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Happiness is a Warm Librarian

The title of my talk is drawn from a pleasantly silly button which I wore to the first Library of Congress Conference on Library Automation about fifteen years ago. It was worn partly as the reaction of a humanist who loves both books *and* computers against the peculiar sort of computer macho that seemed to be evolving. There should, of course, be a rider on this perversion of "Happiness is a Warm Puppy." I'm not insinuating that librarians are like puppies, and I'm using *warm*, of course, not in the sense of temperature or even of emotion, but merely of being human, and not steel and silicon. I must say at the outset that I am no male chauvinist pig, but perhaps the full title of this paper ought to be "Happiness is a Warm Librarian—He'll Understand." There is an interesting chauvinist problem here in the trade: the societal typecasting of librarianship as one of the compassionate and nurturing occupations, rather like nursing and clerical, and therefore female. It is interesting that the *compassionate* is always set in contradistinction to the *dispassionate* which characterizes scholarly, innovative leadership. This is, of course, simply societal typecasting, and I want to emphasize the likelihood of enormous change in the course of adapting to the new technologies. These technologies will give rise to quite a new and essentially human need from librarians and information scientists, particularly for the gift of the peculiarly human pattern of thinking. In this little discourse I would like to set forth views which are those of a person who is only a hobbyist of information science...trying to balance the internal and external patterns of development of science and technology.

My real trade is understanding the progress of the evolution of science and technology, and I would like to apply some fairly well known princi-

ples to the particular and very strategic technology which is the subject of this conference. The social history of libraries is governed by very long periods of remarkably stable, almost fossilized existence separated by very short periods of remarkably rapid metamorphosis. It has been this way since the beginning. Consider some aspects of this evolution. From the invention of writing, probably about 3000 B.C., until the invention of printing (ca. A.D. 1500), libraries were very tiny. The great library of Ashurbanipal of Babylonia, which is now partially excavated, and the much better known Museum of Alexandria were *very* small collections. The great library of Alexandria (which, by the way, was probably never burned by the Arabs, but just wore out and got thrown away) could have been contained in about two ordinary, small faculty offices, according to the reasonable estimate of E.A. Parsons, who looked into the matter and threw out the mythology. That is a very tiny collection.

During the Renaissance and the Reformation, when libraries and knowledge flourished, the archive of learning grew from a tiny collection to fill a large room. It was not until the late eighteenth and early nineteenth centuries that the library essentially became a building in itself, and then in the late nineteenth and twentieth centuries the library became a whole complex of buildings and related industries and national institutions. Probably now it is in the course of becoming a totally international network that is not completely housed anywhere. Another way of looking at this might be in terms of the scale. Libraries and knowledge are the "growingest" things that we have. Certainly since the seventeenth century there has been a doubling in exponential (compound interest) growth about every ten years.

There were fixed intervals when the technology of knowledge changed grossly. The book very suddenly came into maturity in A.D. 1500. Remember that one generation, the lifetime of one individual, spanned the beginning of printing to the very sudden transformation of the book into a major force. Following was the equally sudden emergence in about 1660 of the operation that was to become the scholarly journal. This happened so quickly that it was simultaneously effected by the English and the French. After that came the rise, also sudden, of the secondary literature, around 1820, just after Napoleon; and lastly, the fairly rapid emergence of computers, which I have seen not just in my lifetime, but in my shorter stay in this country. Those stages are each separated by about 100-150 years. During the time that separates each stage from the next, knowledge measured by any reasonable yardstick grew by something like a factor of 1000-3000, and we are on the way through yet another, and obviously by no means the last, of these transformations.

Roughly speaking, every time knowledge increases a thousand times, something has to change in the knowledge system, and this is the imple-

mentation of an innovative, ambient technology. Each stage of the knowledge growth has looked extremely stable. The institutionalization that goes with libraries and the knowledge system at each stage looked extremely static. A look at the structure of the Library of Congress building will reveal that there was a room for everything and it was all nicely arranged for a certain number of people. There was no allowance for the fact that the institution had to become a thousand times bigger. When Yale's library (or any other institutional library) was built, it was planned for near-perfect occupancy. I've never seen a library built with a vacancy factor of more than one-half, even when it's known that a factor of one-half is only going to last ten years if the current rate of growth continues. We don't build libraries for 0.1 percent occupancy. We build them for conditions that we think are going to go on, if not forever, for a very long time. The next generation can make another building.

But change happens much faster than that. The changes have always been extremely rapid and unlike any reasonable projection that could have been made with a technological assessment using the best facts available at the moment. If, for example, Mr. Gutenberg and company had been asked what it was they were doing and what they were planning for and why they were inventing books, they would probably not have been able to admit to much more than the fact that they had gone from a sort of automated production of playing cards to making artificial manuscripts. If someone found an error, it could then be corrected in all copies, and that was a very neat trick. It wasn't really until half a generation later that the new technique suddenly found a totally different market, and the book became the force that produced the Reformation. It wasn't planned that the craftspeople adjacent to the printer—the engravers of scientific instruments and the other urban bourgeois craftspeople then emerging in the late fifteenth and early sixteenth centuries—would latch on to the new technique. As soon as the printers had finished printing the Bible and a few classics, they had to amortize that press and keep it busy, because the press was the next machine (after the windmill) that had to be fed after such a lot of capital had been poured into it. They didn't plan for it, but they took on the friendly neighborhood craftspeople and said, "Couldn't you write a book?" They produced a lot of how-to-do-it books on surveying, and the engraver of instruments engraved first blocks and then plates for the books. This made them much prettier and got them a much wider audience. That such a thing would happen could never have been predicted.

In a way, the system of writing books wasn't aided by printing technologies *replacing* the manuscript tradition. A new system of writing books, which had not been planned, grew up to utilize the available technology. The books that came off the presses were essentially different

books from those that had been produced in the eras of manuscript publication. The old technology was not just displaced by the new one doing a better job with the same thing: the new technology did a different job. Similarly, the scientific journals that erupted about 1660 were produced as artifacts of a new stage in the evolution of the press. Ephemeral publications had come into use with sermons and broadsheets, and this led to the newspaper. Again, the available technology was utilized in doing a job that had not been done before. Of course, there had been scholarly letter-writing before, but the new form of communication, that came when a journal could be entrepreneured and sold, was something quite different. The scientific paper is not contained within the new technology; it was the new technology that gave birth to the journal. Similarly, at a later stage, when scientific journals had multiplied by a factor of 1000, everybody could see the embarrassment of so much knowledge that one couldn't keep up with it. Galileo, about 1600, was the first to be enormously surprised at having to read books by people who were still alive. It was something awfully new. Sixty years later, people were at the stage where they had things to read that were not even books yet, but were available because of the technology of ephemeral publications, stuff that came of a current-awareness type of printing rather than printing out of an archive.

With the embarrassment of too much knowledge, one attempt after another was made to solve the problem of this hideously exploding universe. First it was the encyclopedist who tried to make knowledge available without let or hindrance to the people of the time of the French and American revolutions. The encyclopedist produced the well-known *Grande Encyclopedie*. In its day, it cost the equivalent of something like $20,000 a copy. It was a huge price, a huge job of production, and an obvious failure in its direct purpose, but it did a great job politically. The encyclopedia had the greatest effect on those who wrote it, for there was hardly anybody to read it. It did start a fashion in encyclopedias that has lasted, but in a way it has been a failure, because the original object was that the encyclopedia would contain *all* knowledge, not just the sort of quintessence of that knowledge for ready reference in the home. It could not be used at the research front for it couldn't keep up with exponential growth. Ten years later half of all knowledge was not contained in it; it was too new.

The next attempt was that by librarians trying to master universal knowledge by perfect indexing systems. In the beginning, in the early nineteenth century, they really did try to make a card index of all the articles in the journals; they did not simply file volumes under *"Philosophical Transactions of the Royal Society*, Volume I," *"Philosophical Transactions...*, Volume II," and so on. They indexed all of the articles in

all of the world's periodical literature, and began the brave and noble attempt called the *Catalogue of Scientific Papers* (a 19-volume compilation by the Royal Society of London of all papers published during the nineteenth century). It was carried on and on, with the ancient technology of handwritten cards in shoe boxes, until it was transferred to other hands and continued as *The International Catalogue of Scientific Literature*, covering the years 1901-16—but there it died. The librarians gave up, and so the secondary literature was spawned as a way of attacking the problem—and I need not say that it didn't really solve things. The mastery of periodical literature is still an open matter.

Presently, we are, it would appear, in a new period of rapid change. Computer technology, both the hardware and software, is not merely a very high technology. It is a technology that is changing as rapidly as any technology in the history of humanity. It shows every sign of continuing with no perceivable limits in rapid innovation of new technologies, both in hardware and software, for at least another generation. Reasonable estimates by people in the business lead us to suppose that there will continue to be radical new advances, for this is one of the very few growing tips where we have hardly begun to master the potential of the technology. So, we are in for not just a period of rapid change, but perhaps for the longest period of rapid change in the knowledge industry that there has ever been.

Another consideration is that though this is an age in which the rest of the world is catching up with the United States, and consequently this country has less and less of its investment in brainpower and high technology to export in exchange for the things it still imports, this is the one area in which the United States has more of a monopoly than in any other product. I remember an age when quite a lot of the world's motorcars and nearly all the nylon stockings came from the United States. Now every country in the world can make them. They are no longer exportable commodities. If this country wishes to maintain anything of its present quality of life, it had better have some good exportables. Some of the countries in Western Europe have a computer industry, but they are very much outclassed by the industry in the United States. It seems reasonable to expect that the expertise of the U.S. computerized knowledge industry may for a whole generation remain virtually a generation in advance of that of the rest of the world. Therefore, my first major point is that we must not predict that there will be stasis—that there will be any stationary equilibrium of the computerized knowledge industry. The syndrome that "it will be a beautiful data system when we get it finished" will not answer. We're not going to have a finished system in our lifetime or for some time beyond. We are going to have a rapidly evolving, changing system in

which everybody in the industry must necessarily be on the research front, perceiving a generation of adjustment and quite new social forces. Therefore, for that reason alone, I think we must predict that what is going to evolve is not an old-fashioned library with fancy electronic indexes, nor even merely a computerized something-or-other. We are going to see a continuous series of updates. I would say that if the younger people at this conference are going to do something wonderful, remarkable and beautiful in library and information science, it probably hasn't been invented yet.

Another point about high technology is that it does not work, as I tried to illustrate, by doing an old job better. New products imply the generation of new markets that have not yet been perceived. Look at the recent history of digital watches and hand calculators. I haven't yet worn out an item of either of these, but I have changed the model that I use at least three times since they were first introduced, not because the new one does the old job better, but because the new one does jobs that could not be done before. As a historian of technology, I want to point out that no one could have imagined, even had they been in on the invention, that typewriters (which seemed would only mechanize writing) would invent secretaries; or that the automobile, in the act of replacing horses, would invent suburbs (let alone what its back seat would do to the intimate life of America). In my lifetime I have seen the advent of photocopying and it certainly has had more effect on me than making copying easier and better than I was used to, because copying used to be a relatively trivial activity for very special purposes. Nobody could have predicted that we academic faculty would use it as a way of *not* reading papers; now we just make copies. Librarians should just sit and analyze what the advent of the paperback did to people's reading habits. It did not only make the old books more readily available, but it induced new habits of "bookmanship." I used to spend a lot of my life searching antiquarian bookstores to find copies of the great classics which I absolutely had to have. One of the investments a scholar made was the building of such a library. I now have students who know that if it is not in their friendly neighborhood paperback bookstore it is not literature. I cannot as a teacher recommend books for reading that are not in the paperback bookstore.

One thing that the changing habits did was to destroy this old target of completeness that I had in dealing with the classical literature; completeness, in a way, becomes a rather irrelevant oddity. We tend to assume that the books that have survived are the books that are really wanted. (When you get old and gray, if you happen to find one of your old favorites that isn't "facsimiled" already, you mention it to one of your friends and, before you know it, it is reprinted.) With the junking of the old doctrine of completeness which formerly ruled many a scholar and librarian (but does

not any more and ought to be reexamined), I think the librarian syndrome that goes something like, "It's in there somewhere, the trick is to find it," must die. Librarians do not need to take the attitude that "it" is in there somewhere; "if it's not visible it's probably not in there," is the new sort of attitude. Nevertheless, the question "It's in there somewhere, how am I going to find it?" is the central problem of indexing.

There are all sorts of other events one can see coming. One of my favorite observations of the changing technology is that of the demise of the motorcar and the junking of the dormitory suburbs. We are going to use terminals to change dormitory suburbs into service and knowledge industries—suburbs where one can decentralize all of those industries that work with knowledge on terminals. There is no reason to herd office workers into a single building.

Another old syndrome may be passing away; I mentioned the invention of the journal which caught on like wildfire because of something that was not predicted. It started as a formalized newsletter reporting what had gone on in all the other science "clubs," and what was being published in the scientific news of the day. It began as a "current-awareness" newsletter. It was then realized that if one simply took the stack of newsletters, bound them, and then every ten years or so made collections of them with indexes and summaries, automatically the journal would compact current awareness into an eternal archive. It was this attractive quality that generated the new attitude toward the journal: in the very act of communicating (or so one thought) would be generated a permanent archive of knowledge that could then be compressed until all knowledge, right up to the present, was there on the shelves. With all those indexes, of course, everything could be retrieved. I wonder if we still need that job done under the new computer technologies which do a better job of recording all that has been than is done by laying papers on top of each other. It's a difficult question. That job of packing down current awareness into a permanent archive implies a very linear sequential, and therefore probably false, model of knowledge. All sorts of things could be done to improve it. One of my favorite ideas at the moment, coming from a sort of cumulative advantage theory, is that if journals were published in ink that faded rapidly, and every time an article was used it automatically revised the ink back to fresh and stored the revision, then only useful knowledge would be left and it would really work rather well. It's rather like the idea I have heard proposed that every time a library book is used, an extra copy should be bought and put on the shelf at random. Then if someone came in and wanted thirty books, thirty books could be taken from the shelves at random and they probably would be the right ones, simply because the sampling would be on the basis of prior use.

Our habits are a result of the available technology and not the other way around. What happens in the history of technology is *not* that we generate a technology we need for doing something which we then do and do better. That has never been the way it works. We are presented with a new technique without reference to its eventual use. As mentioned already, the most unsatisfactory nodal point in the evolution of libraries was that which came between the beginning of journals and the present day; that is, the generation of a secondary literature. The secondary literature effected much change and evolved a lot, including a few failed attempts along the way with encyclopedias, handbooks and other devices that couldn't keep up; but it still obviously is not satisfactory, even with massive production of abstract services. I suggest that perhaps we will see an extermination of the secondary literature because the job it used to do can probably be done better, once primary literature is managed in a computerized form. There will then be no reason to adopt this intermediate device to combine in an agonizing way the different jobs of current awareness and the creation and maintenance of an archive. These are obviously things that we once wanted to do and we seized upon a technique of journal publication that happened to do both together; they have since become an uneasy and inefficient combination.

It must be remembered that scientific papers or, more generally, scholarly papers are not designed for *communication*. That is only about 20 percent of their function. We publish scholarly papers because that 20 percent packs down very neatly into what used to be an efficient archive. Many scholarly papers today are designed for current awareness only. Some are designed for archive only. Some are designed for neither. Probably the majority of scholarly papers are designed for the simple reason that they are the only known way of finishing one job and taking on another. It is the only way that a scholar can get out of a piece of research that he or she has done in order to start on something different. It is the conventional consequence, and we think we are communicating, but this is not necessarily so. An indication that we do not communicate very well can be seen in the citations or peer rankings of a person's own papers. The citations and peer rankings will agree very well. They'll show which are that person's best works and which are lesser works, and the oddity is that they'll be in very good but negative correlation with the person's own estimate of the value of their work. More frequently than not we regard our most acclaimed works as somewhat slight and of poor quality, and feel much more proud of some paper that is disregarded by our peers. Everybody seems to have a Mendel chip on their shoulder, knowing that their very best work lies virtually unknown and unsung. This is obviously because we are not particularly good at communicating, and of course the worst commun-

icators of all, as may be supposed, are the specialists in communication! The literature of communication is a mess.

The problem of the human place in a linear sequential system is intriguing to a historian because it dates from the very dawn of history. In fact, the people that, not accidentally, invented writing had a very peculiar way of thinking. The Babylonians had, so far as we can see from their mathematics and astronomy, a completely linear sequential mode of thought. Our modern way of thinking and comprehending is not the Babylonian way. At roughly the time of Alexander the Great, the world got mixed up. Babylonian culture combined with the Mediterranean Greeks and their mode of thought. The people who produced the Parthenon were visual comprehenders. When they understood something they said, "I see"; they worked by Gestalt. I am not trying to pretend that such animals as completely left-hemisphered or right-hemisphered people exist. I think that this is a gimmick, but interestingly enough, from the dawn of civilization, there existed people with this peculiarly one-way mode of thought. Babylonian mathematics and astronomy displayed an elegant mathematical complexity, as advanced as the Greeks' or even more so. We've been able to put their complete theory into a single intricate computer program. Their idea of understanding, their concept of a "theory," was an algorithm. Given the algorithm, the entire theory can be comprehended. Every astronomical Babylonian tablet that has been found can be read somewhere on that computer printout. It was a marvelous and accurate system. They thought like a computer and were hopeless at visual Gestalt. The thinking of Greeks was the other way around. They knew almost nothing about numbers and calculations until the Babylonians taught them. Strangely, that peculiar human capability which existed from 3000 B.C. to the time of Christ has only just been revived and utilized afresh. All that genius was floating around with nowhere to go until we invented the computer to use it, and now we find there exist many computer freaks and they all have this peculiar Babylonian mode of thought.

I want to insist, however, on the simple point that Babylonian-style thinking with combinations of linear sequential elements is not the way we customarily proceed. We have a patterned way of thinking. I can go back to books that I read thirty years ago or collections that I searched earlier than that, and know things about them that could not be found using any index. Half the time we use a stored memory item, we use it for reasons other than could be covered by any plausible descriptors. There must be some other way and that is why old-style browsing was important. Linear sequential thought is perfectly good if we have all the necessary bibliographical information or if we want to find somebody's phone number. If, however, a person is in Copenhagen and wants to call his

friend Hans Jensen, he must know that the friend is Architect Hans Jensen, because he is listed under "Architect." It is weird how things like that mess up our system.

By and large, we think in a way other than any possible system of linear sequential indexing. We think in a sort of Gestalt pattern and it turns out that knowledge itself probably has patterns other than those expressible in algorithm fashion. It is thus very odd that books are automatically linear and sequential, just like a computer. It is a peculiar artifact of our technology that books stack into rows—maybe it is an unfortunate accident because it has recently been shown that the best way to store books is not in nice, neat rows, but lying all over tables, spread out all over the library.

What I am referring to is perhaps the most momentous discovery or set of discoveries to come out of information science in recent years. A set of papers has been published by Belver Griffith and Henry Small on the mapping of scientific papers by citation clustering.[1] It hasn't been widely regarded as revolutionary because people think that it has something to do with citations,which are peculiar and special. I believe that citations are only an accidental diagnostic, and researchers are now finding out the most peculiar thing: knowledge can be represented by points or areas on a map.

One would think that knowledge is so multidimensional that this would be useless. As it happens, the mapping is almost perfectly two-dimensional and the simple, geographical simile works much better than any linear sequential, book-like Dewey Decimal Classification system. Instead of a series of indexing terms, all of which are linear sequential, one should use a pair of coordinates for the proper representation of knowledge. The representation of a sort of road map then generates itself rather than having order inflicted upon it. The proper representation of knowledge becomes a sort of atlas, or maybe even a globe, in which each item is placed relative to other ones with which it is associated. As knowledge continues to increase, one automatically bends and strains this former system a little by relating things in different ways. We have, in fact, been able to make elementary "maps" and I believe that probably within the decade, as an additional technology, we will be able to get visual representations on a computer screen. The relational algorithms will produce this type of Gestalt phenomenon yielding a representation of the way that knowledge *is*. It should show the way that human beings think, relating all similar things. That gives us the possibility of data systems that are ill-adapted to linear sequential indexing, and a much greater versatility.

Another curious finding of the Griffith-Small discovery is that knowledge exists at a single level of aggregation. Let us use the word *atom* for the

units in which knowledge is encapsulated—some big, some small. The average unit is probably something like a year's work because that is a common period of reference. We do one job of work a year and write it up. But there are some trades, like systematic natural history and organic and biochemistry, in which the atoms of knowledge are about two weeks' work, so you get many such atoms and they are very little atoms compared with astrophysics (where the units are probably about two years of work), history (about five years), or philosophy (about ten years). These atoms of knowledge are then aggregated, and interestingly there is a single level of aggregation. Atoms are formed into molecules, and above molecules there is nothing.

A molecule of knowledge corresponds to the work of about 300 people—what we would call a *subfield*. A subfield is made up of entities like plate tectonics, or insulin chemistry, or Cuban economics—specialties in which a few hundred people work. It is not constantly the same people; there is probably a core of a hundred or so, and every year a large number of others flow through. For example, when we encounter a name in a library file, we have probably never seen that name before and will probably never see it again. Most people who float into the knowledge sphere are transients, but upon retrieval we usually get the same names over and over again, and they form a small, stable group. This derives from the cumulative advantage mechanism of scholarly authorship which is a natural birth-and-death process. Knowledge is apparently organized in subdisciplines and subspecialties and at no other level. If we think there is such a thing as physics or physiology or information science, we do so only because it provides a mode of social organization which permits us to have institutes, schools, students, and doctorates in a subject. It does not mean that all of the fields that we teach cohere. People are usually involved in some major specialty plus a number of minor ones, and are waiting in line in case the major field thins out.

Why do these subspecialties contain about 300 people? This magic number implies that there must be something like 3000 specialties in the world, since 3000 specialties multiplied by 300 people gives us the million-odd authors who form the invisible colleges. These colleges are the size they are because 300 represents the ratio between the input and the output of the individual. When a group of individuals live by taking in each other's washing (I thought we only did that in England)—that is to say, live by reading each other's papers—each reads, roughly speaking, a paper a day and writes a paper a year. The ratio is thus 300:1. It is obvious we cannot read ten papers a day with the same intensity that we write one. It is also obvious that we have to read more than one every day, otherwise we are not keeping up with the others. Therefore, if the ratio is less than 300:1,

we're not getting enough to read; as a result, we are involved in a lot of different fields. And if we have more than 300 people in a field there is too much to read, and we therefore fission off a section of it. For that reason, the subspecialties, these invisible colleges, reproduce by budding or fission roughly every ten years.

Invisible colleges seem to be the same size now that they were in the seventeenth century and presumably will remain so. When computerized journals are discussed later in the institute, remember that what we really want to do is produce a "taking in of each other's washing mechanism" for roughly 300 people. If there are more than that, too many papers are being collected (merely to make the field commercial or perhaps to give it a higher status); and if there are fewer than that, not enough can be gained to make it worthwhile.

I believe it should be possible for a computer to organize this sort of thing with the coming technology of memory. We will get much larger memories very soon, and we will need them. The big foreseeable bottlenecks will be getting everything we want into machine-readable form, and having memory readily available everywhere with minimal equipment. When all that is done, what we do *not* get is any simple-minded indexing. I think we will move over to some sort of new encyclopedism produced by an *automatic organization of knowledge*. Let's call it AOK—it sounds good. AOK is a way of doing the same sort of thinking that human beings do—simply translated into a different form. For mapping we use this sort of associative indexing extended to its limit, and that is the way knowledge itself wants to go. I do not think that there will be any replacement of the old methods. They will survive even as handwriting survives the typewriter or the terminal. I still happen to love books and believe that they will survive. People still ride horses! I think we will have the convenience of what is being called the *built-in orderly organized knowledge system* (perhaps known better by its acronym BOOKS), and clearly we will preserve it for recreation and for a very neat form of portable learning. What I am against is the mentality of wanting and trying to throw out the old because we think we have a new way of doing the old thing. A new technology never just replaces the old method—it enables quite different styles of life to come into being. Furthermore, it is the very indirect results of a technology that are its most interesting and sometimes its most significant consequences.

With the computer, and especially with the mapping possibility I have suggested, we have a new sort of capability, not just the old job done better or more cheaply or more massively. The consequences must be far from straightforward, far beyond the possibility of technological assessment. When the library computer deals with knowledge itself rather than

with those mere skeletons of knowledge that can be cut and dried into algorithmic indexing, we will need librarians who are more than mere mediators. We will need people who are better than simultaneous translators, for the new technology will require a very rare sort of talent that has not been utilized for a long time. We will need people who can think in both Babylonian and Greek modes. Most people who can talk very well to computers are not particularly good at talking to people, and vice versa. We need the rare sort of person who can talk to people and tell them of the possibilities of this new technology, which will be different from the technology that is taught to students at library schools. We will need terminal people who can talk to nonterminal people, and that's what I really mean by saying that far into the terminal future, Happiness is going to be a Warm Librarian.

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