

# Environment as trickster: Epistemology and materiality in disaster mitigation

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## Abstract

*Disasters are processes that take form and magnitude at the nexus of human practice and the agency of the material world. Not all human practices create conditions that enhance the disruptive and destructive capacities of geophysical phenomena, but how are we to distinguish which actions mitigate or engender disasters? Most importantly, why do people, institutions, and governments sometimes insist in engaging in human-environment relations that lead to the latter? In this essay, I consider the epistemological dimensions of practice, that is, the ways actions that engender disasters are legitimized as necessary in the context of neoliberal and modernizing approaches to development. I make the argument that these ways of conceptualizing and justifying disaster-engendering actions are rooted in modernist ways of thinking about and engaging the world's materiality. Environments come to be seen as objects at the disposal and service of humanity, without much consideration to the ways material agency manifests in unexpected ways in the moment of practice. Disaster mitigation, I suggest, requires a reconsideration of the ways we think, speak about, and relate to the material world in which the modern epistemological divide between objects and subjects, nature and culture, can be questioned and undone.*

**Keywords:** epistemology, modernity, disasters, material agency, development

## Tricksters, culture, and materiality

A few years ago, I drove from my home in Carbondale, Illinois, to New Orleans, Louisiana, where I have conducted ethnographic research on post-disaster reconstruction since 2006. As I drove through the Mississippi Delta, I was listening to interviews on the radio, with Pueblo people in the US South-West who opposed the use of genetically modified seeds for agricultural purposes. Over the course of one of the interviews, an activist explained his reason for opposing GMO crops, saying, "maize is a trickster." What could he possibly mean by such a statement and what does it have to do with understanding why disasters occur and what we can do to mitigate them?

The trickster in Native American lore is a figure that overcomes challenges through the use of its intellectual abilities and defeats its adversaries by outsmarting them (Tedlock, 1996). Maize, on the other hand, is a crop that is the product of thousands of years of human practices that altered the materiality of wild grasses, with the effect of producing one of the world's principal staple foods (Coe and Koontz, 2013, MacNeish & Eubanks, 2000). Maize, then, is a crop that straddles the line between nature and culture, object and subject. By referring to maize as a trickster, the activist attributed mixtures of materiality and culture that comprise the world we live in with the capacity to outsmart humanity, or at least with the potential to behave in unpredictable ways in response to human actions. In this essay, I reflect on how the trickster figure can help us understand how disasters are engendered and why, despite growing academic knowledge about the social construction of disaster vulnerability, disasters continue to manifest in a variety of ways across the globe.

## Agency, human practice, and materiality in disaster vulnerability

The idea that maize is a trickster resonates with the work of a number of anthropologists and sociologists whose research has focused either on human-environment relations or the ethnographic documentation of scientific practice. Scholars like anthropologist Joseph Masco (2006), for example, have shown that nuclear weapons, like maize, can be tricksters as well. The former are

combinations of human intentions, politics, desires, and material agency, which can behave in unexpected ways. When atomic bombs were first devised in the mid-twentieth century, physicists and military leaders believed them to be a superior form of destructive and energy-producing power, whose negative side-effects were negligible. Open air testing of these weapons was common, and US troops were often required to march through explosions' ground zeroes as proof of their relative safety. As testing of these weapons continued, scientists began to notice a key unexpected, unpredictable, and hazardous side effect: radioactive fallout. Atomic weapons had behaved in a way that was out of the full control or predictive capacities of their makers. The recognition of radio-active fallout and its side effects, in turn, had the effect of giving anti-nuclear movements their reason for being, becoming a driver for social change (Masco, 2006).

Masco's work arrives at very similar conclusions as the sociological analyses of Andrew Pickering (1995, 2008), who asserts that the work of scientists (and humans in general) is open ended, meaning that scientists never fully know what the effects of technologies will be on the material world. Furthermore, the way material agency manifests in the moment of practice often has a feedback effect on people's values, as they interpret and attempt to accommodate the ways in which materiality (e.g. environments, atomic elements) respond to their techno-scientific actions.

The case of flood risk in South-Eastern Louisiana is a good example of how such insights from the anthropology and sociology of science inform disaster research. Three hundred years of levee construction practices meant to channel the Mississippi river and protect farmland and property from flooding have led to conditions not originally desired or envisioned by the region's settlers. Levee construction has limited the ability of the river to deposit sediments and build up its delta, leading to shoreline erosion and salt-water intrusion, while the city of New Orleans has been placed increasingly close to the Gulf of Mexico, exposing it to hurricanes and tropical storms at the peak of their destructive capacity (Camillo, 2012, Camillo & Percy, 2004, Pickering, 2008). Levying has also led to sedimentation on the Mississippi River's bed, raising the river level above the city and increasing the risk of catastrophic flooding (Pickering, 2008). Finally, human made navigation canals meant to facilitate the movement of cargo ships from the Gulf of Mexico to New Orleans or its outlying areas have altered the salinity

levels of wetlands, further enhancing coastal erosion. This has led to the loss of land and communities as the shoreline advances. The lower Mississippi River Delta, one could say, is the quintessential trickster, reacting to human practice in unexpected ways that have put the long-term sustainability of three centuries of colonial, modernizing, and capitalist development in question.

These observations reinforce what a number of social scientists focusing on disaster research have been telling us for nearly forty-five years now. Disasters are by no means *natural* events, but instead are processes that manifest at the intersection of human practice and the world's materiality (Bankoff & Hilhorst, 1994, Blaikie et al., 1994, Hoffman and Oliver-Smith, 1999, Oliver-Smith, 2002). Not all human-environment relationships exacerbate the socially disruptive capacities of geophysical phenomena, but how do we discern which practices transform geophysical phenomena into disaster-triggering agents and which do not? Also, why do people and policy makers in certain contexts hesitate or resist adopting the latter? In this brief communication, I want to make the point that these questions require us to consider the cultural and epistemic context within which practice takes place, that is: how do ideas about engaging the world's materiality become possible, to whom, and what historically, socially, and politically situated desires and intentions are realized in practice?

## A brief cultural history of the present

When thinking about the above-stated question, I find it relevant to recall Elizabeth Povinelli's (1995, 2002) work, which documents the ways people who are often referred to as *non-modern* speak about and relate to their environment. For many Australian Aboriginal people, for example, the material world is not a landscape full of objects or resources, items supposedly devoid of meaning and sentience. On the contrary, it is a landscape populated by entities that defy the dichotomizing claims of epistemological modernity which attempt to parcel out the world into objects, subjects, nature and culture (Latour, 1993, 1999; Mitchell, 2002). In the Australian instance, inanimate objects and non-humans like rocks and wallabies - and I would also argue, tricksters, are thought to possess sentience and emotions and are connected to the *dreaming*, a mythological force that is more powerful than people and can punish them by denying them access to life-supporting water and food when offended (Povinelli, 1994). In aboriginal

epistemology people must maintain a certain level of reverence and observe ritual taboos when relating to objects and animals, because not doing so may incur the wrath of the dreaming. In this epistemic space, viewing the environment as a collection of natural resources to be exploited for the sake of capitalist development is simply unimaginable.

Aboriginal ways of thinking about, and relating to, the material world are at odds with the way modernists think about human-environment relationships and evaluate the merits of different societies. Because foraging societies make what for Eurocentric observers seem to be minimal modifications to their environments, modernist thinkers like Karl Marx have considered them to be outside of history (Foucault, 1970, Povinelli, 1995). For Marx, history was a telos (or purpose) of development, a linear process in time that led to a known outcome of socio-technological organization (Chakrabarty 2000, Fabian, 1983, Foucault, 1970); namely, one comparable to North Western European states. This development process was driven by labor, which was also thought to be the action through which people modified and appropriated their environment. Hence, the colonization of regions like Australia was often legitimized on the claim that aboriginal and indigenous residents could not claim property rights over the landscape they inhabited as they had not significantly altered it through labor; whereas European colonizers intended to do just that. Labor became the engine of a development process that was allegedly unstoppable, universal, and whose desirability was self-evident. For Dipesh Chakrabarty (2000), Johannes Fabian (1983) and Michel Foucault (1970), Marx's unilineal view of history and development was not an objective appraisal of human history and cultural diversity. It was an ethnocentric perspective that assumed the history of North Western Europe was the history of the world.

The rise of epistemological modernity - which is the claim to be able to objectively see the world, unencumbered by cultural presuppositions, is often attributed to the late 17th century. Historians of science (Shapin & Shaffer, 1995; and Latour, 1993) often associate it with the establishment of a means of ascertaining matters of fact. The *matter of fact* was something that was created in the laboratory space, a space that was supposed to be nowhere in particular and everywhere at once, making the matter of fact something that transcended the particularities of localized cultures. Epistemological modernity, as it was championed by Robert Boyle, would

allow people to see the material world for what it was - unrestricted by the type of cultural lenses that would lead one to imagine maize as a trickster or a waterhole as part of the dreaming. The problem with epistemological modernity, as Donna Haraway (1997) and Bruno Latour (1993) would argue much later, is that it never allowed its wielders to actually see the world as it really was, but only to make claims to a superior knowledge that transcended the ecological particularities of localities and cultures. Other empirical forms of knowledge were dismissed as culture, belief, and superstition. North Western Europeans' own combinations of cultural values and materiality became promoted as universal truth.

The invention of epistemological modernity was intimately intertwined with the development of liberal economics and European colonial expansion. Liberal economics engendered a proliferation of *facts*, and its advocates proposed that the meaning-laden relationships between people and the material world of North Western Europe (i.e. private property, capital), were "principles true in every country" (Mitchell, 2002, p.54). The process of colonization of the Americas and the African continent, in turn, created a condition of hierarchized cultural difference in which colonizers could look upon the adaptations of colonized populations to local environments as irrational, and could therefore impose their own decontextualized practices of production and wealth extraction on new environments (Ferguson, 1994, 1999). The process of colonization initiated a transformation to human-environment relationships that brought about the global arrangements of resource extraction, labor exploitation, and wealth distribution we see today.

## The high stakes of modernity and neoliberalism

In the post-colonial era, the hierarchizations that placed Europe at the top of the developmental visions of history shaped the imaginations of emerging national elites across the globe. In Latin America, for example, the period of the late 19th Century Liberal Reforms was distinguished by attempts to transform localized human ecologies into economies geared toward export production for a global capitalist market (Dore, 2006). This policy movement resulted in the dispossession of subsistence farmers, the enhancement of social inequities, and a view of the environment as an object/resource for capitalist production. The dispossession of subsistence farmers has been linked, time and time

again, to the creation of socially produced vulnerability that shapes disasters (Jansen, 1998, Stonich, 1993, Paolisso et al., 1999). Today, Latin America is still struggling with its colonial legacy. In the aftermath of the Cold War, indigenous environmental activists have become a primary target of right wing paramilitary groups that pave the way for mining, logging, and drug trafficking; practices that, among other things, enhance disaster vulnerability in places like Guatemala, Honduras and Colombia (Global Witness, 2014).

At the turn of the 21st century, we are not only experiencing the material and social effects of the assemblages of modernist epistemology, developmentalism, and colonialism I have called attention to. We are also seeing the mutation of economic liberalism into neoliberalism - which is a policy and cultural movement that upholds the idea that market, environmental, and labor deregulation will lead to optimal social ends (di Leonardo, 2008, Povinelli, 2010). South Eastern Louisiana is a case in point. In recent years, a class action lawsuit attempting to hold oil companies liable for coastal erosion caused by navigation canals used to move oil and natural gas throughout the region was opposed by Governor Bobby Jindal. He insisted that energy companies are an indispensable partner in the region's development and that holding them accountable for the environmental degradation caused by their production practices is detrimental to the state's economic health (O'Donnoghue, 2014). This prioritization of capital production as an indicator of social wellbeing demonstrates how the engendering of disasters is a process that ties together epistemological, material, and political dimensions of human existence in the moment of practice.

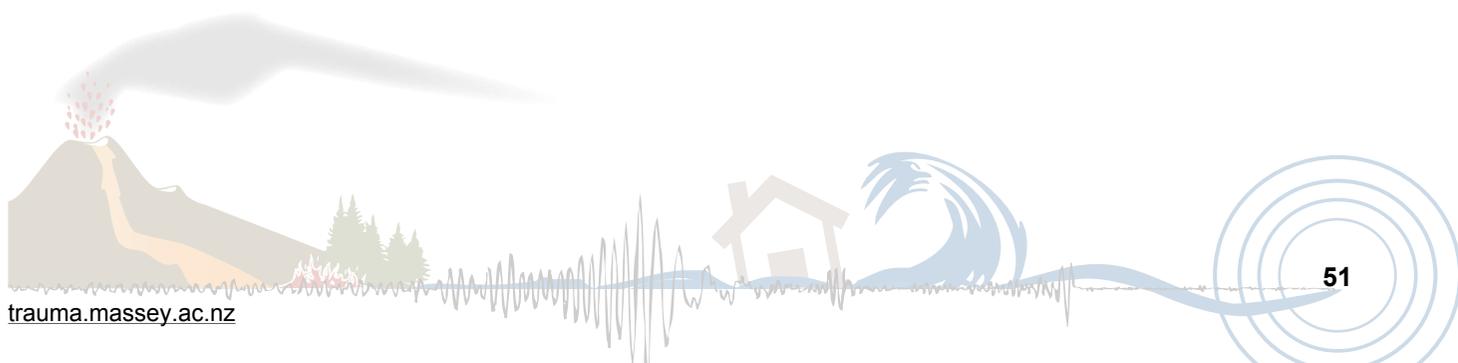
Mitigating disasters, that is, closing the multiple gaps between practice, policy, and academic knowledge involves a profound questioning of some tenets of societal development that seem to hold an unquestioned status as fact and common sense. Narrowing these gaps requires a rethinking of the relationship between the way we think about and relate to other people and things. Environments must not be seen as objects and resources to exploit and sacrifice in the name of development. Instead, they can be seen as entities straddling the divide between object and subject, or as tricksters to be treated with respect and deference - all the while maintaining an observant eye for the ways they react to our actions and a concern with

maintaining a memory of what our previous practices have engendered.

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