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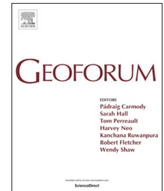

"Who doesn't like dolphins?!" Neoliberalization, variegated environmentalities, and value alterations in a cross-national comparison of Irrawaddy dolphin conservation

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ABSTRACT

Critical assessments of the conservation-capitalism relationship based on Foucault's concept of governmentality have generated notions of environmental governance as forms of 'green' governmentality or 'environmentality.' This paper contributes to the environmentalities literature by demonstrating the utility of a variegated environmentalities approach in understanding how the process of neoliberalization unfolds in different conservation contexts to influence different subjectivities. In this cross-national comparison, I examine the value shifts associated with conservation projects from the perspectives and experiences of the people most affected by these projects. Using Fletcher's (2010) environmentalities typology, I compare two approaches to Irrawaddy dolphin conservation: one in Myanmar focused on community enrichment and preservation of traditional human-dolphin relationships; the other in Cambodia focused on individual monetary wealth and neoliberal economic development. I argue that the dominant governing rationalities in each country influenced the execution of neoliberal environmentality and the ways in which it articulated with other types of environmentality. I then show how these unique articulations led to starkly different subjectivities by reinforcing socioecological values in Myanmar while restructuring them in Cambodia to align with neoliberal rationalities. I do this by contrasting findings in the two projects to trace the alteration of values in Cambodia from dolphins to other socioecological relations. I conclude by suggesting that dominant governing rationalities that foreground community and reciprocity in socioecological relations may serve to temper neoliberalism and thus provide a path toward alternative socioecologies and sustainabilities.

1. Introduction

Critical studies on neoliberal conservation schemes continue to reveal the disastrous socioenvironmental effects of incorporating the environment into the market to save it (Brockington and Duffy, 2011; Holmes and Cavanagh, 2016; Sullivan, 2006; West, 2006). Such projects are often accompanied by the alteration of values and socioecological[1] relations, resulting in the disruption of social cohesion and exacerbation of the problems the projects were meant to fix (Igoe and Brockington, 2007; Li, 2007; Stronza, 2007). Despite these issues, in an effort to understand how people might come to adopt neoliberal understandings of nature, scholars draw on Foucault's concept of 'governmentality,' where the 'art of government' is the means by which "'subjects' [are] brought to internalize state control through self-regulation" (Bryant, 2002, p. 270). Through this framework, it is argued, we might begin to understand how environmental governance structures create environmental subjects that come to internalize particular conceptions of 'the environment.' The trend of applying such a framework to neoliberal environmental governance is widely regarded as beginning with Luke's (1999) identification of 'environmentality' as a type of '"green" governmentality' to describe how states frame 'the environment' in specific ways to justify particular types of interventions. Later, Agrawal (2005a, 2005b) explored 'environmentality' as it was used to mold people into "environmental subjects … who care about the environment" (2005a, p. 162). Following this, instances of 'environmentality' proliferated in the literature (see Fletcher, 2010, 2017 for a review).

Noticing that terms such as 'environmentality' and 'green governmentality' were often used to describe related but different phenomena, Fletcher (2010), following Foucault's categories of governmentality, offers a typology of four environmentalities: (1) disciplinary, which functions via internal motivators of behavior geared toward particular

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[1] I use the term 'socioecological' to refer to the dialectical relationships between and among humans, non-humans, and the life systems that support them.

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understandings of the environment; (2) neoliberal, which functions via external motivators of behavior by shifting the cost-benefit ratio via external incentive structures; (3) sovereign, which operates via "top-down creation and enforcement of regulations" (p. 178); and (4) truth, which Fletcher defines in Foucault's words: "the 'art of government according to truth,' that is, 'the truth of religious texts, of revelation, and of the order of the world'" (as quoted on p. 176). Fletcher concludes by calling for a 'liberation environmentality' that "champion(s) democratic, egalitarian, and non-hierarchical forms of natural resource management" (p. 178). In a later publication, he acknowledges the various communitarian environmental projects in motion to suggest that 'liberation environmentality' might now be considered a fifth extant environmentality, although he suggests calling it 'communal environmentality' instead (Fletcher, 2019).

This paper contributes to the environmentalities literature by demonstrating the utility of a variegated environmentalities approach in understanding how neoliberal environmentality operates in different contexts to influence different subjectivities[2]. Much of the literature on environmentalities has focused on how such forms of governmentality synthesize in different contexts to produce different outcomes. And although many of these studies have included neoliberal environmentality, few have done so in a way that analyzes how such syntheses modify neoliberal*ization* understood as a variegated process. Montes (2019) recently adopted such an approach to examine environmental governance in Bhutan, demonstrating how different governmentalities converge to orchestrate the country's particular form of neoliberalization. In this paper, I build on Montes' work by drawing on fieldwork in Myanmar[3] and Cambodia on Irrawaddy dolphin conservation projects. I utilize a cross-context comparison to show how different constellations of governmentalities can shape different forms of neoliberalization. I also build on the recently emerging literature on subject formation by showing how these processes influenced starkly different subjectivities.

In the following sections, I review how scholars have applied a 'multiple' or 'variegated environmentalities' perspective to understand the different ways that the process of neoliberalization unfolds and the changes in subjectivities that often accompany conservation projects. I then give a brief overview of my methods before I use my findings to describe the main rationalities and visions driving each conservation project and the way these translated into execution of each type of environmentality at the time of this study. Next, I explore the historical value[4] of the dolphin in the study areas and use the findings in Myanmar as a benchmark to show how the adoption of a monetary value of the dolphin by Cambodian participants catalyzed a shift in subjectivities. This shift is evident, I argue, in the transformation from what I call a 'communal ideology,' where reciprocity and communal enrichment are prioritized in socioecological relations, to a 'consumerist ideology' that aligns with a neoliberal rationality where individual wealth and material consumption direct such relations. Finally, I return to the differences in the deployment of neoliberal, disciplinary, sovereign, and truth environmentalities in both projects in order to illuminate the processual dynamics of this shift. I conclude by suggesting that my findings indicate that dominant governing rationalities that foreground community and reciprocity in socioecological relations may serve to temper neoliberalism and thus provide a path toward alternative socioecologies and sustainabilities.

2. Variegated environmentalities, neoliberalization, and changes in subjectivities

In *Geoforum's* virtual special issue on environmentalities (Fletcher, 2017b), diverse researchers engage a 'multiple environmentalities' framework to identify various environmentalities in different contexts and to examine how these interact to produce confounding outcomes. The papers of the more recent theme issue on environmentality in *EPE* (Fletcher and Cortes-Vazquez, 2020) build on this previous work to interrogate the vision-execution gap, explain changes in subjectivities, perform deeper analyses of more complex cases, and expand the utilization of the multiple environmentalities framework.

Despite this recent burgeoning of studies that engage a multiple environmentalities framework, few of these have examined how neoliberal*ization* plays out in different contexts. As many have argued, neoliberalism is best understood as a variegated *process* of neoliberalization whereby the philosophies and principles of neoliberalism are adopted and various neoliberal policies and practices deployed in uneven and unpredictable context-dependent ways (see for example Castree, 2010; Peck and Tickell, 2002). Using a 'variegated environmentalities' perspective, Montes (2019) shows how neoliberalism in the form of ecotourism is filtered through a complex of institutions informed by various Bhutanese principles and governmentalities – a Gross National Happiness governance model (disciplinary), state paternalism (sovereign), and Buddhism (truth). He argues that "neoliberal components characteristic of the modern conservation movement manifest in the Bhutanese context in a novel manner that accounts for local specificities." (p. 7). While Montes focuses his analysis on vision and execution of environmental governance, he concludes with an emphasis on the need to apply such a framework to understand "social, socio-political, and biophysical impacts" (p. 17). I thus build on this work by using a variegated environmentalities framework to examine the different constellations of rationalities operating in two different conservation contexts in Myanmar and Cambodia, as well as to understand the effects of these projects from the perspectives and experiences of the people most affected. In doing so, I am able to also assess changes in subjectivities produced by these different processes.

While theorizations of particular environmentalities based on Fletcher's typology have improved understandings about complex dynamics in neoliberal conservation, few studies have empirically documented the form that resultant changes in subjectivity take. Specifically, although neoliberal conservation has been recognized as a major vector for the introduction of market-based rationalities (Castree, 2008; Fletcher, 2010; Igoe and Brockington, 2007), a limited number of studies have examined the changes in behaviors, practices, and values of people subjected to the neoliberal environmentalities that characterize such projects.

Vivanco (2001) shows how ecotourism in Monte Verde, Costa Rica, has transformed the meaning of the quetzal in unexpected ways through the emphasis of the bird as a symbol of a healthy ecosystem by conservationists and as a lure for tourists. In another analysis of ecotourism, Youdelis (2013) examines the contradictions in overlapping disciplinary and neoliberal environmentalities. She finds that neoliberal environmentality led to particular subjectivities based on individualism and a growth mentality that contradicted the conservationist behaviors encouraged by the disciplinary form of environmentality. As a result, she sees the behaviors encouraged by each of the particular forms of neoliberal and disciplinary environmentalities as existing in opposition to each other.

In their examination of changes in subjectivities, Cortes-Vasquez and Ruiz-Ballesteros (2018) explore how three men subjected to different neoliberal conservation projects navigate multiple environmentalities. They show how the men adopt "new practices that neither breach nor adhere to conservation regulations" (p. 9).

[2] Here, I define subjectivities as the ways in which participants look at, think about, and act in their environments (Agrawal, 2005a), including how they assign meaning to and engage in socioecological relationships.

[3] I found that most people residing in the country prefer the name Myanmar over Burma. Thus, throughout this paper, I refer to the country as 'Myanmar,' in recognition of that preference.

[4] Because it is unlikely that all members of any group will agree on the value of any one thing and there will be some variability in value, I use the term 'value' in this paper as a proxy for the popular importance of the dolphin (i.e. the most often mentioned).

Following Singh (2013), they contend that turning people into environmentalists is more complex than a top-down view of environmentalities might have us believe and they call for closer examinations of what actually changes (i.e. values vs behaviors) and how. Subsequently, several other studies on the role of agency in subject formation under multiple environmentalities emerged. Chambers et al. (2019) take an in-depth look at how different motivations of targeted resource users determine how those users negotiate different combinations of sovereign, neoliberal, and disciplinary environmentalities to affect different program outcomes. Asiyanbi et al. (2019) examine how each of the four main types of environmentality meets resistance in different neoliberal conservation contexts over time to form different environmental subjects. Collins (2019) shows how the experience of racialized histories and colonialism informs the subject formation in REDD+ efforts in Guyana and Suriname. Finally, Choi (2020) shows how subject formation is a variegated process with multiple environmental subjects arising from engagement with an ecotourism development project in unique ways.

Although empirical works on changes in subjectivities such as those described above have started to emerge, few studies have taken a cross-context comparative approach to understanding how the deployment of neoliberal environmentality is shaped by its interactions with other environmentalities. Bluwstein (2017) contrasts neoliberal environmentalities as they relate to two different forms of territorialization for ecotourism in Tanzania: one where traditional land rights are upheld and the other where land is appropriated for privatized enterprise. However, he does not include changes in subjectivities in his analysis. Anand and Mulyani (2020) show how agency gained through a communal (liberation environmentality) approach to neoliberal environmentality leads to “a more advanced form of environmental subjectivity” (p. 107; what they refer to as a ‘conservation subject’) than a more top-down approach to neoliberal environmentality. They note, however, that there was no difference in perceptions and values between the two ‘subjects.’ Thus, there remains a lack of understanding of how certain neoliberalization-environmentality dynamics may catalyze shifts in values and socioecological relations to align subjectivities with neoliberal rationalities, *while others do not*.

This paper builds on both Montes’ (2019) work and previous works on subject formation by combining these to demonstrate the utility of a variegated environmentalities approach in understanding how competing rationalities can function in different contexts by intercepting the vision of neoliberal conservation to impact its execution and the changes in subjectivities it seeks to cultivate. I thus argue that the dominant governing rationalities in Myanmar and Cambodia influenced the ways in which neoliberal environmentality operated and articulated with other environmentalities and that this led to starkly different subjectivities.

3. Methodology

The empirical data for this study came from ethnographic field research conducted in relation to conservation projects in Myanmar and Cambodia. A total of 215 people (92 from Myanmar; 123 from Cambodia) from 17 villages participated as interviewees in this study conducted from October 2014-April 2015 through 128 one-on-one in-depth interviews and/or 25 focus group discussions. I conducted all interviews and discussions through interpreters and supplemented these with participant observation. We chose the majority of participants randomly as we walked through each village, although we occasionally used snowball sampling. Participants were first asked to participate in a questionnaire (as part of a larger study) to develop rapport and ascertain their willingness to participate as interviewees. Issues of power, privilege, and cultural/language barriers were thoughtfully and thoroughly addressed[5] (Burawoy, 1998; Collins, 2013; Harding, 1991).

To protect the identities of participants, I do not use their names and instead identify them by age, sex, and village. I also do not name the villages, but instead refer to them as 'target' (T) - villages specifically targeted by conservation projects, 'adjacent target' (AT) - villages nearby those specifically targeted by conservation projects, but not targeted themselves, and 'non-target' (NT) - villages not targeted by conservation projects and at least one hour by local transport from the nearest targeted village. Thus, the villages will be referred to by the formula: ‘Country (M = Myanmar; C = Cambodia) T/AT/NT, #,’ where # is the number of the village, in chronological order according to when the first interview occurred there. For example, the second Cambodian village I conducted interviews in, a target village, is referred to as CT2. This project included a total of 4 NT, 3 T, and 1 AT villages in Myanmar and 2 NT, 4 T, and 3 AT villages in Cambodia.

All interviews and discussions were audio recorded and the Burmese and Khmer portions of audio-recordings were transcribed verbatim. Each transcription was then translated into English and analyzed using the grounded theory method (Charmaz, 2006). When transcribing focus group discussions, transcribers often did not differentiate voices of participants. Therefore, I cite participants in focus groups with as much information as available. For example, in a focus group of two male fishers aged 23 and 34 and one male farmer aged 28 from CT2, I cite a single participant in the group using “(23 M & 34 M Fishers, 28 M Farmer, CT2).” Additionally, because voices of participants in focus groups were often not differentiated - and because it is possible that some answers may have been unintentionally missed for a particular code - when I state counts of participants whose responses agreed with a concept, I use the minimum number of counts (i.e. concepts coded in focus groups were counted once, regardless of how many times that concept was mentioned in a particular focus group).

Due to high levels of corruption and information control and alteration, it is difficult to gain an accurate understanding of how Irrawaddy dolphin conservation plans translate into practice in Myanmar and Cambodia through secondary sources alone. Thus, to get a full picture of the conservation projects, I relied on empirical data from interviews and discussions to fill in the gaps left by, and to make corrections to, secondary sources such as conservation documents and briefings. In the following section, I combine my review of conservation documents with empirical findings and participant observations to describe the conservation projects and the particular forms that each of the four environmentalities have taken ‘on the ground’ as experienced by the people most affected by them.

4. Vision vs execution in Irrawaddy dolphin conservation in Myanmar and Cambodia

I chose Myanmar and Cambodia because of their cultural and ontological similarities, their contrasting contemporary governance rationalities, and the apparent difference in the success of their Irrawaddy dolphin conservation approaches. Although both countries are ethnically diverse and differ in many ways, they bear several similarities. Both countries have been subjected to colonial rule, followed by violent repressive regimes and have similar population densities, birth rates, and life expectancies (UNdata, 2015a, 2015b). Additionally, and perhaps particularly relevant to the current study owing to its influence on understandings of socioecological relations, Buddhism is the major religion of both countries (Hackett et al., 2012) and its philosophy of reciprocity and coexistence has historically played an important role in national identity, politics, and governance rationality (Keyes, 2016).

Similarities aside, there are two important differences relevant to

[5] For a full description of methods, including how many interviews were conducted in each (type of) village, the justification for choosing study sites and participants, how participants’ trust was earned, and how issues of power, privilege, and cultural/language barriers were addressed, see Deutsch (2018, 2017).

this study. First, while both countries have been shifting toward neoliberalism in recent decades as an economic strategy and conservation solution (Hall and Ringer, 2000; Soe and Kean, 2016), Cambodia is roughly three decades ahead of Myanmar in this shift. Indeed, neoliberalization in the form of privatization and commodification of natural resources was instrumental in securing money, influence, and power in post-conflict Cambodia (Milne et al., 2015). In contrast, Western (neoliberal) influence on national policy in Myanmar was highly restricted and capitalism was mostly held at bay until the relatively recent 2010s (Steinberg, 2013). Thus, while the dominant governing rationality in Myanmar remained informed by Buddhist philosophy[6] at the time of this study, the Cambodian government had come under control of politicians that adhered to a neoliberal rationality. Second, while Myanmar experienced an apparent tripling of their dolphin population following the initiation of dolphin conservation (Smith and Tun, 2007), the dolphin population in Cambodia continued to decline and biologists were predicting their impending extinction at the time of this study (Beasley et al., 2009).

Given the above similarities and disparities, the two countries are ideal for an analysis of differential neoliberal influence on vision and execution of their respective projects and the resultant changes in subjectivities. In Myanmar, conservationists are following a "Buddhist" rationality by employing an approach that focuses on the preservation of traditional livelihoods and human-dolphin relationships, with dolphin ecotourism as a minor part of the approach. This contrasts with the tactic in Cambodia, where conservationists are following a neoliberal rationality by employing a multi-pronged approach that emphasizes diversification of livelihoods and neoliberal economic development, with dolphin ecotourism as one of its central foci.

Myanmar created the Irrawaddy Dolphin Protected Area (IDPA) along a 74 km stretch of the Ayeyarwady River in 2005 and has been working on a long-term program to conserve the Irrawaddy dolphin in this area (Smith and Tun, 2007). At the time of this project, Irrawaddy dolphin conservation on the Ayeyarwady was a collaborative effort between the Myanmar Department of Fisheries (MDoF) and the Wildlife Conservation Society (WCS). Conservation tactics (environmentalities) have included development of dolphin-fisher cooperative[7] ecotourism (neoliberal), awareness-raising of fishers and the general population (disciplinary), restriction of riverine gold mining and fisheries equipment that harms dolphins (sovereign), and support for dolphin-fisher cooperatives (truth).

In Cambodia, Irrawaddy dolphin conservation in the Mekong River is managed by the Cambodian Fisheries Administration of the Ministry of Agriculture Forestry and Fisheries (DoF) with the assistance of World Wide Fund for Nature (WWF), and International Union for Conservation of Nature (IUCN) (Thuok et al., 2014). However, dolphin conservation in Cambodia appears to have been started by Community Aid Abroad (CAA) in 1996 (Pandawutiyanon, 2002) which introduced dolphin ecotourism in 1997 (Beasley et al., 2009). Then in 2004, a researcher from James Cook University enlisted the help of the Cambodia Rural Development Team (CRDT - a local NGO) and formed the 'Dolphins for Development' (DfD) project "to facilitate conservation of dolphins and fisheries … while promoting diversification of livelihoods and equitable distribution of revenue generated from the dolphin-watching industry" (Beasley, 2007, p. 287). DfD included four components that represent three environmentalities: "(1) rural development and diversification of livelihoods (neoliberal); (2) management of the existing community-based dolphin-watching ecotourism (neoliberal); (3) environmental education and awareness raising (disciplinary); and (4) strengthening stakeholder relationships" (Beasley, 2007, p. 287). The fourth component was entirely focused on stakeholders within the government and improving their ecological awareness and capacity to conduct research (disciplinary) and enforce regulations (sovereign).

Under this project, dolphin ecotourism was expanded through new infrastructure and increased promotion to national and international tourists. However, once the infrastructure was in place, the Cambodian government resumed full control of dolphin ecotourism (Beasley et al., 2009). In addition, WWF has contributed to the sustained power of the government by providing the DoF with training and equipment for river guards to enforce fisheries regulations in critical dolphin habitat (WWF, 2013), often at the expense of local livelihoods (Deutsch, 2018).

Thus, although both projects started with the vision of using a similar combination of neoliberal, disciplinary, and sovereign tactics, the vision in the Cambodian project placed more emphasis on neoliberal tactics, while the vision in Myanmar included a fourth (truth) tactic that placed more emphasis on preserving traditional socioecological relationships. In the following subsections, I describe the different ways that each of the four environmentalities have been *executed*, based on a combination of secondary sources and my findings from the field. I focus specifically on the main differences between the two conservation projects in order to return to these later to understand how these differences might have led to particular subjectivities.

4.1. Neoliberal environmentality

In both countries, neoliberal environmentality is operating via benefits received mainly from ecotourism[8]. However, both the means by which such benefits are distributed, and the forms that those benefits ultimately take, are very different in each country. In Myanmar, the income derived from ecotourism is used first to compensate fishers for their time (they are relied on to locate dolphins for the tourists) and the rest goes to the community in the form of material donations. According to participants, these donations include stationary, books, pens/pencils, maps, cell phones, shirts, hats, a motorboat, fishing nets, mosquito nets, blankets, umbrellas, medicine, support for students, and latrines for schools.

In contrast, the income derived from ecotourism in Cambodia goes only to those who are able to participate and only in the form of cash money, exacerbating social inequality in the area. Although this wasn't always the case, with benefits being distributed more evenly before the Cambodian government nullified the community revenue sharing agreement in 2007 (Beasley et al., 2009), it was clearly the situation at the time of this study. Moreover, the new monetary value of the dolphin in Cambodia seems to be clearly associated with external incentives participants receive via dolphin ecotourism as the following response to a question about whether anyone harms dolphins demonstrates: "No, all the people around here love dolphins very much… ….how can [we] hate when the dolphins give a lot of money?" (30 M shop owner and previous dolphin sculptor).

4.2. Disciplinary environmentality

According to Foucault, disciplinary governmentality functions through the internalization of socially acceptable values and behaviors prescribed by various norms and standards, as well as the self-

[6] Importantly and problematically, this has been morphing into a counter-intuitive Buddhist nationalism [see for example Keyes, 2016].

[7] Fishers and dolphins use series of audio and visual signals to cooperate to catch fish where fishers use a cast-net, locally known as a *kun*, while dolphins are thought to catch the fish that are confused and/or stunned during the netting process. The earliest known written record of this dolphin-fisher cooperative, as documented by Europeans, dates back to the 19th century (Anderson, 1878). The cooperative has been practiced for many generations (Tun, 2004) and there are currently more than 100 fisher families involved (Chit, 2014).

[8] While the project in Cambodia emphasizes diversification of livelihoods, such opportunities mostly revolve around ecotourism, with the majority coming from the sale of wooden sculptures, particularly of dolphins, to ecotourists.

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regulation of behaviors out of fear that compliance is constantly monitored by peers/communities. Thus, by incentivizing certain norms and standards, conservation projects may influence the ways in which people relate to their environments. The deployment of these incentives in both projects has taken the form of educational media, signs, and workshops. However, there are two main differences of note between the two countries. First, while conservation officials in both countries recruit community members as intermediaries, these intermediaries have different roles in each country according to participants. In Myanmar, while WCS relies on members of the cooperative to help enforce regulations, these enforcers are also responsible for informing their communities about the importance of dolphins and for distributing educational materials that stress dolphins' ecological role and rarity. While WWF also relies on members of the community in Cambodia, such members are responsible solely for enforcing regulations and education seems to be restricted to matters relating to those regulations (e.g. which nets are legal and during which seasons).

Second, while disciplinary environmentality was deployed via the above three forms during the expansion of ecotourism infrastructure in Cambodia, they have mostly disappeared following the government's take-over of the project in mid-2005, with the exception of regular meetings held by WWF. However, according to participants who have taken part in these meetings, they are mostly attended only by those involved in fisheries law enforcement and are mainly focused on educating the community about fisheries laws and regulations. Therefore, while Cambodian participants rarely mentioned ecological educational media, several participants in T villages in Myanmar had knowledge of media such as illustrated books in schools, pamphlets on dangers of electrofishing to dolphins, screening of dolphin films, and distribution of T-shirts with dolphin conservation project logos on them.

Similarly, several Burmese participants in both T and NT villages were aware of signs that advised against harming dolphins, while the government removed all informational signs on the ecological importance of dolphin conservation and responsible ecotourism in Cambodia in 2007. According to Beasley et al. (2010), the signage was destroyed to avoid censure from tourists as the government increased numbers of tour boats far beyond those recommended by experts and forbade any further involvement of the DfD project with ecotourism. Meanwhile, during my visit to Myanmar, WCS provided a workshop on ecotourism for dolphin-fisher cooperative members that emphasized "harmony with nature along the river" (WCS, 2014a, slide 13). The workshop also included group brainstorming on questions such as: "How can we minimize negative impacts from tourism on dolphins? How can we spread benefits to local communities? How can we use tourism to protect dolphins?" and "What is the guide's role in dolphin ecotourism?" (WCS, 2014b, slide 32).

4.3. Sovereign environmentality

Restrictions on fishing gears that harm dolphins are integral parts of the conservation projects in both countries. However, there is one stark difference in the enforcement of these restrictions between the two countries. The restrictions on illegal gears in Myanmar mostly work in favor of local fishers as they were meant to enhance traditional forms of fishing. A few members of the fisher cooperative mentioned receiving photo-ID cards that signified their membership in the cooperative. These ID cards allow cooperative fishers to fish anywhere without restrictions except in Inns (privately owned enclosed areas of the river). In Cambodia however, restrictions on fishing gears have worked against local fishers, many of whom have found that their livelihoods have been criminalized. This extends even to those who use legal gear, as the DoF often indiscriminately confiscates all gear, regardless of whether they are outlawed in the area (Deutsch, 2018).

4.4. Truth environmentality

Cultural beliefs and stories are imbued with the knowledge of a culture and are part of how cultures encode, communicate, and perpetuate this knowledge (Berkes, 2008; Robbins, 2012). "For contemporary cultural studies critics, myths are not lies, legends, or fairy tales, but the layering of deeply symbolic cultural narratives in such a way that the resulting logic seems natural" (Sturgeon, 2009, p. 13). As such, they offer "prescriptions for appropriate behavior (that)… accord with the fundamental nature of life and the universe" (Fletcher, 2010, p. 176) and thus fit Fletcher's characterization of the 'art of government according to truth.'

In both Myanmar and Cambodia truth environmentality was in operation prior to the conservation projects through cultural understandings of the dolphin (as described in more detail in Section 5). In Myanmar, conservation officials have sought to emphasize and support the value of the dolphin as represented by its historical reciprocity with fishers and the protected area of the river was set up with the maintenance of this relationship in mind (Chit, 2014; Smith and Tun, 2007). In contrast, in Cambodia it seems clear that the conservation project isn't emphasizing the historical understanding of the dolphin as represented in its origin story - where it emerges as a transformation of a woman.

4.5. Variegated environmentalities: explaining the disparities

As described above, although there were many similarities in the Myanmar and Cambodia dolphin conservation project *visions*, their *execution* has differed in several ways. I suggest that these disparities can be explained by the differences in project vision and the dominant governance rationalities in each country. The Cambodian project vision placed more emphasis on neoliberal economic development as a strategy, while the vision in Myanmar emphasized the importance of community enrichment and preservation of traditional human-dolphin relationships. Moreover, Cambodian governance is dominated by a neoliberal rationality, while Buddhist philosophy still holds a central place in Burmese governance. Thus, the vision in Myanmar aligned with the dominant governance rationality and the project seems to be proceeding as planned. Meanwhile, the vision in Cambodia, already dominated by neoliberal tactics, has been intercepted by a government operating through a neoliberal rationality. And since the other environmentalities contradicted the profit-driven rationality of neoliberalism in practice, the Cambodian government modified these other environmentalities to support a neoliberal rationality. In the next section, I explore the historical value of the dolphin in each country and compare it to how participants currently perceive the value of the dolphin in order to begin investigating how these differences in governance rationality dynamics might be reflected in changes in subjectivities.

5. Changes in the value of the dolphin

5.1. Value of dolphins before conservation projects/ecotourism

In both countries, the dolphin has been historically treated as a nonconsumptive resource (i.e. it is not customary to hunt the dolphin). I did not ask participants directly what the historical value of the dolphin was. However, it sometimes came up during interviews, particularly in focus groups. Additionally, Beasley (2007) conducted surveys on the importance of the dolphin in the Cambodian study areas in 2001–2003. Thus, I attempt to parse out the historical value through the ways in which several participants described the importance of the dolphin in relation to the past, data from Beasley's survey, and cultural beliefs and stories about the dolphin as revealed by participants.

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5.1.1. Myanmar

In Myanmar, the value of the dolphin does not appear to have changed significantly, with few exceptions as discussed below. This historical value appears to be grounded in the reciprocal relationship of dolphins and fishers in the cooperative fishery. Most Burmese participants seemed aware of the cooperative fishery and, in response to a question about why it was important to protect the dolphin, many respondents said that it was important to protect them for fishers. However, the ways in which participants described dolphins hinted more at the relationship of dolphins *to* fishers, rather than their use *by* fishers. Dolphins were often described as "saviors," "parents," or "friends" of fishers by fishers and non-fishers alike. This project included at least 15 current and former members of the dolphin-fisher cooperative and at least nine of these participants described feeling a responsibility toward helping dolphins, grounded in their reciprocal relationship to them. One former member of the cooperative said "I love dolphins. I am grateful to them and they support us" (73 M Farmer, MNT2) a full 26 years after leaving the cooperative. Another participant and current member of the cooperative explained that "since we worked together and they are like our mothers and like our close friends, when I see them happy, I am also glad and happy" (35 M, MT8).

According to several participants, although most people understand the value of the dolphin to fishers, women's relationality to dolphins is different than men's because women are rarely involved in fisheries. This relationship appears to direct the roles one takes in dolphin conservation with men's responsibilities focused on care and women's focused on love for the dolphin. As one participant in a group of four women explained: "Both women and men believe [dolphins] should be protected. However, men should take care of the dolphins… For Burmese women, these things are not that related to us. We only know about loving the dolphins" (39, 42, 44 & 46 Farmers, MNT2). Thus, although the relational importance of the dolphin is apparent in its reciprocity with fishers in Myanmar, this importance exists in other non-monetary forms as well.

Although dolphins in Myanmar were occasionally opportunistically harvested in the past when accidentally caught in nets or found dead, this harvesting appears to have mainly focused on the extraction of fats/oils for their perceived medicinal value. However, several participants believe that the recent increase in floods and landslides are karmic results of intentional dolphin kills. Thus, while dolphins in Myanmar have had some use value to fishers and dolphin fats/oils have had some use value to certain parts of the population, the overall historical value of the dolphin seems to have been grounded in reciprocal relationality and mediated by cultural beliefs that forbid posthumous use.

5.1.2. Cambodia

Beasley (2007) conducted social surveys on the Mekong in 2001–2003 (before the expansion of dolphin ecotourism infrastructure in 2004) and found that 66% of participants believed that dolphins were related to humans, a conviction Beasley attributes to the folklore that dolphins originated from a woman. She also found that the main reasons given for the importance of dolphin conservation were "(1) to conserve them as rare Cambodian natural heritage, and (2) to keep them for future generations" (p. 105). Their ecological importance was the third most selected reason and international tourism was fifth of seven. Thus, although the monetary value of the dolphin was introduced in 1997 by the CAA, such a value does not seem to have had much significance to local residents at the time of Beasley's survey, that is, before the DfD project began. This is perhaps because dolphin ecotourism at this time was restricted to seven families and, even then, most of the proceeds were going to the government.

On the other hand, it seems clear that the value of the dolphin has changed for many participants since the DfD project began. At least five participants spoke of 'before' and how the dolphin was not 'valuable' then. As one participant explained: "It's just that it was not valuable back then – it was not the animal that was valuable. Only when we were old … that we know it is valuable" (60F Farmer, CAT1). Thus, it appears at first that dolphins did not have 'value' before the conservation project for several participants. However, the ways in which participants spoke of the 'value' of dolphins 'before' suggests that they were speaking of *monetary* value. For example, the participant quoted above continued to describe how she used to cut dolphins out of her net when accidentally caught and would then eat the meat. A few other participants also mentioned the use of dolphins for meat and at least one described burying their bones under the house for happiness/prosperity. This suggests that dolphins had some *use* value for these participants, although such uses were usually in the context of the war, and there is some evidence that this practice was taboo due to the cultural myth of the dolphin and its relatedness to humans as described in more detail below.

The 60F participant quoted above also later described that the dolphin today "is important because it can help to attract tourist to visit our country [and] it can generate a lot of income for us." All of the other five participants who mentioned that the dolphin did not have any 'value' before brought up the monetary value of the dolphin at some point during their interview. Thus it appears that when Cambodian participants spoke of the 'value' of the dolphin 'before,' they were doing so *in reference to the current monetary value of the dolphin*. It also suggests that the current monetary value of the dolphin is a relatively new development.

Since most Cambodian participants did not specifically vocalize the previous value of the dolphin, perhaps what is most telling about the value of the dolphin before the conservation project is a cultural story about the dolphin that most participants seemed to know. Throughout this project various participants told several iterations of the story. The following is a slightly modified (for clarity) version of this story as told by a group of three elders and former fishers:

> Participant (P) 1: [There was a] woman from a poor family and [she had] no husband … so [the mother] got a snake for her daughter to raise.
> P2: [The snake was] married as her husband
> P1: … and over time that snake grew big and it swallowed the daughter [in some versions this happens on the wedding night]. The daughter shouted to the mother for help. [the mother said] "your husband is playing with." …
> P2: we cannot say it directly [the word sex]
> P1: "don't say anything, just stay quiet". The woman was nearly dead because the snake swallowed her … when she choked, the mother came and helped. The mother was embarrassed. Other people's daughters also got a husband like that and they lived. And her daughter got a husband also, but [now she was] covered with snake slime. Covered with snake slime, she [the daughter] was embarrassed, so she took a cup and went to take a bath [at the river]. The mother told her to take a bath. She was embarrassed, so she put the cup [coconut shell] on her head and [jumped into the river and] died. When she died, she was born into a dolphin. Forgive me, [the dolphin's] reproductive organs are like a woman – with breast and stuffs. It has been known till today and they would not eat it. So until now, they have keep that origin until now. (63 M Farmer, 82 M & 89 M Retired, CAT3)

Of particular importance, the full version of this story, as I later found out, includes a moral lesson in which the selfish pursuit of wealth (in the form of 'treasure') is what led the woman's family to wed her to a snake. Quoting one of my translators who provided a fuller version of the tale:

> There were couples of divines from the last life. The male divine (now a snake) came to female divine who now become human … and they become the partner. The snake would visit her every night and told her family a place to dig for treasure … This was heard

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Table 1
Non-mutually exclusive categories of value of the dolphin in Cambodia and Myanmar.

Value	Dolphins' value derived from …
Ability to bring foreigners/tourists	its importance in attracting tourists (local and foreign) or foreigners (e.g. researchers)
Ability to bring money/income	its importance in generating money described as 'profit,' 'money,' or 'income'
Aesthetic appeal	its aesthetic value (i.e. dolphin was described as fun to watch, interesting, beautiful, cute, lovely, or graceful)
Ecological	the role it plays in the ecosystem or as an indicator species (e.g. the existence of the dolphin is assurance that the ecosystem is healthy)
Endangered status	its status as an endangered species
Importance to/relationship with fishers	its importance to fishers or its relationship to fishers
Intrinsic right to life	its right to live because it is a living being
Medicinal	its use as medicine
Natural resource	its status as a natural resource, where participants specifically used the words 'natural resource'
Physical ability to rescue people	the role it has played in rescuing people from drowning in the water
Rarity	its exceptionalism or rarity in the world

> throughout the area. Because of greedy parents of another girl in a nearby village caught a python and got it married with their daughter, believing the python would give them gold or the same fate**…**

Also interesting was that none of the participants told this part of the story that seems to emphasize the moral lesson on the selfish pursuit of individual wealth. The story also provides evidence that the historical value of the dolphin was embedded in its relatedness to humans, particularly to women, which also explains why 66% of Beasley's participants believed humans were ancestrally related to dolphins.

5.2. Value of dolphins after conservation/ecotourism

Participants were asked if it was important to protect the dolphin and the majority answered in the affirmative. Participants often revealed the value of the dolphin during follow-up questions, although it sometimes came up at other points during the interview. Because participants generally spoke about the *current* importance of dolphins, this generated a much longer list of categories of value than when participants spoke of the dolphin in the past. I identified at least 11 non-mutually exclusive categories of value as described in Table 1.

5.2.1. Myanmar

Burmese participants expressed the value of the dolphin in at least nine of the 11 ways mentioned in Table 1. As indicated by Table 2, the current value of the dolphin to Burmese participants is derived from their importance for, and relationship to, fishers. Additionally, when speaking about this value, Burmese participants never used words like 'money' or 'income' to describe the relationship between fishers and dolphins. The closest a participant came to mentioning the direct monetary value of a dolphin was when a cooperative fisher in a group of four mentioned that "… [w]e can earn more because of them…" (Age unknown M, MNT4). However, he finished this statement with an indication that the relationship is reciprocal: "… We have to thank them. And we care and feed them since we were young…" So even the monetary value of the dolphin is grounded in reciprocal relationality. This appears even more likely when considering that at least 20 of the 42 participants that mentioned the dolphins' importance to fishers used the word 'savior,' 'parent,' or 'family' to describe this relationship. And at least one other participant described dolphins' importance, saying "They prolong the peoples' lives and they rescue us" (13F Student, MNT4). Thus, the current value of the dolphin does not seem to have changed much from the historical value of the dolphin in Myanmar, as it continues to be grounded in relationality based on reciprocity.

5.2.2. Cambodia

Cambodian participants expressed the value of the dolphin in at least 10 of the 11 categories in Table 1. As can be seen in Table 3, it appears that the value of the dolphin to Cambodian participants is derived from their importance in attracting tourists and foreigners. Unlike Burmese participants who preferred the word 'foreigner,' Cambodian participants seemed to prefer the word 'tourist' or 'tourism' to describe this value. Additionally, of the approximately 23 ("26%" in Table 3) participants that mentioned money or income as a value of dolphins, at least 15 also mentioned the dolphin's importance for tourism and directly related money to dolphin ecotourism. Further, of the remaining approximately 25 participants who mentioned that the dolphin's value is derived from tourism (without *directly* relating the dolphin's value to money), at least six unambiguously stated that dolphin ecotourism is important because it brings money and another five related it to local prosperity. On several occasions, the question "Do you think the dolphin is important?" was met with an enthusiastic yes accompanied by a gesture to material items, such as jewelry, as if to say "of course they are, they brought us this!" As one participant explained:

Table 2
The value of the dolphin to Burmese participants with a comparison to ranking by Cambodian participant mentions.

Myanmar Rank[a]	Value[b] (% Burmese participants)[c]	Cambodia Rank (% participants)
1	Importance to/relationship with fishers (60)	9 (1)
2	Endangered status (29)	6 (7)
3	Aesthetic appeal (24)	8 (6)
4	Rarity (14)	2 (29)
	Intrinsic right to life (14)	5 (13)
5	Physical ability to rescue people (4)	N/A
	Ecological (4)	9 (1)
6	Ability to bring foreigners/tourists (1)	1 (46)
	Ability to bring money/income (1)	3 (26)
	Status as a natural resource (1)	4 (14)

[a] 'Rank' is determined by the percent of interviews/focus groups where the value was mentioned.
[b] Values were only counted once for each interview or focus group regardless of how many times that value was mentioned over the course of each.
[c] Percentages represent the lowest possible estimate out of a combined 70 interviews and focus group discussions in Myanmar and 87 in Cambodia.

Table 3
The value of the dolphin to Cambodian participants with a comparison to ranking by Burmese participant mentions.

Cambodia Rank	Value (% Cambodian participants)	Myanmar Rank (% participants)
1	Ability to bring foreigners/tourists (46)	6 (1)
2	Rarity (29)	4 (14)
3	Ability to bring money/income (26)	6 (1)
4	Status as a natural resource (14)	6 (1)
5	Intrinsic right to life (13)	4 (14)
6	Endangered status (7)	2 (29)
7	Support for village livelihoods (8)	N/A
8	Aesthetic appeal (6)	3 (24)
9	Importance to/relationship with fishers (1)	1 (60)
	Ecological (1)	5 (4)
	Medicinal (1)	N/A

"The villagers, everyone loves them [dolphins] in this village… They can … make some souvenir … The tourists come in and buy them! So, give more income to the people. Who doesn't like dolphins!? Everyone love them right" (35 M Farmer, CAT1). Thus, it seems clear that the primary value of dolphin ecotourism for participants is based on its ability to bring money/income to the area.

Although rarity was the second most identified value of the dolphin, it nearly tied with money/income. In what some scholars and journalists have termed 'extinction tourism' (Fletcher and Neves, 2012; Leahy, 2008), capitalism benefits through tourism based on the increased monetary value of rare natural resources and the desire to encounter that resource before its imminent loss (Cater, 2006; Fletcher, 2011; Mowforth and Munt, 2009). At least eight of the 25 participants who mentioned the exceptionalism of the dolphin also mentioned its monetary value at some point during the interview, with four participants directly tying the dolphin's monetary value to its rarity. The recognition of the relationship between the dolphin's rarity and its monetary value was perhaps most stark in the following exchange among my interpreter and one of four farmers when asked why the dolphin is important:

> P: to be exact, dolphin is very important. If we think about it, a dolphin is more valuable than a human's life.
> Interpreter (I): [the researcher] asks why do you think a dolphin is more important than a human?
> P: because dolphins are minority and it… no, don't say that. It is not more *important* than a human's life. A dolphin's life is more *valuable* than a human.
> I: why do you think so?
> P: because dolphins are rare… (emphasis added) (21F, 36F, 39F, & 63F, CT5)

Thus, there is strong evidence that the current value of the dolphin in Cambodia is primarily related to its monetary value. There is also some evidence that the historical value may be fading as participants described the 'value' of the dolphin 'before,' only in reference to the current monetary value of the dolphin (see above). Additionally, although most participants had heard of the snake-woman origin story, many of the younger participants could not describe the details of the story as the following exchange among the interpreter (I), a 53-year-old male soldier (P1), and a 31-year-old female beautician (P2) from CNT9 demonstrates:

> I: so, do you know any story related to the dolphins? I want to say that any folktales or good stories about the dolphins at the dolphins area?
> P1: I used to remember it, but now, I forgot. It's like the folktales that elders passed down.
> I: what about sister?
> P2: yes, the same. I only heard the elders passed it down.
> I: so, it means that where were the dolphins born from? …
> P2: I heard elders said that it was a human wearing a cup jumping into the river.

The fullest and most comprehensive accounts of the story came from participants over 60 years of age. Thus it seems that simultaneous to the adoption of the monetary value of the dolphin, the historical story of the dolphin's human origin is fading. As one 25-year-old fisher put it when asked if he had heard of the story: "that is just a folktale" (M, CT2). The tendency to describe the historical value of the dolphin in terms of the current monetary association, as well as the fading significance of the cultural story of the dolphin, indicate that the historical relational value of the dolphin is being replaced with a new monetary value. Next, I investigate the spatial association of the dolphin's value with the conservation projects to assess the correlation of this change in the value of dolphins to the Cambodia project.

5.3. *The correlation of the value of dolphins with conservation projects*

In Myanmar, as seen in Table 4, although the dolphin's intrinsic right to life was mentioned slightly more than its rarity by participants in 'target' (T) than in 'non-target' (NT) villages, the three most mentioned values are consistent with those most mentioned overall in Myanmar. Thus, the value of the dolphin in Myanmar does not seem to vary by proximity to conservation projects. Although it is difficult to determine the value of the dolphin in 'adjacent target' (AT) villages due to small sample size, such a comparison seems unnecessary since there doesn't seem to be a disparity between T and NT villages.

In Cambodia, there is more variation than in Myanmar in the value of the dolphin relative to participants' proximity to conservation projects as seen in Table 5. Although more Cambodian participants in AT villages mentioned the monetary value of the dolphin than those in T

Table 4
The value of the dolphin relative to proximity to the targeted conservation areas in Myanmar.

Myanmar		Rank			% Participants			
Rank	Value	T	AT	NT	T	AT	NT	All areas
1	Importance to/ relationship with fishers	1	N/A	1	79	0	43	60
2	Endangered status	2	N/A	2	24	0	34	29
3	Aesthetic appeal	3	N/A	3	18	0	31	24
4	Intrinsic right to life	4	1[a]	5	12	100[a]	14	14
	Rarity	5	N/A	4	6	0	23	14
5	Ecological	N/A	N/A	6	0	0	9	4
	Physical ability to rescue people	N/A	N/A	6	0	0	9	4
6	Ability to bring foreigners/tourists	N/A	N/A	7	0	0	3	1
	Ability to bring money/ income	N/A	N/A	7	0	0	3	1
	Status as a natural resource	6	N/A	N/A	3	0	0	1

[a] only one interview was conducted in adjacent target villages

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Table 5
The value of the dolphin relative to proximity to the targeted conservation areas in Cambodia. Gray shading highlights major differences in top three most mentioned values.

Cambodia		Rank			% Participants			
Rank	Value	T	AT	NT	T	AT	NT	All areas
1	Ability to bring foreigners/tourists	1	1	1	38	56	60	46
2	Rarity	2	3	4	32	30	10	29
3	Ability to bring money/income	3	2	4	26	33	10	26
4	Status as a natural resource	4	5	2	14	7	30	14
5	Intrinsic right to life	5	4	3	12	11	20	13
6	Endangered status	5	6	4	12	4	10	7
7	Support for village livelihoods	6	5	4	8	7	10	8
8	Aesthetic	7	6	3	4	4	20	6
9	Ecological	8	N/A	N/A	2	0	0	1
	Importance to/relationship with fishers	N/A	6	N/A	0	4	0	1
	Medicinal value	N/A	N/A	4	0	0	10	1

villages, this may be due to at least two reasons. First, many participants in one of the AT villages also described benefitting from dolphin ecotourism through the sale of wood sculptures in the neighboring T village. Second, the benefits of dolphin ecotourism are distributed unevenly according to many participants. Several participants mentioned that their livelihoods had not changed significantly over the last ten years because they didn't have dolphin ecotourism in their village. For example, in response to a question on changes since the dolphin conservation project began in an AT village that does not participate in making wooden sculptures, two former fishers in a group of three replied:

> P1: I don’t see any changes
> P2: nothing. I see only people making dolphins [sculpture] over there. Here, there is nothing. We just do farming. (63 M Farmer & 82 M & 89 M Retired, CAT3)

So the monetary value of the dolphin is perhaps starker to participants in AT villages who look at the relative monetary wealth of their neighbors in T villages and can only attribute it to the dolphin ecotourism in these areas.

Also of note in Table 5 is the difference in the three most mentioned reasons for importance between T/AT and NT villages. More participants in NT villages mentioned the dolphin's status as a natural resource, intrinsic right to life, and aesthetic appeal than either their rarity or ability to bring income/money. Although the sample size for NT villages was much smaller than those for T and AT villages, this finding is consistent with participant observation and other themes in interview data from NT villages. For example, one NT group responded “yes” to a question about whether they would like tourists to come see the dolphins in their village. When I asked why, they did not mention money, but responded:

> P1: so that our village would have fun.
> I: and what else?
> P2: what else. Want the village to be happy
> P1: if they come, it would be fun (laughing)
> P2: the children would be happy and I would also go to see. My children love seeing it. (46F & 52 M Fishers & 38F Homemaker, CNT8)

Although the percentages in Table 5 represent the total number of interviews and focus groups where each importance was mentioned at least once, only one participant in an individual interview out of 14 total participants in NT villages directly associated the dolphin's importance with money. Thus, it seems that, while participants in NT villages in Cambodia associate the dolphin's importance with tourism, few of these participants associate the dolphin's importance directly with money.

In summary, the data suggest that the value of the dolphin in Myanmar has changed very little insofar as it continues to be primarily represented by reciprocal relationality. It also appears that the conservation project in Myanmar has not (yet) had any major impact on how participants value the dolphin as there is very little variation in value of the dolphin relative to proximity to targeted conservation projects. In contrast, I argue that the value of the dolphin in Cambodia is beginning to be replaced by a new value based on neoliberal rationalities. That is, through its emphasis on individualized ecotourism and the dolphin’s market value as an *in situ* commodity, the conservation project has introduced a new way of relating to dolphins and has altered the historical value of the dolphin to bring it into alignment with a neoliberal resource use regime. Moreover, there is some variation in this shift with the monetary value of the dolphin being more often mentioned in villages that lie in closer proximity to targeted conservation efforts. Next, I explore the correlation of the ways in which participants described changes in their communities to the proximity of those communities to conservation initiatives in order to assess whether this new value of dolphins is also reflected in the ways in which participants relate to their environments and each other in general.

6. Changes in overall values and socioecological relations

In this section, I examine the shift in overall values of the Cambodian communities closest to the conservation project. Since there are no reliable data to directly assess historical values specific to these communities, I first contrast the overall values to those in the Myanmar communities.

Aside from the ways in which participants described the value of dolphins, there also seemed to be general patterns in overall values for each country. These values were evident in many ways in the data and in my day-to-day interactions as a participant observer. Here, I focus on the ways in which participants described change to demonstrate these patterns. Participants in both countries were asked about the changes they had seen in their homes and villages over the last ten years or since the conservation program began, as well as what future foreign researchers should study when coming to visit (i.e. desired changes).

6.1. Myanmar

As seen in Table 6, change was most often described in terms of things that generally benefit the entire community. Thus, the overall theme in Burmese participants’ descriptions of changes in their homes and villages and the requests they made for future changes indicates

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Table 6
Ten most mentioned changes and most requested changes for the future by Burmese participants with a comparison to rank of these changes by Cambodian participants.

Rank	Changes noted by Burmese participants (% participants)	CamRank	Requests made by Burmese participants (% participants)	CamRank
1	School/education (57)	2	School/education (33)	6
2	Landslides (51)	N/A	Stabilizing shore (31)	N/A
3	Health (31)	10	Health (23)	7
4	Better roads (23)	6	Electricity (17)	11
5	Pagoda/monastery (21)	N/A	Agriculture (13)	12
6	More opportunities for work (19)	2	Pagoda/monastery (8)	N/A
7	Agriculture (14)	4	Better roads (6)	2
	Electricity (14)	10	Fishing improvements (6)	12
8	More income/money (13)	2	Being able to do good deeds/donate (4)	N/A
			More money/income (4)	6
9	Shore stabilized (11)	N/A		

that Burmese participants place high importance on community enrichment. This in turn suggests that there is some understanding of, and importance assigned to, their interconnectedness with the community. Moreover, the value of the dolphin to Burmese participants appears to align with their descriptions of change, in the sense that both are embedded in relationality and align with a ‘communal ideology’ informed by reciprocal socioecological relations that emphasize coexistence.

6.2. Cambodia

The ways in which Cambodian participants described change seems to contrast with the way Burmese participants did so. As seen in Table 7, change was often - especially in the case of past change - described in terms of things that benefit individuals and/or require personal profit. Several of the items on the past change list - such as bigger houses, motorcycles, and cars - are signifiers of wealth in Western society and social status is bound in this perceived wealth in Western culture. Although the most mentioned request for future research by Cambodian participants was for more protection for dolphins, 16 of those 24 (“28%” in Table 7) participants also mentioned the importance of the dolphin in drawing tourists (7), providing money (5), or both (4). Thus, the current value of the dolphin seems to align with the ways in which Cambodian participants described change, in the sense that both are mediated through money and align with a 'consumerist ideology' informed by individualistic ways of understanding socioecological relations that revolve around material items. Next, I contrast the overall values of the Cambodian communities closest to the conservation project to those farther away to argue that the difference in overall values indicates that the ‘new’ value of the dolphin has translated to a new way of relating to their environments and to each other.

6.3. The reflection of the new value of the dolphin in other values in Cambodia

While more opportunities for work and school/education were among the top three mentioned changes by participants in all villages, bigger houses and more income/money were not among the top three changes in ‘non-target’ (NT) villages (Table 8). While participants in NT villages may not have mentioned bigger houses or more income/money as often as those in ‘target’ (T) and ‘adjacent target’ (AT) villages because there simply aren't more bigger houses or income to notice, it still seems significant that the most mentioned changes by NT participants (better roads, more opportunities for work, and school/education) are more indicative of communal enrichment than of individual monetary wealth. This also seems to align better with their value of the dolphin in which dolphins serve to bring tourists to the area to have fun and make the village happy, and the dolphin's further value is derived from their intrinsic right to life and aesthetic appeal. Thus, it seems that the dolphin's value in T and AT villages align well with the ways in which those participants described change, which was often in terms of monetary value and signs of monetary wealth. It also seems that the unclear importance of monetary value and wealth in NT villages aligns with a similar lack of a clear connection of the value of the dolphin to money.

The top three requests for future research mentioned by participants in T, AT, and NT villages were all slightly different (Table 9). In AT villages, participants requested things that are more indicative of a ‘communal ideology’ most often (fisheries and forestry studies and better roads). Although participants in NT villages requested more tourism as often as fisheries studies and “everything,” this seems to be related to the joy and fun they relate to their experiences with tourism as described above, rather than to the potential monetary benefits of tourism. Thus, requests from NT participants also align more with a

Table 7
Ten most mentioned changes and most requested changes for the future noted by Cambodian participants with a comparison to rank of these changes by Burmese participants.

Rank	Changes noted by Cambodian participants (% participants)	MyaRank	Requests made by Cambodian participants (% participants)	MyaRank
1	Bigger houses (34)	12	More protection for dolphins (28)	10
2	More income/money (30)	8	Better roads (20)	7
	More opportunities for work (30)	6		
	School/education (30)	1		
3	Motorbikes (20)	14	Fisheries (16)	N/A
4	Agriculture (16)	7	Forestry studies (13)	N/A
5	Material items (jewelry/’modern’ things) (15)	15	More tourism (9)	N/A
6	Better roads (14)	4	More money/income (8)	8
			School/education (8)	1
7	Violence/drugs & alcohol (13)	N/A	Health (7)	3
			More researchers (7)	N/A
8	Cars (11)	N/A	“Everything” (6)	10
	More rich people (11)	N/A		

Table 8
Ten most mentioned changes by Cambodian participants with a comparison by proximity to targeted conservation areas. Gray shading highlights major differences in top three most mentioned changes.

Cambodia		Rank			% Participants			
Overall Rank	Changes noted by participants	T	AT	NT	T	AT	NT	All areas
1	Bigger houses	1	1	5	40	33	10	34
2	More income/money	2	1	5	32	33	10	30
	More opportunities for work	3	2	2	28	30	40	30
	School/education	2	3	3	32	26	30	30
3	Motorbikes	4	4	4	20	19	20	20
4	Agriculture	5	4	N/A	18	19	0	16
5	Material items (jewelry/'modern' things)	6	4	5	14	19	10	15
6	Better roads	8	7	1	10	7	50	14
7	Violence/drugs & alcohol	8	6	3	10	11	30	13
8	Cars	9	4	5	8	19	10	11
	More rich people	8	6	4	10	11	20	11

'communal ideology.'

Finally, of note among the top three mentioned requests for future research in the T villages is that these included more protection for dolphins, more tourism, and more money/income, suggesting a more uniform alignment of values with the monetary importance these participants attach to the dolphin and the ways in which they described change in terms of monetary wealth. Thus, I argue that these values are representative of an individualistic 'consumerist ideology,' which is supported by the loss of moral lessons on the selfish pursuit of treasure (see above). It follows that this new understanding of socioecological relations, necessarily guides the way participants look at, think about, and act towards nature, where - as prescribed by neoliberal resource use regimes - 'nature' becomes something that can be separated from its socioecological context and assigned a monetary value (Coffey, 2016; Sullivan, 2017). This new way of relating to nature is realized not just with dolphins, but also with trees from local forests that are used to carve sculptures to sell to tourists and to build bigger, higher social-status houses, despite the rising socioecological costs of deforestation as I discussed in a previous publication (Deutsch, 2018). Thus, I argue that the shift in values in Cambodia is indicative of a shift in more general values that inform socioecological relations. Moreover, the fact that this shift correlates with an intervention spectrum - where it is strongest in T villages, subtler in AT villages, and weakest in NT villages – indicates that the conservation project may be the origin of this shift, regardless of whether they intentionally promoted it or it became adopted as an unintentional byproduct.

Next, I return to the forms of neoliberal, disciplinary, sovereign, and truth environmentalities operating in each project to explore how these may have articulated in a way that supports the different subjectivities noted in each case.

7. Using variegated environmentalities to explain changes in subjectivity

Although there were many similarities in the Myanmar and Cambodia dolphin conservation project visions, their execution has differed in several ways. First, the benefits from ecotourism in Myanmar are often distributed to the entire community in the form of material donations, while such benefits are distributed in the form of cash money in Cambodia, and only to those able to participate in ecotourism. Second, while conservation is directed mostly in a top-down fashion in both countries, members of the dolphin-fisher cooperative are relied on to help raise awareness of the ecological importance of dolphins while there is no such role in Cambodia. Third, educational media, signs, and workshops are clearly apparent in Myanmar, while awareness-raising is evidently present only in the form of exclusive workshops that emphasize gear regulations in Cambodia. Fourth, fisheries restrictions in Myanmar serve to enhance the traditional livelihoods of fishers, while they function to harm such livelihoods in Cambodia. Finally, while the human-dolphin relationship in both countries was historically mediated

Table 9
Ten most requested changes for the future by Cambodian participants with a comparison by proximity to targeted conservation areas. Gray shading highlights major differences in top three most mentioned changes.

Cambodia		Rank			% Participants			
Rank	Requests made by participants	T	AT	NT	T	AT	NT	All areas
1	More protection for dolphins	1	3	1	34	19	20	28
2	Better roads	2	2	N/A	20	26	0	20
3	Fisheries studies	4	2	2	12	26	10	16
4	Forestry studies	8	1	N/A	2	37	0	13
5	More tourism	3	N/A	2	14	0	10	9
6	More money/income	3	N/A	N/A	14	0	0	8
	School/education	4	5	N/A	12	4	0	8
7	Health	5	4	N/A	8	7	0	7
	More researchers	5	4	N/A	8	7	0	7
8	"Everything"	7	4	2	4	7	10	6

through cultural understandings about the dolphin, these understandings continue to be supported by the conservation project in Myanmar. In contrast, the historical cultural understandings of the dolphin in Cambodia have been muted as the dolphin origin story has been relegated to 'just a story' and the moral lesson of that story on the consequences of greed has been virtually lost.

How have these differences interacted through their respective forms of environmentalities to catalyze changes in subjectivities? In these two cases, I suggest that different messages have been conveyed through the ways in which the dominant governing rationalities have mediated the operationalization of neoliberalism and its articulation with other environmentalities. Thus, in the case of Myanmar, there is a strong message of the dolphin's ecological value operating via disciplinary environmentality. And since the operationalization of neoliberal environmentality is mediated by a communal "Buddhist" rationality, it supports the idea that such a value benefits both fishers and the community, reinforcing a particular value of the dolphin embedded in its reciprocal socioecological relationships. Moreover, since this value aligns with historical cultural understandings of the dolphin, conservation officials have deployed truth environmentality via the emphasis of this understanding in project planning and implementation.

In the case of Cambodia, disciplinary incentive structures for protecting the dolphin were reduced by the Cambodian government when it intentionally masked the message of the dolphin's ecological value in order to emphasize its monetary value. And since the operationalization of neoliberal environmentality is fortified by a dominant neoliberal governance rationality, it supports the idea that such a value benefits only individuals, introducing a particular value of the dolphin as an individualized extraction from nature with a market value. Since this new value of the dolphin misaligns with historical understandings about the human-dolphin relationship, a reassessment of those understandings was necessary. Although it is unclear whether this reassessment was catalyzed by conservation officials, by the 'environmental subjects' themselves, or both, what *is* clear is that it has led to a deemphasis on the role of truth environmentality (via the dolphin origin story) in establishing human-dolphin relationships and social morals with regard to greed.

The role of sovereign environmentality, then, is to further reinforce the particular values of the dolphin. Through the consideration of fisher livelihoods in fisheries regulations and the engagement of fishers in the enforcement of those regulations, the sovereign environmentality operating in Myanmar sends the message that fishers, like dolphins, are important components of local socioecologies where value is derived from reciprocity. In contrast, by showing a willingness to exclude fishers and harm their livelihoods to protect the dolphin enterprise, the sovereign environmentality in Cambodia works to send the message that value is derived from a thing's monetary worth.

8. Conclusion

The vision-execution gap in environmental governance has been confounding scholars and conservationists for decades (Carrier and West, 2009). Fletcher's (2010) typology of environmentality has provided some clarity to working with previously blurred frameworks of environmentalities to explain this gap and changes in subjectivities. Montes (2019) builds on this multiple environmentalities framework by demonstrating how the process of neoliberalization can interact with other rationalities in novel ways in the vision and execution of environmental governance. This paper contributes to the environmentalities literature by accentuating the importance of such a variegated environmentalities perspective in understanding how competing rationalities impact the execution and changes in subjectivities of conservation projects in different contexts. In doing so, it sheds more light on the infamous vision-execution gap, while also explaining how and why neoliberal conservation can lead to unexpected changes in subjectivity. In Myanmar, neoliberalism has been mediated by Buddhist philosophy and the execution of the project has not changed the 'communal ideology' characteristic of the intervention sites. In Cambodia, the initial project vision focused on communal benefits of neoliberalization, but it still emphasized neoliberal economic development and a breaking of traditional socioecological relations (through diversification of livelihoods and the downplaying of the dolphin origin story). I argue that these processes opened the door for the Cambodian government, operating under a strong neoliberal rationality, to take control of the project in pursuit of economic gain. The rupturing of traditional socioecological relations then combined with an emphasis on the dolphin as a commodity to alter values and socioecological relations to support a 'consumerist ideology' that aligns with neoliberal rationalities.

In a previous paper, I show how the disruption of values and socioecological relations in Cambodia has led to increased social inequality and shifting of environmental degradation from the rivers to the forests, reflecting a common outcome of neoliberal conservation that I refer to as 'Whack-A-Mole Conservation' (WAM Con) (Deutsch, 2018). Meanwhile, such 'WAM Con' effects were not documented in the Myanmar conservation project (Deutsch, 2017), suggesting that the mediation of neoliberalism by dominant governing rationalities that foreground community and reciprocity in socioecological relations may hold the key to alternative socioecologies and sustainabilities. Future directions in variegated environmentalities research should include analyses of similar projects to shed more light on such possibilities, including the mediating role of dominant governing rationalities.

CRediT authorship contribution statement

Sierra Deutsch: Conceptualization, Funding acquisition, Project administration, Formal analysis, Validation, Writing - original draft.

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