Can the Mekong Speak? On Hydropower, Models and 'Thing-Power'

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According to the Consultative Group for International Agricultural Research (CGIAR)'s research program on water, land, and ecosystems, there are 241 completed dams in the Mekong basin, 29 are presently under construction and 91 more are being planned.[1] The majority will be located in Laos, a country that envisions a future as the "battery of South-east Asia."[2] However, many dams are also planned in Cambodia, since a cheap, steady supply of electricity is prerequisite for luring foreign companies into the country's special economic zones (Jensen 2017). Along the Mekong, electrified futures are everywhere on the agenda.

Shrouded in secrecy, Chinese hydropower investments flow into Cambodia as part of bundled economic packages. As development ensues, people living close to dams are threatened with displacement, or denied access to land and means of livelihood. Ecologies suffer, too, as development proceeds without environmental mitigation measures, and water flows are altered, diverted, or stopped. Yet, despite promises of electrification, rural people have yet to see many or, in some cases, any, benefits. International and local NGOs join protests against the dams.

Meanwhile, colluding foreign and local businessmen and politicians engage in various forms of resource extraction, from illegal dredging of sand and gravel for export to Singapore,[3] to the destruction of forests in search of valuable timber for the upscale Chinese market. On top of this, the Mekong region is estimated to be one of the areas in the world most vulnerable to climate change.

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[1] See the overview provided by CGIAR's research program on water, land, and

[2] Jared Ferrie. 2010, July 2. Laos Turns to Hydropower to Be 'Asia's Battery.' *The Christian Science Monitor.* http://www.csmonitor.com/World/Asia-Pacific/2010/0702/Laos-turns-to-hydropower-to-be-Asia-s-battery. (Accessed 24 March 2015).

[3] Lindsay Murdoch. 2016, February 26. Sand Wars: Singapore's Growth Comes at the Environmental Expense of its Neighbours. *The Sydney Morning Herald*. http://www.smh.com.au/world/sand-wars-singapores-growth-comes-at-the-environmental-expense-of-its-neighbours-20160225-gn3uum.html (accessed 11 July 2016).

The spring of 2016 saw an unprecedented heat wave, and threats of both droughts and floods are increasing, as river flows and rain patterns transform.

The push to hydropower occurs in a landscape overflowing with events and initiatives, saturated with promises and threats, political maneuvering and forms of knowledge. Yet, this does not mean that the setting is comprised only of people, their dreams and their struggles. Made of, and populated by, rivers and streams, animals, and by an array of infrastructures, this is a landscape of more than humans. Inspired by new materialism and object oriented philosophy, recent anthropology of energy argues forcefully for the need to deal with these nonhumans, with materiality, with things. And in the Mekong basin, too, such powers can hardly be overestimated. Yet, how to deal anthropologically with the forces of things remains elusive.

My vantage point for engaging this issue is an ongoing exploration of how the present and future Mekong basin is turned into an object of knowledge and action by diverse forms of hydrological, ecological and climate modeling. Starting from the question of how and why the river is modeled, and by whom, this project aims to understand the practical and policy uses, but more often lack of use, the many models circulating in the Mekong find.

Perhaps the link between electrification and hydrological modeling seems tenuous. However, since the effects of Mekong hydropower development are not amenable to direct verification, being ambiguous, distributed over thousands of kilometers, and unfolding gradually over long time spans, they must be modeled. Hydrological models, in combination with other kinds of models, are used to estimate the consequences dam cascades, built to produce electricity, are likely to have for water flows, sedimentation flows, and for the habitats of fish and other animals.

In the following, I examine how the powers of dams and electricity are elicited, mediated and made visible through models that thereby exhibit their own powers. At one level, the paper thus aims to add nuance to discussions about how the power of things, or non-things (Bakke, this volume), like electricity, can be anthropologically elicited. At another, an examination of the complicated relations between dams, rivers and models, opens a discussion

about the kinds of subject positions available to those in search of less destructive paths to an electrified Mekong.

Alternating Currents: Electricity and Climate Change in Anthropology

As exemplified by the present volume, electricity and energy are topics of increasing social scientific interest (see also Agustoni and Maretti 2012; Boyer 2014; Strauss, Rupp and Love 2013; Urry 2014).

Painting broadly, one might point to two ways in which the anthropology of energy deals with its phenomena. The first engages in ethnographic study of local practices, for which a broader story of political economy often forms the general context. In this vein, the editors of *Cultures of Energy* (Strauss, Rupp and Love 2013: 10) note that since the "human use of energy is understood and experienced through cultural frameworks," the key question is how energy plays a role in the making of socially meaningful worlds. Accordingly, "the enormous energy challenges facing us all are fundamentally cultural and political *rather than* technological" (10, my emphasis). As indicated by the phrase "rather than", the cultural and political here *replaces* energy and its infrastructures as the topic of concern.

Other approaches are more closely connected with the anthropology of infrastructure (Harvey, Morita and Jensen 2016, Jensen and Morita 2016) prefigured by research in science and technology studies (e.g. Bowker 1994; Summerton 1994). For one thing, electricity networks *are* infrastructures, and Thomas Hughes' (1983) path-breaking *Networks of Power* was concerned with how they were shaped. For another, the analytics of these approaches often relies on a core insight from the STS corpus: that technological systems tend to fade from view, becoming invisible in front of our eyes, or under our feet. Thus, Timothy Mitchell (2013) has analyzed the historical process whereby oil became the spinal fluid of modern societies, and Dominic Boyer (2015: 532) has recently written that: "Electricity is a fascinating subject of inquiry because it is in many respects the foundational apparatus upon which the experience of modernity has been constituted since the late nineteenth century." This emphasis on nonhuman agency resonates strongly with STS analyses including actor-network theory and Andrew Pickering's *The Mangle of Practice* (1995). Increasingly, however,

anthropologists also turn to new materialism and object-oriented ontology for guidance on how to deal with the force of things.

Contrary to socio-cultural analyses of energy, the second line of inquiry thus aims to find ways of taking nonhuman agency into account. At issue is the attempt to grapple with electricity and its infrastructures not as an underlying support system for cultural practice and meaning making, but rather as a set of material assemblages that generates heterogeneous effects beyond human perception and volition (Jensen and Morita 2016). Referencing Jane Bennett and Timothy Morton, Dominic Boyer (2015: 532), for example, finds inspiration in "recent pushes to bring the material and nonhuman more securely into political theory." He goes on to describe electric grids as grooving "political efficacy, subjectivity, and affiliation" (2015: 533), ascribing to them the capacity to shape societies, or even modernity as such.

Stopping One Flow to Start Another

In Cambodia, dam development is conducted mostly by Chinese companies under BOT (build, operate, transfer) contracts. These contracts stipulate a timeframe for construction, and confer upon the building company the right to operate the dam for a period, say 40 years, after which it will be transferred to the Cambodian government. According to recent national environmental impact assessment legislation, environmental and social safeguard and mitigation measures have to be in place, yet there is little accountability, transparency or enforcement of these rules (Siciliano *et al* 2016). Accordingly, local people and environments suffer from the impacts of development, and resistance from national and international NGOs is vigorous, though largely ineffective.

In order to generate electricity, companies build dams that allow for the storage and controlled release of water. Stopping the natural flows of rivers like the Sesan, Sambor and Srepok in northeastern Cambodia, dams start flows of electricity. Stopping the flows of fish and sedimentation that sustain local livelihoods, the dams instead propel flows of capital. Clearly, an understanding of this situation requires attention not only to people but also to things. But what exactly does this entail?

Jane Bennett's analyses of thing-power offer an influential answer. For Bennett, thing-power opens up to an "adventurous ontological imaginary" in which matter is "active, intricate, and awesome" (2004: 364, see also Scott 2013). She describes coming across a stick of wood, a plastic glove and a dead rat by a storm drain, feeling suddenly 'struck' by their singularity. In a flash, Bennett realized that these were not inert objects but rather lively parts of an assemblage,[4] which she defines as "ad hoc groupings of diverse elements, of vibrant materials of all sorts…living throbbing confederations that are able to function despite the persistent presence of energies that confound them from within." Using the massive American blackout of August 2003 as an illustration (see also Nye 2010), Bennett characterizes the electric grid as "a volatile mix of coal, sweat, electromagnetic fields, computer programs, electron streams, profit motives, heat, lifestyles, nuclear fuel, plastic, fantasies of mastery, static, legislation, water, economic theory, wire, and wood—to name just some of the actants" (Bennett 2010: 25).

Bennett offers a lively narrative of interactions between generators, transmission lines and brush fire. Even so, her analyses leave the reader with little concrete sense of the processes that shaped these assemblages and conferred particular kinds of power on things within them. This mode of exposition cannot be detached from her aim to grasp nonhuman agency in their singularity, *as such*. What is left out of this equation is the STS insight that things and people are *all* internally heterogeneous since all are shaped by emergent relations, entanglements and arrangements (e.g. Cussins 1998; Latour 1996a, 1996b; Pickering 1995).

In a recent programmatic statement, Dominic Boyer and Timothy Morton's (2016) propose a way of combining attentiveness to thing-power with the agency of people. Arguing that climate change requires the fabrication of another future, they suggest that it will bring forth a correspondingly new kind of "hypo-subject." Set in motion by a modern "hyper-subject" obsessed with

[4] For a critique of Bennett's thing-power, see Abrahamsson, Bertoni and Mol (2015). For a clarification of the relation between Bennett's position and that of object-oriented ontology, which makes clear that the former is more resonant with STS and anthropological approaches than the latter, see Bennett (2012).

"command and control" and wielding "reason and technology to get things done," climate change will be made livable by "hypo-subjects," characterized, among other things, as caring and playful squatters and *bricoleuses*, who "work miracles with scraps and remains…unplug from carbon gridlife [and] hack and redistribute its stored energies for their own purposes." There are resonances between these ideas and Bennett's (2004: 349) suggestion that the recognition of thing-power may "foster greater ethical" awareness or even a more "enlightened self-interest" (361). The formulations also bear affinity with Isabelle Stengers' argument that different assemblages hold potential for creating varied "appetites" that can act as "lure[s] for feelings" (1999: 193-4) for different futures. Yet, while Stengers, as Bennett, highlights that things, like electrons, can create "lures for feeling", she also insists that the question of what these powers are and do can only be posed concretely, in terms of the 'cultural milieu' they enter into (1999: 202). This demand for specificity connects with her plea for "slowing down" reasoning.

For Stengers (1999:196), slowing down means that one should not aim to "purify the whole field in order to grasp a more general truth." On the one hand, this means that social scientists should refrain searching for the truth of the power of things in themselves. On the other hand, it also entails the refusal of "any temptation to *judge* [the] experience" (1999: 196) of those working with things like dams and rivers on the basis of any "more general truth," such as the clean distinction between bad hyper-subjects and good hypo-subjects.

In the following, I take Stengers' refusal to purify either the force of things or the actions of people as a starting point for analyzing entanglements of water flows, dam cascades, and models, and the possibilities for imagining an electrified Mekong.

Knowing the Mekong

There are, of course, innumerable ways of experiencing the "thing-power" of the Mekong (Jensen forthcoming). Correlatively, this "thing-power" itself can be decomposed and reconstituted in a thousand ways. The casual visitor may encounter scenic sunsets, river dolphins, dredging boats, or garbage accumulated where the river passes urban areas. Such fleeting scenes might well

testify to "thing-power" in Bennett's sense of an unexpected experience giving rise to a flash of intuition. For people living by or on the river, the experiences of thing-power are differently embodied, more long lasting and more consequential. They have to do with such things as knowing fish migrations and water flows, understanding the seasonal patterns of rain and flooding and their consequences for growing crops, and how to safely navigate the river as a storm approaches. For entrepreneurs or politicians who are interested in large-scale economic potentials, the power of the river may be apprehended in the form of sand that can be dredged for export, or as water flows that can be captured by dams and turned into electricity.

As for these dams, their building and operation on the Lao and Cambodian Mekong is subject to fierce criticism from NGOs like WWF and International Rivers. The objections are similar to those raised elsewhere against dam development (Whitington forthcoming). Obligatory environmental assessments are lacking or fatally flawed. Fish migration will be threatened. Underwater explosions may lead to the extinction of the remaining Irrawaddy dolphins. And there are significant threats to a great many ecological niches. Criticism further highlights the forced eviction of local populations, threats to food security, and the fact that dam development is carried out on the back of wildly exaggerated promises for how much electricity will be generated. Even if all the planned dams of Laos are built, for example, the country will probably never become the "battery of South-East Asia," since the electricity production is unlikely to add up to more than a few percent of regional demand.

Because the pre-studies, reports and models that inform Chinese decisions to push particular hydropower projects are not publically available, it is impossible to know how, precisely, they inform concrete policies. Yet, it seems safe to assume that various economic projections and engineering expertise is sitting in the background of decisions to commit to infrastructure projects of this order. Sooner or later information about such projects reaches the public sphere. To critical observers, like environmental NGOs, it looks patchy and generally dubious. In response, they produce counter-knowledges, often in collaboration with university researchers from abroad; as we shall see, however, foreign governments may also commission critical analyses. Such reports will usually

highlight a range of technical issues, and environmental and/or social problems.

Often, these counter-knowledges take the form of, or are significantly based on, models. And thus, hydrological models become part of the terrain on which contests over dams, and electricity, are played out.

The Thing-Power of Models

In 2015, the Vietnamese Ministry of Natural Resources and Environment, commissioned the Danish Hydraulic Institute (DHI), which specializes in hydrological modeling, to conduct a "Study on the Impacts of Mainstream Hydropower on the Mekong." The report concluded that the cascade of planned dams would lead to a loss of capture fishery of up to 50% and an overall loss of 10% of fish species. Moreover, the entrapment of sedimentation by dams is predicted to lead to heightened vulnerability of sea level rise and increased saline intrusion in the Vietnamese delta. All in all, "the planned hydropower cascade would substantially and permanently alter the productivity of the natural system leading to degradation of all the delta's related value" (Executive summary, 3).

On (yet another) scorching hot day in May 2016, I had lunch with Mr. Pélissier, a fisheries expert and well-published researcher with long experience working as a consultant in Cambodia. In his view, the main problem with Mekong dam development is the threat it poses to food security. Scientific studies predict that fish populations may decline by more than 40% over the next several decades; a huge concern in the Cambodian context where fish is the only source of protein for most of the population.

Having just read the DHI report which drew similar conclusions, I asked about Mr. Pélissier's view of its analyses. As far as the picture of fish decline was concerned, he thought the report got it more or less right. Indeed, he stated, bringing attention to this problem was probably a key reason why the Vietnamese government had commissioned the report in the first place.

This may sound strange, since the expected problems in the Vietnamese Mekong delta is less to do with fish decline than with coastal erosion, sea-level rise and saline intrusion. These are huge problems, since the delta grows 90% of Vietnam's rice. As the delta diminishes, Vietnamese food security is therefore

jeopardized. In contrast, Cambodia is pursuing rapid dam development as a solution to national security issues. Presently, the country is important most of its energy from its old enemies Thailand and Vietnam, leaving the country in a weak position.

Yet, Cambodia's food security is also vulnerable. As most of the population gets most of their scarce protein from river fish, a 40% decline in fisheries would likely entail malnutrition or worse for many rural people. The gambit of the Vietnamese is thus to convince Cambodia that they are both threatened by dam cascades, and for similar reasons. And thus Mr. Pélissier surmised that it was not at all random that the results of the DHI report were made public in Phnom Penh rather than in Vietnam. Moreover he thought that it was a good idea. Since the Cambodian ruling party depends on votes from the rural poor, he thought that making visible the threat of food security to politicians might one of the few viable possibilities for problematizing the strategy of building as many dams as possible. In contrast, a purely environmental concern would be likely to sway nobody.

By articulating the link between the building of dams, the decline of fish populations, and accelerated delta erosion, the DHI report and Mr. Pélissier's commentary illuminate the empirical entwinement of electricity generation, the gradual effects of climate change, and national and regional politics in the Mekong basin. They also allow us to probe further the question of the varied articulations and mediations of "thing-power."

In the report and in Mr. Pélissier's interpretation, thing-power is everywhere evident. The difficulty, however, is ascertaining to which thing the power refers. Since the report is about the flow of the Mekong and its tributaries we might argue that it is testimony to the power of the river. However, it might as well be said that what it really speaks about is the power of sedimentation, or fish, or dams, or Vietnamese rice. Since the reports bears witness to the conjugation of all these powers in a complex relational assemblage, none of them can be singularized. Further, it is quite impossible to clearly separate which powers should be attributed to people, and which to things. In reality, the agency of dam builders and politicians is as involved in changing the river as the forces

of climate change and coastal erosion. The power of any particular thing *as such* is nowhere in view. [5]

Indeed, the difficulty of separating thing-power from people-power extends further. For in order to know certain things about the present and future of the Mekong river basin: the flow of sedimentation, changes in fish population, or erosion in the delta, for example, it is necessary *to go through* hydrological models. Rather than a story about the thing-power of the delta or the river, or of dams, we might thus say that this is in effect a story of how the thing-power of models come to "give voice" to the power of other "things," like dams, fish, or the Mekong as a whole.

But if the impact of dams is known only through models, and the models differ, the question of how to model thing-power is subject to a series of complications. Rather than allowing us to glimpse any *unmediated* power of things, the multiple mediations of hydrological models thus oblige us to further decelerate reasoning. Mr. Pélissier will continue to serve as a guide.

Whereas he basically agreed with the DHI report's estimations about food security, he found some parts of the *hydrology* quite dubious. It showed signs, he said, of downplaying the negative impact of the dams.

How to Minimize the Thing-Power of Dams

While the Mekong can be known in multiple ways, for some important purposes, the river and basin can basically only be known through models. If one wants to estimate fish populations, sedimentation flows, or temperature rises, embodied experience is of limited help. Further, since baseline data about most environmental and social issues is either non-existing or hidden in ministerial cabinets, for foreign organizations and researchers modeling offers are indispensable means of making Mekong futures visible and discussable.

Modeling, in turn, depends both on the data sets fed into them, and on the presuppositions and relations built into their equations. Whereas an important dimension of the "thing-power" of models is to speak in the name of the power of

[5] See Bakke (this volume) for a discussion of the ways in which electricity is not a thing but a relation. The same can be said for water flows and, arguably, for most or all other 'things' as well.

other things like water flows and sedimentation, their capacity for doing so is neither direct nor oracular. This is no secret to modelers, who are very sensitive to the fact that models are no better than their inputs and parameters (e.g. Beven 2009). They are also well aware that both of these can be subtly or bluntly manipulated.

Policy makers and the general public, however, are usually less knowledgeable. They typically encounter models as a series of results – graphs and visualizations or written explications, predictions and scenarios – rather than in the form of equations and datasets. Moreover, if they were presented with these equations and datasets, they would not have the scientific literacy to interpret them. Accordingly, there is good reason to use written language and colorful graphs as 'front stage' explanations. Yet, this means that the backstage of the models basically remain invisible.

Although modelers and other insiders are fully aware that no model is neutral, this does not typically lead them to reject their overall, or potential, explanatory power. Even though Mr. Pélissier was skeptical of the assumptions underlying the model used to estimate the effects of dams on biodiversity and water flows in the DHI report, for example, he still accepted the estimate of fish reductions. So why did he think the effect of dams had been underestimated?

When asked, Mr. Pélissier retracted somewhat. He made clear that he had not looked into the final modeling parameters used by the DHI consultants, so he was actually unable to offer a definite opinion on the particular case. The skepticism he had expressed was a consequence of having joined an early consultation meeting with the DHI experts before the actual modeling had been conducted. However, he said, it is by no means unusual for hydrological models to minimize the effects of dams.

Dams generate electricity by storing water and releasing it. However this can be done in many different ways. For example, it is possible to generate electricity at a steady rate, in which case the water level around the dam does not fluctuate very much. Since dams tend to be operated in accordance with peak demands, however, usually there will be fluctuations. If demand is highest in the evening, for example, water will be dammed during daytime, and the turbines switched on later in the day. The consequence is wildly changing water levels

with ecologically devastating consequences. This modulation maximizes the dam's power to destroy ecologies and biodiversity. Because there is no reliable information on dam operations, however, these fluctuations are unknown, and the way they enter models depend on choices made by the modelers.[6] All that is needed to minimize the 'thing-power' of a dam or a cascade, is to assume a steady rate of electricity production or more subtly tweak or finesse the assumed operation rules.

It is quite unlikely that the DHI consultants deliberately wanted to minimize flow variations (or even that they had actually done so, as Mr. Pélissier acknowledged). For one thing, their international reputation depends on maintaining an image of neutral expertise, making it unlikely they would compromise their models for reasons of regional politicking. For another, if they had done so, they would presumably have maximized the power of dams, as they had been hired by a Vietnamese ministry worried about the impact of dam cascades downstream in the Mekong delta.

But regardless, neither university researchers nor consultants commissioned to model the Mekong can avoid entering the territory of conjecture. Dealing with complex interactions of water, weather, sand, and animals under significant time and resource constraints they trade in necessary simplifications. Taking the path of least resistance by assuming a steady flow through all the dams merely exemplifies a trade-off with particularly clear implications. Invariably, therefore, the question of which powers should be

[6] The problem has long been recognized but it has not been solved. In a 2001 study, we are informed that: "assumed regulation rules were used for those dams included in the model. When the true operating rules for these dams are available, they should be incorporated into the model" (Kite 2001: 11). More recently, a study of the 3S river basin "was limited to daily flow simulations because of current constraints in the availability of detailed operation rules of the proposed hydropower projects and actual flow measurements" (Piman *et al* 2013: 731), and a study of sedimentation and hydropower notes that "Many reservoir operating policies are simply unknown at this time. Given the largely uncoordinated nature of basin development, operators are likely to be adapting their strategies in real time as the unknown policies of upstream reservoirs become available" (Wild and Loucks 2014: 5146-7).

assigned to modelers, which to models, and which to the entities or processes they model, can only lead to fuzzy answers.

Nor is this all. For whichever way the dams are modeled, Mr. Pélissier insisted, *the curve of electricity* operates as an unquestioned assumption operating behind the models. What this means is that the unquestioned premise of dam development is the necessity of always *producing more and more electricity*.

The Curve of Electricity

Listening to Mr. Pélissier, it dawned upon me that it is possible to speak of the *subject* of hydrological models in two ways. On the one hand, models have explicit subject matters, such as water and sedimentation flows. But they also contain an implicit human subject in demand of more electricity. Complementarily, it is also possible to understand the modeling of the subject in two senses. For alongside dams, water and sedimentation flows and fish populations, the expected, normal behavior of people and societies are implicitly modeled too.

When Mr. Pélissier observes that the curve of electricity operates as a background assumption of dam development, he is making a critical argument. Similar to many NGOs, he thinks dam development should be halted, or at least substantially changed. However, he is critical not only of dams but also of the strategies of the many environmental NGOs that oppose them. Their modes of argumentation, he said, tends to focus on things like unique butterfly habitats, the threat to a particular rare fish, or the loss of dolphin populations. "It is a hopeless battle," he said, "there used to be wild animals in Phnom Penh, too, but where do you see them now?"

This was not meant as an expression of fatalism. Instead, Mr. Pélissier's argued that the problem with appeals to butterflies and snails is that their aesthetic form is incommensurable with the logic and *modus operandi* of bureaucrats and planners. Based on his own experience, he asserted that hardheaded Cambodian bureaucrats backed with Chinese money would simply not be swayed by appeals to biodiversity. Until NGOs learn to engage dam development on the terrain of the curve of electricity, he insisted, they will fail to

generate any effective counter-position. To succeed, they will have to "learn to speak the language of megawatts."

These arguments open up to contrasting images of what kinds of subject positions may facilitate alternative electrified Mekong futures. Recall Boyer and Morton's broad contrast between hyper-subjects who seek to command and control the environment and hypo-subjects who unplug "from carbon gridlife" to "hack and redistribute its stored energies for their own purposes." On the basis of this argument, they might well applaud NGOs that resist Mekong dams in the name of environmental protection and redistributive justice. Yet, although Mr. Pélissier is not looking to unplug, he is also pursuing the question of how to "redistribute stored energies."

Here, we might return to Boyer's (2015: 533) argument that electric grids provide "grooves" for "political efficacy" and "subjectivity." Isabelle Stengers, too, has pointed to the danger of producing minds "in a groove" (1999: 194, citing Whitehead 1926: 196-7). And indeed, as we have seen, according to Mr. Pélissier, the groove along which dam development on the Mekong runs is the curve of electricity. Recognizing the existence of this groove, he argues, is a precondition for imagining any viable Mekong energy future.

In his view, however, this transformation is unlikely to be brought about by environmental activists, because they, too, operate *in a groove of their own*. Unable or unwilling to compromise with their biodiversity aesthetics and normativity, these activists have no effective weapons with which to defeat the curve of electricity. Accordingly, they fail to make a dent in the calculating minds of Cambodian bureaucrats and Chinese investors.

"Do you know the Siam Paragon Shopping Mall in Bangkok?" he asks me. "That mall uses as much energy as one of the North-eastern Thai provinces." NGOs should examine cases like this shopping mall and press the question of whether its "excessive electricity consumption is warranted," sustainable, or even possible. Effective opposition to the dams thus entails challenging the image of a future where Siam Paragons spread everywhere.

Can the Mekong Speak?

Posing the question "Can the Subaltern Speak?" Gayatri Spivak (1988: 295) famously answered in the negative: as a product of "imperialist subject-constitution," the subaltern could have neither history nor voice. In contrast, new materialists and object-oriented ontologists answer the question of whether "things" can speak with a resounding "yes."

From an anthropological point of view, this affirmation this requires careful scrutiny. Examining Mekong hydropower development, I have tried to slow down reasoning in order to grapple with the *entangled* powers of dams, river flows, fish population, rice growth, models, and politics. Here I echo, Timothy Mitchell (2002: 52) who replied to his own query: whether the mosquito breeding by the Egyptian Aswan dam could "speak" by pointing to the permeability of agency: "what is called nature or the material world moves…in and out of human forms."

New materialists and object-oriented ontologists tend to view the recognition of such permeability as a denial of thing-power. Just as Spivak's subaltern was deemed unable to speak since she is always produced and represented by others, acknowledgment that the powers of dams, water, or sediment is mediated by many relations is conflated with the effacement or silencing of these things. Empirically unsustainable, one consequence of this speeding up of reasoning on behalf of things is a disregard for the complex arrangements that articulate the varied voices of the Mekong.

Ethnographic attunement to such complicated entanglements creates a position from which to nuance understandings arguments about thing-power. Far from silent, dams and rivers speak cacophonously in *a thousand tongues*. But these voices cannot be disentangled from those of other actors, including dam construction workers, fishermen, drowning dolphins, environmental activists, Chinese economists, Cambodian policy-makers and, not least, models. DHI's hydrological model itself is but one effort to confer upon the river the capacity to allow others to speak in its name. And, as we have seen, this model, too, speaks of many other things: sediment flows, fish populations, future consumers, and the consequences of planned damming.

Here is a first lesson from slowing down reasoning. Even if one aims to articulate, capture or protect the thing-power(s) of the Mekong, one will have to

make detours through the powers of other things. The general admonition to heed the force of things makes no difference unless one is able elicit that force through other means, like models. Further, even *within the model* we encounter a chorus composed of many things and people. Recognizing this internal multiplicity opens up for inquiring about the kinds of subject positions available to those who wish to oppose current forms of Mekong electrification.

As noted, Jane Bennett (2004: 348) argues that increased attentiveness to thing power might induce a stronger ecological sense. Dominic Boyer and Timothy Morton (2016) suggests that the fabrication of sustainable futures in the age of climate change will be in hands of 'hypo-subjects.' Activists fighting Mekong dam development in the name of environmental protection and sustainable livelihoods would seem to exemplify this kind of subject position, and it is difficult not to sympathize with their aims.

Yet such sympathy can also blind one to the limitations of their strategies. Pointing to the unlikelihood of politicians and entrepreneurs suddenly converting to environmentalism or becoming human rights advocates, Mr. Pélissier thus offers a second lesson in slowing down reasoning: possibly, the only viable way of pursuing environmental or social justice is by translating these concerns to the language of mega-watts, moving advocacy on to the terrain of modeling. The picture he paints is far more complicated and ambiguous than the clear distinction between coldly calculating hyper-objects and eco-friendly, experimental hypo-subjects.

Even if we accept Mr. Pélissier's diagnosis, we can still question the effectiveness of his solution. In view of the difficulties environmental NGOs have in getting their agendas heard or implemented in Cambodia, his criticism clearly has a point. Yet it overlooks the extent to which these organizations are already committed to modeling such things as fresh water quality, relations between economic development and the natural resource base, or the consequences of dams for biodiversity. While what is modeled varies, what is thus held steady in this imagination is the assumption that models are effective means for speaking truths about electricity to Cambodian powers. In reality, however, I have yet to

come across any case in which *any* model has significantly changed political decisions.[7]

While the Mekong and its models both can and do speak in multiple voices – about fish, sand, and electricity – this does not mean that anyone is there to listen.

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[7] It appears that the conventional idea of speaking truth to power is so deeply embedded in advocacy work that NGOs find it impossible to imagine an alternative in spite of continued failure. The question of what 'scientific facts' become in the political realm of 'theatre states' like Cambodia is worth further pursuing.

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