Steve Mann

Viewpoint

Existential Education in the Era of Personal Cybernetics

I remember very clearly the morning of Tuesday, January 19, 2038 at 3:14:07 a.m., which, very strangely, one second later, was also the afternoon of Friday, December 13, 1901, at 20:45:52. I say "very strangely," because Unix (and its variants such as the GNUX of the GNU cult) was forbidden due to ITAR export regulations. This date was clearly associated with Unix, classed as a munition within the United Corporation of America. It was for export regulations, we were told, that the learning or thinking of operating systems for which thought escrow could be easily bypassed was illegal. This is why the third hemispheres of our brains were pre-taught with the new Win2K operating system, reported to be Y2K (year 2048) compliant.

Most all of us remember exactly what we were doing that day, later to become known as the Y2K-10 (year 2048–10) bug. Little did we know that Win2K (Windows 2048) was just an intellectually encrypted adaptation of GNUX (the criminal efforts of the GNU cult group combined with the highly illegal Linux kernel). The government knew about this, no doubt, but accepted it given the built-in thought escrow capability of the Win2K operating system.

MY PREDICAMENT BEGAN IN COLLEGE, WHEN MY friend Lisa asked me what I had learned in last week's lectures. She had missed the lectures due to illness, and unless she could learn the material, she would probably fail her midterm project. There was no one she dared ask, except me.

This put me in a dilemma. I had to help her, but if I told her what she had missed, she might have learned something. Aside from the fact I could go to prison for teaching without a teaching license, the very idea shocked me. Like everyone else in New York Ltd., I had been taught since elementary school that unauthorized sharing of knowledge was nasty and wrong—something only pirates would do.

Everyone had learned since their kindergarten days that it was immoral to steal ideas, and just plain unfair since others had to pay for their knowledge. And since everyone signed Knowledge License Agreements prior to each university course, it was clear what the rules were. Nobody forced us to live in the United Corporation of America—we were all there by choice. We were completely free not to go to University. For example, we were completely free to accept a low-paying manual labor job if we didn't agree with the Knowledge License Agreement.

And if we didn't agree to the Corporate Employment Agreement associated with a manual labor job, we were totally free to sleep on the streets and be homeless. Of course the homeless were often rounded up and used for various experiments, but this was all part of living in our free world.

But I had, by my own choice and free will, accepted the terms of the Knowledge License Agreements, forbidding the unauthorized or unescrowed sharing of knowledge. But there wasn't much chance the Intellectual Property Licensing Corporation (IPLC) would catch me. In the aftermath of the Y2K-10 bug, also known as the "Friday the 13th" bug, there were plenty of loopholes in our brains' third hemispheres. In my Thoughtware Engineering courses, I had learned each of us had a copyright monitor that reported to the IPLC each time we thought of something copyrighted or patented. The corporations used this information to catch thought and idea pirates, and also to sell personal thought profiles to retailers. It wasn't considered a violation of privacy, because there were strict laws about how the information could and could not be used. Only government officials or law enforcement corporations were entitled to acquire or use the monitor channels. The Law Enforcement Access

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Field (LEAF) was installed with the standard Thought-tech hardware. The courts ruled that it wasn't really much different than the wiretap provisions installed in all the wireless communications systems of the old wearable and handheld computing and communications devices that were the predecessors to our modern e-telepathy and e-commerce Thoughtware technology.

So if I helped Lisa, the next time one of us was networked, the IPLC would find out. I, as a thought criminal, would receive severe punishment.

Of course, Lisa did not necessarily intend to learn from me. Maybe she wanted to talk to me just for companionship. But I knew she came from a middle-class family and could hardly afford the tuition, let alone lecture license fees for last week's course material. Learning from me might be the only way she could graduate. I understood this situation, as I myself had to borrow money to pay for licenses to all the ideas and knowledge I had applied to my problem-solving exercises. Three percent of these fees went to the researchers who made the original discoveries. Since I was aiming for a mathematics career, I hoped my own mathematical derivations, if frequently thought of, would get me enough money to repay my loan, especially if my thoughts were frequently downloaded and taught to others.

Later, I would learn there was once a time when anyone could think of anything they wanted, without paying any royalties or breaking the law. There were independent storytellers who once sat around campfires and spread knowledge and culture through stories and songs. This was before the days of the printing presses, when thoughts, ideas, and songs became entities of something called "server push," of which the printing press was a notable example. Until that time, people were both consumers and producers of information and thought. Back in those days, anyone could participate in shaping culture by uploading thoughts into the minds of others. Of course that was long before the days of modern communications devices such as mental prosthetics and e-telepathy implants, and even before the days of EyeTap Technology and its crude predecessor, the wearable computer, and communications devices such as television, radio, and the telephone.

But with the invention of the printing press, and later the television, we became consumers of informa-

tion rather than thinkers and creators. Sheet music (the so-called "source code" of music) was once printed on paper, so people could play it themselves on old-fashioned mechanical musical instruments called pianos. Families gathered around these early musical machines and sang songs. But playing music required independent thought because it was necessary for the brain to compile the music source code into executable keypresses to produce sound. This form of independent thinking was later replaced with something called radio. (Radio was another predecessor of e-telepathy, and another form of server push, very much like the printing press in the sense it was also a broadcast medium.) We were told (or convinced), that we like our music predigested and precompiled. This way we don't have to expend precious mental resources to make (compile) it ourselves. This way we can save all our mental energy for more important things like doing our jobs. At the end of the working day, when all our mental energy is used up, we can then be passively entertained by thought push in the same way our ancestors were entertained by server push or early broadcast technologies like radio and television.

The Internet threatened to upset the corporate bodies that had been profiting from their visions of centralized production of thought. For a while, the Internet took us back to the days of sitting around a campfire and singing songs or telling stories without paying any royalties. It had begun to take us back to that lost era in which people started to become producers as well as consumers of information.

At first, the Internet actually caused people to start to think independently again. Then in the 1990s, both commercial and nonprofit Internet publishers addressed this problem by creating something called e-commerce (the predecessor of e-telepathy), and by charging fees for access to information.

Although these fees were often so small as to become negligible, it allowed publishers to reify the concept that numbers, thoughts, ideas, and the like, were property. For example, it allowed them to define a particular number as being owned by a particular entity, so that each time someone thought of that number, one needed to pay a royalty to the owner of that number.

By 2038, concepts like free independent thought, or the idea of libraries offering free public access to scholarly literature were dim memories. The IPLC had made certain that the execution of proprietary thoughts would provide due compensation to the original thinkers (after the IPLC deducted its share of the profits, of course).

There were ways to get around the IPLC and Central Licensing. These thoughts were themselves illegal. Dan had had a classmate in Thoughtware Engineering EECS–385, Frank Martucci, who had learned some illicit debugging thoughts, and used these thoughts to skip over his copyright monitor when reading online books and downloading thoughts from the Internet. But he had told too many friends about it, and one of them turned him in to the IPLC for a reward. Students in severe debt were easily tempted into betrayal of their colleagues by these huge icash rewards. In 2038, Frank was sent to prison, not for pirate reading, but for having learned debugging and thoughtware disassemblers.

Dan would later learn there had been a time when anyone could have debugging knowledge. There had even been free debuggers available on the Internet. But ordinary users started using them to bypass copyright monitors and thought escrow, so that eventually a judge ruled this action had become the principal use of debugging knowledge in actual practice. This meant this knowledge had to be made illegal in order to protect the revenues of original thinkers. Without a revenue stream all creative and innovative thought would grind to a halt, and the human race would no longer be capable of thinking if there were no financial incentive to think. Accordingly, the teachers of illegal thought debuggers were sent to prison.

Professors and course instructors still needed debuggers to develop new thoughtware for improved teaching, but debugger knowledge vendors in 2038 distributed numbered copies only, and only to officially licensed and IPLC-bonded thinkers. The debugger Dan used in Thoughtware Engineering EECS–385 was kept behind a special firewall so that thoughts could be passed through it only for closely monitored class exercises.

It was also possible to bypass the copyright monitors by learning a modified mind kernel. Dan would eventually find out about the free kernels, even entire free thought systems that had existed just after the turn of the century (back when people still used handheld or wearable computers). But now, not only were they illegal, like debuggers—you could not install one without knowing the root password of

your brain's third hemisphere. And neither the FBI nor Biosoft Support in Redmond, Washington would tell you that.

In the end, Lisa did not report Dan to the IPLC. His decision to help her led to their marriage, and also led them to question what they had been taught about piracy as children. The couple began reading about the history of copyright, about the Soviet Union and its restrictions on copying, and even the original U.S. Constitution. They moved to Canada, where they found others who had likewise gravitated away from the long arm of the IPLC. When the Toronto Uprising began 10 years later in 2048, the universal right to think eventually became one of its central aims.

The fundamental philosophy called Idiabatism was born. Idiabatism was a natural outgrowth of the "multinational individual" in the cyborg age of wearable and implantable communications. Idiabatism pertains to the construction of a shell around the minds of free-thinking individuals to protect them from the forces of the Thought Police.

There are many such forces that act upon the individual. Three examples are: government, corporations, and criminals (terrorists, robbers, bandits, and so forth). The government allegedly protects us from the other two, but increasingly government is becoming the other two. Or might we say that government is teaming up with the corporations, and this form of corruption is criminal. The idiabatic individual functions on equal footing with entities such as "country," "multinational corporation," and the like. The goal of idiabatism is to create a flat hierarchy in which the thoughts of the individual are not compromised by or a subject of control by entities such as "country" or "corporation." Ultimately, it is the individual free spirit that will protect itself from these three forces.

Accordingly, Dan and Lisa formulated the following manifesto of free thinkers against the Thought Police:

The 10 Elements of Free Thinking

1. My thoughts are my own, not yours.
2. You have no business knowing what I am thinking.
3. You have no right to prevent me from thinking certain thoughts.
4. The privacy and solitude of thought is an inalienable right.
5. You have no right to patent or copyright any kind of thinking, or the right to know if I am thinking thoughts to which you claim copyright or patent. Nor do you have right to prevent me from thinking such thoughts.
6. The left side of my brain has an inalienable right to talk to the right side or the center without telling you.
7. I am free to think thoughts, such as $\sqrt{2}$, without your knowing my thoughts, notwithstanding any claim you might have to any "algorithms," such as $\surd$.
8. You have no right to tax my synaptic signals, which have neither mass nor occupy space.
9. You have no right to a percentage or restriction of the information that flows across my corpus collosum. A) My corpus collosum extends as I see fit, and includes the connection between left brain, right brain, and center brain of myself or of others, as we reserve the right to share thoughts in an idiabatic fashion (for example, closed to you). B) My mind is an idiabatic process, closed to you if I so desire. C) Your only rights to use the force of violence against me are when I damage you. D) I pay only for that which I deprive others of. E) Accordingly (to D), tax me for the natural resources I consume, or the waste I produce, but not my thoughts. F) As an idiabatic entity, I remain free to share some of my thoughts with some others, and my different thoughts with different others.
10. The terms of this right to think are severable. If any term or provision is declared invalid, it shall not affect the remaining terms or provisions. C

This "Viewpoint" is adapted from Richard Stallman's article published in the February 1997 issue of *Communications.*

Sources

1. Shulman, S. *Owning the Future.* Houghton Mifflin, 1999.
2. Stallman, R. The right to read. *Commun. ACM 40,* 2 (Feb. 1997).
3. Union for the Public Domain—a new organization that aims to resist and reverse the overextension of intellectual property powers. For more information, see www.public-domain.org/.
4. www.wearcomp.com.

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