"We become what we behold," Marshall McLuhan wrote in 1964. "We shape our tools, and thereafter our tools shape us." The medium beheld with the most interest in McLuhan's day was television. Now, thirty years later, we have shaped for ourselves a new communications tool—the millions of networked computers that make up the Internet. It is a medium that is both like television—in that it involves people staring at glowing screens, sharing experiences, real and imagined, over vast distances—and unlike television—in that it is decentralized, interactive, and based on the written word.

Although considerable attention has been directed to the superficial aspects of the on-line world—its entertainment value, its investment opportunities, its possible abuse by child pornographers and drug runners—little has been said about how this tool we are shaping is, in turn, shaping us. To answer that question, Harper's Magazine turned to four observers of the Internet and asked them to consider the message of this new medium.
The following forum is based on a discussion that took place this spring in Cambridge, Massachusetts. Paul Tough, a senior editor of Harper's Magazine, served as moderator.

JOHN PERRY BARLOW

is one of the founders of the Electronic Frontier Foundation, a group formed to protect civil liberties in cyberspace. He was a participant in "Is Computer Hacking a Crime?" a forum that appeared in the March 1990 issue of Harper's Magazine.

SVEN BIRKERTS

is the author, most recently, of The Gutenberg Elegies: The Fate of Reading in an Electronic Age, published by Faber and Faber, an excerpt from which appeared in the May 1994 issue of Harper's Magazine.

KEVIN KELLY


MARK SLOUKA


JOHN PERRY BARLOW: I have said on numerous occasions, and I still believe, that with the development of the Internet, and with the increasing pervasiveness of communication between networked computers, we are in the middle of the most transforming technological event since the capture of fire. I used to think that it was just the biggest thing since Gutenberg, but now I think you have to go back farther. There has been much written both celebrating and denouncing cyberspace, but to me this seems a development of such magnitude that trying to characterize it as a good thing or a bad thing trivializes it considerably. I also don't think it's a matter about which we have much choice. It is coming, whether we like it or not.

MARK SLOUKA: I get anxious when you say that talking about whether this is good or bad is beside the point. It seems to me it has to be the point. We can't talk about these emerging technologies without taking a look at the impact they're going to have on average human lives. And if, in fact, these new technologies are so vastly transforming, we have to take a look at where they're leading us. What direction are we going in?

BARLOW: Let me tell you what I do for a living these days. I go around and tell people that something really weird is happening. Some fundamental shift is taking place that will have many consequences that I cannot imagine. But I think it's time we all started thinking about those consequences so that collectively we can make the little decisions that need to be made. That is all I do. I don't say that these changes are good. I certainly don't claim we're creating a utopia. I mean, I love the physical world. I spent seventeen years as a cattle rancher in Pinedale, Wyoming. I was basically living in the nineteenth century. If I could still make a living there, I would. But the fact is, there is very little economic room in the physical world these days. If you are making something you can touch, and doing well at it, then you are either an Asian or a machine.

SLOUKA: That is a hell of a generalization.

BARLOW: But it's largely true. There is not much room to exist in that part of the economy any longer, and I wish there were. Now, given that, I think there are a lot of forces that tend to head society toward cyberspace, whether it wants to go there or not. There are times when I
honestly believe that we would have been better off if we’d gone the way of the Aborigines, who have been sitting out in the Australian desert for the last fifty thousand years and have come up with precisely three tools. They did not make of their minds a very open ecology for the formation of tools. And as a result they are probably a lot more connected to the soul of the universe than we are at the moment. But however I may feel about it, I’m not sure there is a damn thing I can do about it, except try to be helpful to the people around me who might be suffering some kind of paroxysm as a result of this profound change in their lives.

SVEN BIRKERTS: This theme of inevitability pervades both your writing on the subject and Kevin’s: “Go with it because it is inevitable, and adjust yourself as well as you can.” Mark and I are questioning that inevitability. I want to know whether this is a juggernaut that is out of our control. It appears to be moving with a sort of self-proliferating logic of its own. I’m just curious about what is underwriting it.

BARLOW: You know what’s underwriting it? It’s the thing that sets human beings apart from all other species on this planet—a permanent hardwired dissatisfaction with the ecosystem they find themselves in. And a desire to adapt it to them, instead of to adapt to it. That itch is at the root of the human spirit.

SLOUKA: Hang on. I am not dissatisfied with the ecosystem I inhabit. I think the drive to get on-line is not so much this alleged dissatisfaction. I think it’s 3.5 trillion dollars. It has been estimated that the business coming out of these technologies is going to amount to that sum. That’s a nice pile of cash, and it’s going to generate a need to convince us that we should follow along, that we should buy these things. I think that is one answer. The other answer is that the wired world is a response to certain cultural changes over the last two or three generations—the breakup of the family, the breakdown of the community, the degradation of the physical environment. I grew up in a little place up near the Catskills, Putnam Lake. It’s gone. Every place I’ve loved in this world has been paved over, malled over, disappeared. As we observe this assault on the physical world, we feel ourselves losing control. I think alternative worlds become more appealing to us.

BIRKERTS: We’re looking to technology to solve what it has wrought.

SLOUKA: And I think it’s a culture-wide cop-out. Why bother fighting for those last stands of old growth in the Pacific Northwest when you can live on the new electronic frontier? I think the real answer has to be in the physical world. The only choice we have is to resuscitate our failed communities, to bring back Pinedale and Putnam Lake—to align ourselves with physical reality now, before it’s too late. The answer is not in a physical space. The answer is not virtual reality. Yet that is precisely the direction we’re headed.

BIRKERTS: The last two words in my book are “Refuse it.” I don’t mean that this is necessarily a realistic mass proposal. I mean that speaking subjectively, for myself, this is what my heart tells me to do.

BARLOW: If you can find a way to refuse it and make that refusal work for yourself, I think you should do precisely that. I’m pro-choice, to the extent that choice is possible.

BIRKERTS: But I am going to quote you to yourself, John. This is from the Ume Reoder. “But really it doesn’t matter. We are going there whether we want to or not. In five years, everyone who is reading these words will have an e-mail address, other than the determined Luddites, who also eschew the telephone and electricity.” So that’s the choice you’re offering me: I can be a “determined Luddite.”

BARLOW: You can.

BIRKERTS: In living my own life, what seems most important to me is focus, a lack of distraction—an environment that engenders a sustained and growing awareness of place, and face-to-face interaction with other people. I’ve deemed these to be the primary integers of...
Barlow: There is something so beautiful about that vision. I don’t know that I could do it as elegantly, but if I were to describe my aspirations I wouldn’t use many different terms from the ones you just did. Nietzsche said that sin is that which separates. And I think that information, as it has been applied primarily by broadcast media, and to a great extent by large institutions, has separated human beings from the kind of interaction that we are having here in this room. There was a long period when I adhered to your point of view, which is that the only way to deal with the information revolution is to refuse it. And, as I say, I spent seventeen years driving a four-horse team around, living in very direct contact with the phenomenal world and my neighbors. And what I finally concluded was that there were so many forces afoot that were in opposition to that way of life that the only way around technology was through it. I took faith in the idea that, on the other side of this info-desert we all seemed to be crossing, technology might restore what it was destroying. There’s a big difference between information and experience. What you are talking about, Sven, is experience. That is the stuff of the soul. But if we’re going to get back into an experiential world that has substance and form and meaning, we’re going to have to go through information to get there.

Birkerts: But that implies that the process—going through the information world—isn’t going to change us beyond recognition and warp the aspiration itself. That’s my fear. I’m going to throw another set of terms in here that belong to Rilke. He said two different things that have struck me as very relevant to this. And again, we are dealing with a very romantic, poetic perspective. Speaking of poets, he said, “We are the bees of the invisible.” The ultimate human purpose is to transform. And the other thing he said is that ultimately, when you kind of look down the long turnpike of the future, “Nowhere will world be but within us.” I always read those two statements as saying that our collective evolutionary destiny is the conversion of contingent experience into soul-matter. But what I see happening instead is our wholesale wiring. And what the wires carry is not the stuff of the soul. I might feel differently if that was what they were transmitting. But it’s...
not. It is data. The supreme capability that this particular chip-driven silicon technology has is to transfer binary units of information. And therefore, as it takes over the world, it privileges those units of information. When everyone is wired and humming, most of what will be going through those wires is that sort of information. If it were soul-data, that might be a different thing, but soul-data doesn’t travel through the wires.

KEVIN KELLY: I have experienced soul-data through silicon. You might be surprised at the amount of soul-data that we’ll have in this new space. That’s why what is going on now is more exciting than what was going on ten years ago. Look, computers are over. All the effects that we can imagine coming from stand-alone computers have already happened. What we’re talking about now is not a computer revolution, it’s a communications revolution. And communication is, of course, the basis of culture itself. The idea that this world we are building is somehow diminishing communication is all wrong. In fact, it’s enhancing communication. It is allowing all kinds of new language. Sven, there’s this idea in your book that reading is the highest way in which the soul can discover and deepen its own nature. But there is nothing I’ve seen in online experience that excludes that. In fact, when I was reading your book I had a very interesting epiphany. At one point, in an essay on the experience of reading, you ask the question, “Where am I when I am involved in a book?” Well, here’s the real answer: you’re in cyberspace. That’s exactly where you are. You’re in the same place you are when you’re in a movie theater, you’re in the same place you are when you’re on the phone, you’re in the same place you are when you’re on-line.

BIRKERTS: It’s not the same at all. The argument is very attractive: “Well, it’s just a word. It’s a word on a screen, it’s a word on a page. Same thing.” But that’s a limited way of looking at it. The larger picture has to include the particular medium through which we convey the word. When you write the word across a football stadium in skywriting, you’re not just writing the word, you’re writing the perception of the word through the air. When you’re incising a word on a tombstone, you’re not merely writing the word, you’re writing a word as incised on a tombstone. Same for the book, and same for the screen. The medium matters because it defines the arena of sentience. The screen not only carries the words, it also says that communication is nothing more than the transfer of evanescent bits across a glowing panel.

BARLOW: I would agree with you completely that media have an enormously transforming effect. A word written in the sky by jet fighters is not the same as that word spoken by a lover.

BIRKERTS: Right.

BARLOW: But part of the reason that I’m guardedly optimistic about these new technologies is that the word that is incised on a page in a book has to be put there by a large institution. Sitting between the author of that word and the reader
Date: Fri, 26 May 1995 22:00:08
To: "Internet Addiction Support Group" 1-o-o-g@netcom.com
Subject: Literally Got Sick, Surfing

The reason I got on the net was because I was convalescing from back surgery. Previously, being physically active, I had no time for the PC or the internet.

Initially, I spent only 30-45 minutes on the PC, twice a day, exploring various boards and doing infantile net explorations. Then one night I woke up in the middle of the night and went online. I rationed myself to 1 hour for surfing.

I need reading glasses to focus on the screen. Sitting close enough to focus w/ my glasses caused me to strain my back (less than 1 week after surgery). After 5 1/2 hours on the net, my back ached from bending, my head ached from the eye strain, and I was nauseated from the distorted images I was processing visually. I remained disabled and sick in the stomach, pinned in the neck and leg, and with a throbbing headache for at least 24 hours, the longest I've been sick in over 30 years.

My wife was disgusted with me. I couldn't believe myself that I stayed on the net so long.

Since that time I have lost hundreds, maybe even thousands of dollars in unearned income due to unfinished proposals and projects, late payment on bills because I just didn't take the time to make out the checks, lost rapport with friends and associates, missed deadlines on discount travel and air fares, lateness to appointments (I was a punctual person until I got this net habituation). I've spent countless hours typing out messages like this to people I don't know and will probably never hear from. I've typed out more letters and messages since my back surgery in December than in my entire life before then. My own kids since then have received no more than 2 or 3 notes from me in the snail mail. They won't get on the net so I don't even get to write them.

My back surgery was so successful that after a few weeks I could do anything. I jog, play tennis and golf, fly airplanes, lift heavy objects and yet still I gravitate to the PC several times a day. It's just the financial stuff I avoid while doing these messages and explorations. My wife is annoyed that my office here at the house is stacked up with months of snail mail and other projects I used to do on a regular basis. I'm annoyed, too.

But it's just too much fun writing to you, whoever you are.

BARLOW: Well, you may or may not. But in order to feel the greatest sense of communication, to realize the most experience, as opposed to information, I want to be able to completely interact with the consciousness that's trying to communicate with mine. Rapidly. And in the sense that we are now creating a space in which the people of the planet can have that kind of communication relationship, I think of that word is a huge mediating organism made up of organization and capital.

BIRKERTS: I can't really deny that.

BARLOW: And all that mediation has a great effect on that word. But between the word that I type into my computer and e-mail to you and the word that comes out on your end there's nothing but the digital transformation taking place. It is not mediated. It's as intimate as it possibly could be without me whispering it into your ear.

SLOUKA: But it seems to me that the kind of writing that's done in the electronic media has a sort of evanescence to it. There's an impermanence to it. A book, though, is something you can hold on to. It is a permanent thing. There is something else going on here, too. And that is what happens in the process of reading. When you read a book, there's a kind of a silence. And in that silence, in the interferences between the words themselves, your imagination has room to move, to create. On-line communication is filling those spaces. We are substituting a transitional, impermanent, ephemeral communication for a more permanent one.

BARLOW: You know, I'm beginning to realize that the principal difference between you and me, Mark, is that I take a considerably longer view of things. I mean, I think that the book is pretty damn ephemeral, too. The point is not the permanence or impermanence of the created thing so much as the relationship between the creative act and the audience. The big difference between experience and information is that with an experience, you can ask questions interactively, in real time. Sven, because you're sitting here, I can ask you questions about your book. As a reader I can't.

BIRKERTS: But as a writer I didn't want you to.
we're moving away from information—through information, actually—and back toward experience.

BIRKERTS: But that wasn't what I wanted in writing the book. The preferred medium for me is the word on the page, alone, with an implicit recognition that I'm not going to be there to gloss and elucidate and expand on it. It is what drives me, as a writer, to find the style that will best express my ideas. I would write very differently if I were typing on a terminal and my readers were out there already asking me questions. Writing a book is an act of self-limitation and, in a way, self-sublimation into language and expression and style. Style is very much a product of the print medium. I don't think that Flaubert, for example, could have written the way he did on a screen. In the move to on-line communication, the aspiration to the kind of style that seeks a sort of permanence, symbolized by immobile words on a page, vanishes. Okay, no big deal, except that I also believe that language is our evolutionary wonder. It is our marvel. If we're going to engage the universe, comprehend it and penetrate it, it will be through ever more refined language. The screen is a linguistic leveling device.

BARLOW: You say that the point of language is to evolve. Well, it seems to me that evolution occurs a lot more rapidly and better in open, unconstrained environments than in constrained environments.

BIRKERTS: But language is what communicates the subtlety of that evolution to us. We may be evolving on all fronts, but we only comprehend ourselves by way of language. And I think that the deep tendency of the circuited medium is to flatten language.

KELLY: Here you are wrong. If you hung out on-line, you'd find out that the language is not, in fact, flattening; it's flourishing. At this point in history, most of the evolution of language, most of the richness in language, is happening in this space that we are creating. It's not happening in novels.

BIRKERTS: I wish some of this marvelous prose could be downloaded and shown to me.

KELLY: You can't download it. That's the whole point. You want to download it so that you can read it like a book. But that's precisely what it can't be. You want it to be data, but it's experience. And it's an experience that you have to have there. When you go on-line, you're not going to have a book experience.


KELLY: You think that somehow a book is the height of human achievement. It is not.

SLOUKA: But there is a real decline in the kind of discourse taking place. I go back to what John said in an interview that I read not too long ago.

He said that the Internet is "CB radio, only typing." That really stuck in my mind, because there's an incredible shallowness to most on-line communication. I realize that there are good things being said on the net, but by and large the medium seems to encourage quickness over depth, and rapid response over reflection.

KELLY: My advice would be to open your mind to the possibility that in creating cyberspace we've made a new space for literature and art, that we have artists working there who are as great as artists in the past. They're working in a medium that you might dismiss right now as inconsequential, just as the theater, in Shakespeare's day, was dismissed as outrageous and low-class and not very deep.

SLOUKA: You've pointed out that one of the advantages of the net is that everybody can pub-
The question I keep asking is: Where does the need come from to inhabit these alternate spaces?

You get babble. My shopping list becomes as valuable as Cormac McCarthy's latest book. And then you go back to thinking, "Well, wait a minute, maybe those middlemen had some function, however flawed they were."

Birkerts: "I want my hierarchy!"

Barlow: You said it!

Birkerts: I said it with quotes around it, but I said it.

Barlow: There's a hell of a lot of babble in life, and there's a hell of a lot of babble in cyberspace. But there are certain expressions that rise above the noise. The ones that are most intimately familiar to me are things of my own creation. When my lover died last year, I e-mailed her eulogy—the words that I spoke at her funeral—to about sixty friends. Just to tell them that she had died and to tell them what I was thinking. One of them posted it somewhere, another posted it somewhere else, and the next thing I knew, I had received a megabyte of e-mail from all over the planet—thousands and thousands of pages. People I'd never met talking about the death of a loved one, talking about things they hadn't talked about with anyone. What I wrote had self-reproduced.

Birkerts: Well, as the psychologists say, "How did that make you feel?"

Barlow: It made me feel like my grief was not just my own, that it was something I had shared, inadvertently, with the rest of my species. And my species, in some abstract way, had answered.

Sloka: But the reason you did that was probably because you didn't have a community of friends around you, a Pinedale, where everyone would have known your lover and would have shared your grief. And instead of writing back to you and saying, "John, we're sorry," they would have, I don't know, God forbid, hugged you.

Birkerts: Baked you a pie.

Sloka: Shown up at your doorstep. My point is not that you can't find compassion and communitarian values on the net. You can. But you can find them just as well, and better, in a real community. One phenomenon I encountered on the Internet was that people would put words like "grin" or "smile" or "hug" in parentheses in a note. It's a code meaning cyberhugs, cybersmiles, cyberkisses. But at bottom, that cyberkiss is not the same thing as a real kiss. At bottom, that cyberhug is not going to do the same thing. There's a big difference.

Barlow: Yes, there is a difference. But I wasn't without the warmth of my friends. I got a lot of hugs during that period, and I still get them. My community was around me. I mean, it wasn't a case of either/or. I didn't have to give up the human embrace in order to have this other, slightly larger form of human embrace, a kind of meta-embrace. One supplemented the other.

Sloka: At some point do you think the virtual world is basically going to replace the world we live in? Is it going to be an alternate space?
KELLY: No, it's going to be an auxiliary space. There will be lots of things that will be similar to the physical world, and there will be lots of things that will be different. But it's going to be a space that's going to have a lot of the attributes that we like in reality—a richness, a sense of place, a place to be silent, a place to go deep.

SLOUKA: But the question that I keep asking myself is: Why the need? Where does the need come from to inhabit these alternate spaces? And the answer I keep coming back to is: to escape the problems and issues of the real world. I've talked to a lot of people who go on to the net and take on alternate personas. I mean, why the hell would you do that?

BARLOW: Because you want to experiment.

SLOUKA: Why are you experimenting? Because you're threatened by the reality you inhabit.

BARLOW: Is there something wrong with experimenting?

SLOUKA: There is if it distracts us from the problems at hand. One of the people I interviewed for my book was a man who posed on the net as a woman. He wanted to see what it's like to be a woman and what it's like to be hit on by another male. He wanted to get away from sexism, ageism, racism—all the collected "isms" that go along with life in the real world. Instead of dealing with those issues, though, he was sidestepping them.

KELLY: Have you ever been to Europe?

SLOUKA: To Europe? Yes.

KELLY: Why? You have your own community. Why go to Europe?

SLOUKA: Because I wanted to experience another physical community.

KELLY: Yes.

SLOUKA: I underscore the word "physical."

KELLY: Well, even though we're physical beings, we have an intellectual sphere. It's like reading a book, one that you lose yourself in completely. Why does one do that? Do I have to be really messed up to want to lose myself in a book?

SLOUKA: I hope not.

BARLOW: Well, why would you want to flee the physical world into a book?

BIRKERTS: I agree—reality is often not enough. But I think we have diverged here from the central point. If we're merely talking about this phenomenon as an interesting, valuable supplement for those who seek it, I have no problem with it. What I'm concerned by is this becoming a potentially all-transforming event that's going to change not only how I live but how my children live. I don't believe it's merely going to be auxiliary. I think it's going to be absolutely central.

BARLOW: You know, it's possible that both of those things can be perfectly correct. In terms of your life span, I don't think that there's any reason you can't go on leading exactly the life you lead now, living with the technology you find most comfortable, reading your books—of which there are likely to be more over the period of your lifetime, by the way, rather than less. I see no reason why you can't personally "refuse it." But over the long haul, I'd say that society, everything that is human on this planet, is going to be profoundly transformed by this, and in many ways, some of which will probably be scary to those of us with this mind-set, some of which will be glorious and transforming.

BIRKERTS: But even if I've pledged myself personally, as part of my "refuse it" package, to the old here and now, it still impinges on me, because it means I live in a world that I find to be increasingly attenuated, distracted, fanned-out, disembodied. Growing up in the Fifties, I felt I was living in a very real place. The terms of human interchange were ones I could navigate. I could get an aura buzz from living. I can still get it, but it's harder to find. More and more of the interchanges that are being forced on me as a member of contemporary society involve me having to deal with other people through various layers of scrim, which leaves me feeling disembodied. What I'm really trying to address is a phenomenon that you don't become aware of instantly. It encroaches on you. I do believe that we gain a lot of our sense of our own reality and validity through being able to hear an echo, by
getting our words back, by being mirrored. And community, in the old-world sense, was about being mirrored immediately. You know, you yell for Clem, and Clem yells back, and you understand the terms of your world. Now you type something to, say, Kiichi in Tokyo, and it comes back a few hours later. You're being mirrored in another way. Maybe it's because I'm not on-line, but it seems to me, as an adult human being living in 1995, that the signal is getting weaker. I find that more and more I navigate my days within this kind of strange landscape. People have drawn into their houses, and the shades are down. You go into a store and the clerk isn't looking at you, he's busy running bar codes. And you multiply that a thousandfold: mediation, mediation, mediation. I want an end to mediation. And I don't think I can break the membrane by going on-line.

THE INTRODUCTION
OF FIRE PRODUCED
GREAT CHANGES IN
SOCIETY. THAT
DOESN'T MEAN THAT
EVERYTHING IS ON FIRE

BARLOW: Sven, you and I are in absolute, complete agreement on this. But the alienating engine that I perceive in society is broadcast medi-

KELLY: Sven, I think part of what you're saying is true. You're ignoring the center of the culture, and therefore you feel sort of cut off. The culture has shifted to a new medium. But it's not going to be the only medium there is. The introduction of fire produced great changes in our society. That doesn't mean that everything is on fire. Digital technologies and the net can have a great effect without meaning that everything has to be the net. I listen to books on tape. I have for many years. I couldn't live without them. I listen to the radio. I read books. I read magazines. I write letters. All of these things are not going to go away when the net comes.

BIRKERTS: But don't you think it's a push-pull model? If you send out a net that allows you to be in touch with all parts of the globe, you may well get a big bang out of doing that, but you can't do that and then turn around and look at your wife in the same way. The psyche is a closed system. If you spread yourself laterally, you sacrifice depth.

KELLY: I question that trade-off. That's my whole point about this kind of environment. It's not that we're going to deduct the book, though the book will certainly lose its preeminence. The flourishing of digital communication will enable more options, more possibilities, more diversity, more room, more frontiers. Yes, that will close off things from the past, but that is a choice I will accept.

SLOUKA: See, the confusion is understandable because so