



RESEARCH PAPER

A Shared Field of Semiosis: Multispecies Entanglements and the More-than-Human World of Manchar Lake, Pakistan

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ABSTRACT

This paper examines the Manchar Lake as a semiotic ecology in which humans, nonhumans, and non-living elements are entangled in the making of life, survival, and predation. Drawing Eduardo Kohn's (2013), and Terrence Deacon's (2012) the objective of the paper is to take biosemiotics beyond forests to show how rivers and lakes and being inhabiting them communicate meaning through semiosis. This paper is based on one year of ethnographic work – participant observation with the lake and conducting semi-structured interviews the fishing community of the lake. The results show that beings of the lake rely on various ecological cues to survive, avoid danger, and respond to predators. This creates a shared field of semiosis in which signs are central to both survival and exploitation. The paper challenges human-centered understandings of meaning and concludes that the lake should be understood as an emergent semiotic assemblage in which humans, nonhumans, and nonliving forces are mutually implicated in the ongoing production of meaning, movement, and life. This paper recommends going beyond human understanding the life of the lake.

KEYWORDS Biosemiosis, semiotic ecology, multispecies ethnography, Manchar Lake, Pakistan

Introduction

Manchar Lake, one of the biggest and oldest freshwater lakes of South Asia, I encountered a scene in which a boy of about 12 was fishing at the bank of the lake. The boy has tied the small fishing net from the eastern side with bamboo, forming a square, with the western end open. There was a stick in the boy's hand that he was hitting in the water with force while moving towards the open end of the net. He was doing it continuously. When asked what he is doing? He said, 'I am capturing fish.' How? 'When I strike this stick in the water, it produces sound and vibrations in the water like tahhhhh tahhhhh, thhhrrrrrrthhhrrrrrr, he made such sounds in his mouth as he hit the stick in the water. These sounds create chaos, locally called *traah*, in fish, and fish run in the opposite direction of the sound. In the opposite direction is a fishing net, hence the fish is trapped.

What are such sounds linguistically, and do they convey any meaning? According to Janis B. Nuckolls (1999), such idiophones are 'sound symbols' which "go beyond linguistic function as a contrastive, non-meaning-bearing unit, to express some kind of meaning directly" (Nuckolls, 1999, p. 228). In other words, such sounds communicate meaning by their own virtue rather than in association with other sounds, unlike language sounds. This sound symbolism is possible due to Charles Peirce's (1955)

theory of semiosis, in which he developed three possible relations between a symbol and its reference: iconic, indexical, and symbolic.

This article explores the lake's semiotic and emergent life, arguing that nonhumans also understand the lake and engage with its complex, multispecies world through signs that are inherent to the lake's ecology. This article asserts that "signification is not the exclusive province of humans" (Kohn, 2013, p. 31), but that nonhuman beings, too, signify within the ecology and interpret signs; nonhumans also engage with and represent ecology through their own complex mechanisms of sign interpretation, which go beyond those of humans (Kohn, 2013).

In so doing, this article also discusses how nonliving things have a life of their own, if not biologically but semiotically, that is to say, things like water, wind, sound, boats, and other things function as 'ecological signs' which inform humans and nonhumans about the ecology. There are two parts of this article. The first part discusses how different paralinguistic sounds and vibrations function as signs that extend beyond human language. For this, we made use of Charles Peirce's semiosis, especially as contended by Janis Nuckolls (1999) in his concept of 'Sound Symbolism' and also Eduardo Kohn's use of semiosis in his book *How Forests Think* (2013). The second part discusses how nonexistent things and events function as signs. For this, we drew on Charles Peirce's semiosis, as articulated by Terrance Deccan (2012) through his concepts of 'Absential' and 'Emergent' in his book *Incomplete Nature: How Mind Emerged from Matter*.

This article is imperative as it takes biosemiotics beyond the Indigenous people of the Amazonia to bring into focus the ways other ecologies are full of signs and how people and nonhumans exploit those signs and symbols in the ecology of selves. Thus, by foregrounding the biosemiotics world of the Manchar Lake, and by showing how the multispecies relations emerge at the lake, this article contributes to the emerging debates in multispecies ethnography and biosemiotics.

Literature Review

Toward a Multispecies Semiotic Ecology: Transcending the Nature/Culture Dualism

The conceptual departure point for this study is the "Ontological Turn" in anthropology, which seeks to dismantle the entrenched Western opposition between nature and culture. As Sahllins (2013) notes in his foreword to Descola's *Beyond Nature and Culture*, this work is central to "relativizing and transcending the fundamental Western opposition of nature and culture" (p. xi). Since the 17th century, dualism has preoccupied Western philosophy and has shaped the epistemological terrain of social sciences, including anthropology. In anthropology, dualism has an impact on the way nature is treated as passive, inert, and a backdrop to human activities only.

Descola (2013) and Viveiros de Castro (1998), among others, challenge the universality of this dualism. They argue that the Western dualism emerged during a particular historical moment and can be represented with "the moderns" (Descola 2013, xviii). However, people who are outside the modern or the Indigenous people do not necessarily make a distinction between a "supernatural" realm and a "natural" realm composed of "mindless, nonhuman realia" (Sahllins, 2013, p. xiii). This "Great Divide," as Bruno Latour (1993) called it, requires critical investigation. Descola calls for the "Anthropology of Nature" while working with the Indigenous people of Amazonia to envision a world in which nature distributes "technical skills, ways of life, and modes of

reasoning" equally among humans and nonhumans (Descola, 2013, p. xv). For Viveiros de Castro (1998, 2015), perspectivism is a way forward. It is the Amerindians' theory that argues that animals are "subjects" with whom humans have social, political, and even diplomatic relations. Thus, the world is "multinatural," with multiple natures and one culture, rather than "multicultural," which assumes one nature and multiple cultures. By merging these domains, we move toward an anthropology that renegotiates its scope and methodology (Viveiros de Castro, 1998) to develop a "more robust analytic for understanding human relations to nonhuman beings" (Kohn, 2013, p. 7).

In other ways, a different field of multispecies ethnography reframes anthropology's preoccupation with anthropocentrism. Scholars working in the field of multispecies argue that "world-making" is a multispecies or interspecies relation, and it cannot be reduced to humans alone. In so doing, they argue to expand the scope of anthropology beyond anthropos to include other-than-human beings as protagonists (Kirksey and Helmreich, 2010; Van Dooren et al., 2016). They put forward two major arguments. First, they deconstruct the idea of human exceptionalism by exploring what it means to be human within interspecies relations (Haraway 2008), and second, they argue that nonhumans are also social, thus expanding it beyond humans (Tsing, 2014). Thus, their motto is to envision social relations that "do not come into being solely because of humans" (Tsing, 2014, p. 27).

Similarly, Donna Haraway (2008) urges us to sense the "agility" of species in "contact zones" (p. 35), where humans and animals "become-with" as "companion species." In this relationality, species are viewed as "unloved others" (Rose and van Dooren, 2012) or as parts of a "natureculture entanglement" (Fuentes, 2010), rather than as passive objects acted upon by culture. In accentuating the world-making and meaning-making of nonhumans, Van Dooren (2014) demonstrates how penguins permeate the meaning in places where they breed. These interspecies relations manifest the multispecies agencies and exemplify the "diverse ways of life that constitute the world" (Van Dooren et al., 2016, p. 2) as they "assemble to become-with each other" (Haraway, 2008; Tsing, 2015).

Peircean Semiosis and the Ecology of Selves

Charles Sanders Peirce (hereafter CP) triadic semiosis allows us to understand the semiotic world of the Manchar Lake. Peirce argues that the field of semiosis consists of a Sign, its Object, and its Interpretant (CP 5.484), which makes communication possible. A sign (or representamen) is "something which stands to somebody for something in some respect or capacity" (CP 2.228). As Peirce (1955) explains, the sign stands for its object in reference to a "ground" (p. 99). Signs transition through three stages – Firstness, Secondness, and Thirdness – where a sign is only fully realized when an Interpretant (Thirdness) uses it. Peirce further divides signs into three trichotomies, most notably: Icon: A sign that refers to its object by virtue of its own characters or resemblance (Peirce, 1955, p. 102). Index: A sign that refers to its object by being "really affected by that Object," such as an existential link (p. 102). Symbol: A sign that refers to its object by virtue of a law or association of general ideas (pp. 102–103).

Through this lens, we understand that "Selves, human or nonhuman... are outcomes of semiosis" (Kohn, 2013, p. 34) as they are alive and permeate everything. Kohn's (2013) work among the Runa people illustrates this, as he writes, when a jaguar sees a human as a "self" like himself capable of looking back, it changes its behavior. This "ecology of selves" suggests that species have perspectives through which they interpret the world."

Deacon (2012) extends this Peircean semiosis to understand how meaning emerges from what is not there. His concept of “absential,” which is a phenomenon of something missing and nonexistent, allows us to see how humans and nonhumans exploit the signs at the lake. For Deacon (2012), absence is not non-existence; it is “constitutive absence,” because a sign only means something. After all, it points to something missing or not yet complete, such as a possible future event or a warning based on the past (Deacon, 1997, 2012). In this regard, his theory of emergence connects the physical world and the semiotic world.

As Alaimo (2010) argues that human body is not separate from the environment. She coined the concept of “trans-corporeal,” by which she meant that the human body is constantly interpenetration of water, chemicals, and species around it. Thus, we are bodies of water (Neimanis 2017), and we must not treat water (lakes, rivers, and oceans) as mere metaphors but material reality. A few scholars, thus, explore the biosemiotics of water ecologies to demonstrate how water flows, water sounds, and other movements of water in rivers and lakes function as signs. Ryan (2022) introduced the concept of “hydro-poetics” that shows water bodies possess “language” and “voice” characterized by embodiment and relationality. While Farina (2014) works define soundscapes as a combination of biophony, geophony, and anthrophony. In other words, not only what humans sound mean in the lake ecology, but also the sounds of the lake, and also their absences, communicate meaning.

In the following pages, I demonstrate the ways bio-hydro-semiotics inform local fishermen, fish, and waterfowl. This paper does so by tracking the fish and waterfowl hunting techniques to understand the emergent properties of the lake and the ways those properties are interpreted in the survival strategies both by the Mohanna and the nonhuman "selves" they pursue (Kohn, 2013)

Materials and Methods

This article is based on one year of ethnographic fieldwork with the Manchar Lake and the fishing community of the lake during 2014-15. During the stay at the lake, Kumar regularly participated in fishing and waterfowl hunting (often staying in a boat all night) and in everyday activities like playing cards during leisure time. Participant observation provided deeper insight into the lake's multispecies world through various fish and waterfowl hunting methods. The informal discussions during participant observation provided deeper insights into the multispecies semiotic world of the lake. These interactions provided “deep hanging out” opportunities to understand the Indigenous ecological knowledge and semiotic practices of the lake and fishing community. Further, semi-structured interviews were conducted (n=42) with the fishers to triangulate the data. These datasets allowed me to understand the multispecies semiotic world of the lake and the ways human and other-than-human beings exploit it.

Results and Discussions

The relational semiotic world of the Lake: Part One – Sounds

Acoustic Semiosis and the "Bhaan" Technique

During an initial field observation at Manchar Lake, an adolescent fisher – approximately twelve years of age – was noted employing a specialized traditional fishing technique during the summer season, characterized by low water levels. The

method involved a quadrangular net secured by bamboo on the eastern side, with a deliberate opening facing west. The fisher utilized a rhythmic, forceful percussion of a wooden staff against the water's surface while advancing toward the enclosure. Upon inquiry, the individual described this process as a method of fish entrapment through the generation of acoustic disturbances; he replicated the auditory output vocally as *tahhhhh* and *thhhrrrrrrr*, explaining that these sounds induce a state of "chaos" – locally termed *traah* – among the fish. This auditory stimulus triggers an instinctive evasive response in the prey, driving them away from the source and into the awaiting net.

Linguistically, these sounds raise questions regarding their placement within a formal paradigm and their capacity to communicate meaning. According to Nuckolls (1999), such ideophones function as "sound symbols," which she defines as any sound that "goes beyond linguistic function as a contrastive, non-meaning-bearing-unit, to directly express some kind of meaning" (p. 228). Consequently, these sounds communicate meaning by their own virtue rather than through the arbitrary association typical of standard phonemes. This sound symbolism is further elucidated by Peirce's (1955) theory of semiosis, which identifies three fundamental relationships between a sign and its referent: the iconic, the indexical, and the symbolic. In this context, the percussive sounds act as iconic and indexical signs, where the physical properties of the sound directly correlate to the behavioral response of the fish, thereby bridging the gap between mere noise and intentional communicative action.

For Peirce, any sign is "something which stands to somebody for something in some respect or capacity." (Peirce, 1955, p. 99). The iconicity, as in the above case, is the relationship of sound –*thhhrrrrrrr thhhrrrrrrr* – by virtue of its resemblance with the striking of a stick with water. And it communicates meaning, if not for humans, but for fish. In fact, fishermen know that fish here will be an 'Interpretant' and will take 'sign as a reason' of something dangerous, hence, this is what they exploit in this hunting technique. (Peirce, 1955).

Eduardo Kohn, in his book *How Forests Think* (2013), also highlighted such paralinguistic sounds during hunting in Avails, when one of his informants bangs a palm tree to unsettle the monkey who has been hiding in the tree. The sound of the banging tree is interpreted by the monkey as danger, and as he comes out of the tree, he shoots the monkey (30). In such scenes and many others in the book, the paralinguistic sounds take on the secondary, although important, meanings during hunting. In other words, hunting solely does not depend on such sounds. But at Manchar Lake, many fish and waterfowl hunting practices are the result of such paralinguistic sounds, without which hunting would nearly be impossible, as shown in the above example. In fact, fishermen have a local hunting tool called *thaali* that they exclusively use to produce such paralinguistic sounds.

Fishermen 'capture' fish or waterfowl but do not 'kill' them. To capture fish or waterfowls fishermen make use of a locally made hunting tool called *thaali* [lit. plate]. Fishermen make the wooden frame and attach a copper plate to it, so that when the frame is shaken, the metallic plate strikes the wooden frame and makes the loud, high-pitched sounds. The most important fish & waterfowl hunting technique, which captures tons of fish and hundreds of waterfowls are done with the *thaali*.

The Mechanics of Traah: Chaos and Social Sanctions

During *bhaan*, a fish hunting technique, fishermen extensively make use of *thalli*, which produce paralinguistic sounds to produce chaos in the fish. They also shout and

strike long bamboo sticks in the water to produce more sounds. Capturing requires understanding how your opponent would behave in certain conditions, and here, how fish would behave to certain sounds is important to understand.

In *Bhaan*, to capture fish, fishermen first allow fish to collect at the point where there is fish food. At such places, they have social sanctions, and no one goes there; they call it *rakkh*, and allowing fish to 'think' that place is safe. This brings in more fish in that particular area. And then one day, they fasten the fishing net in one direction and from the other direction they produce the high-pitched loud noises, especially using *thaalli* and by striking *chaarr* (shafts) in water and shouting. Usually, they do this at predawn, when they believe the fish is sleepy.

Such high-pitched sounds create *traah*, chaos, in the fish. As the sound is an intruder, something dangerous, unknown, and fish will run in the opposite direction from where she is hearing the sounds. As it is the nature of the fish that in chaos, it jumps rather than swims, as fishermen say, it will throw itself into the *bhaan*. This technique produces more fish than any other hunting technique.

Hunting fish requires *traah* [chaos] in the fish, which is possible by producing sounds like above. Hence, fishermen exploit the very possibilities of how fish would interpret the sounds. 'How fish would interpret' is also about understanding the 'nature of fish' that how fish would react to different sounds, vibrations, and other activities in the water or lake.

Fishermen say that 'fish is a very unpredictable creature; it sometimes is unsettling, always roaming here and there, and at certain times it is quite sleepy, especially at predawn. Also, fish more often understand the threat by interpreting what is happening in the water through the vibrations in the water. She likes calmness, and anything that breaks the calmness is dangerous for fish. Today, since the degradation of the lake has significantly depleted the amount of fish in the lake, fishermen do not use the *bhaan* technique anymore. In fact, the *thalli* have become a rare hunting tool.

Vulnerability and the Degrading Semiotic Landscape

The success of the *bhaan* relies on the fishermen's ability to "think" like the fish – to understand how it interprets the disruption of the water's "calm." As sentient beings, fish are perceived by the Mohanna as highly sensitive to vibrations; anything that disrupts the aquatic equilibrium is processed as a sign of mortality. However, the current ecological degradation of Manchar Lake has fundamentally altered this multispecies interaction. The precipitous decline in fish populations has rendered the *bhaan* technique obsolete, and the *thaali*—once a central instrument in the lake's communicative ecology—has become a "rare tool," a relic of a semiotic world that is rapidly vanishing.

Pooee: Habituation and the Semiotics of Deception

Pooee is a waterfowl hunting technique. Fishermen used this technique to capture hundreds of waterfowl in one attempt. Once again, in this technique, fishermen make use of high-pitched sounds using the *thaali*. Like *bhaan*, fishermen allow waterfowls to gather at a certain place, allowing waterfowls to 'think' that place is safe and has enough food to eat. For at least one month, fishermen do not hunt waterfowl at those places where they have *raakh*. Waterfowls which arrive first are signs for the late-

arriving birds that this place is safe. In this way, within one month, hundreds of waterfowl arrive and gather at that particular place.

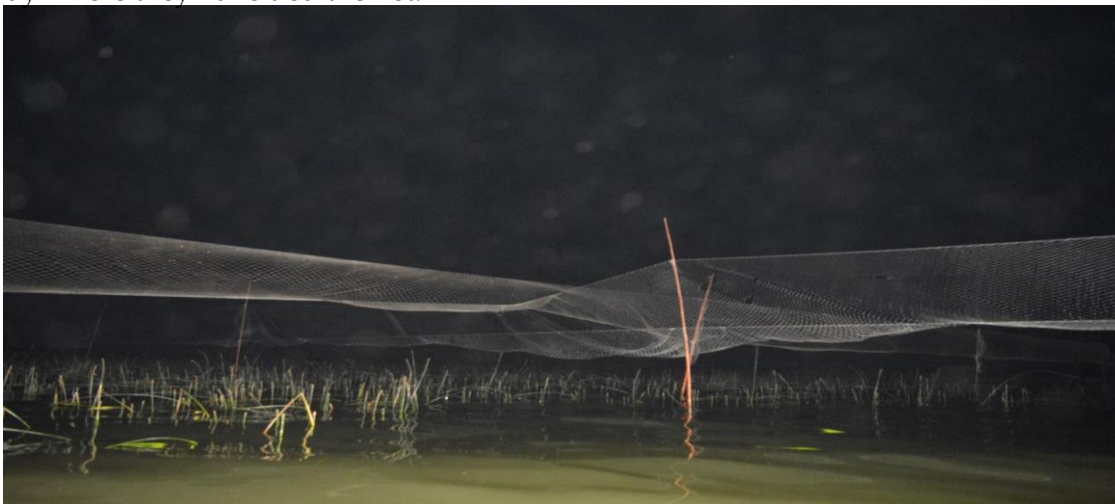
During this time, fishermen do fishing near the *raakh*, so waterfowls should 'think' that boats and fishermen are quite 'normal' in the ecology. This is also, as fishermen say, when they tie the hunting nets around *raakh*, waterfowl should take it as normal activity, or in other words, they should not think of the fastening of nets as 'danger'. When fishermen think enough waterfowl have been gathered, they tie the net in a semicircle form in the evening. Later at predawn time, from the other side of the net, in another semicircle form, fishermen in the shape of a group on their boats locally called *hurro*, using *thaalis*, and shouting move towards birds.

As waterfowls were sleepy during predawn, as fishermen say, the sudden noise produced *traah* [lit. chaos], in waterfowls. And they fly to the opposite side of where they are hearing the sounds. On the opposite side, fishermen have tied the nets, just a few feet above the water, and many waterfowl hang themselves in the net. Fishermen believe waterfowls has 'weak hearts'; in other words, they quickly get scared. These sounds scare them such that they don't even think they have to fly. They run in the water, then they fly, but it is too late to fly high above the nets, as Baradi Mallah, aged 45 years, said.

Wanjhar: The Indexical Lure and Onomatopoeic Representation

In the same way, one of the other waterfowl hunting techniques called *wanjhar* requires another Peircian sign called indexical, which represents "by virtue of real connection to any object." (Peirce, 1955, p. 102). Fishermen capture waterfowl by producing the onomatopoeic sound of birds with the same pitch and loudness at night. The birds flying 'think' that their mates are sitting down there, from where they are hearing the sounds, and 'think' that place is safe to land. As birds land, they hang themselves in the nets tied around where they make the sounds. The onomatopoeic sound is indexical as it directly represents the sound of real birds.

In the past, they used to produce bird sounds themselves that they had learned to produce the sounds of different birds. They would do that in chorus, to produce continuous and high-pitched sounds that can reach birds flying above in the sky. But today, they use modern technology, they use audio recorders and speakers that they play where they have tied the net.



Picture:1: *Wanjhars tied in water to capture waterfowl.* (Source: Author, 2015)

Historically, the success of the *wanjhar* technique was predicated on the embodied skill of the Mohanna hunters. Fishermen were required to master the intricate phonology of various avian species, learning to produce a vocal chorus of high-pitched, continuous calls capable of reaching waterfowl navigating the high-altitude flyways. This human-to-nonhuman vocal bridge functioned as a shared semiotic frequency.

However, in the contemporary era, this embodied mimesis has been largely supplanted by modern technology. The transition from human vocalization to the use of high-output audio recorders and speakers represents a shift in the lake's semiotic landscape. These digital lures are strategically placed near submerged nets, automating the production of indexical signs. While the medium has changed, the semiotic logic remains the same: the machine produces an acoustic "trace" that the flying birds interpret as the existential presence of their kin, leading them toward a landing site that is, in reality, a lethal trap.

Part Two: The Semiotics of Absence and Emergence

Part one discussed how ecological signs are interpreted not only by humans but also by other-than-human species. This part will discuss how things that are not present are still there, if not physically but semiotically, that is to say, how the absence of something inform human and nonhumans about the ecology. For this, I will make use of Terrence Deacon's concept of *absential* (2012), by which he meant any "*phenomena whose existence is determined with respect to an essential absence.*" (Deacon, 2012, p. 03). This essential absence "*could be a state of things not yet realized, a specific separate object of a representation, a general type of property that may or may not exist, an abstract quality, an experience, and so forth*" (ibid).

The Absence of Light as an Informed Entity

Once, I accompanied Akber Mallah to capture waterfowl in the lake. It was night, and we headed to *Wanjhars* in a small boat intended to spent whole night in that. It was completely dark, not even moonlight. The recorder was playing the voices of an *aari* bird, and we were discussing about waterfowls sentience. I wanted to picture the *wanjhar* (nets tied around). As it was dark, I used the flash of my camera. Akber stopped me as he saw the light. 'Don't use light, he said. Why? I asked. He explained: 'Light will inform birds flying above that some danger is down there. Darkness is our friend, light is an enemy here' he said. 'It will inform birds that there is some trap down there, and they will not come down. If they won't come down, we will not be able to capture birds.

How come light becomes such an 'informed entity'? And how absence of light communicate something to someone? Waterfowls, being the 'sentient beings' who know about ecology, not only of what is present but also knowing what should not be present, hence what is absent; informs their survival in the ecology, as for fishermen knowing how waterfowls could be trapped using the same logic of what must be present and what should not be present. The absence of light is not that it is not there, but it is there through its 'absence'. In other words, such absences work semiotically to come alive to "represent what is not present." (Kohn, 2013, p. 23). And what is not present actually informs, not only humans, but also other beings of the lake, how to go with the ecology, in other words, it informs waterfowls flying where to land and where not to; what spaces are safe and what are not safe in the lake.

Moreover, the flash of the camera is also "*emergent - because they have the appearance of spontaneous novelty, as though they are poking their noses into our world from*

out of a cave of non-existence.” (Deacon, 2012, p. 143) that they come into being through their absence to mark on life. In other words, the flashlight is informing fishermen that the poking of nose of such entities in the world of the lake’s ecology will thwart their effort of capturing waterfowls. Hence, Akber warned me not to use any light that night.

But for waterfowl, such emergent phenomena also stand for something in some capacity. Their emergence is a sign, an indexical sign, that some danger is there, something unknown. Hence, they will not lie down and will survive. Hence, the capturing of waterfowl is a game of controlling absences and emergent phenomena on the human part, and for nonhuman beings, it is to continuously look for what absences are emerging in the ecology to survive.

The Signs of Degradation: Interpreting the Vanishing Lake

The lake has been degrading for more than two decades. The degradation has not only depleted the amount of fish in the lake but also caused many fish species to go extinct. Also, now fewer waterfowls visit the lake, and whatever waterfowls come, they don’t stay at the lake for many days and fly away, whereas in the past the lake was known as ‘heaven for waterfowls’. The degradation of the lake has also killed many flora and fauna, which have been food for fish and waterfowl. How to understand degradation semiotically, that is to say, do degradation provide signs of degradation which humans and nonhumans equally and “scientifically.” (Peirce, 1955) interpret to know about the degradation. The simple answer is yes.

For humans, degradation is evident as there is no flora and fauna or forest in the lake anymore, the water is poisoned as it tastes bad, and cannot be taste of sweet water, and has also caused many skin diseases which fishermen have never witnessed. Also, it smells bad, and its color has changed. What about other species, especially for waterfowl that come here to the lake once a year from northern areas of Central Asia, Russia, and Siberia? How do they know the lake is degrading?

‘*Kadho* [food], *lek* [place to hide], *wehak* [place to rest] what waterfowls need’, as said by fishermen. This all comes in the deep forest, where food was abundant, in the bushes waterfowls can hide themselves and also can rest there. But with degradation, there is no deep forest anymore; no food, no place to hide, and no place to rest. When waterfowls arrive today, they look for the deep forest, not finding any or just little bushes, for waterfowls, these are signs of degradation.

For Pierce, this is because of “scientific intelligence,” by which he meant “intelligence capable of learning through experience.” (Peirce, 1955, p. 98). Hence, the learning is not only a human phenomenon but also nonhumans, here waterfowls, also learn through experience, which they accumulate and perhaps transfer to others like humans. The following example will enforce this point.

How do waterfowl learn all this? Or what makes them interpret signs of degradation as indicating that this place is not a place to stay? In other words, what is real for waterfowl? Pierce again provide much comprehensive explanation for this. For Pierce, there are three aspects of real which he called Firstness, Secondness, and Thirdness. Thirdness is “habits, regularities, patterns, relationality, future possibilities and purposes...which can originate and manifest themselves in the worlds outside human mind” (Pierce cited in Kohn, 2013, p. 59). In other words, it is about “the tendency of all things to take habits” (ibid).

As waterfowls for centuries have been visiting the lake and for them living in the deep forest with all necessities are actually 'real', they have acquired the 'habit' of living in the forest through 'scientific intelligence'. But degradation is a break in this 'real,' or in other words, degradation provide 'another real' which has not been the 'habit' of waterfowls that they had acquired through 'scientific experience'. This new experience has new meanings, new interpretations for waterfowl. Hence, degradation here becomes a sign, a new sign, which waterfowl has to interpret. As degradation is absence of forest or absence of food, a place to hide and rest, they are the signs that this 'place is not a place to stay at' anymore.

With the degradation, the forest disappeared slowly, and so were waterfowls. Fishermen said that 'it was not that waterfowl's arrival had stopped suddenly, or were leaving the lake earlier than before. But it went slowly, first we noticed fewer and fewer waterfowls were arriving, and those that were arriving did not stay for more than a few days, whereas in the past they used to stay for months. Today, the number of waterfowl is perhaps in the hundreds, and they also stay for no more than one or two days.

This suffice to say that not only humans interpret and transfer the signs of degradation, but also waterfowls understand this through their own complex world of representation and also transfer such knowledge to other waterfowls, and that is the reason why, with the passage of time, the number of waterfowls decreased significantly.

Calmness and the Absential Logic of the Decoy

Manchar, a bucolic lake, has a certain calmness; one can even hear the sound of little waves and the air. With such absence of sound, which is not present through virtue of being absent, hence very much there. Sound becomes an important sign for humans in capturing fish or waterfowl, as well as for other beings to make a move for survival. For example, in the first example, a boy was striking a stick in water to make a sound and to produce chaos among the fish to capture them. But before striking the stick in water, the particular sound is not there, but it is emergent. Hence, fishermen expertly exploit the 'emergent phenomena' to capture fish in this as well as in the *bhaan* technique. For fish, such emergent sounds also stand for something (danger) in some capacity. And fish in chaos, run in opposite direction just get trapped in the net.

In another waterfowl hunting technique, fishermen don't name it, where they use the domesticated waterfowls, as they call them, to capture other waterfowls. Most of the fishermen capture 30 to 50 birds and domesticate them. Daily, they put these birds in a group a little away from their houses in the water. They tie their legs with some big bushes and sticks that they throw in the water. Along with each bird, they leave some bushes, left so as other flying birds can sit there. When waterfowl flying above in daylight see so many birds sitting down there, not knowing that they are in fact tied. As they see birds 'thinking' the place as 'safe' comedown and sit on the bush which was put there for them only.

As fishermen see birds landing, they swim in the deep water not to be noticed by birds - sometimes wearing a *kandho* and sometimes using another bird that they put on their head - move towards the birds and capture them from the legs. What is important, as fishermen told me, is that 'waterfowl should not shout and flap their wings' as through these they communicate among themselves. For this, fishermen must be expert enough to drag waterfowl as quickly and swiftly as possible in the water to capture as many birds as possible.

'Waterfowl should not shout and should not flap its wings' is important here. Within the calmness of the lake, there are certain familiar sounds, which are there that waterfowl know are the 'sounds of the lake', i.e., the sound of waves or moving boats. But what is absent is the 'waterfowl shouting' and 'sudden flapping of wings'. They are absent but emergent. These sounds provide information, information of danger to other birds. Danger is not immediate, but it is what Pierce called "in futuro" or a "living future" (Pierce cited in Kohn, 2013, p. 23), which is the coming of danger in the future; hence, it is not there, but it is also there as a future. Hence, for waterfowls the important thing is to continuously look for such 'futuristic signs' of danger to avoid being prey.



Picture 2: Captured birds are tied to bushes in a group. The left bush is also visible. This has to be there with every bird, where other birds will come and sit, and fishermen will capture it. (Source: Author, 2015)

Hydro-Semiotics: Aquatic Plants as Ecological Signs

Meheen ne maare maachi, dheeh maare

It is not fishermen who hunt (kill) fish, but *dheeh*.

While locating the fish in the dense forest, in the past, it was important for fishermen to understand the nature of fish, what she eats, and what ecological changes would take place when the fish eats the plant she eats. In the past, when the lake was covered with dense forest, such semiotic knowledge of the ecology was very important for the fishermen; hunting fish would be next to impossible.

Fishermen has wide ecological vocabulary to classify and signify such ecological signs. For example, Fish eat a plant locally called *dheeh*, all types of *dheeh*, but their favorite food is *Sehaarrri dheeh*. While eating *sehaarrri*, water gets *pakko* [lit. hard] by which they mean water gets transparent, and fish are easily visible in the water. This is a sign that fishermen can find fish where there is *dheeh*, especially *sehaarrri*. Fishermen have to locate *dheeh* or *pakko pani* in the dense forest to hunt fish. In the past, there were patches of *pakko pani* and some patches of were *kaacho pani* (where there were no or less dense forests) that helped them to capture fish. Also, when fish eat *dheeh*, they continuously jump out of the water to catch the air. Fishermen call this *uubandi*. Moreover, as through transparent water, fishermen can clearly see the fish, but the water

looks like 'black' because the dense fish give feeling of 'black water', they call *kaaro pani* [lit. black water].

Here, one sign (*dheeh*) gives birth to another sign (*pakko pani*), and this than give birth to yet another sign (*kaaro pani*), black water. This chain of ecological signs is interpreted equally by fishermen and fish to engage themselves in the ecology of the lake. If for fish locating, the *dheeh* is a matter of survival as food, but for fishermen, the same is a matter of hunting fish. That is why fishermen used to say in preverbal form, as said above, that it is not fishermen who hunt (kill) fish but *dheeh*.

The Kandho: Iconic Mimesis and the "Bird's-Eye" Point of View

Kandho is the dummy of a bird. This particular dummy is used in many bird hunting techniques, especially when they capture it by hand or use a bullet. They make *kandho* by using the skin of any bird, which they very carefully strip from the body of the bird, as it should come complete, not in parts. Fishermen make a body of a bird with wood, so big that a man's face can go inside it. Later, at the upper part of that wooden body, they carve the bird's skin and make a beak with wood, coloring it so that it looks like a bird's beak. They leave two holes, eyes shaped so that fishermen can see through them.

When birds collect themselves at any point, fishermen wear the *kandho* on their head, while putting their whole body inside the water and slowly moving toward the birds, without making any sound or vibrations in the water. As they reach near, they capture birds from their legs and very quickly and swiftly drag bird into the water so as its flapping wings do not send a message of danger to other birds. As they drag the bird in water, they break its legs and crisscross its wings and put them inside bag that they tie it with their body.

Kandho is iconic as it represents the actual bird by virtue of its likeness to other birds. In this technique, the whole point is to make other birds think that the body which is coming near to them is not any alien, but rather it is 'something one of us', 'one of our own family member', as fishermen put it. *Kandho* is not about what humans think about how a particular bird looks, or to say it is not to put a human point of view, rather it is to enforce how other birds think what their family member looks like, it is to enforce the bird's point of view. Otherwise, birds would fly away; they would not recognize *Kandho* as a 'family member'.

Hence, it is to continuously transform oneself; it is about becoming and unbecoming. It is to make a quick transformation from being a human to being a bird and again a human, so on and so forth, until fishermen are capturing birds, not losing even once any of their transformations. If fishermen lose any transformation, say, if fishermen become 'human' when birds are watching them, they will fly away, or if fishermen become 'bird' when it is breaking its legs and putting it in his bag, he will not be a good hunter because he would not capture as many birds as he wants to as an expert. This is about remembering not only what it is like to be human but also how to behave like a bird; it is to capture the bird's perspective, while not losing the human point of view.



Sketch 2: *Kandho*: The sketch of a dummy bird, as fishermen put it on their head to capture birds. (Drawing by Kumar)



Sketch 3: A fisherman moving toward birds wearing a *Kandho* on his head. (Drawing by Kumar)

Conclusion

This article has shown that the life of the lake is more than a biological process or a material setting. It is a semiotic world, one in which life is constituted through signs, multispecies relations, and responses that are always emerging. In a Peircean sense, semiosis is not just about language or human interpretation, but about the ongoing relation between sign, object, and interpretant through which beings – humans and otherwise come to know, sense, and act in the world of the lake. Seen in this way, the lake is not a passive environment. It is a field of communicative processes where

movement, sound, reflection, currents, shadows, and seasonal shifts become signs that are read by those who dwell within it. Peirce's wider theory of signs makes it possible to think beyond a human-centered account of meaning, and this is important here because the lake's ecology is clearly shaped by more-than-human forms of perception and response.

This point also resonates with Eduardo Kohn's argument that representation, thought, and sign processes are not exclusively human affairs, but extend across living worlds. Kohn pushes anthropology beyond humans by asking us to take seriously the fact that forests, animals, and other beings are caught in webs of meaning that exceed language. From this perspective, fish and waterfowl do not simply react mechanically to external stimuli; they inhabit a world of signs through which danger, opportunity, concealment, and exposure are apprehended. Ripples on the surface, the direction of wind, changes in water depth, the sudden interruption of light, and the sounds of approach all become meaningful in practical and embodied ways. These are not abstract symbols, but ecological signs that shape action and survival in very immediate terms. In that sense, the lake is semiotically alive.

At the same time, the article also shows that humans, especially fishermen, are part of this same semiotic field. They too learn to read the lake through its signs. They observe patterns of water movement, bird behavior, silence, sound, and light in order to locate fish and waterfowl, and to anticipate their movements. What is important here is that the same signs that allow nonhuman beings to avoid predation are also used by humans to hunt, trap, and exploit them. This makes the lake a space of shared semiosis, but not of equal outcomes. They circulate across species, yet they are taken up for different purposes. For prey, they may signal escape; for hunters, they may signal capture. So, semiosis here is not innocent. It is bound up with livelihood, vulnerability, skill, and struggle.

Deacon's work helps deepen this point by showing that meaning does not float above material life, but emerges from it through relational processes, constraints, and absences that become causally significant. In the lake, water, sound, and light are not mere background conditions. They matter because they make certain actions possible and others impossible; they organize attention, timing, concealment, and pursuit. Thus, even non-living elements become active within the ecology of signification. The lake's life, then, is best understood as an entangled assemblage of humans, nonhumans, and seemingly nonliving forces, all of which participate in the ongoing making of meaning and survival. This is why the lake should be approached not just as nature, but as a semiotic and anthropological world, always relational, contested, and still becoming.

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