A closer attention to cultural and cosmological difference as the basis for thinking about how we redesign our own modern technological infrastructures may be the way to decolonize design research.

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he design educator Viktor Papanek, in his seminal and very polemical 1971 text *Design for the Real World*, started his critique of design practice by bringing into focus the stark divide between a normative idea of the human, which most industrial and communication designers worked from, and the scope and scale of their actual interventions, serving humans of all backgrounds and identities. His words are a necessary indictment: "design is discriminatory against major sections of the population...in

spite of the clients' differing age, occupation, sex, schooling, etc., most designers seem to design for an exclusively sexist, male chauvinist audience. The ideal consumer is between eighteen and twentyfive, male, white, middle-income, and if we look at ergonomic data published by designers themselves, exactly 6 feet tall, weighing exactly 185 pounds...designers know very little about what people really need or want" [1].

Forty-eight years later, little seems to have changed. If anything, Papanek's observations about how poorly the infrastructure designed by designers (and technologists such as architects, and engineers, etc.) serves the vast majority of the U.S. population—women, people of color and other marginalized minority groups, immigrants, the very young and very old, the ill, the disabled, the working class, the unemployed, and the homeless—seem even more disproportionate against the grandiloquent proclamations of large technology monopolies, like Google and Facebook, to serve the "next billion users" in Asia, Africa, and

Latin America.

This observation seems even more justified if we reflect on who the majority of designers and technologists are, where they come from, and the conditions under which they work. "Design is a luxury enjoyed by a small clique who form the technological, moneyed, and cultural 'elite' of each nation. The 90 percent native Indian population which lives 'up-country' has neither tools nor beds nor shelter nor schools nor hospitals that have ever been within breathing distance of designer's board or

workbench...if I suggest that this holds equally true of most of Africa, Southeast Asia, and the Middle East, there will be little disagreement, "Papanek wrote [1].

In short, he raises an extremely important political and ethical question that all technologists should think deeply about when they next sit down inside air-conditioned offices, at well curated and equipped desk spaces, to design for people whose lives they not only know nothing about but cannot comprehend given the privileges of their own lived experiences. Should an extremely privileged minority be designing for the needs of an underprivileged majority?

My own thoughts around this began to materialize while working and teaching for several years as a designer in my home country of Pakistan, specifically Karachi. There, the fit between the needs and wants of the panoply of different people who form Karachi's extremely diverse and cosmopolitan population and the poorly designed infrastructure (the built environment, products, services, platforms, etc.) was even more stark. It was obvious—and this was shared by many colleagues and students—the vast majority of people made do with these designed technological, material infrastructures. In fact, much of their lives were spent navigating through, around, and in spite of the constant constraints and roadblocks that these infrastructures and their associated social systems imposed.

One can argue about what, in this case, the role of technologist should be. Yet, at least in design discourse, there has been a long history of discussion in the Western hemisphere on this issue. We can follow this in the long tradition of discourse on participatory design or

co-design, beginning with designing interfaces at the outset of the computer revolution to scaffold upskilling the working-class in *Work-Oriented Design of Computer Artifacts* by Pelle Ehn [2], as well as the formulation of designing for social innovation where designers-as-experts aid in the everyday designing done by ordinary people as discussed in Ezio Manzini's *Design When Everybody Designs* [3].

However, I would like to bring attention to a more specific, and more recent, development in design discourse: The decolonization of design practice and theory. The decolonial turn in design is a relatively recent one, and has unfolded with the specific aims of bringing the voices and concerns of hitherto marginalized designers and design scholars to bear. In essence, a decolonial approach to design tackles precisely the

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kind of problem that Papanek raised, but with the additional observation that most of the knowledge, perspectives, and approaches that designers bring to bear come from an Anglo-Eurocentric perspective, given that colonialism displaced indigenous knowledge systems and replaced them with Anglo-European ones. This is as true of designers practicing in non-Anglo or European contexts. One of the enduring legacies of colonialism lies in how design is taught largely as a practice that originates in Europe, with the consequent implications of design students being interpellated into American or European ideas on aesthetics, use, desirability, etc.

One of the key questions that a decolonial approach to design would therefore raise is: What does it mean to design for people who are not like us, even before we ask whether we should design for people who are not like us? What does it mean to design for people who have different histories, different backgrounds, and different commitments from us? What does it mean to design for people who might relate to the world differently from the way we do?

Thus I would argue the decolonization of the knowledge systems that designers rely upon must start from a proper appraisal of difference. Not just difference in a shallow sense, where we assume people around the world simply use different words and languages to describe the same concepts and the same realities. Instead, I would argue we must think of difference as something deeper and much more fundamentalsomething indicative of the incredibly different realities that people inhabit and relate to. Difference—and I would argue, especially the difference between different cultures, civilizations, communities, and collectives of people who have developed along their own trajectories through time—is ontological. It is deeply tied to the ways, the categories, through which we make sense of ourselves and our identities.

The idea of difference as ontological is not a new one. Despite a history of being dominated by Anglo-European perspectives, the field of cultural anthropology has nevertheless also seen intense debate and critique on the issue of how they construct knowledge of humans and the worlds they inhabit.

The "ontological turn" in anthropology-best represented in the work of Marilyn Strathern, Eduardo Viveiros de Castro, Philippe Descola, and Martin Holbraad-challenges long-held Eurocentric assumptions dating back to the Enlightenment that cultural "Others" hold the same ways of defining reality as the Europeans did. For example, the idea that fundamental concepts, categories, and binaries like "nature" and "culture" exist across all cultures, or concepts that are commonly taken for granted in constructing modern identities ("race," "gender," "class," etc.) are universal. In fact, the ontological turn in anthropology shows us precisely that these taken-for-granted categories and definitions, i.e. ontologies, are local and specific to communities and time periods. They are often fluid and protean, subject to change, often through political contestation and struggle. And they are often multivalent, having different inflections and senses depending on how and why they are being used.

Ontologies are, in short, cosmologically specific—and here I use the word cosmology instead of culture to denote that what we are talking about are large constellations of ontologies that structure the ways in which human communities make sense of the cosmos they exist in. They are cosmoontologies. This was true even in early studies of cultural anthropology, as far back as when the anthropologist Evans-Pritchard described how the Nuer of Sudan construct their concept of something as fundamental as time: "In the middle of September Nuer turn, as it were, towards the life of fishing and cattle camps and feel that village residence and horticulture lie behind them. They begin to speak of camps as though they were already in being, and long to be on the move. This restlessness is even more marked towards the end of the drought when, noting cloudy skies, people turn towards the life of villages and make preparations for striking camp... the concept of seasons is derived from social activities rather than from the climatic changes which determine them, and a 'year' is to Nuer a period of village residence (cieng) and a period of camp residence (wec)" [4].

Time, for the Nuer, is not a discrete

succession of states nor lived duration. It is social, interior to the life of the community rather than exterior to it. This conceptualization of time as measured through the lifeworld of the community is also something particular to the Nuer in relation to how they live and survive. What it shows us, as do countless other examples of pre-modern communities in the annals of anthropological documentation, is other ways of seeing, acting, and being in the world can, have, and do exist.

Cosmo-ontologies and cosmological perspectivism, as Vivieros de Castros calls other cosmologies and worldviews, raise particularly poignant and important points for researchers working in tech to reflect upon [5]. Strathern, in her text Relation, argues we reflect on the fact that whenever we construct knowledge around an unfamiliar Other, we make what is local and familiar to them familiar to us through a process of reduction by passing what is observed through our own concepts of the world, in what amounts to a "globalization" of knowledge [6]. This reduction is what makes what would otherwise be strange and irrational, impossible for us to internalize, something that we can understand and internalize.

Michael Taussig comes to a similar conclusion over the course of his studies on Bolivian miners in The Devil & Commodity Fetishism in South America. The perspectives that the working class from the Global South hold on social, economic, and political shifts that have happened via modernization and industrialization in the form of local beliefs is tainted. Looking at how money is acquired through wage labor rather than more traditional barter or gift exchange, Taussing writes: "on receiving his wage, the miner must, by law, forfeit all control of and claim to the ore. Alienability and profitability take over, and the commodity rises transcendent, freed from the strictures that in a use-value economy bind goods to people, ritual, and cosmology" [7].

Taussig thus argues other cosmologies, belief systems, and value systems can therefore act as mirrors to compare and contrast with our own modern unquestioned habits, practices, beliefs, and values. They do this by making it clear to us how strangely irrational the

practices and beliefs we take for granted are in the face of other ways of being and doing such as modern fetishizations of productivity, expediency, and efficiency. Taussig's observations of the beliefs of Latin American laborers holds a mirror up to our own obsession with acquiring individual wealth by trading our physical, mental, and emotional freedom and wellbeing to imaginary nonhuman entities, i.e. corporations.

Over the course of my own fieldwork in Karachi, I entered into conversations with working-class service laborers on issues of how the city had changed and what changes they perceived in local natural environments. I was also in conversation with faculty and design professionals in local art schools on how they perceived and made sense of concepts central to design and art practice such as the nature of creativity, craft, and process. I found the tenets of the ontological turn held true: Once they began to articulate at length why they held some of their fundamental assumptions about things, Karachi locals had very different ways of making sense of the world compared to their counterparts in the United States.

Discussions with the working class surfaced their beliefs regarding the outcomes of local government campaigns to plant more trees on key highways in the city. The trees, which were imported from abroad (presumably to cater to the aesthetic sensibilities of visiting diplomats), were treated as projects doomed to failure, because "foreign" trees lacked the "language" to communicate with "local" trees and wouldn't take to local soil. Discussions with local faculty on design practice revealed there were strong beliefs in the idea that creativity, and more importantly, the decisive "aha" moment that designers and artists often claimed they experienced were tied to a form of sudden disclosure that was divine in nature. This, I later found, was historically consistent with both Vedic (pratibha, प्रतिभा) and Indo-Islamic (amad, آمد) conceptions of the source of creativity as flowing from the realm of the divine to the mundane through an individual. As another example of interesting work done in the domain of computing technologies and local knowledge systems, the philosopher Akhandadhi Das has recently written on the parallels between the theory of mind and consciousness developed in Advaita Vedanta, a school of Hindu philosophy, and virtual reality [8].

What does the ontological turn mean for design research? There are, broadly speaking, three takeaways that we can glean from anthropological discourses on cosmo-ontologies.

First, we must try and cultivate an epistemic humility in studying people not like us. This means we do not take our own fundamental notions about the world and our own definitions for granted. It means opening up to the idea that our own concepts are not universal and makes for a strong argument for paying closer attention to the kinds of concepts that suggest themselves through the perspectives of cosmological or cultural Others.

Second, an overturning of perspective is possible. It comes from seeing our own knowledge and perspective as local in its own sense, and therefore, open to globalization within another's worldview. This means we should be aware that the concepts we hold to be very familiar and "natural" can themselves be subject to other interpretations and consequently, reductions, when viewed from the perspective of a cosmological or cultural Other. The cosmological Other should expose us to the contingency of our own worldviews, and, as both Strathern and Taussig argue, get us to see the inconsistencies between the myth of rationality and orderliness of life under modern capitalism and its very irrational and inconsistent foundations.

This ties to the importance of my third observation, which is by showing us concrete examples of how things could be otherwise, other cosmologies open up the space by which we not only question existing cultural, economic, political, and social structures, but can actively work to restructure them. Recreating the cosmology, or transitioning to the cosmology, of another community is ethically and politically problematic, if not outright impossible, as cosmologies develop in relation to many variables (the environment and climate, political struggle, external communal influences, etc.) over long periods of time. However, given the designed is prefigurative and shapes and conditions human

beings as much as it is shaped by them, this opens up the space for us to rethink how we could redesign technologies to promote the transition of everyday practices and the behaviors and beliefs that accompany them that we deem to be unsustainable and oppressive.

To sum, I would argue if we are to think of redesigning systems not only to be more materially sustainable, but, as design theorists like Cameron Tonkinwise [9] and Tony Fry [10] have argued, for people to be more sustainable in the way they live, a shift in how we do design research to uncover how societies that have lived more sustainably through their own everyday lives would be invaluable. Moreover, if we consider cultural diversity to be as important as ecological and biodiversity in realizing a world that is more just and equitable, where people from all cultures and lifeworlds can co-exist, then the ontological turn gives us a way to foster the sensitivity to difference that design research and practice need, in order to move toward making that kind of world possible.

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Biography

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