automatically or at a distance.

The bureaucratic and financial side of the medical relationship can move to the Web, and patients can gain access to medical literature and support groups online as well. The medical relationship will truly be always-on. Hospitals and doctors' offices, therefore, will shift their emphasis toward medical activities that truly require physical interaction. A strange division of labor may arise between the machinery that is kept in specialized places and the machinery that travels about on an individual's body.

Once cell phones and other such devices start coming equipped with Bluetooth cards, perhaps they will be required to interact with their surroundings to learn the "house rules": for example, no ringing.

New interfaces will be required. Everybody in the world has six billion relationships to other individuals, and every one of those relationships has a certain informational architecture. That doesn't even include the relationships between people and organizations (banks, schools, governments), and between people and objects (computers, cars, refrigerators). If all of those many relationships are continually present, then some method is needed to keep the endless updates under control. Academics who keep track of one another's careers, for example, might receive a daily newspaper with bibliography entries for all of the new publications by people whose work interests them.

An XML document type for vitae (the academic equivalent of a résumé) would make possible a query such as "show me bibliographic records for every book that has been published in the last five years by anyone who got their Ph.D. in anthropology from the University of Chicago." This sort of capability would make it much easier to seek out appropriate collaborators, thereby increasing the efficiency of the relational marketplace.

Other design metaphors would be appropriate for other kinds of relationships. Software technologies from business might spread to other areas of life. Salespeople have customer relationship management and contact management software, together with structured practices for capturing useful infor-

mation about every customer and sharing it with others in the organization who need it.

These tools presuppose that the various relationships have a similar structure: the people are all customers, and we all want them to buy the stuff that we're selling. But they might provide a model for managing the more heterogeneous portfolio of always-on relationships that the rest of us are accumulating. As the culture digests these technologies, people will invent new always-on cultural forms that depend on each party to a relationship having access to large amounts of continually updated information about the other.

Associate with anyone, anywhere

In this way, we will have freedom of association in a radical sense; increasingly freed from geographic constraints and equipped with powerful search tools, we will be able to pick out exactly the people we want to associate with, and we will be able to associate with them whenever we want. We won't devolve into disembodied brains, of course, and geographic proximity will always play an important role in our lives. The point, rather, is that we can maintain more continual relationships with whomever we associate with, near or far.

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This is already happening as family homes break apart into separate media spheres for each individual, everyone with their own television, telephone, and Internet connection. It is also happening in industry as people change jobs more quickly while maintaining networks among their former co-workers. And it will intensify as the informational architectures of our various relationships become more complex.

All of this is good and bad. The opposite extreme from an always-on world is feudalism, in which everyone assumes that all relationships are fixed, static, permanent, and God-given, so that everyone knows their place and fully expects to spend their lives maneuvering within a specific, small, stable repertoire of relationships.

Feudalism has its virtues: if the relationships are good ones, then they can acquire a depth and comfort that comes from the confidence that they will always be around. The problem with feudalism, of course, is that most of the relationships aren't good ones, so that everyone is trapped in the relational world they were born with.

The always-on world has the opposite problem. It is a world of freedom, but it is also a world of anonymous global forces that ceaselessly rearrange all relationships to their liking. We don't understand this world very well, but we will soon have plenty of opportunity to study it first-hand. ●