

The Shock of the Invisible

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When considerable effort has been put into creating a book aimed at helping humanity, it would be unfair to use the few words allotted here to criticize what it contains.

Instead, I will follow up my initial reaction 50 years ago: that the book paid attention to many important visible changes but crucially missed what was going on *invisibly*, and these invisibles were likely to have much more impact on the future.

Two critical invisibles that Future Shock missed were (a) global warming and climate change via greenhouse gas buildup, and (b) the progressive lowering of "cultural normal" catalyzed by changes in communications environments, especially from television.

Charles Keeling¹ was the early detector of global warming, while Marshall McLuhan gave notice of what was likely to happen as our most-used communications environments qualitatively changed.

A chemist turned geologist, Keeling in the mid-50s devised the first highly accurate instruments for measuring the CO₂ content of the atmosphere. His first measurements were 310 parts per million (ppm) and rising on average year by year. By the early 60s it was *scientifically clear* that the amount and pace of the rise was dangerous, and the first warnings to the public and the government were given.

Why warnings? CO₂ is the major "greenhouse gas". Without it to keep the Earth's heat—gotten mostly from the sun—from radiating back out into space, the planet would be about 60° colder.

Ancient air bubbles trapped in glaciers reveal that the level of CO₂ over the last million years has fluctuated between 200ppm and 300ppm, and today's ecosystems—and our civilizations—are accommodated to these levels. When greenhouse gases increase, the effect is to trap more of the heat from the sun and this will raise the overall average temperature of the Earth sufficiently to start changing the surface and the climate drastically and dangerously.

The additional CO₂ is mostly from industrialization, and the increase in another important greenhouse gas—methane—comes from both meat animals via agriculture, and from melting tundra from the increase in global temperatures. At the time of this writing the CO₂ level is 414ppm (an alarming increase of 33% in just 60 years) and the rate of increase is accelerating.

Scientists could see this "invisible" because science is both an imagination amplifier and a time machine. Much of what science is about is "to help make invisibles more visible" and to "see the future by understanding the present from the past".

Science is also a special kind of decision amplifier and its conclusions are arrived at very differently from traditional human consensus.

It took our species more than 200,000 years to invent science, so we are not born with "science in our genes". Instead our genetic urges are to form cultures, create stories that give us a sense of meaning and help pass on to future generations our cultures' ways to live. Most large decisions over our history have come from beliefs that grow over generations and are gradually accepted via a kind of consensus (i.e. when most people already pretty much believe something it becomes a cultural norm).

This is not a great way to decide things, but it has some worth if stronger methods are missing.

Scientists are humans—so parts of their brains try to believe also. However scientific training and methods can get around this to some extent to help to form critical knowledge as *models* that are much less culturally determined. These models are carefully compared with the phenomena of nature, using methods and mechanisms that are considerably more accurate than and more culturally independent of our own nervous systems.

Thus science was able to accurately detect a danger and its main cause *more than 60 years ago*, but the lack of understanding in the general public resulted in virtually nothing being done. Many of the once possible correctives—e.g. "market solutions"—will now take much too long to be effective.

We are now in a situation where nothing short of a full out war on climate change has a chance at handling the danger. But still our collective imaginations lack the force for the action needed.

I will leave this grim story here, because in the 50 years since Future Shock missed the warnings in the 60s, at least the topics of "global warming" and "climate disasters" have surfaced.

On the other hand, the "*re-definition of 'normal' downwards*" that McLuhan explained and warned about has remained almost completely invisible.

Why invisible when "normal" is seemingly in plain sight? Because we accommodate to and believe so thoroughly in what is constant around us that it disappears into what we regard as "reality", and hence: "normal". McLuhan's quip for this was: "*I don't know who discovered water, but it wasn't a fish!*".

Keeling and climate were not mentioned at all in Future Shock, but there were a number of references to McLuhan in the book. What seemed to be his "wild conjectures" were dismissed: "many of McLuhan's other assertions are debatable" [page 269].

We shouldn't completely blame the Tofflers for this omission. McLuhan wrote in a kind of coded language that takes quite a bit of work to unravel, and the Tofflers were already doing a lot of work. Still, the underlying principles are of more vital importance to civilization than almost everything they did write about, in part because many dangers—including the climate—require humanity to have a large general sense about the world when it is up to them to initiate corrective actions. And these require "normal" to be *elevated* rather than lowered.

The "invisible" that McLuhan got interested in has to do with what happens to human brains—and hence, *minds* (the processes that are manifested by a brain)—when we learn and use something fluently, especially within a culture: customs, tools, and most especially communication.

There's no controversy about the idea that learning is done by actual changes in a brain that produces changes in its processes.

A critical still open "civilization question" is whether the changes from learning can be qualitative, deep and critical enough to replace important detrimental atavistic behaviors, even under stress.

When anthropologists started to study the thousands of existing human cultures, they soon found that all shared many *critical categories*. For example, no humans were found in isolation: they all lived in *groups* with a *culture*, a *language*, *stories*, *beliefs*, *notions of status and hierarchy*, and several hundred more. Overall, each culture had a "*shared sense of reality*". In other words "normal" is a learned set of beliefs about "reality" within each culture.

Moreover, a child can be taken at birth, or a few years soon after, to any other culture and will grow up as a full-fledged member of the receiving culture, including *completely believing its notion of reality*. Another important discovery was that children are internally driven to learn and accommodate to the pervasive environment around them, especially the social surround. This behavior can also be seen at various levels of strength in older humans, particularly with regard to military boot-camp training, imposition of extreme political frameworks, religious conversions, deprogrammings, etc.

There have also been relatively recent *inventions* that are not found in traditional cultures at all, such as: writing and reading, abstract deductive math, empirical model-based science, equal rights, etc. The differences brought by these have been qualitative.

For example, what we call "civilization" has always been associated with writing and reading. Is this association a manifestation of civilization, or one of its main causes and co-evolvers? Many studies have shown that it is certainly the case that attaining fluent literacy in a structured setting—such as a school—also *creates modes of thinking that are qualitatively different than those found in any purely oral culture*, including how one's self is thought about, and how the world beyond the local culture is thought about. In other words, becoming fluently literate also changes one's notions of "normal" and "real".

McLuhan came to similar ideas from a very different perspective, and a much more urgently felt one: *when what constitutes a human "environment" is changed, especially the one in which ideas are conveyed, "normal" will be redefined*.

For example, when humans go from primarily oral discourse to imagery to writing to printing to television etc what happens to "normal" and "reality"? What happens when humans go from primarily story forms to exposition and argument and models (as in mathematics and science)?

McLuhan's somewhat cryptic answers in terms of "odd slogans" were meant to wake people up and get them thinking. For example, what did he mean by saying "*the medium is the message*"?

The "big message" of learning anything is *what happens to us as the result*. So if learning to read and write fluently qualitatively changes how we think, then that is the "message" of writing/reading. This is what "*the medium is the message*" means. One of his books about this idea had the title *The Medium Is The Massage*.

Applied to a new medium like television, what McLuhan meant was: what's important about television is *what it means to be such a constant viewer that learning its forms become the new normals* for dealing with ideas. A culture doesn't exactly tell people what to think, but immersion makes it difficult to think in ways outside the culture.

He warned that television, radio, movies, and the telephone meant that *oral modes of thought would re-arise*. He saw world-wide networking approaching and was sure that it would create the feeling of a vast "*global village*", so vast that people would lose their sense of identity, and would devote much of their time to trying to re-establish it via many kinds of re-tribalization and even violence, coupled with demands for participation, but not necessarily for cooperation.

When he said "*you can argue about a lot of things with stained glass windows, but democracy is not one of them*", he was pointing out that democracy was *argued* into existence by the kinds of arguments and forms that only extended structured writing can handle, and for which the printing press is needed. He was also pointing out that replacing writing with "modern stained glass" in the form of television would gradually erode democracy because it can't carry the needed discourse well enough (but can carry many other kinds of discourse that are likely harmful to democracy).

If we primarily see the world through our own beliefs and personal notion of "normal", then he expresses this by "*I can't see it until I believe it*", and "*We become what we behold*". He agreed with Thoreau who a century earlier said "*We become the tools of our tools*", and who when asked what he thought about the new transatlantic cable said that he was "*afraid that he would find out that an European princess had just gotten a new hat*"!

More recently, McLuhan would have had much to say about social media, especially on small screens. For example: *Twitter can powerfully catalyze revolutions but it is not wide or deep enough to allow a complex system of government to be argued into existence* (thus media like Twitter can hardly be more dangerous in unsophisticated hands). He would be even more concerned with the seemingly total but frighteningly meager and traditional-culture environment presented by Facebook, Twitter and other social media.²

The Tofflers were properly concerned about the equivalents of Post Traumatic Stress Disorders from too much rapid change. But they missed the other far more dangerous and insidious forms that we were accommodating to—dangerous especially to representative democracies—and which are now undermining many centuries of upward striving for deeper understandings and better ways to deal with our situation in the universe.

And there are many more critical invisibles we need to identify and deal with. We cannot learn to see until we admit we are blind. Will we?

Notes And References

¹ This is a reference for Charles Keeling

² Summary in the Washington Post—see the link in this article for the whole study: Twitter is eroding your intelligence. https://www.washingtonpost.com/nation/2019/05/30/twitter-hurting-intelligence-not-smart-study/?utm_term=.439442a6de17