WIRED

Singular Visionary

Sci-fi master/math nerd Vernor Vinge believes that machines are about to rule the human race as humans have ruled the animal kingdom.

By Kevin Kelly

Three years before William Gibson described cyberspace so convincingly in his novel *Neuromancer,* science fiction writer Vernor Vinge had envisioned a visual MUD-like cyberspace in his landmark novella, *True Names.* In Vinge's world, virtual agents mingle among automata and people operating behind elaborate personae. Many Net veterans cite *True Names* as a seminal influence that shaped their ideas about Net policy. First published in 1981, *True Names* grappled with the tricky issues now spreading over the Net: Can there be privacy? Should anonymity be tolerated? Why not have multiple identities? And who should know your true name?

Author Vinge is a mathlete - an associate professor of math sciences at San Diego State University; he sold his first science fiction story in 1964. Besides *True Names,* he has written *A Fire Upon the Deep* (which won a Hugo in 1993 for best novel) and is working on that story's prequel.

***Wired*: In *True Names,* you describe a global computer network that, by providing the graphical illusion of an artificial world, allows users to interact with people thousands of miles away without knowing their true identities. It became a cult classic among hackers and presaged everything from Internet interactive games to *Neuromancer.* Where did the idea come from?**

Vinge: In '78 or '79, our university got a little PDP-11/44 with a few dial-in lines. In order to work from home, I bought myself an enormously expensive display with a keyboard and a 300-baud modem. One day, I was lurking around, and someone started talking to me with the Talk program. We chatted for some time, trying to figure out who each other was. Finally, I told him I couldn't talk anymore because, really, I was a personality simulator - so, goodbye. After I broke that connection I thought, I just lived a science fiction story!

***Wired*: How do you think the story holds up 14 years later?**

Vinge:I think I did well in terms of saying things technically. For example, there are MUD participants who are robots right now, some of them very good. You never quite know who you're dealing with.

***Wired*: In your books, you sometimes focus on the idea of a singularity - the point at which a mathematical function goes infinite. What does that mean to you in terms of a cultural singularity?**

Vinge: All sorts of apocalyptic visions are floating around, but mine is very narrow. It just says that if we ever succeed in making machines as smart as humans, then it's only a small

leap to imagine that we would soon thereafter make - or cause to be made - machines that are even smarter than any human. And that's it. That's the end of the human era - the closest analogy would be the rise of the human race within the animal kingdom. The reason for calling this a "singularity" is that things are completely unknowable beyond that point.

***Wired*: If I could give you a round-trip ticket into either the future or the past, which direction would you go? And how far?**

Vinge: Fifty years into the future. If my ideas about the singularity are true, it will happen within 50 years. If my ideas aren't true, 50 years would probably be long enough to expose in detail why the singularity can't happen. Either way, I gain good information - information that might be profitable if I chose to come back.

***Wired*: Do you see any evidence that we are headed toward a singularity?**

Vinge: I think the singularity may explain Fermi's paradox: where is all the other intelligent life in the universe? For years, there have been two theories: the first is that civilizations exterminate themselves, and the second is that these outer civilizations are so weird there's no way to interact with them. That second explanation has gained a lot of weight in my mind, because I can see us becoming weird - before my very eyes.

***Wired*: Is technology neutral? Or is it inherently good or bad?**

Vinge: Technology is neutral in the sense that it needs some human medium to express itself. But I think technology is close enough to being out of control that human intervention has become a weaker and weaker constraint. Also, it's important to regard technology in the long sweep of history as being one with history. In fact, it's one with biology, one with the rise of multicellular life forms, and it's headed someplace - probably. But it's not alien to the sweep of development and beauty and order in the universe.

***Wired*: What's your dream in life?**

Vinge: Oh, to be a whole lot smarter and live forever. But those two things are so extreme that, if you tried to define them precisely, it might sound a lot like what many people think Hell is. If you're going to be stuck inside a human-capacity body or mind, a 10,000-year lifespan is a strange thing to ask for. It would be like playing a tape loop forever. There's just not enough depth in humans to take advantage of 10,000 years. If you really want to live forever, you have to be growing. But if you become twice the person you are now, intellectually and emotionally, would you still be the same person? If you became a million or a billion times bigger than you are now, that new creature would bear about as much resemblance to you as you bear to your zygote. And, that's beginning to sound like death again.

***Wired*: No, that sounds like birth.**

Vinge: Yeah, but it's the end of Kevin Kelly.

***Wired*: But does a zygote die to become me?**

Vinge: Well, think of your essence as this indigo dye. It's in a thimble, so dark that it's black. But as you grow, you'll take that dye and put it in a bathtub full of water. That's still going to be pretty blue stuff. OK, now another million, 2 million, 3 million years; it's time to expand again, and you dump the dyed bath water into a swimming pool. Well, you can still see some of the blue. But, down there toward the end of time - at that point, it's like pouring that thimble of dye into the Atlantic Ocean. For me, the point is that sufficiently radical optimism - optimism that more and more seems to be technically feasible - raises the most fundamental questions about consciousness, identity, and desire.

Kevin Kelly* (kk@well.com) *is executive editor at Wired and the author of Out of Control (Addison-Wesley, 1994).