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ABSTRACT

How do people whose identities appear so deeply connected to the land they love engage in environmentally harmful activities? This paper explores this question, presenting selected research on children's moral relationships with nature and examining the boundaries of the moral domain to more precisely delineate relations between moral constructs. Findings from five studies using structural-developmental interviews are presented. Study participants included black children and parents from a poor Houston community, Brazilian children in urban and rural parts of the Amazon jungle, and children and young adults in Lisbon, Portugal. The paper identifies anthropocentric and biocentric reasoning in the studies, finding the latter more common in older than in younger children. The paper finds that biocentric reasoning appeals to a larger ecological community than anthropocentric reasoning and uses justifications based on the intrinsic value of nature and nature's rights. The paper notes that one striking feature across the five studies was the similarity in reasoning. Cultural differences did exist, however, with the Houston child study illustrating how human violence and danger prevent children from experiencing nature. The paper suggests that biocentric reasoning may emerge in two possible ways, through daily, intimate contact with the land or as a result of modern philosophical moral discourse. The paper further suggests that morality falls within two orientations: the first focuses on obligatory requirements of right action and is embodied in most current moral theories; the second focuses on long-term character traits and personality, including courage and wisdom, and is based on what it means to be a "good" person. The paper notes that research findings provide evidence that children as young as second grade distinguish between obligatory moral acts and those left to the moral agent's discretion, but nevertheless considered good. It may be that in indigenous cultures, biocentrism is largely driven by a theory of the good. In cultures involved in addressing larger social, ecological, and technological problems, a theory of the right potentially leads the way toward a more ecologically holistic and sustainability morality. The paper suggests that although developmental psychologists have largely investigated morality in terms of a theory of the right, developmental theory could profit

by extending the moral domain to include a theory of the good. Both types of theories might be investigated in the context of the human relationship with nature. (Contains 62 references.) (KB)

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Structural-Developmental Theory and Children's Experience of Nature

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Paper Presented at the Biennial Meeting of the Society for Research in Child Development,
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2

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Structural-Developmental Theory and Children's Experience of Nature

One day I met my neighbor, a logger, on a dusty dirt road, near our respective lands, an hour drive from the nearest small town. His name is Horse. He's a big fellow, part White and part Indian. On that day he tells me that he's heading five miles north to where he and his crew are logging on a 30,000-acre cattle ranch. He adds loudly: "Now I ain't hurtin' the environment any. You know, I love this land." I do know. And I knew his dad, too, who had been foreman of another large cattle ranch ten miles east. Decades earlier, as an adolescent, I had on more than one occasion ridden horseback through that land – trespassed if truth be told. Horse and I came of age in these mountains. I answer Horse back, "Heck, the trees you're cutting, they're mostly overly mature trees, don't you think?" And he looks pleased that I had remembered the point he made during a conversation last year: that he's harvesting trees that are soon to die anyway and so he's doing no harm. "Horse, you know, I'm starting to feel a bit overly mature myself. I hope no one starts a comin' after me." "Oh hooo," Horse bellows, and he drives north. We were glad to see each other.

But I remain puzzled. How do people – whose identities appear so deeply connected to the land they love – engage in environmentally harmful activities? Do they really believe that the activity (e.g., logging mature trees) causes no environmental harm? Do economic demands simply trump environmental moral judgments? Or do both the demands and judgments coexist in an uneasy if unequal alliance? What does it mean when such people say that they love the land? Do they love the land only for what it can give to them, or in some way that extends beyond their own immediate self interest?

Such questions have formed part of my research that aims toward an account of the human relationship with nature (Kahn, 1994, 1997ab; 1999; Kahn & Friedman, 1995, 1998; Kahn & Kellert, in press). To succeed, or course, any such account must be large in scope and interdisciplinary. It would include, for example, investigations into our evolutionary history within a Darwinian framework: that certain responses to nature have been more adaptive than others (e.g., fear of snakes or an attraction to bodies of water) and thus persist in who we are today (Kellert, 1997; Kellert & Wilson, 1993; Wilson, 1975, 1984). It would also include social, political, and historical investigations (e.g., Berry, 1997; Krech, 1999; Nash, 1973; Orr, 1994). Yet my own focus over the years – while attentive to such investigations – has been more on understanding the development of children's environmental moral reasoning and values. For such understandings, when attained, capture that which is at once deeply fundamental to our being and very practical. In his classic essay on the conservation ethic, Leopold (1949/1970) argues that environmental education will continue to fail until we help people develop a "love, respect, and admiration for land, and a high regard for its value" (p. 261). "No important change in ethics," Leopold writes, "was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions" (p. 246). That is much of what I have been after: understanding, with respect to nature, children's intellectual emphasis, loyalties, affections, and convictions.

Thus I have two goals in this paper. First, I present some of my structural-developmental findings on children's moral relationships with nature. Some of this material I have presented elsewhere. But I take this occasion to raise a particularly puzzling aspect of the cross-cultural data that bear on the relative effects of development and culture in forming an individual's environmental moral conceptions. Second, I will show how this research and theorizing bear on a persistent problem in the moral-developmental literature: of how to bound the moral domain – and to do so broadly enough to be sensitive to the richness in the moral life by taking seriously diversity of moral constructs, yet precisely enough to delineate the relations between the constructs when they occur.

Environmental Moral Reasoning

Toward conveying a sense of children's environmental moral reasoning, I draw selectively from five collaborative studies. Two studies involved a black population in an economically impoverished community of Houston, Texas. In the first study (which will be referred to as the Houston child study) we interviewed 72 children, evenly divided across grades 1, 3, and 5 (Kahn & Friedman, 1995). In the second study (the Houston parent study) we interviewed 24 parents from the school which participated in the Houston child study (Kahn & Friedman, 1998). In the third study (the Prince William Sound study), we interviewed 60 children in Houston across grades 2, 5, and 8, on their moral and ecological reasoning about the 1990 Exxon-Valdez oil spill that occurred in Prince William Sound, Alaska (Kahn, 1997b). In the fourth study (the Amazonia study) we modified the methods from the Houston child study and interviewed in Portuguese 44 5th grade Brazilian children in urban and rural parts of the Amazon Jungle (Howe, Kahn, & Friedman, 1996). In the fifth study (the Lisboa study) we interviewed in Portuguese 120 children and young adults in grade 5, 8, 11, and college in Lisbon, Portugal (Kahn & Lourenço, 2001).

Methodologically, we employed the structural-developmental interview which was pioneered by Piaget (e.g., 1929/1969, 1932/1969, 1952/1965, 1983) and has been elaborated upon by a large number of more recent researchers (e.g., Colby & Damon, 1992; Damon, 1977; Eisenberg, 1982; Ginsburg, 1997; Helwig, 1995; Killen, 1990; Kohlberg, 1984; Lourenço, 1990; Saxe, 1990; Selman, 1980; Smetana, 1995; Snarey, 1993; Turiel, 1983). Some of our interview questions focused on the pollution of a local waterway: of a nearby bayou in Houston; of the Rio Negro in Amazonia; of the Rio Tejo in Lisboa. Other questions, for example, focused on participants' (a) environmental commitments and practices, (b) moral understandings about human actions that effect such everyday natural phenomena as birds, water, plants, insects, open spaces, and air, (c) potentially contradictory environmental judgments, (d) conceptions of what counts as "natural" activity, and (e) conceptions of what it means to live in harmony with nature.

I start with some results from the Houston child study. Keep in mind that the children we interviewed came from one of the most economically impoverished communities in Houston (which I will say more about shortly). Of the children we interviewed, the majority (84%) said that animals played an important part in their lives, as did plants (87%) and parks/open spaces (70%). The majority of children (72%) talked about environmental issues (such as pollution) with their family, and did things to help the environment, such as recycling (74%) or picking up garbage (25%). Children judged that polluting a bayou would have harmful effects on birds (94%), water (91%), insects (77%), and the view (93%). Moreover, it is one thing to know that harm is occurring to an entity; it is another thing to care that that harm is going on. Results showed that it would matter to these children if such harm occurred to birds (89%), water (91%), insects (77%), and the view (93%).

We also analyzed whether children judged the act of throwing garbage in their local bayou as a violation of a moral obligation. We drew here on the domain literature of Turiel (1983, 1998), Nucci (1981, 1996), Smetana (1983, 1995), and others where a moral obligation is assessed, in part, based on the criterion judgments of prescriptivity (e.g., throwing garbage in a bayou is not all right to do), rule contingency, (the act is not all right to do even if the law says it is all right to do), and generalizability (the act is not all right for people in another country to do, even if people in that country do the act). Based on these and three other criterion judgments, and in consort with children's moral justifications, results showed that the majority of the children believed it was morally obligatory not to throw garbage in a bayou. Developmentally, fewer children in grade 1 (68%) compared to grades 3 (91%) and 5 (100%) provided such morally obligatory judgments.

In this study, we also characterized children's environmental moral reasoning. In the broadest perspective, two main forms of environmental reasoning emerged from the data: anthropocentric and biocentric. Anthropocentric reasoning appeals to how effects to the environment affect human beings. Justification categories included appeals to (a) personal interests (e.g., "animals matter to me a little bit because we need more pets and different animals to play with"); (b) aesthetics (e.g., "because I'd get to see all the colors of the plants and the beauty of the whole -- of the whole natural plants"); and (c) the physical, material, and psychological welfare of self and others (e.g., "air pollution goes by and people get sick, it really bothers me because that could be another person's life"). In turn, biocentric reasoning appeals to a larger ecological community of which humans may be a part. Justification categories included appeals to the intrinsic value of nature ("if nature made birds, nature does not want to see birds die") and to the rights of nature.

Isomorphic and Transmorphic Reasoning. Two ways, in particular, emerged from the data for how children established biocentric rights reasoning. One way occurred through establishing isomorphic relationships. Here natural entities (usually animals) were compared directly with humans. For example, one child said: "Fishes, they want to live freely, just like we live freely...They have to live in freedom, because they don't like living in an environment where there is much pollution that they die every day." Thus an animal's desire ("to live freely") is viewed to be equivalent to that of a human's desire, and because of this direct equivalency children reasoned that animals merit the same moral consideration as do humans. A second way occurred through establishing transmorphic relationships. For example, a 5th grade child said:

Fish need the same respect as we need....Fishes don't have the same things we have. But they do the same things. They don't have noses, but they have scales to breathe, and they have mouths like we have mouths. And they have eyes like we have eyes. And they have the same co-ordinates we have....A co-ordinate is something like, if you have something different, then I'm going to have something, but it's going to be the same. Just going to be different.

This child appears to draw on a word he encountered in some other context to help him explain that while fish are in some respects not the same as people (they don't have noses like people do) that in important functions (such as breathing and seeing) they are the same. Thus he moves beyond a reciprocity based on directly perceivable and salient characteristics to be able to establish moral equivalences based on functional properties.

Isomorphic and transmorphic reasoning should not be confused with anthropomorphic reasoning. In the latter case, an aspect of nature is equated to be like people. Consider, for example, the anthropomorphic reasoning of this child from the Amazonia study, as she was explaining why the government should stop people from logging the jungle:

It is like me having a leg or an arm cut...Nature is like a person, no, thousands of persons because it isn't just one thing....[A] person is like a tree. If the tree bears fruits, it is the same with people. Taking care of a tree is the same. If you cut a branch off a tree it is like cutting a finger or the foot. To cut a tree down is like doing it to yourself. It is the same to our heart, it is not good. The jungle is like the heart of a person.

Here nature is likened to a human or becomes human in one or more important ways ("Nature is like a person, no, thousands of persons...[A] person is like a tree"). In contrast, as noted above, in isomorphic reasoning a moral feature (such as freedom) is deemed important to both nature and humans, and on that basis a moral principle (such as to protect freedom) is applied equally to both nature and humans ("Fishes, they want to live freely, just like we live freely").

Developmentally, the child's understandings of animals appears to start early in childhood. Myers (1998; Myers & Saunders, in press), for example, provides evidence that even by 3 months of age children begin to develop understandings that animals display four properties that remain constant across many different interactions: *agency* (a dog decides to eat and acts accordingly), *affectivity* (a dog appears to enjoy playing with the child), *coherence* (a dog is able to coordinate its movements in response to the child's actions), and *continuity* (the dog's repeated interactions become regularized into a relationship with the child). Such understandings, according to Myers, make it possible for children to recognize that animals have their own subjective states and can have correlative interests in interacting with the child ("my dog wants to play with me"). These cognitive underpinnings, in turn, make possible the development of caring for individual animals. Such caring, however, can fall short. After all, what about animals children do not know personally – a dog across town? macaques in Indonesia? Presumably such animals also deserve moral consideration. Thus, my account of the development of children's isomorphic and transmorphic biocentric moral reasoning extends Myers's theorizing insofar as it characterizes increasingly complex levels of moral reasoning that allow older children to construct generalized concepts of care: for animals in general and potentially the natural world as a whole.

Isomorphic and transmorphic reasoning may also provide the developmental underpinnings for yet another evolutionarily-shaped relationship with nature. What I have in mind is this. In his book *The Others: How Animals Made us Human*, Shepard (1996) argues that animals were "among the first objects of classificatory thinking" (p. 97) and that "the human species emerged enacting, dreaming, and thinking animals and cannot be fully itself without them" (p. 4). "Of each species", Shepard proposes, "we can say, 'I am not that -- and yet, just in this one respect, it is like a part of me,' and so on, as though with every 'I am not that one' we keep some bit of them. We take in the animal, disgorge part of it, discover who we are and are not" (p. 72). Thus, in comparison to anthropomorphic reasoning, isomorphic reasoning – and to a larger extent transmorphic reasoning – grants greater independence to the natural world, embracing what Shepard (1996) refers to as "otherness": the partly unknown and wild aspects of nature that "is essential to the discovery of the true self" (p. 5).

Cross-Cultural Similarities. One of the striking features across our five studies was the degree of cross-cultural similarities. For example, by and large participants across studies said that animals, plants, and open spaces played an important part in their lives, were aware of environmental problems, recognized that pollution harmed various natural entities (e.g., birds, water, insects, and the view), would care if such harm occurred, and brought moral obligatory reasoning (based on the criteria of prescriptivity, non-contingency of conventional practices, and generalizability) to their environmental judgments.

Even more striking, perhaps, was the degree to which participants' reasoning seemed virtually identical across locations. To provide a sense of the substance here – that the similarities do not merely reflect superficial resemblances – I provide some matched examples of reasoning across locations. I start with an example that speaks to a common if not visceral response people have to a polluted environment.

1A. [The people by the river would be affected because] the smell of the water, it should bother people to open their windows and feel that foul smell....[It would matter to me] because a person shouldn't have to smell dead fish or trash bags full of rotten stuff when she opens the window in the morning." (Lisboa study)

1B. [The air] stinks, 'cause I laid up in the bed the other night. Kept smelling something, knew it wasn't in my house, 'cause I try to keep everything clean. Went to the window and it almost knocked me out. The scent was coming from outdoors into the inside and I didn't know where it

was coming from.... Now, who'd want to walk around smelling that all the time? (Houston parent study)

Such reasons grounded the participants' judgments that it is wrong to throw garbage in a local waterway or to pollute the air.

Other examples speak to the importance of trees in the healthy psychological functioning of human lives:

2A. I live in the country and I find that living in the city is very difficult, it causes stress. For instance, we live on this street full of trees. Anytime that I leave home in the morning, I feel invigorated seeing the trees and their shade, I can breathe, I can hear the birds. Now, if I lived on a street close to Avenida da Republica, I would feel stressed seeing that amount of cars, very few trees. (Lisboa study)

2B. Yesterday, as my son and I were walking to the store and we were walking down Alabama [street] and for some reason, I think they're getting ready to widen the street. And it's a section of Alabama that I thought was so beautiful because of the trees and they've cut down all the trees. And you know it hurts me every time I walk that way and I hadn't realized that my son had paid attention to it, too. So, he asked me, he said, "Mama, why are these, why have they cut down all the trees?" And then he asked me, "Well, if they cut down all the trees everywhere, would that have an affect on how we breathe?" (Houston parent study)

Thus I do not think it is the case that aspects of everyday nature – trees, plants, open spaces, sunshine, fresh air – are luxuries of the well-to-do; rather, they are psychological necessities that people often recognize. I will develop this point in the last section of this chapter.

Earlier I provided an example from the Houston child study of transmorphic reasoning. I include that example below, along with virtually identical examples from children in Amazonia and Lisboa:

3A. Fish don't have the same things we have. But they do the same things. They don't have noses, but they have scales to breathe, and they have mouths like we have mouths. And they have eyes like we have eyes. (Houston child study)

3B. Even if the animals are not human beings, for them they are the same as we are, they think like we do. (Amazonia study)

3C. [Wild animals are important] because they breathe like we do, and sometimes we think that because they are animals they are not like us, that they don't do certain things. Then we end up seeing that they do. (Lisboa study)

Thus, again, these environmental judgments are based on the view that although animals are not identical to human beings ("fish don't have the same things we have"; "animals are not human beings"; "animals they are not like us") both animals and people have significant functional equivalences (fish "don't have noses, but they have scales to breath"; animals "think like we do"; wild animals "breathe like we do").

Aristotle (1962) begins *Nichomachean Ethics* by saying that "the good, therefore, has been well defined as that at which all things aim." He then develops a teleological account of the good, wherein each kind of inanimate object (e.g., a clock) and animate being (e.g., a human) has an ideal way of functioning. Something of this Aristotelian orientation emerged from the data. Consider examples across four studies:

4A. Yea, because it looks better...Well, I mean without any animals the world is like incomplete, it's like a paper that's not finished. (Prince William Sound study)

4B. Because water is what nature made; nature didn't make water to be purple and stuff like that, just one color. When you're dealing with what nature made, you need not destroy it. (Houston child study)

4C. Because the river was not made to have trash thrown in it, because the river belongs to nature. (Amazonia study)

4D. [Wild animals] are important because if someone created them it is because they have some kind of role. (Lisboa study)

All these participants offer a moral conception of the proper endpoint of nature, and that the good arises with nature reaching that end and being complete ("without any animals the world is like incomplete, it's like a paper that's not finished"; "nature didn't make water to be purple"; "because the river was not made to have trash thrown in it"; "because they [wild animals] have some kind of role").

Thus our quantitative and qualitative cross-cultural results support the proposition that there are universal features in children's conceptions and values of the natural environment. If true, the reason may be that inherent aspects of nature itself help give rise to children's environmental constructions. In this way, nature is not a mere cultural convention or cultural artifact, as some postmodern theorists suggest. Rather nature is part of a reality that not only has shaped our evolutionary history but from a developmental perspective bounds children's cognition.

By emphasizing cross-cultural similarities, I do not want to undermine unique features of each cultural context, and how these features, too, shaped children's environmental commitments and sensibilities. In the Houston child study, for example, 7% of the children responded to the question of what they thought about in terms of nature with issues pertaining to drugs and human violence; and when asked about what environmental issues they talk about with their families, 17% of the children responded with similar issues. As one child said when merely describing a bayou (a preliminary question in the interview):

It's where turtles live and the water is green because it is polluted. People – some people need to um, some people are nasty. Some people, you know, like some people go down there and pee in the water. MM HMM. Like boys, they don't have no where to pee, and drunks, they'll go do that, too. OKAY. And sometimes they'll take people down and rape them, and when they finished, they might throw 'em in the water or something. SO, WHAT DOES IT LOOK LIKE? HOW WOULD YOU DESCRIBE IT? A BAYOU? It's big and long and green and it stinks...And turtles live in it.

Indeed, it was this element of human violence and danger that often prevented children in Houston from experiencing nature. For example, consider one of the children in the Houston child study, Eboni, who seemed to us least connected to or interested in nature. We asked her, "Do you ever climb trees?" She said no. We asked why. She responded: "Cause it's dangerous. Cause if they fall the grass might have glass and then they fall on they face in the glass and then they'll cut their nose or eyes and they they'll be blind." Eboni told us that she never goes to the local park. We asked why. "Because I used to go, now the people go in there and they be throwing glass and they have guns and stuff and they might shoot me." Indeed, Eboni does not even like to play in her back yard. Why? "Nothin' can get me. Like a stranger or something." Thus it is less the case that Eboni has no affiliation with animals, plants,

and parks/open spaces, and more that her economically impoverished and violent urban surroundings have made nature largely inaccessible.

There are lessons to be learned from these children in the inner-city of Houston. Lessons that apply to many communities. Namely, when human violence increases it becomes all the less likely that children will experience nature even if nature is there to be experienced. Pyle (in press) speaks eloquently to this point:

With population expansion and crowding, the frequency of assaults – or its perception – has increased to the point that few parents are comfortable allowing their children anything like the outdoor freedom and latitude that my generation took not only for granted, but as an essential birthright. Whether or not violent incidents represent a genuine danger or one largely projected through sensational news coverage, parents think that the woods are unsafe. Recently I met a woman, an academic sensitive to the natural world, who nonetheless would not permit her seven-year old outside the family's cul-de-sac unaccompanied. This would have been sheer torture to my friends and me...The loss of footlooseness among the young must be counted every bit as much a tragedy and a challenge as the loss of places in which to be footloose.

Moreover, as our Houston data shows, it is not only parents who – often with good reason – curtail a child's explorations of his or her environment (natural and built): children curtail their own explorations, as well.

The Development of Biocentric Reasoning

In the above account of environmental moral reasoning, I pay heed to culture. Yet some readers may be thinking: "Well, in all that has been said so far, culture really plays a secondary role, attenuating or modifying what are proposed as more fundamental psychological processes and constructions. Are there not ways that culture plays a primary role?" Perhaps. What I would like to us to explore now is a puzzling aspect of my data, and whether a cultural explanation can be invoked to solve it.

The puzzle emerged in the following way. Earlier I showed that both anthropocentric and biocentric reasoning emerged in the Houston child study. However, taken across nine questions that we analyzed systematically, only about 4% of children's reasoning was biocentric. Based on this result, I wondered what we would find if we interviewed children who grew up not in an inner city but in a rural village that lived in daily intimate connection with the land. Would we, for example, find a greater proportion of biocentric reasoning? This question was one of several that motivated the Amazonia study. Our results showed, however, that even in the small rural village along the Rio Negro (accessible only by boat), there was no statistical difference in the percentage of biocentric reasoning (about 4% in Houston; 4% in Manaus; and 8% in the remote village).

In interpreting these results, I could see three possible explanations. One explanation (offered to me informally by Roger Hart of City University of New York) is that although the village population in the Amazon was remote, the interviewing occurred in Portuguese (instead of an indigenous language). Accordingly, the interview was weighted toward eliciting responses imbued with the Portuguese colonial (anthropocentric) culture. A second explanation is that biocentric reasoning may have a cultural basis, and does not emerge in every culture that lives close to the land. This explanation would be compatible with Diamond's (1993) observations during his research with native peoples in New Guinea, where he reports that these people had a rather insensitive utilitarian orientation toward all of nature. A third explanation is that across cultures biocentric reasoning emerges more fully in older adolescents and adults. Indeed, this explanation would be compatible with the developmental results from the Houston

child study. There we found that when biocentric was used, it was used almost exclusively by the older children (1st graders, 7%; 3rd graders, 37%; 5th graders, 56%).

Being a developmental psychologist, I was rather inclined to believe that the third explanation had particular merit. In this light, the Lisboa study seemed ideal. For we were able to control not only for language (interviewing in Portuguese), but within the very country that had colonized much of Brazil. Thus, if biocentric forms of reasoning were found to increase with age across our Portuguese population, it would provide evidence to support the developmental hypothesis. Our results showed that on a few questions (that we had not asked in the previous studies) that biocentric reasoning largely increased with age. For example, we asked "Are wild animals important to you, and why or why not?" Results showed the following use of biocentric reasoning: (fifth grade: 43% of their justifications were biocentric; 8th grade, 67%; eleventh-grade 60%; and college 71%). Roughly, an upward trend. But such trends were not pervasive. In other words, the proportion of biocentric reasoning with the older population in Portugal roughly matched the proportion in the Houston child study and Amazonia study.

In interpreting these findings, I had suggested elsewhere (Kahn, 1999, chap. 10) that there was some qualified support for the developmental hypothesis. I said, for example, that perhaps biocentric reasoning has taken shape structurally by adolescence, but then gets employed only occasionally, depending on the context. As an analogy, imagine if you had a sports car that had the capability of going 110 mph. Occasionally you might exercise this capability. But usually the context of driving in the city prevents such activity. Similarly, adolescents and young adults may have developed the capability to engage in biocentric reasoning, but rarely do so.

Such an explanation, however, may misconstrue key ideas that lie at the intersection of biocentric reasoning, development, and culture. Throughout my investigations, I have assumed that there is a single pathway by which biocentric reasoning emerges. But perhaps two pathways actually exist. One pathway may emerge (but for some reason – as shown by the Amazonia study – not in all cases) in cultures that live in daily, intimate contact with the land. Thus, for example, Nelson (1989) reports on the biocentric relationship that the Koyukon of Northern Alaska have with their community of nature: a community that includes not only humans, animals, and plants, but mountains, rivers, lakes, storms – the earth itself. As Nelson (1989) writes: "According to Koyukon teachers, the tree I lean against feels me, hears what I say about it, and engages me in a moral reciprocity based on responsible use. In their tradition, the forest is both a provider and a community of spiritually empowered beings. There is no emptiness in the forest, no unwatched solitude, no wilderness where a person moves outside moral judgment and law" (p. 13). In turn, a second pathway by which a culture can develop a biocentric orientation may depend less on daily, intimate contact with the land, and more on modern philosophical moral discourse. Here there is some historical precedence that such moral discourse leads to extending moral standing to an ever widening range of entities. For example, over the last 150 years in the United States, moral rights have accrued to Blacks, women, and children; and some argue it is just a matter of time before they accrue to animals and nature in general. As Stone (1986) writes: "each time there is a movement to confer rights onto some new 'entity,' the proposal is bound to sound odd or frightening or laughable. This is partly because until the rightless thing receives its rights, we cannot see it as anything but a thing for the use of 'us' – those who are holding rights at the time... I am quite seriously proposing that we give legal rights to forests, oceans, rivers and other so-called 'natural objects' in the environment – indeed, to the natural environment as a whole" (pp. 84-85).

If this "dual-pathway" account has merit, then are the biocentric conceptions that emerge by means of these two pathways the same? I do not know. To answer this question, we would need psychological research with children, adolescents, and adults in native cultures, such as perhaps the Koyukon, that have a clear biocentric ethos. One major difficulty of conducting such research, of course,

is that such cultures are disappearing quickly, absorbed by increased globalization, and changed – apparently irreversibly – by the introduction of advanced technologies and Western consumer desires.

Integrating a Theory of the Right with a Theory of the Good

Philosophers and lay people alike often hold strong and diverging opinions about morality's content, scope, and epistemic status. Still, the possibilities of what counts as moral usually fall within two broad orientations – what can be termed a theory of the right and a theory of the good (Louden, 1984). I would first like to sketch these two orientations. Then I will suggest that both orientations are essential to understanding children's moral relationship with nature.

Obligatory requirements for right action have been proposed by moral theorists for centuries. For example, around 400 BC lived a philosopher in China, Mo Tzu, who established a system of thought which "ranked with Confucianism for some two centuries as one of the eminent schools of the day" (Mei, 1972, p. 410). Mo Tzu critiqued Chinese society, including its feudalistic hierarchy and daily brutalities, and offered a solution. He taught that "Partiality should be replaced by universality" and "he exhorted everyone to regard the welfare of others as he regarded his own" (Mei, 1972, p. 410). More recently, around two hundred years ago, Kant (1785/1964) similarly proposed the categorical imperative: Act only on that maxim which you can at the same time will to be a universal law. Even more recently, Rawls (1971) grounded his influential theory of justice in Kantian-like impartiality. In what Rawls calls the "original position," he asks us to imagine that we are to be born into a society and do not know what our positions will be: wealthy or poor, healthy or sick, talented or not, and so on. Rawls then asks us to choose basic moral principles under which we would want to live. Rawls contends that once we are placed under this "veil of ignorance" – that is, once we are equally encumbered by not knowing about our own particular qualities – that we will choose egalitarian moral principles that are binding on all rational people. Along similar lines, Gewirth (1978) defines morality as "a set of categorically obligatory requirements for action...[that apply to everyone] regardless of whether he wants to accept them or their results, and regardless also of the requirements of any other institutions such as law or etiquette" (p. 1).

Over the last several decades, the field of moral development has been particularly shaped by two research programs, one impelled by Kohlberg (1969, 1984) and the other by Turiel (1983, 1998). Both programs have drawn on the above philosophical traditions. According to Kohlberg (1974), for example, a moral judgment involves "a mode of choosing which is universal, a rule of choosing which we want all people to adopt always in all situations" (p. 11). Thus, like Kant, Mao Tzu, and others before him, Kohlberg (1971) viewed the concept of moral obligation in terms of "two formal characteristics of moral judgment, prescriptivity and universalizability" (p. 304). Along somewhat similar lines, Turiel and his colleagues have defined obligatory moral judgments as prescriptions which are (a) generalizable, meaning that they apply universally to all people in morally similar situations, (b) not contingent on societal rules, laws, or conventions, and (c) justified by considerations of justice, fairness, rights, or human welfare. In turn, they have used these criteria to differentiate moral issues from those that are personal and conventional. Personal issues refer to those that lie under the jurisdiction of the self. Conventional issues refer to behavioral uniformities designed to promote the smooth functioning of social interactions. This perspective has become known as the "domain perspective" in moral development.

This emphasis on moral obligation – an organizing principle in a theory of the right – has been central to a good of my own research on children's relationship with nature. As shown above, for example, children across cultures appear to bring concepts of moral obligation to bear on acts of water pollution (using criteria as established by Turiel). In other words, children view such an act as wrong, wrong even if one's cultural custom allows for the act, wrong even if everyone in one's culture does the act, and wrong for other cultures even if they have cultural customs and practices that allow for the act.

Children also bring a theory of the right to judgments about harm to other constituencies of the natural world, including birds, insects, landscape, and people.

In contrast to a theory of the right, a theory of the good – with roots to Aristotle in *Nichomachean Ethics* – focuses on what it means to be a "good" person or on a conception of the "good" or the "good life." Here the focus is on long-term character traits and personality, such as courage, temperance, loyalty, and wisdom.

In the past (Kahn, 1992), one way I have sought to investigate children's conceptions of the good is by focusing on what I termed discretionary moral judgments. This term discretionary follows Williams' (1985) view that there may be actions that are "heroic or very fine actions, which go beyond what is obligatory or demanded. Or there may be actions that from an ethical point of view it would be agreeable or worthwhile or a good idea to do, without one's being required to do them" (p. 179). In other words, discretionary moral judgments are those where moral action, while not required of an agent, is nevertheless conceived of as morally worthy based on concerns of human welfare or virtue (see, also, Fishkin, 1982; Hart, Yates, Fegley, & Wilson, 1995; Nisan, 1991; Hunt, 1987; Urmson, 1958).

For example, in one study I interviewed 72 children in grades 2, 5, and 8 about three brief stories which controlled for the degree of personal cost – low or high cost – incurred for performing the moral act (Kahn, 1992). The results provided evidence that children as young as second grade make distinctions between moral acts that are morally obligatory for a moral agent to perform, and moral acts that are left to the moral agent's discretion. Toward making this latter distinction, two criteria were used in consort. The first criterion drew on William's (1985) proposal that one obvious way to assess the moral status of a discretionary act is to assess whether the act would be greatly admired or well thought of. This criterion harkens back to the Aristotelian concept of the "good" noted earlier, and was assessed in terms of praiseworthiness: whether children thought the protagonist of a moral action should be praised for performing a positive act. Results showed across all four positive conditions that of the children who viewed the positive acts as discretionary the large majority (over 90%) provided praiseworthy evaluations. The second criterion drew on children's justifications for praising. Across all four positive conditions, the large majority (over 86%, with an average of 94%) of justifications children provided for praising entailed concern with other's welfare or virtuous character. Given that concerns with human welfare and virtue are central to moral discourse and moral theory, and taking such justifications in conjunction with the praiseworthy evaluations, the results help establish children's discretionary judgments as moral.

In my more recent research on children's environmental moral relationships with nature, this orientation toward a theory of the good has been playing an important role. For example, in one set of analysis across studies, my colleagues and I have pursued questions of what it means to live in harmony with nature. Emerging from the data are five conceptions:

Physical

Conception based on doing something to nature, for nature, or with nature, including negative acts ("Harmony with nature is not to destroy trees, not to destroy nature"), positive acts ("Harmony means to protect the animals and the plants"), and activity ("When a person is living in harmony with nature he goes to the country side and has a picnic").

Sensorial

Conception based on apprehending nature directly with the senses ("Harmony means seeing everything blooming, not seeing people cutting trees down, smelling nature's environment").

Experiential

Conception based on experiencing a particular state of mind or feeling ("Harmony means feeling comfortable with yourself in that moment and in that place").

Relational

Conception based on a relationship between humans a nature, including personal caretaking ("[Harmony means] when I see a wounded animal, I help it") and psychological rapport ("[Harmony means] talking with the trees.... Sometimes I talk to them as if they were people, like this").

Compositional

Conception based on being in balance with nature, including a focus on anthropocentric compositions ("We can live in harmony with nature without having to destroy more than we are allowed; nature has 'x' resources to give us, and if we take them all at once, we leave nothing to grow") and biocentric compositions ("To live in harmony, it is the balance, we trade with nature in a way that none of the parts suffer any harm.")

Developmentally, in the Lisboa study, we found that compositional reasoning increased with age: fifth grade (3%), eighth grade (31%), eleventh grade (52%), and college (71%).

In the above conceptualizations of harmony, I have sought to highlight the "virtue" aspects of the reasoning. For example, by compositional reasoning I do not mean something like "additive composition," where there is a step-wise addition to a structure. Rather, I mean composition as in say a musical or artistic composition, where one seeks an overarching integrity, beauty, sense of balance, or proportion; and where one focuses on the entire entity, and the ways in which the pieces support the whole. (3%), eighth grade (31%), eleventh grade (52%), and college (71%).

Yet it is not always possible to disentangle completely justice (a subset of conceptions of the right) from virtue (a subset of conceptions of the good). Notice, for example, that the above example of compositional virtue reasoning in a sense brings forward a equilibratory structure ("To live in harmony, it is the balance, we trade with nature in a way that none of the parts suffer any harm"). Potentially, it is this same equilibratory structure that governs, for example, what I have called earlier isomorphic and transmorphic justice reasoning. Recall that with isomorphic reasoning there is an appeal that is based on recognizing value or justice correspondences between humans and other natural biological or non biological entities ("because I think that animals have as much right to live and to have good conditions of life as we do"). In turn, transmorphic reasoning takes an isomorphism and then extends it through either compensatory or hypothetical considerations ("because they [animals] breathe like we do, and sometimes we think that because they are animals they are not like us, that they don't do certain things. Then we end up seeing that they do").

In conceptions of harmony, then, justice structures are sometimes embedded in virtue reasoning. Correlatively, researchers like Kohlberg (drawing on Socrates) have spoken of justice being a virtue, perhaps the highest virtue. In short, there is justice in virtue and virtue in justice. Both propositions I believe are correct. Yet neither proposition is reducible to the other.

Indeed, together both orientations can help speak to the problem I set up earlier regarding biocentric reasoning. Recall that I had proposed – as a tentative hypothesis – that biocentric reasoning can develop along two pathways. One pathway may emerge in indigenous cultures that live in daily, intimate contact with the land. In such cultures, there is less need for solving complicated social disputes and ecological problems that transcend local geography. Accordingly the biocentrism, if it emerges, may be largely driven by orientations that I have characterized in terms of a theory of the good. In contrast, a different form of a biocentric orientation may emerge in other cultures, such as ours, that have needed, by necessity, to solve larger social, ecological, and technological problems. As a culture addresses such problems, a theory of the right potentially leads the way toward a more ecologically holistic and sustainability morality. Of course, if even the rough outlines of this account has merit, I would expect both orientations, to some degree, to be present in all cultures.

Conclusion

Although there are legitimate disagreements about what counts as moral, I have suggested that the possibilities usually fall within two broad orientations. One moral orientation focuses on obligatory requirements of right action, and is embodied in most moral theories today (including those that are consequentialist and deontological). The second moral orientation, with roots to Aristotle in Nichomachean Ethics, focuses on what it means to be a "good" person or on a conception of the "good" or the "good life." Here the focus is on long-term character traits and personality, such as courage, temperance, loyalty, and wisdom. For the most part, however, developmental psychologists have investigated morality in terms of the first orientation: a theory of the right. In turn, I suggested that we could profit by extending the moral domain to include a theory of the good. And I sought to show how both theories can be investigated particularly well in the context of the human relationship with nature.

Granted, integrating a theory of the right with a theory of the good poses many problems that I have not broached in this paper (cf. Nucci, 1989). For example, one problem – part of Kohlberg's "bag of virtues" critique – is that moral "goodness" can move quickly into nonmoral territory, and the dividing lines are not easily drawn. Pursuing one's musical interests, for example, might be labeled "virtuous," but is it morally virtuous? Answers to such questions depend on the extent to which human flourishing is viewed to lie within the scope of the moral domain (cf. Scheffler, 1992; Williams, 1985). It is also the case that seemingly virtuous qualities (such as loyalty) can appear to become immoral in unjust causes (e.g., a gang member who loyally obeys his violent leader). Still, such problems notwithstanding, I have suggested there are fundamental linkages between a theory of the right and a theory of the good, and that neither orientation is reducible to the other. I have also suggested that both orientations speak to essential aspects of our moral selves.

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