The Cultural Construction and Uses of Data

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Everyday life relies upon misconceptions carried forward from the past, while encountering new challenges that are only superficially understood. The current emphasis on data-based decision making represents one of these double bind situations where the more we rely upon past misconceptions about the nature of data the more we will increase our superficial understanding of the challenges we now face.

The misconceptions inherited from the past had their origins in what were then progressive insights of how to free thinking from the superstitions of the day. These progressive insights included relying upon critical inquiry, the rationalism of the individual, and the new mode of inquiry where empirical evidence was needed in order to establish a new form of knowledge: namely, objective knowledge. The ability to use this knowledge to bring about changes in the world required that it meet the test of being replicated by others who also elevated the importance of empirical evidence in determining what constituted objective knowledge that was free of both the prejudices of the investigators and the prevailing myths of the larger society.

This new mode of inquiry became known as the scientific method, and it represented a real break from both the taken for granted world of widely held superstitions as well as the abstract theories of mainstream philosophers and social theorists of the times. Its success in giving control and predictability in bringing about changes that improved the quality of life led to a new set of taken for granted beliefs, including the idea that there is such a thing as objective knowledge acquired through a mode of inquiry that is free of cultural influences. Actually, in the late 16th and early 17th century when this new mode of inquiry was becoming established there was no understanding of culture.

More importantly, there was no understanding of the role that language plays in reproducing the thinking of earlier eras—and how the vocabularies inherited from the past influence awareness, interpretations, as well as what is not recognized. In short, the origins of modern science did not take account of the ontological reality that humans cannot escape how the scientists and everyone else takes for granted the linguistic influences on their interpretations of the world. That

is, the scientific gaze, while focused on evidence requiring that hypotheses meet the test of verifiability by other scientists, cannot entirely escape the influence of how the taken for granted language frames how the world is interpreted.

That the world of scientists is an interpreted world, one that takes account of empirical and measurable evidence, can be seen in how their discoveries are viewed within western cultures as expressions of a linear form of progress. The scientific discoveries that promoted the development of the first industrial and now digital revolution were justified as leading to a more progressive future—even though we now recognize that the real progress was in contributing to what we now understand as climate change and the acidification of the world's oceans. Scientists in Nazi Germany took for granted the social Darwinism that justified the elimination of the less fit humans, just as scientists supported the eugenics movements in North America and Great Britain. Their interpreted world also supported the idea of equating intelligence with learning to think in the English language. And now, reducing the complexity of everyday life experiences to data, the ability to collect and store vast quantities of data on people's behaviors and ideas, and developing the technologies that now subject everyone to being hacked, are interpreted as further expressions of progress. Indeed it is the scientific mindset that reduces the semiotic worlds of communication that sustains both the natural and cultural ecologies of emergent, relational, and co-dependence to what can be observed through the use of MRI technologies. Increasingly, measurability that can be represented as data is becoming a key criterion for determining if something exists.

The historical developments in how the scientific gaze is now reducing the intersubjective world of personal identities and narratives to the objective status of data now has to be reconciled with how we beginning to understand the ontological realities of the world we live in. These realities include the following: (1) that there is no permanence in either the natural or cultural ecologies. Everything is emergent according to its cycle of renewal, which is influenced by a second ontological characteristic. (2) That is, everything exists in relationship with other participants in the natural and cultural ecologies. Contrary to a major misconception in the west, there are no isolated, self-contained entities. To put it another way, there is no autonomy such as autonomous thinkers and actors. The relational nature of existence needs to be understood as ecologies of communication where everything from the simplest organism to the most complex

natural and cultural systems relies upon its inherited semiotic system for interacting and influencing the Other. (3) The ontology of the world we live in also includes the co-dependence that is sustained through the ongoing semiotic patterns of communication (or information exchanges) that represent how each organism and natural process respond to the emergent nature of the ecological world they are part of.

In the case of the West, other misconceptions reproduced in the inherited vocabularies include the idea that this is human-centered world, that there is such a thing as an autonomous individual, and that a consumer based lifestyle leads to progress.

Influence of language on awareness and interpretations:
As the digital culture now transforms more aspects of the culture of everyday life into data, the old misconceptions continue to be carried forward—even by scientists. And the primary misconception is that data is objective and measurable—to be understood and used as factual information free of cultural influences. The myth of progress is also a cultural construction that has been justified in terms of different narratives, such as the Book of Genesis, the abstract thinking of western philosophers such as John Locke and Rene Descartes who argued that reliance upon their different epistemologies would free people from the constraints of traditions, and now the computer futurists who are racing to replace human intelligence with artificial intelligence—even as they are blind to the reality that intelligence is largely cultural and thus differs between cultures.

Data and print share the same basic limitations. And like print, which in the west has been understood as mostly responsible for its many cultural achievements, data is now being seen as leading to further progress.

a. The following limitations of print are also the limitations of data.
b. Data, like print, can only provide a surface knowledge of ideas, events, and processes. It cannot fully reproduce contexts.
c. Data, like print, immediately becomes outdated in the ecological world of constantly changing relationships and multiple levels of message exchanges.
d. The abstract thinking fostered by data and print too often becomes interpreted as having a universal meaning.

e. Both data and print reinforce the conduit view of language that undermines awareness that words are metaphors that carry forward earlier cultural assumptions that influence current interpretations.
f. Both data and print reinforce the western myth of the autonomous individual who relies primarily upon a visual relationship with the external world.
g. Both data and print are inherently ethnocentric as they are unable to represent the inter-subjective world of oral cultures.
h. Most writers and readers are unaware of the taken for granted cultural assumptions that influence their interpretations of the world that take on the appearance of objectivity when encoded in the printed word and as data.

But data is not just acquired through measurement and constant surveillance of behaviors in the natural and cultural ecologies. Decisions about what in the diversity of ecologies that is to be taken out of context, reduced to a surface snap-shot of phenomena in the emergent world of natural and cultural ecologies, is driven by powerful interpretative frameworks generally taken for granted by the person or group that decides on what needs to be transformed into data. The interpretative framework or ideology of the scientists collecting data on changes in water temperature or rate of acidification of a local body of water includes both the scientific method but also assumptions about the need to slow the rate of environmental degradation. And the culture's emphasis that change be interpreted within its calculus of progress is also an inescapable part of the scientist's thinking. The educator collecting data on a student's performance, as well as the manager of a hospital, factory, bank, and so forth who wants data on the performance of workers relies upon an interpretive (ideology) framework that emphases a different set of cultural priorities such as the importance of improved productivity, greater efficiency, improved profits, and so forth.

The interpretive framework, in effect, dictates what is to be collected, and provides the justification for ignoring the complexity of an ecology of human experience and of other phenomena in the natural world. Like print, data requires that the emergent, relational, and co-dependence that are characteristic of all natural and cultural contexts be ignored. Also, like print, where the writer is often unaware that the vocabulary she/he takes for granted encodes the metaphorical thinking of earlier eras, the human/cultural influences on the decision making process about what constitutes data are lost sight of. Reduced to numbers, words,

graphs, and computer models, the human authorship disappears. And when this process of reductionism is understood as an expression of the scientific gaze, few people are likely to question the cultural roots of this process---or the human costs. It is much easier to assume that the data possesses an objective status.

Again, it is important to recognize that, like print, there are many benefits in acquiring data on the behavior of different systems—especially in light of climate change and the many ways the world's natural systems are now being stressed. But the collection of data can also lead to new forms of social injustice, such as what is occurring in the digital revolution where the dominant interpretive framework (ideology) is driven by the idea that progress requires that computer intelligence (AI systems) replace human intelligence, as well as human workers—and where collecting data on people's behaviors is more important than protecting their privacy.

The introduction of the Internet, and now the increasingly digitally connected world of everything, which will lead to even more massive amounts of data that will be stored in the cloud, by-passed the democratic process in the first place. And now in, the name of technological progress, the Internet is introducing new perils into the world where cyber warfare is becoming an increasing threat as nations continue to compete for resources, markets, and influence on the world stage. There is also an increased threat that what remains of the democratic process will be further eroded as national security concerns, as well as criminal and terrorist networks, rely more upon surveillance technologies that, in turn, lead to increasing the police powers within society.

That the digital revolution, for all of its benefits—and there are many, is leading us down the pathway to a techno-fascist future raises an important problem that is just beginning to be recognized—which in itself raises the question of why the current concern of computer experts with identifying a guiding ethic has just come up. It would seem that a concern with the morally inappropriate uses of digital technologies would have been the initial concern before the technologies that now make everyone, everywhere in the world, vulnerable to being hacked, before algorithms that now replace workers were introduced, and before the total surveillance systems were put in place. The social justice issues should have been addressed at the outset, as it is now impossible to limit hackers, extremists engaged in cyber attacks, and governments and businesses that benefit from the surveillance culture that is emerging.

What is seldom recognized is that when an individual's performance, relationships, and ideas have been reduced to data, and can be accessed by others, the individual has no control over how the data will be used. The ideology of the Other then becomes part of the ecology of data collection and use. The Other may be a well-intentioned person driven by a personal sense of integrity, but she/he could also be driven by the profit motive, by a desire to make the lives of others more difficult, to bullying, and generally to exploiting the vulnerabilities of others. All the safeguards that have been created in the west to protect the civil rights of the individual can now be overcome, with the state no longer providing protections. The digital revolution has in effect marginalized both the authority and ability of the state to protect its citizens.

Computer Mediated Learning and the Loss of Knowledge of Local Contexts and the Lived Experience of Others:

The word "context" is another abstraction, but it refers to the ecology of experience where the emotional, intuitive, empathic, memory, reflective, fear, courage, spiritual, and ongoing negotiations with the Others, reproduce taken for granted cultural patterns in this emergent, relational, and co-dependent world. Each individual's cultural/existential context is biographically distinct, even as many of the cultural patterns that frame how the existential aspects of personal experience are expressed. These existential, that is, personal sources of meanings have a history, are largely framed by cultural/linguistic influence that are taken for granted, and may be the sources of self-doubt, sense of inferiority, and confusion about life's purpose.

These ecologies of how relationships are experienced in this emergent world are impacted by the decisions of others who have been educated to think in abstractions, to create social systems that are intended to fit peoples lives in pre-determined patterns—often in ways that differ radically from the cultural patterns that have become a taken for granted lifestyle. The Others who are now creating the learning environments where youth are learning to think in the abstractions created by the printed words appearing on the computer screen, and in terms of data, graphs, and computer models of how some part of the world works, are being socialized to ignore both their own inter-subjective worlds as well as the inter-subjective worlds of others—including the culturally different. What they are learning to take for granted is that their own ecologies of experience can be accurately represented as data that other will use, and that carry forward the

existential moments in time when the data was collected on who they were and thinking. The data, as pointed out before, represents fixed moments in the flow of time, while the life-worlds of living experience are always emerging even as the patterns of thinking and behavior continue to be influenced by cultural traditions that are taken for granted.

One of the characteristics of both the print appearing on the computer screen, and the data that reflects the abstract and thus surface thinking of the people who created the curriculum, provides a model of thinking that can heavily influence the thinking of a young student is who learning something for the first time. For students who are already being unconsciously influenced by the mindset of their teachers and curriculum developers, encountering the same mindset over and over again further ensures that it will be experienced as the natural order of reality even when it only represents a surface, abstract, and ideologically driven interpretation of reality.

There are a number of characteristics of this print and digitally constructed process of learning that affects consciousness itself. One consequence is that attention spans are shortened, which makes it less likely that thinking will encounter the depth of explanations—which includes the historical and the mix of events and information that influenced the development of earlier or current times. Another consequence of a print and data dominated curriculum is that in- depth learning about other cultures, particularly oral cultures, will be limited—and too often represented as backward because they value the ecologies of face to face relationships rather than the abstractions of the print/data based world. This will lead to cultures that have developed ecological intelligence, which comes from giving close attention to the emergent, relational, and co-dependent patterns occurring in natural systems, being ignored.

Another consequence is that students will not learn about the many ways that language is partly at the root of the ecological crisis. That is, they are unlikely to learn how vocabularies encode and thus carry forward many of the misconceptions of earlier eras when the meanings of words were being framed by the choice of analogs that reflected the misconceptions and silences of the times. John Locke settled upon the analog of human labor as determining the basis of property ownership, while Adam Smith, in promoting free markets, helped to undermine the long tradition of the guild systems. We can clearly see now the biases and misconceptions that framed the early meaning of the word woman, environment, individualism, intelligence, and that this is a human-centered world.

In being unaware that words have a culturally distinct history, words then are easily misunderstood as referring to things and events that are real in themselves and not cultural constructions that continue to frame the current thinking that ignores climate change and other evidence that we may be entering a 6the extinction of the world species—including ourselves.

For the computer scientists who are influenced by science and the myth of objective knowledge, rather than by a deep knowledge of cultural differences, the current efforts to globalize the digital revolution will continue. This process of cultural imperialism will also continue to replace the intergenerational knowledge and skills essential to the formation of personal identities and loyalties with a data-based view of the world. This, in turn, opens the door to replacing the culturally divers humans with the new digital technologies that will increase the efficiencies in the economy that is now threatening the world with ecological collapse.

Chet Bowers is now retired but continues to write about educational reforms that address lifestyle changes that slow climate change, and about the techno-fascist characteristics of the digital revolution. The *False Promises of the Digital Revolution* (2014) and *Digital Detachment: How Computer Culture Undermines Democracy* (2016) are his latest books. Wikipedia