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Paddling with the Mississippi River: place-based–but not place-bound–knowledge production

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This article explores how sustained embodied experiences in and with environments shape ecological awareness, challenge dominant narratives of nature as passive or separate, and provide new modes of environmental meaning-making. Through an autoethnographic account of my 70-day canoe expedition down the Mississippi River, I investigate how "paddling with" acts as a rhetorical and relational practice—a form of experiential environmental communication that reveals, complicates, and sometimes transforms perceptions of the river. Drawing from Indigenous epistemologies of "walking with," it offers a framework for understanding how immersive ecological encounters can not only encourage place-based knowledge but also spark ecological thinking. In doing so, it calls for greater scholarly attention to the communicative power of physical encounters with place—particularly as they shape and contest hegemonic narratives of humans and nature to reveal our vast interconnectedness with all life.

KEYWORDS

ecological thinking, place-based knowledge, environmental communication, paddling, indigenous epistemologies

1 Introduction

It started as a call, a soft buzzing energy in the background. There was a bookcase at my partner's childhood home, a large built-in wooden feature worthy of the surrounding grandiose living room. Even then it called to me, from the hardcover casing of a book waiting patiently in a forest of literature. Surely it was pages of trees that first summoned me to the water. The nervous energy of meeting your partner's parents can be quelled by an uncommon curiosity about objects, thumbing through titles on a bookshelf to see if one might spark good conversation that could put you in high regard. It caught my finger before it caught my eye: *Great Rivers of the World*. The large coffee table book awkwardly bumped out of the otherwise smooth and even row of smaller bindings. Only a year prior, I had canoed over 2,000 miles from Minneapolis to Hudson Bay and, lucky for me, had a lot to say about rivers. It was the perfect weapon for the moment and great fodder for later. But, as books often do when opened, it sucked me in and had the opposite social effect. I retreated to the corner and silently turned large pages filled with vibrant pictures and inviting descriptions of rivers around the world, overwhelmed with possibility.

Paddling any river can easily spark a love for all rivers. Having paddled a few rivers in my day, I was overflowing with river love—a great desire to be *with* moving water. I began plotting ways to paddle each river in the book: the Thames, the Ganges, the Yangtze. The list went on. I settled into the section about the Mississippi River. Its brown waters called to me from the linseed oil and petroleum distillate likely used to create the image staring back at me on the page. Minerals perhaps produced, manufactured, or transported on the Mississippi River. My

thoughts spiraled. I longed to be like water; I wanted to be *everywhere*, always moving, intimately in place and vastly *interconnected*. The irony of scheming my vagabond life in a canoe while meeting my life partner's parents was not lost on me. They should have curated their library more carefully if they did not want me to leave their son for months at a time.

I craned my neck out of the window as we drove over the Mississippi River on the ride home. Examining paddling conditions on the river was my texting-and-driving—not recommended for a safe commute yet disturbingly habitual and immediately gratifying. The last rays of sun stretched across the river, reflecting the orange–pink light illuminating the Minneapolis skyline. The water looked like a sheet of glass, calling for a canoe to ripple through, confirming my suspicions of another perfect paddling day. A lingering symptom of too much time spent on the water, I subconsciously calculated the wind speed and direction each morning just by looking through the window from our city apartment. As we crossed the bridge, I felt a force pull the same string tied to my spirit that the coffee table book had tugged earlier. I sighed deeply and squeezed my partner's knowing hand. It was time. I wanted to see more than a glimpse of the Mississippi River across the Franklin Bridge. I wanted to feel the river's expanse every time I encountered her waters.[1] What else did she have to say?

The river called, so I answered.

Place calls to us. It beckons us into relationship in more than just objective scientific ways or passive viewing. It is a spiritual call—something in the water that we cannot quite put our finger on. When the noise of life fades for a moment, I am left with the unsettling feeling, "there was something…" Larsen and Johnson argue that place has agency and will reveal its meaning, if only we would look again 2 (Larsen et al., 2017). A little deeper, a little longer. They discuss the Indigenous epistemology of "walking with" as a "flexible, relational way of thinking that is grounded in the embodied mobilities of mutual entanglement" (Larsen et al., 2017, p. 29). In paddling with the Mississippi, one flows through Indigenous and settler colonial history, scars, and current struggles, invisible political boundaries, multiple ontologies of the people on the river, and the physical connectivity of the land, water, and air. The river links "past, present, and future generations through the storied relationships of land" (Larsen et al., 2017, p. 27). It serves as a metaphor for coexistence: barges and ocean-going boats filled with goods headed for international markets, lockmasters, canoers, fish, dams, industries, Indigenous communities, stolen treaty lands, black churches by the water in Memphis, and built infrastructure that controls our most necessary resource: water. The list goes on. The river continues to flow. Endless embodied scales of coexistence between humans, non-humans, and more-than-humans interweave and engage in different kinds of dialogue, struggle, and relationship with the water. The Mississippi River is not an object. It is "entangled in space" (Larsen et al., 2017, p. 21). It is a world of many worlds. In the words of Leroy Little Bear, "When jagged worlds collide, objectivity is an illusion." The human and more-than-human experiences of and with the Mississippi River are plural and complex; infinite fractals across time and space. Paddling with the river "might help us imagine life differently, nudging us toward dialogue and relationship with other modes of existence and different ways of being entangled in place" (Larsen et al., 2017, p. 20).

In this article, I argue that paddling with a river is a viable form of place-based knowledge production that has the power to reveal interconnected relationships that challenge the human–nature dichotomy. For my purposes as a canoer and river lover, "paddling with"[2] is like "walking with," in the sense that traversing a trail—in this case, a water trail—is a way to "recover knowledge as an embodied, more-than-human movement along the trails or paths of a lifeworld, an understanding of knowledge that has progressively been lost to humanity" (Larsen et al., 2017, p. 27). Larsen and Johnson argue that walking—in my case, paddling—is a responsibility, "a 'responding to' the coexistence intrinsic to place…a 'call' that asks we offer something of ourselves to the human and more-than-human others whose relationships support us" (Larsen et al., 2017, p. 48). Paddling with is an ongoing engagement "in and through place," that can help guide us toward "provisional balance among different ways of worlding, establishing a rhythm of grounded, responsive mobility not unlike the pace and coordination of two people [paddling or] walking well together" (Larsen et al., 2017, p. 48). Place calls us to rekindle ancient educational relationships with all living and non-living beings, and paddling with a river is one way to more intimately observe those life-giving connections.

While my experience paddling the Mississippi River was place-based, it was not place-bound—embodied encounters with the river opened me up to consider larger interconnected systems. Beyond presenting new possibilities for knowing a place, I argue that paddling with the river—moving slowly with the landscape—can also inspire ecological thought. Ecological thinking—thinking in interconnected systems of relations with humans and non-humans in the "mesh" of life[3]—is vital if we are to care for a planet in peril. A central tenet of "ecological thinking" is that humans are *enmeshed* and *entangled* in the pluriverse, a world of many worlds, of which we are one of many interconnected beings. Because of our genealogical and evolutionary histories in this shared place, nature does not exist as a separate entity. The ecological thought, per Timothy Morton, flows, drips, and seeps beyond capitalism and hierarchies of power to envision new ways of democratic coexistence (Morton, 2010).

1 Some ecofeminists are in favor of gendering nature to draw attention to the mutual oppressions of women and nature and to create alliances between them (Alaimo, 2000). By linking these two subjects, ecofeminists hope to transform gender relations and interact with nature in a radically different way. I gender nature in my writing to unearth and identify structures of power, with the belief that the systems that oppress women are the same systems that unjustifiably harm the Earth for capital gain. By linking oppressed subjects, I hope to more clearly identify the overarching ideologies of capitalism that continually cause harm to "othered" bodies.

2 By using the indigenous epistemology of "walking with" as the basis for "paddling with," I do not intend to appropriate indigenous knowledge systems. Robin Wall Kimmerer explains the difference between being indigenous and becoming naturalized to place. As a white woman, my goal is to use "paddling-with" as a way to become naturalized to place; a method to understand how humans can learn about complex relationships and the interconnectedness of all life, of which we are a part.

3 Morton uses "mesh" to describe coexistence: the "mesh" is where everything comes into relation with everything else.

There has been a call for communication scholars to explore how humans come to think ecologically.[4] Morton argues that there are many places to "get on the train" of ecological thought. This scholarship considers how paddling with the Mississippi River—embodied encounters with place as one moves *with* the land and/or water—can reveal complex interdependent and interconnected relations between all living and non-living entities. I argue that paddling with a river is a form of place-based knowledge production that has the power to help the paddler consider larger interconnected systems. It is one of many ways to transport an individual (or a collective) from "being within an environment to being inseparably part of ecological processes" (Jensen, 2019, p. 12). This is the embodiment of ecological thinking.

This is an autoethnography of my 2013 expedition down the length of the Mississippi River. I revisited my detailed journal entries and over 80 h of video footage from my 2013 expedition to understand how that experience helped me not only know and care for the river but also to think ecologically; to consider interconnected relationships in and around me. In this article, I pair stories and reflections from my expedition down the river with scholarship that explores what I learned and how I learned it. I place myself in "a social context by connecting the personal and the cultural" (Alsop, 2002). Through self-reflexive voicing and the disclosure of personal stories, feelings, and thoughts, I hope to disrupt the "privileged knowledges that go unmarked in academe" through "located knowledge that cannot be impartial" (Harris, 2016, p. 118). This scholarship contributes to a continuing discovery of places, "both metaphorical and literal, that allow for new ways of sensing, new modes of experience, new frames and formats, and new connections between the environment, language, and ourselves" (Oravec and Clarke, 2004, p. 14). This scholarship brings together autoethnographic and narrative methods with a non-universalizing approach to rhetorical analysis. Through the combination of academic insights and personal reflection, I hope to manifest my "love for the planet we stand upon" (Oravec and Clarke, 2004, p. 2). Here, you will find my own exploration of how encounters with the Mississippi River opened me up to know, feel, and care for the river and to think beyond its banks.

Now, let us get on the water.

2 Paddling with place

I fell in love with the rhythm. My breaths and paddle strokes were players in an orchestra, fumbling at first but eventually melding into one sound as they became playfully familiar through practice and repetition. Canoeing is meditation in motion; a trap for those who think they love to be on the move. The trees offered the gift of oxygen, and I accepted it with gratitude, breathing air deep into my body and reciprocating with carbon dioxide—A life-supportive exchange. My hands reached like roots over the canoe paddle. The familiar friction broke down barriers as my fingers became entangled in the wood, welcoming it as an extension of my body. I became mesmerized by the river bottom as I continually thrust my paddle into the clear water. If I focused my vision just right, I could spot fish lingering in our path as we canoed above them, imagining we were planes passing overhead, or perhaps space shuttles in orbit above the planes, or maybe shooting stars gracefully zipping through the galaxy in which I now floated downstream in a Kevlar canoe. I had time to think. Today, the mussels were singing. Their mouths cracked open toward the sky, releasing tiny air bubbles that signaled their location below like flares. Our group of 11 paddlers was singing with them. Teaching each other songs helped pass the time and allowed for a beautiful chorus to emerge when all of us knew the melody. With each paddle stroke, we built our muscles and our musical repertoire.

The upper stretches of the Mississippi River consist of lakes connected by winding narrow sections of river where the current trickles over rocks teeming with crayfish that we would catch and release during leisurely snack breaks. The eagles guided us from tree to tree like signposts directing us downstream. They were our helicopter parents, watching from above when our own parents had lost sight of us years ago. We lived in a world of green and brown, with glimpses of white clouds through the treetops leaning over the riverbank and the short but colorful display of sunrises and sunsets to bookend the days. The air was fresh with smells of what was to come. Hints of crisp fall whispered in the still-warm breeze of mid-September, a mix of dry soil and leaves living out their last days. I stepped into the cool river and submerged the water filter beneath the surface to collect water for my expedition partners. After only a few days on the water, we had learned the best places to filter water based on the river's current, clarity, and depth. The river flowed hesitantly through plastic tubes on its eons-long journey to nourish my own veins. I lingered for an extra moment to silently thank her for providing for us and all other life here.

The first few days of our expedition quickly re-oriented us toward relationships that I had easily ignored in my day-to-day life in Minneapolis. The wind, weather, and even the health of the trees dictated our movements, decisions, and assessment of risk. With the land and water as our sometimes-harsh teachers, we learned how to stay warm in cold rain (and, later on, sleet and snow), look for dead trees before setting up our tents for the night, stay safe while sharing the river with others during hunting season, read the wind and waves, fish for our dinner, and filter water from deep parts of the river with a strong current to avoid algae or sediment getting stuck in our pump. With more than 60 days to go before reaching New Orleans I began to wonder what else the river would teach us. To move with the water is to be embedded with non-human and more-than-human others in embodied and inescapable ways. Unlike taking cover from severe weather or possible danger back at home—"I'll just stay indoors"—comfort and safety are not easily available on the river, and a consistent routine is unlikely. These embodied experiences on the water showed us that it is not possible to simply canoe the river as a bystander or outsider looking in.

How humans are oriented to and with the world facilitates the relationships possible between human, non-human, and more-than-human others. What and who we encounter as we move through a landscape not only "impacts what becomes observable and present for meaning making" but shapes our identities through repetition and time (Marin and Bang, 2018, p. 112). Back in the city, possibilities for interactions were shaped by roads, buildings,

4 Barnett (2018) The Ecological Awareness of an Anthropocene Philosopher, Environmental Communication, 12:7, 989–993. Barnett writes, "Understanding how such a shift in awareness is induced ought to become a central concern of environmental communication scholars" (p. 993).

and businesses—ways of knowing and moving influenced by "cultures that alienate us, sensually as well as intellectually, from both the land and the myriad plants and animals with whom we share the land." Sara Ahmed argues that "to be comfortable is to be so at ease with one's environment that it is hard to distinguish where one's body ends and the world begins" (Ahmed, 2015, p. 148). She likens this to sinking comfortably into a chair that has embraced us many times before and has conformed to our shape. In these spaces, we do not "notice the world *as a world* when one has been shaped by that world;" we do not "see the 'stitches' between bodies;" we are not forced to seriously consider our interconnected relationships to and with other beings (Ahmed, 2015, p. 148). Joshua Trey Barnett argues that the more caught up we become in a dominant American culture that sees nature as a resource for extraction or property, "the more remote does the land, as well as other animals and plants, come to seem" (Barnett, 2022).

In ""Look It, This is How You Know:" Family Forest Walks as a Context for Knowledge-Building about the Natural World," scholars Marin and Bang explore how learning *unfolds in place*. In conversation with Indigenous scholars, they further develop walking, reading, and storytelling about the land as methods to make sense of physical and biological worlds. In their analysis of an Indigenous family walking through a forest, Marin and Bang observe how the land and water shape experiences and conversations, and dictate "what is possible for human sense making" (Marin and Bang, 2018, p. 112). Paddling with the river, I was re-oriented to a specific place with new opportunities for observation and learning as the river unfolded beneath my canoe.

Place-based learning, in this case, moving with a place to know it, is an ancient concept and a key practice in some Indigenous ways of knowing that emphasize fluidity, animate relationships, exploration, complexity, plurality, and interconnectedness *in place*.[5] Moving with a landscape to learn about complex relationships has been "embedded within Indigenous ways of knowing for generations" (Marin and Bang, 2018, p. 89). Some Indigenous epistemologies emphasize the importance of walking with the land to know it; a knowing "tied more to manners and behaviors than principles…more about actions and hands-on activities than beliefs or ideals" (Nelson, 2018, p. 253). Movement and mobility are central to learning *with* other humans and more-than-humans across a landscape.[6] Paddling, like walking, is about *movement*. The meditative act of paddling and the movement of the paddler with the river allows one to observe and take seriously the "vitality of (non-human) bodies" (Bennett, 2010). On this section of the river, I noticed the abundance of eagles, the presence of mussels and crayfish (signs of good water quality and a healthy aquatic ecosystem), the slowly changing seasons, and the common smells and sights of what we call the natural world. I observed interconnected relationships in place as I methodically moved with the water. I participated in the rhythm as another entity in an infinite web of human, non-human, and more-than-human interactions. The land and water presented ever-changing encounters where new actions and realizations, like our awareness of potentially hazardous trees and responses to inclement weather, emerged and accumulated as we moved with the river downstream.

The difference between paddling *with* and paddling *to* is vital. Unlike roads—viewed as a tool to get from one place to another—the river, despite its ability to move bodies and materials, does not encourage a hurried pace.[7] With the water level especially low during our expedition, we could only travel two to three miles per hour paddling the upper stretches of the river. This slow movement (sometimes so slow that we joked we could appreciate every leaf on every tree) encouraged paddlers to open themselves up to learn from the land and water as we responded to always emerging environments.

Also common in place-based epistemologies is the concept that "knowledges about place are always situated, and that Indigenous lands are alive, can speak to humans, and include multiple time scales, life forms, and relationalities of co-being, co-belonging and co-becoming" (Clement, 2019, p. 287). This understanding portrays land and water not as abstract ideas or backdrops for human activity but as living entities with which we come into reciprocal relationships in intimate ways over time.[8] The land and water are teachers "imbued with meaning and hence authority as actors in the world" (Sletto et al., 2021, p. 619). As we paddled-with the river, we began to understand what different ripples and eddies in the water meant as we strategically maneuvered the current, speculated about what might appear around the bend based on the current's flow and the widening and narrowing of the river, what attributes of the land would make for a safe and dry campsite, and what time of day the fish were most active and intrigued by our lures. We learned these things through embodied experiences

5 See Clement (2019), Larsen et al. (2017), Marin and Bang (2018), Moreton-Robinson (2017), Nelson (2018), Wilson (2008). While Indigenous ways of knowing differ across cultures, history, and geography, Vincent Clement shows how "they share a common desire to call into question both the positivist epistemology inherited from the Enlightenment and the socio-historical experiences of domination, violence, and dispossession."

6 Marin and Bang, "Look It, This is How You Know," 91. Marin and Bang argue that "mobility, or people's movement from place to place and through places, is central to learning in everyday life. For generations, Indigenous communities and intellectuals have been describing the role of motion, mobility, migration, and land for learning. In these cases, learning is conceived, in the broadest sense, as processes that support the generation of activities necessary for sustaining and promoting life."

7 Bjorn Sletto, Gerónimo Barrera de la Torre, Alexandra Magaly Lamina Luguana, and Davi Pereira Júnior, "Walking, Knowing, and the Limits of the Map: Performing Participatory Cartographies in Indigenous Landscapes." *Cultural Geographies* 28, no. 4 (2021), 617. The authors discuss the difference between roads and paths: "Differing from the modernist conception of the 'road' as something that is placed upon the ground to facilitate easy and rapid movement from place to place for 'travelers', paths are produced by 'wayfarers' through quotidian life and movement."

8 Nelson, "Back in Our Tracks," 256. Nelson argues that "ingrained within Indigenous languages is the sense that an ethical relationship to place is not an intellectual concept; rather, it is a daily, embodied practice. Like all relationships, this one needs to be enacted, applied, responded to, cared for, and renewed as a way of being. It is best practiced in place over time, in local spaces where one has an opportunity to truly develop intimacy with particular mountains, valleys, forests, rivers, creeks, plants, and animals."

and interactions *with* place; lessons taught to us by the land and water themselves.

Another shared aspect across Indigenous epistemologies is a focus on relationships, often called "relationality." This concept refers to the belief that "relationships do not merely shape reality, they *are* reality" (Wilson, 2008, p. 7); that "everything is becoming together" (Ashcraft, 2021, p. 582); that "everything in the natural world has relationships with every other thing and the total set of relationships makes up the natural world as we experience it" (Moreton-Robinson, 2017, p. 73). We fished from the river. We drank from the water. I came into relationship with the land in an intimate way, such that the boundary between human and nature started to blur. These interactions became the foundation of my perceptions of the river moving forward, allowing me to notice when my surroundings shifted from balanced, albeit conflictual, relationships to harmful, imbalanced ones, as evidenced by the degradation of land and the decrease in water quality as we paddled downstream.

There are many ways to know and to come to know a place. Paddling with the river presents an embodied way to move *with* the water as unfolding and unexpected lessons emerge around each bend. Unlike reading or hearing about the river, or glancing out a car window at the water flowing beneath a bridge, paddling with the river presents a way of knowing that is rooted in experiences *with place*, in relation to human, non-human, and more-than-human others in that place, fostering a relationship beyond an abstract understanding of the river.

3 Paddling with can spark ecological thought

I removed my shoes and walked into the cold water where the Mississippi and Minnesota Rivers converged. The blue–brown Mississippi reluctantly let the muddy brown Minnesota River, noticeably carrying agricultural chemicals and sediment, to combine with her waters. Seemingly calm waters flowed over my bare feet as my toes sank deep into the riverbank. I thought about my family name: Warren. I contemplated whether it was fate or coincidence that my name was the same as the river that created the Minnesota River basin almost 12,000 years ago. Glacial Lake Agassiz, formed from the meltwaters of the Laurentide Ice Sheet during the last ice age, was once the largest lake in the world, even larger than all the Great Lakes combined. It covered parts of Minnesota, the Dakotas, and Canada. A natural dam made of rocks and ice that held Lake Agassiz's waters broke, draining the great lake and unleashing the great River Warren. A wall of water hundreds of feet deep and several miles wide rushed through the landscape, carving out the river valley. She was a force to be reckoned with. I felt honored to share her name. When she collided with the Mississippi River, the River Warren created a large waterfall (approximately the size of Niagara Falls) that eventually receded to what is now known as St. Anthony Falls. Together, these rivers flowed freely south in search of the sea. The almost static current—now pooled and controlled by a series of 29 locks and dams from here to St. Louis—showed little sign of its history.

As we paddled through St. Paul, we admired the beautifully strange characters enjoying the river on this beautiful fall Saturday. One person waved to us while enthusiastically dancing with their guinea pig on shore while bikes sped by in droves through the trees behind them. Barges, our newest river friends, hummed and glided by, carrying corn and scrap metal. We took the opportunity to test out our radio communication skills on channel 16 of our marine radio: "Hello barge! We are five canoes paddling downstream, passing river right. Just want to make sure you see us. We hope you are having a beautiful day! Over." In response, the barge captain replied, "Roger that," and a loud horn reverberated throughout the river corridor. Communication with barge captains and lockmasters became part of our daily lives as we safely navigated the busy shared waters of the Mississippi.

We made less progress than expected and had to camp beneath the Highway 494 bridge. I fell asleep to the sound of rushing cars above us and hoped we would not get any visitors at the boat launch late at night, especially from the police. At this point in our journey, we would be illegally camping almost every night from the Twin Cities to New Orleans. It was challenging to hide 11 adults, five canoes, and four large tents from prying eyes in public spaces. We had switched our maps from the Minnesota Department of Natural Resources' "Upper Mississippi River Water Trail Maps" to the Army Corps' Mississippi River navigational maps. Instead of identifying campsites and points of interest for recreationalists, these new maps were specifically made for commercial navigation and had little to offer paddlers besides river miles, names of cities, and the locations of locks and dams.

I felt strong. My muscle tissue had stitched, settled, and rebuilt during our few days off from paddling. We were cruising through South St. Paul. Already a week into October, the trees on the bluffs were sprinkled with fall colors. Trains made their way alongside the river across the yellow–orange–red-hued landscape. They, too, would be constant companions for the rest of our expedition—loud choo-choo rumblings and all—as tracks lined both sides of the river from here on south. Our company was quickly expanding and diversifying from the eagles and mussels in northern Minnesota.

I gagged the moment it hit my nostrils. Putrid. Rancid. Foul and not of this earth. Unlike the smell of the paper mill we had encountered earlier on our trip, which I could identify as a "not pleasant smell" as we paddled toward it, this was an all-encompassing and suffocating blanket of festering filth that nearly made us vomit. It clawed at our insides and refused to leave our bodies for at least a mile on the river before the stench from what we later discovered was a nearby stockyard and meat processing plant blew elsewhere with the breeze. We affirmed each other's reactions, wholly surprised that something could smell so wretched for so long.

Later that day, we canoed by something that put the industries we had encountered on the river so far to shame: our first oil refinery. Tall cylindrical towers loomed over the river as plumes of white–grey smoke billowed into the sky. If I squinted just right, it looked like the Manhattan skyline. With half-closed eyes, I imagined people bustling through the streets on an October day in New York, adorning their fall fashion, thankful that the smell of hot summer garbage was now masked by pumpkin spice lattes and crunchy brown leaves. The mechanical clanking sounds were merely endless construction projects, and the routine beeps and horns provided a background

soundtrack to the buzz and energy of the city. When I opened my eyes again, the nuances came back into view, and my vision returned to the lifeless industrial landscape; the metal prison of energy creation for the nearby metropolis where we all lived.

There was a certain light in the sky, either in color or angle, that signaled us to start looking for somewhere to camp each evening more than the various time-keeping devices in our canoes. This natural alarm usually gave us a one-hour grace period before darkness descended. But bend after bend we could not find enough space on shore to set up our tents. When the sun set, we turned on our canoe headlights and donned our personal headlamps as we continued paddling. Barges are equipped with a bright light that darts from shore to shore at night, making sure they navigate within the channel markers (red buoys on the left if you are traveling upstream—"red-right-return," as they say—and green buoys marking the other side). We made sure to stay out of the channel altogether, although this sometimes posed a problem as wing dams—large piles of rocks that direct the current toward the navigation channel—lined the river. Wing dams can create dangerous paddling conditions on the sides of the river, especially during low water, and our canoes would occasionally beach on the unseen underwater rock structures. A barge spotlight bounced around the river until it fixated on our five canoes, nearly blinding us as we continued looking for somewhere to camp. A voice sounded over the marine radio, "Y'all need to get off the water, it is not safe out here." It was hard not to feel like a rebellious teenager at that comment. Why was it safe to operate a full 15-barge tow at night but not paddle a canoe? We assured them we were looking for somewhere to camp, and they eventually passed our fleet without another word.

The next morning, we got a call from the Coast Guard. It turns out the barge captain had reported us to the federal government. The Coast Guard employee told us we had to call them every morning and every night to report our whereabouts. We did this every day for 3 weeks, even though what we were doing was completely legal, and more than 50 people canoe the length of the Mississippi River every season. We started calling the Coast Guard "mom"—"I'm gonna give mom a quick call before we launch." It became a bit of a joke as we realized the ridiculousness of the request, but it did not bother us enough to refuse to comply. One morning, I made the routine call to share our location on the river, and someone different from our usual correspondent answered the phone. I told them what we were doing and where we were, and they replied, "Why the hell should I care?" and hung up. After that, we never called or heard from them again, beyond a brief run-in on the lower river.

Paddling Lake Pepin can be dangerous. Clocking in at 22 miles long and up to two miles wide, the lake (or "liver," as we called parts of the river that were also referred to as lakes) has many personalities, sometimes providing pristine flat waters for recreationalists to easily traverse and other times kicking up unruly waves that have taken lives during rough weather. The fate of paddlers is decided by the wind speed and direction. It was late afternoon when we arrived at the mouth of the lake just south of Red Wing. Conditions were perfect for a night paddle, something I was familiar with and comfortable doing based on my previous experiences. I slowly started planting the seed, canoe by canoe, that we should paddle through the night as we approached wider waters. Some people were supportive, while others were skeptical. Our decision-making model required all 11 paddlers to agree if we were to do something, so I gave up my campaign and resigned to camp on a beach nearby instead.

The wind gently pushed ripples across the lake the next morning. I knew if the wind was blowing by 6:00 a.m. that it was not a good sign for the rest of the day. Surely enough, the waves grew bigger and bigger a few miles into our journey across the big lake, providing flashbacks of paddling on Lake Winnibigoshish, but on a lake nearly twice its length. We were hyper-focused on our paddle strokes, staying perpendicular to the waves and aiming for a small sand peninsula about a mile ahead. Just then, a huge BOOM! reverberated across the water, bouncing off the bluffs and rocks, nearly shaking own bodies. I dared a glance to my left. My heart sank. Just beyond the shore were small bluffs typical of the driftless area—a region of hilly topography untouched by glaciers. But where one bluff should have rolled with the landscape, it was cut awkwardly in half and being blown to smithereens by what we later learned was a frac sand mining operation. We could not see the machines rumbling at the bottom of the pit, but we could hear the explosions and the low vibrations—the relatively immediate demolition of an ecosystem hundreds of millions of years in the making.[9]

After an adventurous day, including building our own catamarans out of rope and driftwood that we immediately disassembled because they felt unsafe in the waves, we finally paddled into Wabasha, set up camp, and walked to a nearby brewery for a well-deserved drink. The next day, we visited the National Eagle Center and resolved our seemingly endless eagle debacle before continuing downstream to new sites, sounds, and smells on the ever-changing river.

Paddling on the river allowed me to slow down, feel my surroundings, and think about my relationships with the world as I collided with other living and non-living entities on the river. These collisions created "epistemic friction" with others, like the Coast Guard and barge captains, through unexpected moments of encounter inherent in moving through a landscape; of moving *with* a river.[10] An open meditative state inherent to paddling allowed our group to observe and discuss the ripple effects of balanced and imbalanced interconnected relationships among the many actors who use the

9 Eric Carson, Rawling, J. Elmo, Daniels, J. Michael, Attig, John, *The Physical Geography and Geology of the Driftless Area* (Boulder, Colorado: Geological Society of America, 2019). The sedimentary rocks of the Driftless Area are from the Paleozoic Era and up to 545 million years old, and even the most recent strata of bedrock are hundreds of millions of years old. Frac sand operations are common in this area because the St. Peter sandstone is so loosely held together that it makes for ideal mining conditions.

10 Larsen and Johnson, *Being Together in Place*, 181. Larsen and Johnson define "epistemic friction" through Seawright, as "those uncomfortable moments in which our taken-for-granted assumptions about the world begin to crack. These moments can be transformative and catalyze critical consciousness to imagine and hopefully actualize an alternative epistemology."

same river for different purposes. As we continued to read and narrate the landscape on our expedition, it became clear that we were less and less welcome on the water as other uses of the river—industry, commerce, and transportation—began to emerge and take priority over recreation. We had to negotiate our own needs with others in this shared space. Beyond revealing diverse uses of the river and intertwined relationships in place, how did paddling on the river encourage me to *think* in interconnected ways? How did this thinking challenge human–nature binaries embedded in my own cultural and socio-geographic location, and allow me to sit with the multiple and sometimes contradictory identities of the river?

Paddling on the river helped me think in more interconnected ways that differed from my previous exposure to binary thinking, like the separation of human and nature. Robin Wall Kimmerer,[11] Soren Larsen, and Jay Johnson[12] argue that Western articulations of the human–nature relationship reinforce long-standing colonial projects that disrupt "productive dialogue about our relationship with other humans and non-humans" (Larsen et al., 2017, p. 106). Kimmerer expresses that communication problems in Western views of the human–nature relationship explain our current environmental crisis.[13] Social constructions of "land as resource" tell a story in which "everything is a commodity to be sold" (Kimmerer, 2013, p. 31). She argues that this thinking has led to the devastation of the natural world. Kimmerer finds the mindset behind something like dumping toxic waste into a lake or creating endless fields of monocultures—or in this case, the mindset behind blowing up a bluff millions of years in the making—more disturbing than the act of environmental degradation itself. For Kimmerer, the human–nature divide is a disease that "divorces our mental calculations from our intuitive, emotional, and biological embeddedness in the matrix of life…[that] allows us passively to acquiesce in the preparations for our own demise" (Kimmerer, 2013, p. 326). Instead of working with the natural world, humans shape the land "for the convenience of machines and the demands of the market" (Kimmerer, 2013, p. 138).

By perceiving nature as a blank space for human mastery, it becomes "over yonder," something separate from humans. Kimmerer argues that this understanding of the human–nature relationship clings to the "neoclassical fallacy that human consumption has no consequences. We continue to embrace economic systems that prescribe infinite growth on a finite planet, as if somehow the universe had repealed the laws of thermodynamics on our behalf" (Kimmerer, 2013, p. 308). She believes our current climate crisis is a direct result of harmful understandings of the human–nature relationship that presents human-made destruction as an inescapable fact; of a nation that requires loyalty to a flag over responsibility to each other and the land;[14] and of "an economy that grants personhood to corporations but denies it to the more-than-human beings" (Kimmerer, 2013, p. 376).

Rivers are literal interconnected systems that serve as a helpful metaphor for thinking about interconnectivity. The Mississippi River flows more than 2,300 miles from its source at Lake Itasca to the Gulf of Mexico, traveling through 10 states that are collectively home to 55.4 million people and providing drinking water to more than 20 million people in 50 cities (Schaetzl et al., 2023). Water from places as far away as Alberta, Canada, and Pittsburgh, Pennsylvania, flows into the Mississippi River, and eventually into the Gulf of Mexico.[15] Unlike unseen groundwater systems or the interconnected air we share, rivers and their watersheds provide a physical and tangible visual for vast interconnectivity that is otherwise difficult to imagine. Literal interconnected systems can serve as actants for thinking about larger interconnected systems beyond the local.[16] I continued to read the landscape for meaning, processing new and emerging encounters and information, pondering, "Who is the river?" "What is the river for?" "What is my relationship with the river?" Instead of being able to articulate answers to these questions as I spent more time on the water, tensions and contradictions compounded as the river's identity became more tangled and complex. On the surface, the commercial vessels, mining operations, dams, and wing dams we paddled by continued to narrate the story of the "river as a resource for human gain." But the river was my home, and my relationship with her had grown from traveling the small clear headwaters stream to the wide navigation channel now before me. Paddling with the river revealed my own connections and interdependencies within a larger web of life that challenged the discursive divide between humans and nature.

11 Kimmerer, Robin Wall, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants,* Minneapolis, Minnesota: Milkweed Editions, 2013. Robin Wall Kimmerer is an enrolled member of the Citizen Potawatomi Nation, writer, speaker, and scientist who lives, works, and breathes in a world of plants. Her book, *Braiding Sweetgrass*, provides environmental communication scholars much more than literal ecology. Through beautiful stories rooted in Indigenous ways of knowing, she reveals the deep interconnectedness of all beings that challenges dominant understandings of the human-nature relationship.

12 Coming to the human-nature discourse from geography, Larsen and Johnson focus on place as an agent that "calls us to the struggles of coexistence in the pluriverse, a world of many worlds." *Being Together in Place* focuses on Indigenous ways of knowing and living in the world to imagine new (and ancient) ways of articulating our interactions with others in "place" to envision a more life-supportive coexistence. Larsen and Johnson tell stories of indigenous activism happening *in place* to explore the ways humans and nonhumans "recognize one another and their entanglements, however strange or difficult that may be, in a pluriverse cosmopolitics of coexistence."

13 While rooted in environmental science and botany, Kimmerer's main message is of environmental communication, and of our ethical responsibility to re-articulate the human-nature relationship in this time of environmental crisis.

14 Kimmerer, *Braiding Sweetgrass,* 112. Kimmerer talks about the differences between the Thanksgiving Address and the National Anthem. She points out the nationalist messages in the National Anthem, like loyalties to a flag but not to a land, whereas the Thanksgiving Address is all about giving thanks to the land itself.

15 NASA's Scientific Visualization Studio, "The Rivers of the Mississippi Watershed," Released September 12, 2016, https://svs.gsfc.nasa.gov/4493. This animation shows the expanse of the Mississippi River Watershed.

16 Through learning about a place, we can learn something about all places, and contribute to a cosmopolitics of coexistence in what Larsen and Johnson call the "pluriverse." Place-based knowing implies an educational relationship that can help us imagine life differently within all of coexistence, whereas place-bound is associated with an anterior identity claim to a specific place.

Encounters with the river sparked bodily sensations that revealed interconnectedness.[17] The smells and sounds along the river forced me to acknowledge that I was not a spectator separated from my surroundings but a vastly interconnected part of my environment. The smell from the meat processing facility and stockyard broke down any preconceived boundaries I had between body and atmosphere. Microorganisms and cells show that our world is made up of infinite worlds that blur our understanding of boundaries, much like our "infinitely porous" skin, which is easily infiltrated by smells.[18] The "boom" of the frac sand mining explosion vibrated through my body, impacting more just than my ears. Paddling with the river was a multisensory experience in which my entire body became "one giant listening organ, one great resonating chamber" (Faris, 2020). Faris argues that these embodied moments can raise "awareness of both one's own sensorial experiences and one's relationship to others," as our senses heighten our engagement with the world around us. The sorrow I felt while glancing toward a bluff as it was blown in half left me aware of the genealogical and evolutionary histories in this shared place that challenged the idea of nature as a separate entity. Paddling with the Mississippi River revealed complex interdependencies—like the daily concern for our water supply even though we were surrounded by water—that challenged the integrity of the human–nature divide.

Kimmerer, Larsen, and Johnson argue that a central tenet of interconnected thinking is that humans are *enmeshed* and *entangled* in a world of many worlds of which we are one of many interconnected beings. Kimmerer argues that the first step in moving beyond the human–nature dichotomy is realizing that humans are entangled in genealogical and evolutionary relationships with all of life—living and non-living, material, and spiritual.[19] Humans are just one entity in a vast landscape where we encounter and relate to others. Interconnectedness becomes apparent when we collide with others in a place, where everything comes into relation with everything else. Larsen and Johnson argue that place "summons others to encounter, dialogue, and relationship among the humans and non-humans who share the landscape" (Larsen et al., 2017, p. 2). For Larsen and Johnson, place forces interactions with others; it calls human and non-human beings into relation with one another through epistemic friction: an educational relationship through the collision of worlds. As evident in our interactions with the barge captain who told us to get off the river or in our bizarre relationship with the Coast Guard, relationships with others are asymmetrical and agonistic, meaning that "they provoke a response, compelling recognition, dialogue, and struggle in the epistemic friction of place's agency" (Larsen et al., 2017, p. 49).

These asymmetrical, agonistic relationships require balance. When strangers collide, we must negotiate "the degrees of autonomy we do possess in ways that are balanced and life-supportive" (Larsen et al., 2017, p. 195). Kimmerer, Larsen, and Johnson view humans as younger siblings to Mother Earth, in which "place" holds firstborn agency. Humans are students tasked with learning the complex interconnected relationships in and around them. Even though this suggests a hierarchy, it is not a relationship of power and control. It is a reciprocal educational relationship based on the mutual thriving of all living and non-living things. These scholars argue that because we are enmeshed, everything is in relation to everything else. All living and non-living things are interconnected through time, space, spirit, and place.

Paddling with the river encouraged me to think in interconnected ways across perspectives as we collided with different others and negotiated space on the water. Larsen and Johnson argue that place "summons others to encounter, dialogue, and relationship among the humans and non-humans who share the landscape" (Larsen et al., 2017, p. 2). Visceral experiences like encountering an explosive blast related to mining operations—a normalized practice—opened my mind and heart to think not only about the interconnectivity between the many players in this shared place but also about the physical, political, and cultural systems and conditions that normalize certain practices over others. Larsen and Johnson remind us that while our thinking is *place-based*, it is not *place-bound*. Considering relations in place allows us to consider all relations in all places.[20] An important component of being enmeshed and interconnected is thinking beyond the individual. "It is through our awakening to a kinship with an energetic pluriverse of manifest difference that allows us to perceive a discourse beyond the well-being of one family, one people, or one species" (Larsen et al., 2017, p. 199). In this regard, thinking interconnectedness encompasses diverse, multiple, and sometimes contradictory ways of knowing and

17 Ashcraft, Karen Lee, "Communication as Constitutive Transmission? An Encounter with Affect," Communication Theory 31, no. 4 (2021): 571–92. Ashcraft explains the capacity of affect to reveal associations and connections: "Affect pulls bodies into association and pushes them to become something as their connection unfolds," 573.

18 Timothy Morton, *The Ecological Thought*, Cambridge, Mass.: Harvard University Press, 2010. Morton uses the composition of our bodies to show fluidity across infinite scales. He quotes Gilles Deleuze: "Matter thus offers an infinitely porous, spongy or cavernous texture without emptiness, caverns endlessly contained in other caverns: no matter how small each body contains a world pierced with irregular passages, surrounded by an increasingly vaporous fluid, the totality of the Universe resembling a 'pond of matter in which there exist different flows and waves,'" 55. Ashcraft similarly makes the claim that "Human bodies are imminent and porous, beyond the usual concession that people are affected by their surroundings." Ashcraft quotes Brennan to elaborate on this point: "We are not self-contained in terms of our energies. There is no secure distinction between the 'individual' and the 'environment,'" 576.

19 Kimmerer shows what it means for humans to be enmeshed in the world through stories of mutual thriving and reciprocal relationships between humans and plants. Debunking nature as something "over yonder" or something that would be better off without humans, Kimmerer's research shows how sweetgrass thrives when harvested (respectfully) by humans—it *needs* this human intervention. She uses the example of how when humans sustainably harvest large trees in a forest, light flows through for younger trees to grow.

20 Morton, *The Ecological Thought*. Morton supports this claim, arguing that thinking ecologically—in interconnected systems—allows us to think big about our galaxy in relation to other galaxies. It also allows us to consider infinitely microscopic worlds colliding all around us, and the interconnectedness of everything in between. "Thinking ecologically goes beyond a consideration of sentient beings on earth here and now. It spans time and space," 29.

being with the river.[21] Instead of an "epiphany-like" encounter with interconnectedness—"we just need to think in systems to see the truth and make better decisions"—paddling with the river is a muddling and sobering experience that often confuses and complicates than clarifies our entanglements with others. It forces us to consider our relationships with all others and to think about what to do next.

4 Conclusion

Paddling with the river is a viable form of place-based knowledge production that has the power to blur the human–nature dichotomy deeply ingrained in Western knowledge systems. The embodied encounters inherent to paddling with the river expanded upon what I had read about the river and knew through my environmental education. The river is a place where diverse ways of knowing and being are evident. While this article only highlights a few stories from my expedition, my learning compounded as I paddled south and encountered larger and more harmful industrial practices downstream. As I paddled-with the current, I saw the river through multiple, often contradictory, lenses: the river as my home and provider, and the river as a channel for shipping and transportation, as well as a necessary provider of goods and services to sustain human life. I knew that barges carried goods up and down the river, the Coast Guard was responsible for on-water safety and security, and the Army Corps was tasked with managing the river for commercial navigation. I knew that frac sand mining requires extensive amounts of water and that operations are often located near rivers, lakes, and sand; I also knew that the process to extract oil pollutes water, increases sedimentation, and destroys habitats. I knew that these impacts have negative consequences for the health and sustainability of the river ecosystem and the many communities and industries that rely on the river. But it was not until I came face to face with these entities and activities—literally talking to people over a marine radio or watching a bluff explode—visceral embodied moments of encounter—that I began to realize the complex relationships among the river's many users, of which I was and always had been a part.

21 Larsen and Johnson focus on place because, for them, colonialism broke relationships with place and presented "proper" ways of knowing that often ignored our obligations to the natural world. As such, place-based research can help rekindle those broken relationships through stories of direct action and mutual care grounded in intimate knowledges of specific places.

Data availability statement

The datasets presented in this article are not readily available because the data consists of personal stories that are included in the paper. Requests to access the datasets should be directed to natalie.warren11@gmail.com.

Author contributions

NW: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Supervision, Writing – original draft, Writing – review & editing.

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