**Technopoly**

*The Surrender of Culture to Technology*

**The Judgment of Thamus**

You will find in Plato's Phaedrus a story about Thamus, the king of a great city of Upper Egypt. The story, as Socrates tells it to his friend Phaedrus, unfolds in the following way: Theuth was the inventor of many things, including numbers, calculation, geometry, astronomy, and writing. Theuth exhibited his inventions to King Thamus, claiming that they should be made widely known and available to Egyptians.

Socrates continues:

*Thamus inquired into the use of each of them, and as Theuth went through them expressed approval or disapproval, according as he judged Theuth's claims to be well or ill founded. When it came to writing, Theuth declared, "Here is an accomplishment my lord the King, which will improve both the wisdom and the memory of the Egyptians. I have discovered a sure receipt for memory and wisdom." To this, Thamus replied, "Theuth, the discoverer of an art is not the best judge of the good or harm which will accrue to those who practice it. So it is in this; you, who are the father of writing, have out of fondness for your off-spring attributed to it quite the opposite of its real function. Those who acquire it will cease to exercise their memory and become forgetful; they will rely on writing to bring things to their remembrance by external signs instead of by their own internal resources. What you have discovered is a receipt for recollection, not for memory. And as for wisdom, your pupils will have the reputation for it without the reality: they will receive a quantity of information without proper instruction, and in consequence be thought very knowledgeable when they are for the most part quite ignorant. And because they are filled with the conceit of wisdom instead of real wisdom they will be a burden to society.*

There is an error in the judgment of Thamus, from which we may also learn something of importance. The error is not in his claim that writing will damage memory and create false wisdom. It is demonstrable that writing has had such an effect. Thamus' error is in his believing that writing will be a burden to society and nothing but a burden. For all his wisdom, he fails to imagine what writing's benefits might be, which, as we know, have been considerable. We may learn from this that it is a mistake to suppose that any technological innovation has a one-sided effect. Every technology is both a burden and a blessing; not either-or, but this-and-that.

Nothing could be more obvious, of course, especially to those who have given more than two minutes of thought to the matter. Nonetheless, we are currently surrounded by throngs of zealous Theuths, one-eyed, prophets who see only what new technologies can do and are incapable of imagining what they will *undo.* We might call such people Technophiles. They gaze on technology as a lover does on his beloved, seeing it as without blemish and entertaining no apprehension for the future. They are therefore dangerous and are to be approached cautiously. On the other hand, some one-eyed prophets, such as I (or so I am accused), are inclined to speak only of burdens (in the manner of Thamus) and are silent about the opportunities that new technologies make possible. The Technophiles must speak for themselves, and do so all over the place. A dissenting voice is sometimes needed to moderate the din made by the enthusiastic multitudes. If one is to err, it is better to err on the side of Thamusian skepticism. But it is an error nonetheless.

Once a technology is admitted, it plays out its hand; it does what it is designed to do. Our task is to understand what that design is—that is to say, when we admit a new technology to the culture, we must do so with our eyes wide open.

Here I should like to give only one example of how technology creates new conceptions of what is real and, in the process, undermines older conceptions. I refer to the seemingly harmless practice of assigning marks or grades to the answers students give on examinations. This procedure seems so natural to most of us that we are hardly aware of its significance. We may even find it difficult to imagine that the number or letter is a tool or, if you will, a technology; still less that, when we use such a technology to judge someone's behavior, we have done some thing peculiar. In point of fact, the first instance of grading students papers occurred at Cambridge University in 1792 at the suggestion of a tutor named William Farish. His idea that a quantitative value should be assigned to human thoughts was a major step toward constructing a mathematical concept of reality. If a number can be given to the quality of a thought, then a number can be given to the qualities of mercy, love, hate, beauty, creativity, intelligence, even sanity itself. When Galileo said that the language of nature is written in mathematics, he did not mean to include human feeling or accomplishment or insight. But most of us are now inclined to make these inclusions. Our psychologists, sociologists, and educators find it quite impossible to do their work without numbers. They believe that without numbers they can not acquire or express authentic knowledge.

I shall not argue here that this is a stupid or dangerous idea, only that it is peculiar. What is even more peculiar is that so many of us do not find the idea peculiar. To say that someone should be doing better work because he has an IQ of 134, or that someone is a 7.2 on a sensitivity scale, or that this man's essay on the rise of capitalism is an A— and that man's is a C+ would have sounded like gibberish to Galileo or Shakespeare or Thomas Jefferson. If it makes sense to us, that is because our minds have been conditioned by the technology of numbers so that we see the world differently than they did. Our understanding of what is real is different. Which is another way of saying that embedded in every tool is an ideological bias, a predisposition to construct the world as one thing rather than another, to value one thing over another, to amplify one sense or skill or attitude more loudly than another.

This is what Marshall McLuhan meant by his famous aphorism "The medium is the message." This is what Marx meant when he said “Technology discloses man's mode of dealing with nature” and creates the “conditions of intercourse” by which we relate to each other. It is what Wittgenstein meant when, in referring to our most fundamental technology, he said that language is not merely a vehicle of thought but also the driver. And it is what Thamus wished the inventor Theuth to see. This is, in short, an ancient and persistent piece of wisdom, perhaps most simply expressed in the old adage that, to a man with a hammer, everything looks like a nail. Without being too literal, we may extend the truism: To a man with a pencil, everything looks like a list. To a man with a camera, everything looks like an image. To a man with a computer, everything looks like data. And to a man with a grade sheet, everything looks like a number.

Unforeseen consequences stand in the way of all those who think they see clearly the direction in which a new technology will take us. Not even those who invent a technology can be assumed to be reliable prophets, as Thamus warned

**The Risks of Parenting While Plugged In**

**By** [**JULIE SCELFO**](http://topics.nytimes.com/top/reference/timestopics/people/s/julie_scelfo/index.html?inline=nyt-per)

WHILE waiting for an elevator at the Fair Oaks Mall near her home in Virginia recently, Janice Im, who works in early-childhood development, witnessed a troubling incident between a young boy and his mother.

The boy, who Ms. Im estimates was about 2 1/2 years old, made repeated attempts to talk to his mother, but she wouldn’t look up from her BlackBerry. “He’s like: ‘Mama? Mama? Mama?’ ” Ms. Im recalled. “And then he starts tapping her leg. And she goes: ‘Just wait a second. Just wait a second.’ ”

Finally, he was so frustrated, Ms. Im said, that “he goes, ‘Ahhh!’ and tries to bite her leg.”

Much of the concern about cellphones and instant messaging and [Twitter](http://topics.nytimes.com/top/news/business/companies/twitter/index.html?inline=nyt-org) has been focused on how children who incessantly use the technology are affected by it. But parents’ use of such technology — and its effect on their offspring — is now becoming an equal source of concern to some child-development researchers.

Sherry Turkle, director of the Massachusetts Institute of Technology Initiative on Technology and Self, has been studying how parental use of technology affects children and young adults. After five years and 300 interviews, she has found that feelings of hurt, jealousy and competition are widespread. Her findings will be published in “Alone Together” early next year by Basic Books.

In her studies, Dr. Turkle said, “Over and over, kids raised the same three examples of feeling hurt and not wanting to show it when their mom or dad would be on their devices instead of paying attention to them: at meals, during pickup after either school or an extracurricular activity, and during sports events.”

Dr. Turkle said that she recognizes the pressure adults feel to make themselves constantly available for work, but added that she believes there is a greater force compelling them to keep checking the screen.

“There’s something that’s so engrossing about the kind of interactions people do with screens that they wall out the world,” she said. “I’ve talked to children who try to get their parents to stop texting while driving and they get resistance, ‘Oh, just one, just one more quick one, honey.’ It’s like ‘one more drink.’ ”

Laura Scott Wade, the director of ethics for a national medical organization in Chicago, said that six months ago her son, Lincoln, then 3 1/2, got so tired of her promises to get off the computer in “just one more minute” that he resorted to the kind of tactic parents typically use.

“He makes me set the timer on the microwave,” Ms. Wade said. “And when it dings he’ll say, ‘Come on,’ and he’ll say, ‘Don’t bring your phone.’ ”

Not all child-development experts think smartphone and laptop use by parents is necessarily a bad thing, of course. Parents have always had to divide their attention, and researchers point out that there’s a difference between quantity and quality when it comes to conversations between parents and children.

“It sort of comes back to quality time, and distracted time is not high-quality time, whether parents are checking the newspaper or their BlackBerry,” said Frederick J. Zimmerman, a professor at the [University of California](http://topics.nytimes.com/topics/reference/timestopics/organizations/u/university_of_california/index.html?inline=nyt-org), Los Angeles, School of Public Health who has studied how television can distract parents. He also noted that smartphones and laptops may enable some parents to spend more time at home, which may, in turn, result in more, rather than less, quality time overall.

There is little research on how parents’ constant use of such technology affects children, but experts say there is no question that engaged parenting — talking and explaining things to children, and responding to their questions — remains the bedrock of early childhood learning.

Betty Hart and Todd R. Risley’s landmark 1995 book, “Meaningful Differences in the Everyday Experience of Young American Children,” shows that parents who supply a language-rich environment for their children help them develop a wide vocabulary, and that helps them learn to read.

The book connects language use at home with socioeconomic status. According to its findings, children in higher socioeconomic homes hear an average of 2,153 words an hour, whereas those in working-class households hear only about 1,251; children in the study whose parents were on welfare heard an average of 616 words an hour.

The question is: Will devices like smartphones change that? Smartphone users tend to have higher incomes; research from the Nielsen Company shows that they are twice as likely to make more than $100,000 a year than the average mobile subscriber. If increased use of technology encroaches on the time that well-to-do families spend communicating with their children, some could become the victims of successes originally thought to help them.

Dr. Hart, who is now professor emeritus at the University of Kansas Life Span Institute, said that more research is needed to find out whether the constant use of smartphones and other technology is interfering with parent-child communications. But she expressed hope that more parents would consider how their use of electronic devices might be limiting their ability to meet their children’s needs.

Part of the reason the children in affluent homes she studied developed larger vocabularies by the time they were 3 is that “parents are holding kids, the kids are on their lap while the parent is reading a book,” Dr. Hart said. “It is important for parents to know when they’re talking to kids, they’re transferring affection as well as words. When you talk to people, there’s always an implicit message, ‘I like you,’ or ‘I don’t like you.’ ”

Meredith Sinclair, a mother and blogger in Wilmette, Ill., said she had no idea how what she calls her “addiction to e-mail and social media Web sites” was bothering her children until she established an e-mail and Internet ban between 4 and 8 p.m., and her children responded with glee. “When I told them, my 12-year-old, Maxwell, was like, ‘Yes!’ ” Ms. Sinclair said.

“You can’t really do both,” she added. “If I’m at all connected, it’s too tempting. I need to make a distinct choice.”

*Articles in this series are examining how a deluge of data can affect the way people think and behave.*