

## *Networking with computers*

“Computers” and “networks” are words that go well together. Perhaps too well, if *you* are *doing* a keyword search for information on people networks and don’t want to wade through a lot of hardware stories.

These hardware stories, however, often contain the holon (whole-part) essence of a network. Adapting our definition of social networks: a computer network is a set of stand-alone computers cohering through shared protocols. One excellent definition of a “local-area network” appeared in the January 1983 cover story of *Personal Computing*, by David James:

[A network] is a multiple-user, multiple-function computer system of equal units. The key here is not the multiuser configuration; indeed, a true network is less a “system” than a collection of equals. . . . In a true local-area network, roles are shared. . . . The key is that any computer in the network, regardless of where it is geographically, can access all the elements of the network—whether it’s another computer, a memory-storage unit, or a printer. “Equality and fraternity” are the bywords here.

In computer networks, as in people networks, we see two patterns: parts—people, groups, computers, or peripherals—that have independent functions and capabilities; and a *whole* that emerges from the communication between parts, the entity of relationships called “a network.”

For people networks, computers are a tool that may be used to greatly enhance the ability of individuals and small groups to act as very capable and independent node-parts in business, issue oriented, professional, or other sorts of social networks. Computers

can also be effective helpmates to the people facilitating a network, assisting in collecting, maintaining, and distributing the information that is often the “whole body” of a network.

None of the many cover stories we’ve seen on “computer networking” even hints at the complementary social phenomenon of “people networking” that comes bundled with every multiple-computer setup.

Social networks are organizational “media with a message.” So are computer networks. If a tightly controlled company sets up a true local-area network but maintains its existing hierarchical management chart, the social and technological messages are sure to conflict. Desktop access to large databases and communications systems together with local power to prepare, process, and use information bring both independence and decision-making capability. If the social whole can’t adjust to its technologically more independent parts, then trouble lies ahead.

Conversely, an organization looking to democratize its structure, distribute its decision-making, and encourage creativity can use computer networks to support those social goals.

On a very personal level, we have been using computers in our work continuously since 1970 and in our home since 1978. They are part of our mental equipment now, an integral part of how our skills and thinking come together into real-world products. For us, computers enhance our humanness, doing for mental drudgery what machines did for muscle drudgery.

And, we are only at the beginning. More precisely, we are in the middle of the beginning, in a very turbulent transition time of ideas, technologies, social organization and personal consciousness. Old and new coexist right now.

Today’s computer is still tied to yesterday’s logic. It carries its own genetic constraint—like the external skeleton that kept the insect’s brain from developing. The computer limit might be called “the von Neumann bottle-neck,” the one-step-at-a-time central processing unit that controls the whole system through its linear logic. While the design strategy has been to widen the control channel from eight bits to sixteen bits, the thirty-two bit Apple Macintosh already heralds the evolutionary end of this pathway.

Future “computers” will be more like brains: they will be organized as networks. There will be no “central” processor, as there is no “chief cell” that directs the brain, no one place that controls the

“whole me.” Each cell is an individual, with features of biological independence, yet specialized within the neurological whole—like chips on a motherboard.

Faint hints of the network-processing strategy are seen in computers with parallel processors, or coprocessors, or the use of special processors to handle screen functions or high-precision mathematics. Broadening this perspective, local-area networks may be seen as large-scale breadboard experiments in linking functionally independent processors into one system. Stepping farther Out, global computer-communications networks presage the hardware of a global brain.

### *Electronic networking*

Electronic networking and computer conferencing are names for a remarkable new communications medium created by the merger of computer and telecommunications technologies. In contrast to computer-assisted instruction (CAI) or a conventional information utility, where people are meant to interact directly with a computer, computer-mediated communications enhances people’s ability to connect with other people.

In developing our research on *people* networking, we have been assisted by *electronic* networking tools. Our personal computers and telecommunication extensions have been irreplaceable aids in dealing with the complexity of our myriad contacts and information sources.

It is our conviction that people and computer networking are developing as complementary aspects of the same evolutionary trends. While it is quite possible that computer networking will remain an elite activity, the downward plunging prices and upward leaping performance of computer power leave as an open issue the ultimate accessibility of this resource by the world’s people.

As a many-to-many interactive medium, electronic networking involves: (1) a host computer and software; (2) the telephone system and its extensions; and (3) users with personal computers or terminals. Users connect through the phone system to call the host computer, enter a common “space” (literally memory space), and have access to services such as electronic mail, online conferences, electronic meetings, electronic publications, and online education.

The electronic networking *business* is concentrated in the host part of the host-phone-user system. A regional host typically consists of a minicomputer, the appropriate communications gear, sophisticated conferencing/electronic-mail software, and administrative support for the 1,000—100,000 users involved in such a network.

As a “new” medium, electronic networking combines aspects of other media in novel ways, and adds a few twists. This interactive medium provides a way for people and groups to exchange information and ideas. It is like the mail system, telephone, and face-to-face meetings in this regard.

Like the telephone, electronic networking is inherently nongeographic, precisely because the telephone acts as the point-to-point loop between one user, the host, and all other users. Meetings, by contrast, are very geographic.

With both meetings and the telephone, people communicate in real time (synchronous). Computer conferencing can likewise be synchronous, but it can also be, like the mail, at different times (asynchronous), which means you can pick up mail and respond to comments in conferences at your own convenience.

Like the phone and mail, electronic communications provides a very personal one-to-one medium. Like meetings, electronic networking offers very public spaces for small seminars, large conferences, or multifaceted information cultures. Electronic interaction may be recorded in hard copy, like mail, or experienced in ephemeral soft copy as telephone and meeting exchanges are.

While like them, electronic networking is also utterly unlike mail, phone, and in-person meetings. Because everything flows from people, through computers, to people, electronic networking interaction is preserved, that is, memorized. All communication is stored in the host computer and can be retrieved, organized, misused and transformed with all the flexibility computers allow.

As the historical record accumulates on any host computer, nongeographic communities tend to develop. People networks flower in the soil of electronic networks.

Cultures are better experienced than explained. Through messages, comments, notes, memos and other formats, people inform, question and touch one another. While obviously carrying rational content, this medium also transmits emotional color and drama. Much is said between lines.

Electronic networking is most successful when it is combined with periodic face-to-face meetings. Where in-person meetings enrich online exchanges, computer conferencing provides the continuity and contact that meetings cannot. Face-to-face and computer conferencing are complements—the ultimate combination of “high tech” and “high touch,” to use John Naisbitt’s term from his book *Megatrends*.

Electronic networking has been predominately a national medium, dominated in the US by large commercial systems, such as CompuServe and The Source. Because of the distance separating users of national systems, only a small portion of the online experiments have involved any offline contact.

Regional conferencing potentially provides the best balance in addressing the “distance dilemma.” The benefits of electronic networking increase in value the farther apart people are as the medium helps “close the gap,” while in-person meetings are easier the closer people are. In a region, such as New England, an ongoing need for contact over a wide area can be accommodated with computer conferencing and combined with the relative ease of meeting in person. Conferencing for a geographically distributed company or institution would be a similarly appropriate context for balance between in-person meetings and online contact. Many companies already successfully use electronic mail, and others, such as Digital Equipment Corporation, use computer conferencing for planning purposes within and between departments, across New England, and around the globe.

The New England Commons, a regional conferencing system based in Boston, offers community with communications. With the “commons” metaphor, geographic imagery enters into a nongeographic “global village” medium. “The Commons” evokes the ancient human idea of shared space and links it with the simplicity of orientation in the traditional New England town.

A simple image belies the complex weave of sectors found on a public electronic networking system. Business, education, entertainment and consumer areas coexist and overlap. Each successful application adds to the diversity of the whole network and increases its attractiveness for new applications.

Upper and lower boundaries are easily established in an overview of the developing electronic networking industry. At one end of the spectrum are people, personal computer users, interactive

participants—each of us, one by one. At the other end, the large-scale bound, is the global system, the total of all of us and our social sets.

Intermediate aggregation is less obvious. A regional system, such as The New England Commons, provides sufficient size and diversity to become metabolically independent in the American economic environment, while small enough to be distinct and acquire coherence. Myriad “local” systems—local meaning specific, smaller-scale geographic, corporate, institutional, or special interest networks—are accessible through the regional gateway.

Boston is an international city. A Boston/New England network exports information products. People throughout the world use The Commons to connect with the people of New England and its varied resources. We think that the eventual global electronic networking system will emerge as a patchwork of interconnected, large-scale regional systems.

Through electronic networking, we can think and act locally and globally.

#### *Electronic education*

One of the earliest US computer conferencing systems is the nonprofit Electronic Information Exchange System (ELES, pronounced “eyes”) designed by Murray Turoff. For the first three years of its development, EIES was supported by grants from the US National Science Foundation (NSF). Thus much of the system’s early experimentation involved professionals from a number of disciplines who used computer conferencing as a way to exchange information within their fields of study. Electronic communities were formed in such areas as devices for the disabled, social-network analysis, office automation, medical applications and legislative research.

ELES began experimentally in 1976, expanded greatly with increased NSF funding in 1977, and went through yet another change in 1980, when the NSF operational trials ended and the system had to become self-supporting. Using terminals or personal computers in their homes or offices, members of the system are able to hold conferences over long periods of time that simulate but do not duplicate “in-person” conferences. Each conference has its own moderator, and participants are able to add comments,

references, papers and any other information that is pertinent to the topic of discussion. Overall, the effect is something like an open microphone at a conference that never ends—a microphone that picks up both formal and informal presentations and discussions.

In addition to providing computerized conferencing facilities, EIES is also an electronic mail service, allowing users to send private messages to one another. Since everything that happens on EIES is stored in the computer, physically situated at the New Jersey Institute of Technology, in Newark, messages can be sent at one time and received whenever the addressee next signs on to the system. Communication is synchronous, when both parties are using the system at the same time, and asynchronous, when messages are sent and retrieved at different times.

When we “signed on” to the system for the first time in 1980, we perused the list of others who were using EIES at that moment and noticed the name of Steve Johnson, one of our postal and telephone friends whom we met through the network research. We sent him a message: “Hello, Steve. Here we are on EIES. How are you and what did you have for breakfast?” A few minutes later a response headlined “How about them cookies?” came back to our bold first message. Johnson welcomed us to EIES and invited us to participate in an EIES conference he was planning a few weeks thence in Seattle. With the Neighborhood Information Sharing Exchange (no longer in existence), Johnson was planning a demonstration of the system at the Seattle CityFair, a huge exposition on urban alternatives. A number of EIES participants were forewarned, and the demonstration happened over a period of days. Each day, Johnson sent a report of what was happening at the CityFair to the group he had invited to participate in the temporary conference on EIES. Johnson introduced a new comment into the conference whenever people came by his booth at the fair requesting information that the disembodied EIES participants might have. EIES members spread out around the world then responded with information “online.”

As the communities on EIES have developed and expanded, and people have moved in and out of the system, the EIES world has also grown and changed, much as a geographically based community might, complete with oldtimers, newcomers, and visitors. One “conference” on EIES is called “The Poetry Corner,” an

ongoing scroll for people to inscribe their thoughts in verse. Another conference is called simply “Graffiti” and contains various bits of wall-written wit, as well as jokes, riddles and rhymes. Often when EIES members have the opportunity, they take a portable computer to “real life” conferences and demonstrate the system to those who are interested.

Four years later, in November 1984, we joined several dozen people on four continents for a month-long study and discussion of networking using EIES.

This course was one in a series offered by the School of Management and Strategic Studies at the Western Behavioral Sciences Institute in La Jolla, California. The two-year program combines semiannual week-long face-to-face seminars with online (the time one is connected to the electronic world) instruction. Rather than leave their regular place of employment to continue their training, these people stay put, and do their travelling electronically.

Each month, different faculty give the online “lectures” and lead discussions on topics in which they are “experts.”

We were faculty for the networking course. The students were a mix of corporate, government and nonprofit executives.

Our intention in the course was to introduce networking as a form of organization, distinct from bureaucracy and hierarchy, and as a perspective on the world.

The participants were skeptical. They probed where our thinking was weak, and contributed their own experiences. Drawing on their own interests and from their organizations, the participants drew out examples that illustrate the applicability of networking to large-scale organizations and the connection to small-scale, personal networking.

We select one thread of many to reproduce here, eleven comments out of more than 200 entered during our month course. Known to us as “the Ed Glenn sequence,” these comments trace our interaction over three weeks with one participant, Edward P. Glenn, III, a horticulturalist with the Environmental Research Laboratory in New Mexico.

One of the most difficult parts of the online experience to communicate is how *personal* the exchange can be. Even more remarkable is how the very personal and very abstract weave so closely together in the fast-paced spacetime of a rolling conference.



[A few days after the course begins, we attempt to stir things up a bit by pointing to what Virginia Hine wrote about this very group.]

C349 CC1853 Lipnack/Stamps (J & J, 670) 11/6/84 KEYS :/HINE PAPER/GLOBAL MANAGEMENT!

Virginia Hine's SPIN paper (see Chapters 1 and 9) is an eyebrow raiser. In it, she attempts to explain how the whole world is organized. Words implying forms of organization are highlighted in ALL CAPITAL LETTERS:

"The four major SEGMENTS of the GLOBAL management NETWORK are upper LEVEL decision makers in MULTINATIONAL CORPORATIONS, in INTERNATIONAL financial INSTITUTIONS, in the GOVERNMENT of both industrialized and underdeveloped 'host' COUNTRIES, and representatives of powerful FAMILIES in Europe, the Americas, the Middle East, South Africa, the Philippines and Asia."

Some, she says, describe the emergent global management form as an oligarchy, meaning government by the few, specifically, according to the OED, twenty when it comes to botany (oligandrous means fewer than twenty stamens), and four when it comes to language (oligosyllabic means fewer than four syllables).

The heritage of these modern forms of management is the Arabian desert tribes who practiced fratricide then united to confront the outsider.

She cites the size of these pre-industrial networks in the hundreds of thousands.

Is she right? Does her schema describe your organization? Do you attach numbers to your units of responsibility? What are the boundaries between the informal networks and formal lines of authority?

[Five days later, a student comes back with what appears to be a complete putdown of Hine, and challenges us to talk about the dark side of networking.]

C349 CC1867 Edward Glenn (399) 11/11/84 KEYS:/VIRGLNIA HINE'S PROPHECIES!  
J & J,

I enjoyed your description of Virginia Hine [not included here]—it’s always nice to know the person behind a piece of writing. In her writing she claims the “new age” paradigm recognizes two levels of reality as opposed to the single objective reality of the scientific-industrial paradigm. However, I find much of her prophesy to be mere wishful thinking rather than reality of any kind.

Her type of prophesy is familiar to us now—make a big claim, such as the “dawning of a new age,” support it with emotional appeal and anecdotal evidence, and disparage those who hold on to the old, outdated paradigm. One begins to weary of these prophets, with their social jargon mixed with pseudo-science (example: Hine claims the probabilistic nature of quantum theory somehow justifies her belief that networks are the organizational form of the future).

Doubtless the network phenomenon has a kernel of truth. I am grateful to you two for introducing me to this latest version of immortal truth. However, we should look for the down side of networking if we want to be complete. Reading Hine I was struck by the obvious use of networking organizational structure by terrorist organizations such as the IRA and the PLO. Would you care to address this darker side of the human potential/networking movement?

Ed Glenn

[It’s a question we’ve been asked to address before: what about the “bad” networks? Jeff is ready to answer it.]

C349 CC1869 Lipnack/Stamps (J & J, 670) 11/12/84 KEYS  
:/HINE/DARK VALUES/PROPHECIES!

Thanks, Ed, for your once-again cutting to core issues (cc1867). It is certainly true that networks are not always held together by what I think of as “good” values, which I am sure include some values you and I would agree upon and some not. While we have not studied them, we agree that the “international terrorists” are a good example of a network structure. The Union of International Associations, using a network definition, includes the Mafia in its list of distributed multinational organizations. A moment’s reflection about almost any revolutionary movement, from the American, to Russian, to South African, to Solidarity, will bring up images

of segmented, semi-autonomous small groups (cells), linked by shared ideology and polycephalous leadership.

In pointing out that networks cohere through relations, values, we are saying that the value content itself can be anything that turns people on. Networks cohere through “normative” power, in Weber’s taxonomy, in contrast to coercive or “instrumental” sources of power. When a network’s integrative ideology begins to swallow its parts (people or groups), the pathology is mob (mass) behavior. A second, quite common, pathology is of the opposite sort, where the value bond is weak or unclear, and the network is impotent or dissolves.

Hine’s “new age” paradigm shift certainly suffers from its early 1970s terminology. However, despite what some early writers thought (not including Hine), networking is not only a “human potential” movement, but rather emerges in response to a much more fundamental shift from material to information reality. A few years ago, “the information age” was gee-whiz stuff; now it’s old hat. The economic and technological correlates of this “new information age” tell only part of the story of the associated evolutionary changes.

Harlan’s [Cleveland, another faculty member] new comment in the leadership conference provides an excellent argument for now being “the twilight of hierarchy.” Asserting that the inherent characteristics of physical resources encouraged the development of hierarchies,” Harlan suggests that now that reality increasingly consists of “information resources,” “we see vertical pyramids being replaced by consultative committee-work less on orders down more on consent-building.”

[A few days later, without having responded to the “Dark Values” message, Ed poses a new line of questioning and Jessica responds.]

C349 CC1889 Edward Glenn (399) 11/15/84 KEYS:/LIMIT OF WRITTEN WORD!

J&J,

Could you comment on the limitation that the written word imposes on teleconferencing? Didn’t Marshall McLuhan predict that we would be freed from reading and writing in the new age? If information overload is a problem for a

literate group such as this, how can we expect teleconferencing to become a primary means of communication?

I would be interested to hear your idea of the “ideal” media for networking (even if it has not yet been invented). In your work with networks, what is the most common way the members stay in touch? In person, telephone, mail?

I have found this WBSI course to be a sore test of reading and writing skills. That’s all to the good since this is an educational network. But I wonder how the personal computer can be regarded as a “liberating” technology as long as it demands literary skills for participation.

C349 CC1899 Lipnack/Stamps (J & J, 670) 11/17/84

KEYS:IDEAL NETWORK MEDIUM/TYPING

TEMPORARY!

Ed, Re the limitations on teleconferencing of the written word:

Obviously, this medium favors first those who can type and then very quickly those who can write.

But I think this is temporary: in addition to the Japanese pictograph-to-abc translation, there’s also the words-to-pictures translation going on.

I think the language of this medium will evolve too. The useful computer language would combine spoken and written words with pictures and video and music and data.

My ideal networking technology would allow me to index all my communication and work. It would connect with my photos and all our writing, our files, our tapes, our calendar, and the telephone, in person, and mail traffic through our lives. It would be portable, such that when we speak our info would be online and we could add as we go along.

But I don’t pine away for this, and I feel quite grateful for the unimpeded access I have to some very remarkable tools even now.

On most common ways of staying in touch: it depends. There are telephoners, writers, and others who prefer to make the rounds in person.

Our Japanese book translators told us they never write letters. If at all possible, they visit. Next best is telephone.

There are some very effective networks that never use the

telephone, using the mail exclusively, while still others use neither phone nor mail and base their connections completely on their face-to-face meetings.

And now we have the electronic phenomenon which is both letter, telephone, and in person but really none of these.

Re: viewing this as a “liberating” technology: I’m reminded of the famous futurist we know who will have nothing to do with computers. She says she may get one when they’re truly voice-activated because she cannot type. I still think being taught to type when I was 12 was the most important educational experience of my life.

Jessica

[A week after raising the topic, Ed returns to it, and asks, Isn’t Lebanon a network nation?]

C349 CC1902 Edward Glenn (399) 11/18/84 KEYS:/LEBANON IS A NETWORK NATION!

J&J,

I’ve been following the networking discussion with great interest. There seems to be agreement that networks, if not new, will anyway take on new meaning as the facilitating technologies described by Chuck House [another participant] are developed. Thus Don’s [Straus, another participant] concern about the When and Where is especially relevant.

Gerlach and Hine are quite clear that they expect networking to *replace* hierarchical and bureaucratic forms. I think you hold the same hope that networks and shared global values will help us avoid nuclear war. I wish I could agree—certainly networks offer ways to explore issues person-to-person in ways unavailable through official channels. Walt Robert’s [another faculty member] call for US-Russian teleconferencing on nuclear winter is an example of how networking can help.

But I don’t think networking is a good way to organize nations. When I think of a Segmented, Polycephalous, (Ideological) Network Nation, Lebanon leaps to mind. This state “solved” its factional problems after W’~(JII by organizing a complex net of the various religions and factions, each retaining a degree of sovereignty and military power. This organization worked until challenged by outside forces; then, as we have seen, the country fell apart.

I remember my own involvement as a bit player in the New Left of the 1960s in our own country. The intense factionalism and dogma finally drove me away from that type of political involvement. Had by some misfortune our efforts at “revolution” succeeded, I have no doubt we would have created a nation similar to Lebanon.

Hine lays down the ground rules for a successful network movement [in Gerlach and Hine’s *People, Power, Change*]. The movements must be opposed to some aspect of the establishment to bind its members together; ideological debate is necessary to keep the movement segmented and polycephalous; and individuals must experience a conversion process, a “cosmic tap on the head,” that seals their commitment. I realize these organizing principles apply to worthwhile organizations as well as the bad. But aren’t we being cynical to accept these principles as the best human nature can offer, calling as they do for the suspension of individual responsibility and thought in favor of an ideology (of whatever persuasion)?

Aldous Huxley wrote that social movements always fail to realize that the ends do not justify the means; rather the means determine the ends. Thus if we organize ourselves into factions for the purpose of preventing war, we are really guaranteeing factional disputes and hence war in the long run. Do the network movements described by Hine seem as attractive as ends as they do as means?

[We respond the next day and reject the idea that Lebanon is a SPIN.]

C349 CC1904 Lipnack/Stamps (J & J, 670) 11/19/84

KEYS:NEITHER EXTREME/NETWORKS ARE MEANS!

Ed, we are glad the networking thread is holding your interest. We hope it is clear by now that we do *not* expect networks to *replace* hierarchy and bureaucracy. Subsume them, yes, but replace them, no. There will always be need for dominance and policies.

Lebanon is not a great example of a SPIN. Although our history in this region is rusty, Lebanon itself is not a very old nation, is it? Weak ties to a new nation, conceived by departing

colonial powers, by segments oriented to religions millennia old—  
unbalance in favour of the parts.

At the other extreme, you object (quite rightly) to a form that calls  
“for the suspension of individual responsibility and thought in favor of  
an ideology”—unbalance in favor of the whole.

Networks are about the dynamic interaction of whole and part,  
neither totally obliterating the other. Where strong parts threaten a  
weak whole (Lebanon), work on the whole. Where weak parts seem  
overwhelmed by the whole (movements), work on the rights and  
power of the composing people and groups.

Look more closely at the Hine review. It is *personal commitment*  
that is generated by an act of opposition to the established order, or  
one’s previous place in it—i.e., any significant personal change.  
Successful networks most certainly do not have to be opposed to the  
establishment:

witness the electoral landslide led by the polycephalous  
conservative/fundamentalist/single-issue movement.

Huxley is exactly right that it is the means that determine the end.  
Thus, we can support the value of networking itself, whatever the  
networker’s/network’s values, because the *means* involves horizontal  
relations between peers based on trust. Ultimately, more participatory  
means will result in a more participatory world.

J&J

[Ed does some homework, and three days later, teaches us a lesson.  
This untitled message is the first political translation of the SPIN that  
we’ve seen.]

C349 CC1909 Edward Glenn (399) 11/22/84

J&J,

I do think Lebanon is a good example of a SPIN. I happened to read  
Hine’s and the J. C. Penney articles [“Networks: a matrix for  
exchange,” J. C. Penney, *Forum*, March 1983] on networking right  
after browsing through *The republic of Lebanon, nation in jeopardy*  
(David Gordon, Westview Press) in the library. Gordon’s description  
of Lebanon’s government seemed exactly like Hine’s SPIN.

Lebanon has had a constitution since 1926 but has only

been independent since 1943 so in a sense it is a new nation as you said. But the major sects that make up Lebanon have lived together for centuries. Power is shared among the Christians (Maronites, Greek Catholics, Armenian Catholics, Roman Catholics, Gregorian Orthodox, Greek Orthodox, and Nestorian Assyrians), Muslims (Sunnites and Shi'ites), Druze (a separate religion) and other sects numbering twenty-two in all. Gordon describes how the sects are organized:

“Each of these forms one or another of the tesserae of what is sometimes called the Lebanese mosaic; the dynamic by which each acts as a unit and interacts with the others is usually termed ‘confessionalism’ or ‘sectarianism’ (ta’ifiya in Arabic).” Each sect is usually organized as an extended family. “Lebanon is a small place, and these families have had long experience with each other and with the rules and practices that makes coexistence possible.” Is this not the S in SPIN?

The P in SPIN is guaranteed by the constitution of 1926 and traditions arising thereafter. The president is always a Maronite; the prime minister is a Sunnite; the president of the assembly is a Shi-ite; and cabinet posts and assembly seats are apportioned to the sects according to the 1932 census (unfortunately long out of date and one of the points of dissension in the current struggle). Polycephalous leadership is further promoted by separate militia maintained by some of the sects.

Hine defines the I in SPIN as the shared values that keep a network together as well as the ideological differences that keep it polycephalous and prevent one node from dominating the network. This description fits Lebanon in spades. The binding glue is made of many ingredients. The ruling families have often banded together against outsiders such as the French and Turks; they have a common business network that made the country prosperous before the 1975 civil war (Beirut was then the Paris of the Middle East); literacy is the highest in the Middle East including Israel (86 to 84 percent, according to Gordon based on 1968 data); in general, the Lebanese are united by the desire for an independent, free-enterprise state similar to Switzerland.

The ideological differences (ignoring religion) are numerous but often boil down to how much of an “Arab face” she



should turn to the world: how hard should she fight against Israel; how much support to give the PLO; should she turn to the West or East for military support. Recall Hine's description of the schismatic nature of SPINs which she illustrated with the example of the Friends of the Earth spinning off from the Sierra Club. Then think back to the chaos of the reconciling meeting among the Lebanese factions last summer [1984] in Geneva. Doesn't this capture the I in SPIN?

The network structure of the Lebanese government has been widely blamed as part of the problem there. The government works well in tranquil times but generally fails to unify to fight internal or external threats. I have no solutions to offer. The US and other members of the multinational force tried to modernize the army and government so Lebanon could compete against her more modern, aggressive neighbors but we apparently failed.

Gordon wrote: "Lebanon has been a laboratory for ethnologists and other students of multiethnic existence—even if only as a negative model—this in a world concerned with coexistence on a global scale, with reconciling and integrating diverse peoples into legitimate, pluralistic combinations. Perhaps Lebanon may serve only to show what to avoid; more optimistically, it may show that multiethnic coexistence is possible, even with internal flaws, unless destroyed by extrinsic forces."

One negative example such as Lebanon does not prove that SPINs will not work in organizing our "global village". Now that I know about SPINs I will be looking for positive examples as I watch the evening news. My tentative conclusion is that what makes SPINs strong as vehicles of dissent may make them weak when they finally achieve power. But I would be happy to be convinced otherwise.

Happy Thanksgiving!

[Wow!]

C349 CC1914 Lipnack/Stamps (J & J, 670) 11/23/84 KEYS  
:/LEBANON SPIN/INTERNATIONAL NETS!

Ed, thank you for your thoughtful CC1909. You certainly have demonstrated for us that Lebanon is a good example of a SPIN, even if not a successful nation. Examples of networks

not working help us extend our understanding of this form and aid us in designing networks more consciously.

Of the three characteristics—Segmented, Polycephalous and Ideological—the binding glue seems the weakest element of the Lebanese network government. This ingredient is clearly the most volatile in the networking mixture: too little in common and the whole can't cohere; too ideological and the whole overwhelms the parts. Here, the ideologies identifying the distinct segments, essentially religious, seem so much sharper and distinct than the Lebanese desire for independence and a free-enterprise state. Your tentative conclusion that what makes a SPIN strong in dissent may make it weak in power is probably correct and related to the ideological role.

One dimension the Lebanon example offers is the variety of ways that segmentation may occur. Segmentation based on religion may make coherence more difficult than segmentation based on region—e.g., US states or Swiss cantons. As we suggested in another comment, the US Constitution can be interpreted as reflecting a network design in the functional segmentation of executive, legislative and judicial power— powers to be balanced, no institution dominating the others.

It may also be that a network may not be the best way to organize a nation (intra-nation), because self-identity is so difficult to achieve in a decentralized form. It may, however, be the best way for the globe to organize itself internationally. In historical terms, bureaucratic organization parallels the rise of the nation-state. Large-scale networks are appearing as the volcanic nation-making process subsides and the inter-nation integration process accelerates.

Indeed, given that the bulk of the world's states are quite resolutely hierarchically organized, we think a meta-state would have to be of the network form. National hierarchs would not tolerate being dominated by a global hierarch. Sovereignty becomes not an impediment to world government, but rather the statement of independence, segmentation, of nations. Absolute sovereign rights, however, would have to go the way of most industrial-age absolutes.

**J&J**

[And a few days later, Ed sends us a gift of turtles, just as the course is about to end.]

C349 CC1926 Edward Glenn (399) 11/27/84 KEYS:/NETWORKING  
IN MEXICO!

**J&J,**

I would like to share a networking peace story. It is about my friend Carlos Nagel, a private consultant for US institutions wishing to work in Mexico. We at ERL [Environmental Research Laboratory] do a lot of work in Mexico and over the past four years Carlos has helped us in countless ways. Once a year Carlos and I travel through Mexico together visiting salinized farms at the request of the Mexican forestry research department. During this week-long car ride we share our life stories (several times). Carlos has talked about networking before but until your month I paid him no mind. As part of my networking education last week I bought him lunch and was repaid with the following story.

“I first started networking in Mexico without knowing what I was doing. I spent four years as the Mexico desk at the Arizona-Sonoran Desert Museum. My work included everything from obtaining collecting permits for rare species to promoting environmental causes in Mexico. I spent the four years traveling throughout Mexico, making contacts at all levels of the government and the private sector. Two things struck me: first, I could get cooperation person-to-person that could not be had institution-to-institution; second, the middle-management level is where the work is done in Mexico.

“My interest in Mexico grew as the Museum’s faded so I finally left to start my own consulting firm. About this time I read *The Aquarian Conspiracy* and discovered I was a networker in Mexico. (I had a similar experience earlier. I spent six years managing a monkey colony in a corner of Puerto Rico. My workers were local fishermen but I soon had them managing the colony by themselves. A year after leaving, I was spending the night with a psychologist and his wife; browsing over his bookcase filled with books on Theory **Z** and Participatory Management, I discovered what I had done in Puerto Rico.)”

Carlos then learned a hard lesson about the fallibility of hierarchies. He became a consultant for World Wildlife Federation (WWF), headed by Russell Train (ex-Carter cabinet member). They were trying to monitor the breeding grounds of the sea turtles in Michoacan, Mexico. The hawksbill and other turtles lay their eggs on these once-deserted beaches. Today they are threatened by hunting pressure. The turtle meat is prized as food; the eggs as an aphrodisiac; and the oil is put in face cream and sold on the vanity market (much of it in the US).

Mexico has the laws to protect the turtle but the Fisheries Department does not enforce them. Their loyalty is to the fishermen who depend on turtles for cash. The World Wildlife Federation dealing institution-to-institution was unable to convince the Fisheries Department to accept its program for protecting the breeding grounds. Carlos says:

“Really, everyone involved was ready to start doing something about the destruction of turtles. The fishermen wanted a sustained yield, not a slaughter. The Fisheries Department only wanted to help the fishermen. Even the owner of a local turtle processing plant ultimately saw the value in protecting the resource. But the World Wildlife Federation and their man on the scene were more interested in controlling the situation than in working with the Mexicans—they insisted on having their own observers, refusing to relinquish control to Mexican environmental groups; this even though we had created an on-the-scene network whose nodes were the Mexican Marines, the governor of the state of Michoacan, and student observers from the University of Michoacan who were standing by to assist a truly Mexican effort. WWF couldn’t accept that the US role was to point out the problem for the Mexicans to solve. They couldn’t see that a visible US presence would poison the efforts of the concerned Mexicans.

“The hierarchical WWF in the end was ineffective. Despite their fund-raising ability they couldn’t influence the situation in Mexico. I am now resurrecting the network of participants in Mexico—the fishermen, Fisheries Department, university students, plus private sector environmentalists such as Brianda Domeq, author and heir to the Domeq vineyards. The

network includes US citizens as well, but this time the relationships will be person-to-person. I believe 'networking', connecting the interested parties who may not even know of each other's existence, will succeed where institutions failed."

Carlos is a dedicated man, a believer in networks and sea turtles, and I wish him well. His company is Intercultural Development Associates in Tucson, Arizona. Next week we take our yearly car ride together and I look forward to sharing what I've learned from J & J this month.

Thank you.

C349 CC1930 Lipnack/Stamps (J & J, 670) 11/29/84

KEYS :/CROSS-CULTURAL NETWORKING! KEYS:/LONG  
ROAD TO THANKS!

Ed,

We're very appreciative of your networking peace story about Carlos Nagel's efforts to protect the Michoacan sea turtles. We receive many inquiries about the cross-cultural transportability of networking; this is an excellent example.

When you take your drive with Carlos next week, could you ask him if he'd mind whether we recount his story in our journal?

And, we want to acknowledge your contribution to the development of thought in this course.

Before we started this course, one of our "colleagues" over in the faculty "lounge" took us aside, and briefed us on the students.

"Watch out for Ed Glenn," he said. "If there's anything weak or shoddy in your thinking, Ed will find it."

So it was with great trepidation that our fingers engaged the keyboard, wondering where our feeble minds would reveal themselves.

We've covered a lot of ground since your first challenges in the early part of the month, and want to thank you for helping us cross some new boundaries in our work.

Your examples have been superb, and we request your permission to cite you in our writings.

With thanks,

J&J

*The year 2000*

A 1980 survey published in *The Wall Street Journal* reported that, within most bureaucratic organizations, only about one in ten people is willing to use a computer. Among the generation that has seen computers develop in two brief decades from multimillion-dollar vacuum-tube behemoths that filled large rooms to powerful “computers—on—a—chip” so small that dozens can be held in the hand, this attitude toward computer use is readily understandable. We wonder what a survey done in 1910 would have indicated about the automobile? Would more than one in ten people have said they could envision themselves driving a car as a daily necessity? Similarly, we wonder what a *Wall Street Journal*—like survey would indicate if taken in the year 2000, when today’s children, who have grown up with computers and “intelligent toys” all around them, come of age.

We think of our own children. Our daughter Eliza, at this writing in first grade, is learning how to spell with a small laptop computer. And our older daughter Miranda, when still a preschooler, knew which piece of equipment was the computer and which was simply the typewriter, distinctions that to a less astute observer would appear meaningless since the two pieces of equipment had similar keyboards. Miranda knew that “run” is a word that makes the computer go, as well as being a description of one of her favorite activities.

Our children have been born into a world totally different from that which we were born into during the years in and around the dropping of the first atomic bombs. Our generation seems to have been born to be connected together in this world, with each of us bearing the responsibility for what to do in this awesome moment of transition, predicament and potential that faces us.