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'No One Should Destroy the Forest': Using photo-based vignette interviews to understand Kenyan teachers' views of the environment

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Introduction

In the midst of the current environmental crisis, scientists, academics, authors and politicians worldwide are urging citizens to create sustainable communities that "do not interfere with nature's inherent ability to sustain life" (Capra, 1999, p.1). That said, there is little capability to build a sustainable society without an informed, active, and engaged populous. (McBride, Brewer, Berkowitz, & Borrie, 2013; Monaghan & Curthoys, 2008; Orr, 2004; Orr, 2007). This requires more than just environmentally knowledgeable citizens but a society that understands the principles of the environment but can also exemplify them in daily life (Capra, 1997). In order to create a more environmentally literate world, there has been a push for Environmental Education (EE) integrated into K-12 schools (Adams & Jeanrenaud, 2008; North American Association for Environmental Education (NAAEE)., 2000/2004).

However, in the 30 years since UNESCO first described a need for EE in the K-12 school curricula, various experts in the field agree there is a negative perception of the implementation of EE worldwide. There are good reasons for this perception: integration difficulties that creates curricular disorganization that is a patchwork of a variety of subject without relevancy, confusing connections between social and natural sciences which leads to a overreliance on geology, biology or geography, lack of professional development for teachers which accounts for teachers difficulty selecting the best pedagogical methods to achieve the goals of EE (Almeida & Vasconcelos, 2013; Monaghan & Curthoys, 2008; Palmer & Birch, 2005; Vasconcelos, 2011). These deficiencies often lead to schools creating one-off activities (such as Earth Day celebrations or park clean-ups) or "shock doctrine" (Mueller & Bentley, 2007) to scare children into participating in eco-friendly activities.

While these activities provide some external benefits (parks are cleaner), they fail to provide students with connections between their actions and environmental knowledge or long-term effects on the environment. Worse yet, these activities result in the alienation of children from nature as they feel the issues are too big for them to solve (Louv, 2005). Significantly, yet another issue with these short-term approaches to EE is that they exclusively reflect an anthropocentric view of the human-nature relationship, as if this view were the only one possible (Almeida & Vasconcelos, 2013).

When examining the policies that are most often enacted in schools, there is an over-reliance on natural resource management to ensure the needs of humans (Feygina, 2013; Mueller, 2009; Ojomo, 2011). Paradoxically, it is exactly these views of the value of nature is derived from human use that is at root of the current environmental state. Complicating the issue is the knowledge that teachers' ideological stance ultimately influences the way and type of knowledge that is taught to his/her students. (Hashweh, 1996; Thompson, 1992; Tsai, 2002a; Tsai, 2002b; Waters-Adams, 2006) That said, research demonstrates that there is better integration of EE into

science curricula if teachers' ideological stance is examined and then presented with a transdisciplinary perspective of environmental education which includes sociological, political, and ecological stances (Belsky, 2002). This points to a need to understand teachers' ideological stance prior to providing professional development to determine if teacher's viewpoints are counter to EE's best practices. This is particularly important in areas where students are living with issues of parks and wildlife as a part of their every day reality such as the areas that border the Maasai Mara National Preserve in Kenya (Ali, 2006). Here, the students live, depend on, and/or recreate in areas that are closely tied to the preserve (Houston, 2013; Litscher, 2009) Thus, these people see first hand the difficult choices that are often made between economics and

the environment. In many such places, anthropocentric thought is an understandable one. When choice is presented between protecting the environment or improving the quality of life for humans, it is understandable when the environment does not win out. Thus it is important not to trivialize these notions of anthropocentric thought, but to examine the viewpoints to understand if there are ways to present the viewpoints as having intersecting points. Perhaps surprisingly, attempts to understand teachers' environmental attitudes in these areas have not been widely studied; instead the focus has remained on the educational value of the areas (Ali, 2006). This qualitative study is to examine Kenyan teachers' perspectives on the human-nature interaction by conducting vignette focus-group interviews. It is a subject not widely explored but vital for conservation not only in this area, but other areas that seeks to have an ecological informed populous.

Contextual Background of Study

Kenya gained independence in 1963 and was declared a republic in 1964. Kenya has a population of over 39 million people with 43 percent aged 14 or less. The languages actively in use are English (official), Kiswahali (official), and approximately 42 indigenous languages (Woolman, 2001). The government of Kenya spends approximately 6.9 percent GDP on education. The aggregate lifespan (primary to tertiary) is 10 years for males and 9 years for females. The total population literacy rate is about 85 percent however of those illiterate persons 70 percent are female. Since its independence in 1963, the number of students enrolled at various levels of education has increased(Otunga, 2010). Primary education begins at age 6 or 7 years after completion of nursery school. In 2003, the government re-introduced free and universal primary education (it had existed in the mid-1980s), however it is still not compulsory. Secondary schools in Kenya exist in three categories: national, provincial, and district. Students

with the highest scores on the national exam gain entrance to the national schools, while those with lower schools are placed into provincial and district schools. The fees for secondary school have been greatly reduced with the goal of having free universal secondary education by 2015. The reduced fees have greatly increased attendance but highlight the problems in its educational system. A study published by the University of London in 2007 found that Kenya's free schools were "a matter of political expediency ... not adequately planned and resourced," and as a result, there have actually been more dropouts and a falling quality of education (Oketch & Rolleston, 2007). There are currently 30 universities: 23 private and 7 public. The University of Nairobi is the oldest public university. In order to attend a university, students must pass a national examination. Those students that pass secondary school national examination with high scores are selected to public universities. All others that pass the exam are selected to private, or public if there is availability.

Kenya offers a unique setting to study environmental viewpoints because of its complex environmental issues. The first national park was established in 1946 in Nairobi and had an aim of protecting wild flora and fauna. Today, Kenya touts 26 national parks and 30 national game reserves (CITE). This project engaged teachers in an economically and environmentally fragile region—the Narok district in Kenya. Narok District includes the Mau Forest and the Maasai Mara National Reserve, which provide both ecological and monetary benefits to the country. However, this area faces the challenges of destructive environmental practices such as deforestation, insufficient waste management, and water pollution, which have contributed to drought and adversity in the surrounding valleys. The Mara River, the only perennial river in the transboundary ecosystem, is often the only source of water for grazing animals during the dry season. Increasing water demands from agriculture, industries, and growing human populations

reduce its availability for migratory species. For example, during the temporary 1993 drought, nearly 400,000 wildebeest and uncounted other species died due to water shortages in the river. Even if the seasonal rains are late, it causes huge devastation to the area. In 2006, the delayed rains caused widespread drought in the area, disrupting the annual migration, destroyed crucial watersheds, and disrupted livelihood for the Maasai, the primary indigenous group in the area.

In the Mau forest and Maasai Mara National Reserve, more than one million acres of forest have been cleared for land development and fuel. This deforestation has destroyed crucial watersheds, ecosystems, and wildlife as well as sacred lands of the Maasai people (Glasson, Mhango, Phiri, & Lanier, 2010). Although the government has attempted to address this problem by limiting the land that pastoral communities such as the Maasai people can utilize for animal grazing, These land adjudication practices do not attend to the indigenous ways of pastoral living by the Maasai, which created a dis-engagement towards sustainability and sustainability education (Davis, 1993). The education system in Kenya is centralized and there is a national curriculum followed by public schools. Although environmental education is a cross-curricular activity, science is considered the main venue for delivering the standards (Kenya Institute of Education., 2003)That said, the emphasis remains on covering content for national examinations. These challenges make implementation of EE difficult, however, the government has reiterated a need for better implementation and is working on outreach programs to facilitate professional development with teachers. For these reasons, it was significant to understand Kenyan teachers' relationship with the environment in order to understand the epistemological stance with which they would be entering the classroom.

Theoretical Framework

Environmental values are a critical component of understanding human-nature interactions because values tend to predict attitudes and behaviors Values serve as "fundamental, enduring beliefs or mental constructs" (Fulton, Manfredo, & Lipscomb, 1996)p. 25). Thompson and Barton (1994) suggested that environmental values had at least two distinct types: anthropocentric and ecocentric values. Although individuals generally show high support for environmental issues, their interactions with the environment depend more on what type of environmental value they hold. The ecocentric-anthropocentric spectrum helped distinguish motivations and values that underlie environmental attitudes, which previous environmental valuation studies did not account.

Anthropocentric environmental values view the importance of the environmental in regards to its human value. This includes extractive, consumptive, utilitarian uses of natural resources; things like hunting, mining, and logging would be viewed as anthropocentric valuation of the environment. This is reflected in some governmental agencies philosophies. For instance, both the Bureau of Land Management and the United States Department of Agriculture Forest Service, with Pinchot's famous "greatest good of the greatest number in the long run" (USDA Forest Service, 2014) being perhaps the best summation of values, would both be considered to exhibit anthropocentric environmental values. However, not all anthropocentric environmental values are considered consumptive, extractive, or utilitarian in nature. Aesthetic, cultural, spiritual, recreational, and historical valuation of the environment would also be considered anthropocentric environmental values, even though they may do less damage to the environment than the previously mentioned consumptive activities. Agencies like the National Parks Service (NPS) in the United States exhibit a non-consumptive form of anthropocentric values, specifically the dual-mandate of providing for both resource protection and enjoyment of

people (National Park Service., 2006)Even wilderness, often considered one of the highest levels of landscape protection in the world(International Union for Conservation of Nature., 2013), is criticized for being based around the anthropocentric, human-construct of wilderness, instead of an ecologically functional area (Cronon, 1996). In Kenya, there are similar views of their governmental organizations as tourism plays an important role in their economy. For example, tourists have increased tenfold since 1960 (Kibicho, 2006), which has led to environmental issues that are difficult to manage. Thus, previous studies on environmental values in Kenya have documented a more nuanced view of the environment. Ali (2006) documented environmental views of Kenyan students and found that attitudes towards parks and wildlife were generally very positive. Upon further analysis, he discovered the students held anthropocentric views but not in the typical sense of the Dominant Social Paradigm (DSP) which is defined as "the constellation of common values, beliefs and shared wisdom about the physical and social environments that constitute a society's basic 'world view'". (Dunlap & Van Liere, 1984) p. 1013 and held underlying beliefs that is anti-environment or anti-ecological. Instead, their feelings about parks and wildlife and is more likely to embrace conservation in context of their culture and experiences. In fact, many of the students remarked that they see conservation as a way to solve their economic challenges. This DSP is different to the DSP seen in Western Europe and North America that likely includes environmental degradation to sustain economic growth. Thus, in this study, we view anthropocentric values as more blurred as suggested by Dyer and Gunnell (1993). In this way, there is less of a dichotomy of views but a spectrum that sees anthropocentric values of the environment as both consumptive and non-consumptive in action. What ties values together as anthropocentric is that the attributed values come from what a resource has to offer to humans.

Ecocentric environmental values can be described as concern for the intrinsic value of the landscape as a whole. As indicated by the prefix eco-, it is a concern for not only the life that inhabits the landscape, but also the abiotic components of the landscape and the processes that make up the entirety of the ecosystem. The genesis of ecocentric environmental values are best attributed to the famous naturalist Aldo Leopold (1949)in his seminal book *A Sand County Almanac* (1949). Although not immune to the occasional anthropocentric environmental valuation, Leopold established a "land ethic" (Leopold, 1949, p. 201), which is the continuing basis for ecocentric environmental values today. His idea of a land ethic "changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it" (Leopold, 1949 p. 204), including the mutual respect of other members of the community and the community itself. Ecocentrism is best defined by the notion that wild nature – the landscape, processes, communities, and relationships – has intrinsic value in and of itself outside of any human use. This doesn't mean that ecocentrism completely ignores that humans need trees to make paper and consume other animals to survive. Turning to Leopold again, ecocentrism implies that "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" (Leopold, 1949, p. 224-225).

Nested within ecocentrism, or perhaps a distinctly different idea in its own right, is the idea of biocentrism. Biocentrism can be seen as an environmental value that sees life – that is biotic organisms – as having an intrinsic right to exist. Although biocentric and ecocentric environmental values have some areas of overlap, there are also some distinct differences. Where ecocentrism is concerned with processes, communities, and wild nature's intrinsic value, biocentrism is concerned solely with *life's* intrinsic value. Well-regulated hunting, a central tenant of the North American Model of Wildlife Management (Geist, Mahoney, & Organ, 2001),

can be easily incorporated into an ecocentric value system, but the same cannot be said for biocentric value systems. Sometimes, these issues will pit different environmental groups against each other. Wild horses, an exotic species introduced to the American West, cause conflict between environmental groups. Some groups are concerned with the environmental costs of wild horses and burros, which cause an estimated $5 million USD in environmental damages each year, compete for food resources with native species, and increase soil erosion (Pimentel, Zuniga, & Morrison, 2005)Other groups, like the American Wild Horse Preservation Campaign, consider the wild horses and burros to be an American West icon and want to see them continue their existence in the wild. Because the federal government is barred from culling horses (The wild horse and burro protection act, 1971), the Bureau of Land Management (BLM) spends over $50 million USD a year collecting wild horses and burros from the landscape and transferring them to holding pens (Bureau of Land Management., 2014)This expensive measure of herding and keeping wild horses in pens by the BLM can be seen as a compromise between the ecocentric value of removing wild horses and burros (and their ecological damage) from the landscape and the biocentric value that all life has intrinsic worth.

All of the valuation systems discussed thus far (biocentrism, ecocentrism, and anthropocentrism) suggests that there is value to the environment, regardless of where it is derived. However, Thompson and Barton (1994) also discovered that some people might lack a value for the environment. This lack of caring was termed apathetic environmental valuation. Although concern for the environment is high, it is not universal. An apathetic valuation of (or lack thereof) the environment should be seen as a viable environmental perspective.

Methodology

We employed a qualitative methodological approach employing grounded theory and utilizing InVivo Coding analysis (Glasser & Strauss, 1967) in order to understand environmental perspectives. Previous work in Kenya and with indigenous peoples suggested that qualitative research methods mimic the ways in which local knowledge is shared (Thomson, 2010). The data source included focus group vignette interviews. The vignettes were created using photographs and explanations of the photographs that the participants collected and emailed to the authors. Scholars from a wide range of disciplines use vignette interviews to explore diverse social issues and problems (Schoenberg & Ravdal, 2000). Additionally, the literature clearly demonstrates that vignettes capture meanings, beliefs, judgments and actions that are locally positioned (Barter & Renolds, 2000). For this project, it was important to employ an approach, such as vignette interviews, that incorporated the local geographical context (in this case, the Mau forest and the Maasai Mara).

Participants

We selected and recruited a purposeful sample of participants from the following constituents to participate in the vignette creation (taking the photographs and emailing the images and descriptions to Author 1): Maasai community members (n=4), teachers from Mata Day School[1] (n=11), teachers from Kwaeki Primary school (n=10), faculty from Suswa Teachers Training College (n=7), teachers from Tamoo Day School near the Maasai Mara National Preserve (n=2), and teachers from the Community School at the Maasai Mara National Preserve (n=5). The total number of participants for the vignette creation was 39—consisting of 23 females and 16 males. However, for the focus group vignette interviews, there was a total of 55 participants (30 females and 25 males) with an additional nine participants from Mata Day

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[1] Pseudonyms are used for the participants' names and schools.

School, five from the Suswa Teachers Training College, two additional participants from Kwaeki Primary School, and one from the Community School. One participant from the Community School who helped with the vignette creation could not attend due to graduate school requirements. The Mata Day School is a co-educational primary school on the campus of Kenya University. The Kwaeki Primary School is a co-educational elementary boarding school in the city of Narok. Suswa Teachers Training College trains pre-service teachers and is affiliated with the local university, Kenya University. Tamoo Day School is a co-educational primary day school. The community school at the Maasai Mara National Preserve is a boarding school for secondary students that train students within 1-year duration to become tour guides at the Maasai Mara conservancies. The Maasai community members live in the Narok area and are not affiliated with the primary day or boarding schools but work for a variety of conservancies in the Maasai Mara. Table 1 provides additional background information on the schools including type of school, location, and year established, number of students and teachers.

The recruitment process for the schools and the participants consisted of the following procedures: 1. We contacted the major university[2] in the area describing our research study and asked for help in recruiting principals, teachers, and community members in the local area. 2. We then contacted the recommended principals from seven schools (2 day schools, 3 boarding schools, 1 community school at the Mara, and 1 teacher training college). 3. We received responses from the five schools mentioned. 4. Next, we contacted 10 community members and received responses from 3 of the community members. Our goal was to recruit a diverse set of teachers in terms of educational background, ethnicity, employment location and experience.

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[2] We have a well-established relationship with this university and have been working with them on several projects over the past three years.

Given our small sample size, we recognize it is not representative of the population rather a sub-sample of it.

Data Collection and Timeline

This study included two data collection phases: 1. photo-documentation and 2. focus group vignette sessions. The goal of Phase 1 was to ask the participants to document and define through photographs and brief statements their views of their thoughts on the environment. We used the terms, 'environment,' 'nature', 'sustainability', 'preservation,' and 'conservation' to broaden the discussion beyond the singular term 'environment'. The research team selected the original guiding terms as a beginning to our conversation with the participants about their environment. We discussed these terms with the participants and encouraged them to view these words as starting point and to expand their ideas of these words. The participants discussed wanting to document both positive and negative examples of the terms. We encouraged them to do so. As such, in the data, the participants documented broad ideas surrounding these terms. The goal of Phase 2 was to develop emergent, co-constructed, shared understandings of the key terms. This study focuses on Phase 2 of the data collection (for results of Phase 1, see Author 1 et al., 2014).

The photo-documentation occurred over six months in May-October 2012. We taught the participants how to use specific functions of the Smartphones that were unfamiliar such as using the camera-phone, email, and web surfing. The participants emailed photographs and narratives (2-3 sentences) from their phones to the researchers.

The focus group vignette interviews occurred over one-week in October 2012. We utilized the findings from our analysis of the photo-documentation data to construct the vignettes to provide meaningful context and authenticity (Author 1 et al., 2014). In this previous photo-

documentation study, we collected over 400 photographs with narratives surrounding environmental issues. Each participant took several pictures each week using a Smartphone and emailed us the picture along with a narrative description of the picture. The narratives varied from 1-10 sentences in length. Our goal in using this photo-documentation with written narratives was to allow the participants to document, what "sustainability," "nature," "environment," "conservation" and "preservation" look like to them in the form of a photograph. Over 6 months (May 2012-October 2012), the Kenyan participants emailed the pictures and narratives to Author 1. The authors and the participants analyzed these photographs and their narratives by the following topics: water catchment/harvesting issues, deforestation practices, human diseases due to poor water/air quality, waste disposal/sewage issues, population growth, alternative fuel sources, and navigating traditional practices in terms of cattle grazing (For a complete explanation of this analysis, please see Authors, 2014, in press). We constructed several vignettes for each topic to ensure all topics were discussed during the interviews.

For example, in Figure 1, Catherine took a picture of a gutter used for rain harvesting. She included the following narrative with the picture, "*I took this picture because it shows how rain water can be harvested and stored for future use. The basic tank is built of stones, concrete, cement...the works and covered using iron sheets. Look at the improvised pipe from the roof gutter so that harvesting is maximized. The question is how safe the water would be for human consumption? It is possible to build water tanks that can be cleaned adequately?"* We showed Figure 1 with the narrative (the narrative served as the vignette) and then asked follow-up questions such as: *What is the key issues related to the environment captured in the picture? Does this photo and narrative suggest ways for addressing these issues? Can you think of other ways of addressing this issue? The vignette suggests there might be a problem with using this*

type of rain harvesting. How do you decide if the risks are worth taking? The vignette

interviews consisted of 8-10 similar vignettes touching on each of the themes described above.

We grouped the participants into 4 focus groups to allow for meaningful conversation. Because

the participants from the Tamoo Day School and Community School at the Maasai Mara were

close in proximity to each other, we brought those participants together for the first vignette

focus group interview on one day with the other schools on another day. We mixed the teachers

from the different schools so that the teacher could talk to people from different schools about

the topics. For the second focus group, we brought together the remaining schools and again

mixed the participants to encourage conversations among the schools. The interviews lasted

between 3-4 hours each.

<Insert Figure 1 about here>

Figure 1. Example of a picture used for vignette interviewing. The description that Gilda

from the Mata Day School wrote was, "*I took this picture because it shows how rain water can

be harvested and stored for future use. The basic tank is built of stones, concrete, cement...the

works and covered using iron sheets, look at the improvised pipe from the roof gutter so that

harvesting is maximized. The question is how safe the water would be for human consumption.

It's picture possible to build water tanks that can be cleaned adequately.*"

Following the focus group vignette interviews, we brought together the two focus groups

for a whole group discussion to understand participants' reactions to the issues presented in the

vignettes. The aim of these whole group discussions were to generate mutual, local definitions of

the major ideas surrounding the topic of environmental sustainability (i.e. conservation,

preservation, nature, environment) and to understand why there might be differences among the

groups in their approaches to the issues in order to achieve a common consensus about

approaches all participants could agree. Additionally, we utilized this time to discuss any challenges/successes the participants had with the methods. This interview lasted approximately 1 hour. For example, we asked the participants: "What were your overall impressions of taking the pictures and writing about them?" "Was there anything difficult about the process?" "Something you did not feel comfortable with?" Was there something you particularly enjoyed?" and "Do you think there would have been a better way for us to collect data from you on this topic? If so, why or why not?"

Analysis

The researchers analyzed the transcripts of the interviews for themes. We utilized InVivo coding (Strauss & Corbin, 2007)InVivo Coding is also labeled, "Literal Coding" or "Verbatim Coding" in selected methods literature (Strauss, 1987). InVivo's root meaning is "in that which is alive," and as a code refers to a word or short phrase from the actual language found in the qualitative data record, "the terms used by the [participants] themselves" (Strauss, 1987, p. 33). InVivo Coding analysis is advantageous in forming patterns particularly when studying a culture that is not your own since one of the genre's primary goals is to frame the facilitators interpretations of terms that participants use " in their everyday lives, rather than in terms derived from the academic disciplines or professional practices" (Stringer, 1999) p. 91.

In order to conduct, InVivo coding, the interview transcripts were read while listening to the original interview. This helped to feature participant voices and vocal emphasis. Additionally, we noted features such as impacting nouns, action-orientated verbs or evocative word choices. Moreover, we noted word choice such as ironic phrase, similes and metaphors. If the participant often used the same words or phrases, we applied an InVivo Code to it. In this way, we kept track of codes that are participant-inspired vs. researcher-generated. Additionally,

we kept the initial codes in the words of the participants, such as, "A don't care attitude" to describe the apathetic viewpoint of the environment.

After the initial coding, we had 15 codes from Author 1 and 2. We reflected using analytic memo writing and a second cycle of coding, condensed the number of InVivo codes to six codes (humility, resentment, blame, unity, pragmatism, and self-interested) within three major themes. Analytic memo writing is helpful for noting the rationale behind combining codes. For example, we combined the codes "human beings are together" and "finding balance" into the code "Unity" as these represented similar ideas. This also provided reanalysis of our initial work to reorganize our themes, which ultimately led to three major themes ecocentric, apathetic and anthropocentric.

Findings

As described above, through the thematic analysis, there are three major themes: ecocentric, apathetic, and anthropocentric. In this section we will describe each of the themes and the codes within these themes.

Ecocentric Views: Resentment and Pride

In the first them, ecocentric, there were two codes: pride and resentment. In this viewpoint, participants are nature-centered as opposed to human-centered, set of values. Although the participants described their views of the environment as central, there was a notion of resentment towards this feeling. For example, when the participants discussed the Maasai Mara National Reserve (often referred to as, "the Mara" in the transcripts) there was a sense of resentment that it was being exploited for tourists: "*The number of hotels and lodges is becoming a disaster. For example now, these lodges and hotels are always put where streams are, and these streams might be very fundamental places for the breeding of some wild animals. For*

example, when you erect a lodge in a breeding area for the rhinos, they will completely

disappear...The government is to really look at those because they have to reduce the number of

lodges within the Mara so that wild animals could [trespass] without any problems." Here,

Martin's focus is on the wildlife and how the lodges are encroaching on breeding areas for some

of the animals.

Similar sentiments were shared by other participants, such as when Sarah stated, "*The*

Mara is known all over, but when you happen to go to the Mara, there's so many other things

that will be able to make you want not to love the Mara. First of all, the infrastructure. Before

you get inside the Mara, there is a lot of environmental destruction [from the tourists]. The

inversion of animals, cattle mixing up with wild animals, making the wild animals to So many

lodges in the Mara. There is a lot of litter around it and if there are [litter from the tourists] and

[but we need the tourists for the money] (at this point, other participants chime in agreement)

and so many lodges [have been created] in the Mara. Still, it becomes very difficult for those

animals to move around." Here Sarah's comment demonstrate the pride that the "*Mara is known*

all over," but she understands that this presents challenges as the number of lodges which makes

it difficult for the animal to move around. At the same time, she understands the economic

benefit of the Mara from the tourists. In this way, her ecocentric viewpoint is at conflict with the

goals of the National Preserve.

As Sarah's comments denoted pride of the Mara's well-known status, similarly,

Stephen's ecocentric viewpoint also shared a sense of pride for the environment when he stated,

"*We believe that when somebody destroys that forest (*referring to the Lost Forest)*, it is against*

their community. As if they destroyed their community. No one should destroy the forest. It is an

honor to have." In Stephen's description of the forest he views the forest as almost superior to

everything else. He makes the strong statement that "*no one should destroy the forest.*" And "*It is an honor to have.*" The pride he has for the Lost Forest, an area where primarily indigenous people live, positions the forest above all others, including humans.

Apathetic View: Blame

The second major theme is apathetic. In this theme, the code for the theme was blame. The apathetic viewpoint of the environment denotes that there is a lack of concern for the environment. For example, Martha stated, "*It also shows how careless we are...We are supposed to work, not just throw whatever we have whatever in our homes but we don't. We just throw it on the road.*" Here, Martha is describing a rationale for the litter that is often found in streets rather than rubbish bins. However, she uses the pronoun, "we" instead of "I" In this way, she is including herself in this action of carelessness but she is also includes others, a component of blame. She blames herself and others for their apathetic concern for the environment. What is interesting to note is that was a viewpoint that the teachers often described other people having. For example, the participants' state, "*People are not having respect of nature. There's a lot of pollution, especially polluting. There's a lot of dust I can see there*" and "*...It's an I don't care attitude, that even if you throw, fine, you're not liking, there's that, there's that particular attitude...*" Another participant described it as simply "*people's carelessness.*" Noteworthy is that almost all of the participants when they noted an apathetic viewpoint of the environment offered solutions for changing this viewpoint. For example, the participants called on better dissemination of information regarding pollution and recycling or requested governmental intervention, such as "*Call the city council. Get them involved*" or "*the government needs to improve its waste management department.*" This is clearly demonstrated in the following statement, ""*I think the people dwelling nearby are to blame for this mess at the same time, we*

are also blaming the authority, the local authority that is concerned...it may not just be the dumping site for the plastic bags and the other kind of thing." In this manner, the participants are trying to provide a resolution for the apathetic viewpoint, almost as they see it as problematic.

Anthropocentric Views: Perils, Pragmatism, and Self-interested

The largest theme was anthropocentric. In this theme, there were three codes: perils, pragmatism, and self-interested. Anthropocentrism is the belief that human beings are at the center of the planet and/or that human are valued higher than that of other animals. In our research we found that when participants held this viewpoint, they were notions of the perils of environmental challenges (either physical danger, disease or other related health issues). For example, Ruth stated, "*The place where I live is just like this one dumpsite. Kids play around this place and you imagine how dangerous it is. They're not the ones who control this sometimes and so I think the local government should find a way and it is so to dispose the waste. For me it's more of a health hazard so much.*" Here, Ruth described the health hazard of the lack of waste disposal and she worries about the children that play near the dumpsite. Similarly, Magda mentions that the health concerns are not just for the people living near the waste but for others as well, "*So I see water also carrying some of the waste. And other people downstream, somewhere, might also be affected.*" The participants also recognized the challenges of stagnant waters that occurred after flooding and worried about mosquitos and disease transmission such as cholera. The stagnant water also raised other concerns as the participants discussed that this water is often used for bathing and bathrooms, which "*bring houseflies and eventually a very many kind of diseases.*"

The participants who described an anthropocentric viewpoint also denoted a pragmatism to their descriptions, particularly when describing the resource-dependent nature of their lives. It

was as if they were trying to justify why they felt this way. For example, Lydia stated this challenge of farming when she said, "*If the water catchment areas will be destroyed, we cannot be able to practice pastoralism. We cannot be able to practice farming, and that is really going to be a major catastrophe because they will be - now, nature will be fighting back.*" This pragmatic statement focuses on the reality of the resource-dependent existence of humans. In a comparable way, Susan describes the relationship between humans and nature when she stated, "*Human beings are together with livestock. Human beings cannot survive without the nature and they can and the livestock can't survive without nature so nature is very important.*" Another participant, Mary, denotes that part of the anthropocentric thought is related towards economics, "*This thing is a twin problem. Here, we are seeing a community which is using charcoal because of economic viability but on the other hand we are also seeing charcoal here as form of destruction for the environment. So, if you do choose an alternative source for fuel, let us say we have the ability [for an alternative fuel]. But charcoal selling is a way of earning a living, so that although we can provide alternative source of fuel. We also have to alternative forms of earning a living.*" Here, Mary considers the broader implications of anthropocentric viewpoints, which are the financial realities.

Related to the ways that Mary considers the financial implication of alternative fuels, Catherine notes that people are dependent on the Mara and therefore, when the environment suffers it has consequences for the people, "*I want to bring out this point that two years ago we heard a reason that animals from around the Maasai Mara died. The government was able to buy a portion of the land and then the animals died. One reason was that the animals were supposed to move to the Maasai Mara to get food for the special grass and because the government has demarcated that place for themselves these animals end up dying and the people*

who depend on these animals are left helpless. We have got to take responsibility and see that people who are living there depend on this and we all depend on Mara anyway." Simply put, as Frank states, "*human beings, as long as they are not comfortable, they interfere with nature.*" In these ways, the teachers discuss describe their anthropocentric views in pragmatic ways, almost as to provide rationale for why they take this viewpoint.

In other ways, the teachers described their anthropocentric relationship with the environment as humanistic. Edith brings up a discussion about the differences in which the western world views the environment when she states, "*I want to talk about tarmacking. What I understand is that road cannot be tarmacked because the process of tarmacking will interfere with animals, and for the tourists, when the road is nasty, that is fine for them. As you are talking about the environment and conserving, there's this argument that comes from the western world is more interested in the nature actually more than the humanity. We are talking so much about the animals, about the animals, about the trees, but we also don't see the human being really is there who is becoming the danger because the human being has to live.*" Likewise Julian challenges the conversation when he felt it became too ecocentric and demanded, "*Why are you interested in the tourists and not interested in these human being who is suffering with his cows because of the economic situation? People are increasing. Population is there. The needs are there. As I said, I'm able to be poor when I can graze my cows because you take care of the human being first?*"

Interestingly, there was a spiritual connotation to the anthropocentric view. The teachers discussed that nature provided them with a respite, "*Also there are places where there are no churches...but they use trees. They sit under a tree. A preacher can preach. People can sing and they get the message. They go home. So trees are very important.*" In this way, Julian

describes the utility of nature for humans but for the purpose of religious activities. This was a common description among the trees and they noted, *"God provides us with nature to use it."*

Discussion

The results of this study indicate that the teachers held a variety of beliefs including ecocentric, apathetic, and anthropocentric with the most frequent environmental views being anthropocentric. Beginning with the ecocentric viewpoint, we found that the participants positioned the environment as being of utmost importance. This is not surprising that teachers would have positive attitudes towards the environment. In fact, previous research in Kenya documents that communities tend to have a positive outlook in regards to the environment, even more than Western Europeans or North Americans (Ali, 2006) What is interesting to note, is that this did not come without bitterness. It is as if the teachers understood the value of the environment but still felt resentment that the environment was being exploited because of this view. This is documented in the literature. For example, Njeru (2012) documents that because of the tendency to view the environment holistically, that these competing viewpoints are often visible. In her research, she noted that the lack of dichotomies permitted these multiple viewpoints at the same time. There is a tendency, which may be seen as a historically Western practice) "to simplify complexity to binary, opposing categories, often with essentialist underpinnings" (Belsky, 2002) p. 270. But as Buttel (2002) warned, such thinking can lead to inefficient assertions of one approach as ``good'' while the other is ``bad,'' discounting the observation that environmental views are either one or the other. Binary oppositions cannot portray the complex nature of numerous and fluid positions involved in environmental viewpoints, and they overlook how each side implies the other (Belsky, 2002).

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In addition to the ecocentric viewpoints that included resentment, the teachers discussed pride in their environment- particularly when discussing the park systems in Kenya. The participants discussed the honor of the parks and that it is known all over. This pride in their environment is echoed by Dyer and Gunnell (1993) and Dunlap and colleagues (2000) who note that ecocentric attitudes are often noted in the context of one's culture, region and experiences. As the participants proudly talked about the "Mara", their concern was expressed as they talked about the threats to wildlife and the forests.

Despite this ecocentric viewpoint, the participants also held apathetic views as well. In particular, there was a notion of blame as the teachers described this attitude. Interestingly, when the participants described this viewpoint, they often described it as being held by others. In this way, they acknowledged that this viewpoint existed but they attempted to remove themselves from this view, as if to say, that "others" were to blame. The participants used condemning language such as "carelessness." As a result, the participants often talked about solutions to changing this viewpoint. Education, empowerment, and government intervention were all cited as solutions for changing this view.

The anthropocentric view was the strongest theme in the data. That said, the participants talked about this view in very different ways. They discussed the perils, pragmatism, and a notion of self-interest when they held this view. First, they discussed the dangers that can be associated with environmental degradation. These perils were noted in a variety of ways that included health and physical danger. In this way, they view the environment as affecting humans in negative ways. They did note that this was often due to human-induced environmental degradation but sometimes it was more matter-of-fact, such as when a flood would occur that would lead to stagnant water that could potentially carry diseases. In a similar way, the teachers

viewed their environment in an anthropocentric that was more pragmatic. This pragmatism is well-documented in the literature.

EE is value-laden, which makes it difficult to teach. As a result, most schools do not approach the ethics or values of EE. Instead schools approach EE as a set of neutral and consensual activities that are ideologically free. This is problematic as students come to view the environment through one perspective instead of the multiple viewpoints that have been documented. The fact that the teachers held multiple viewpoints is not only unusual but reassuring. What little research is available on teachers' perceptions of the environment found that teachers typically hold a singular viewpoint and that view is typically ecocentric. This, despite the fact that most of their EE implementation were projects that espoused an anthropocentric view (Almeida & Vasconcelos, 2013). This is good news for the teachers as they move to implement EE into their schools as their multiple perceptions of the environment will encourage a spectrum of type of EE projects. One way to introduce different perspectives about human-nature relationship is the approach of controversial issues (often called STS for Science, Technology and Society in the literature) in environmental projects in their schools. This can be tricky though and as Claire and Holden (2007) warn the vast majority of primary and secondary teachers has no training or do not feel sufficient guidance to include these types of issues in their practice. However, with the appropriate support and training, researchers have noted that students make gains in both environmental literacy and environmental responsible behaviors (Sadler, Barab, & Scott, 2007; Sadler, 2002; Stokols, Lejano, & Hipp, 2013).

Conclusion

What we garner from this study is that environmental attitudes should not and cannot be divorced from the prevailing social conditions and cultures (Ellis & Thompson, 1997). The teachers in this study based their environmental attitudes on the parks and wildlife that influence their lives in many ways.

-professional development that first examines teacher perceptions of environment