

RESEARCH ARTICLE



From warrior to guardian: An autoethnographic study of how consumers think about and interact with the natural world

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Abstract

Consumers are increasingly concerned about how their interactions with the natural world affect both the health of that environment, and their own well-being and enjoyment of life. More aware consumers seek to make sense of the natural world around them and consider how their consumer behavior impacts this environment. How actors notice and bracket ecologically material cues from a stream of experience and build connections and causal networks between these has been referred to as ecological sensemaking. This research examines ecological sensemaking in a specific context, that being in the experience of catch-and-release fishing. Data were gathered through a process of autoethnographic inquiry obtained over the course of four fishing trips. The results reflect the process of ecological sensemaking pertaining to the experience. Through the findings, we propose a new concept, ecological reasoning, which seeks to provide a critical link between ecological sensemaking and ecological embeddedness. Using this new concept, the research contributes to extant understanding of how consumers think about and interact with the natural world. Apart from constructing an overarching narrative of the experience, four subnarratives are also identified, in a chronological sequence that comprises the entire experience of catch-and-release fishing. The findings have implications for the broader management and marketing disciplines seeking to establish better ways of interacting with the natural world, both for themselves and their consumers.

KEYWORDS

autoethnography, consumer behavior, nature, sensemaking, sustainability

1 | INTRODUCTION

As managers strive to integrate environmentally sustainable practices into business models and production systems (Acuti et al., 2022; Bocken et al., 2014; Boons & Lüdeke-Freund, 2013); strategies (Salzmann et al., 2005); and products and services (Chen et al., 2019; Sheth & Parvatiyar, 2021; Winterich et al., 2019), it is critical for them

to understand how consumers think about the natural world. This shapes how marketers communicate with consumers, emphasizing the sustainable business practices that consumers value (Trollman & Colwill, 2020). Managers' beliefs about nature and their obligations toward this environment shape the organizational actions that they endorse, with wide-reaching implications for both business and society at large. How consumers respond to those actions, and their

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own understandings of them, will determine what they choose to do, and how they feel about doing it (e.g., Gollnhofer et al., 2019; Tezer & Bodur, 2020; White, Habib, et al., 2019; White, Hardisty, et al., 2019). By way of illustration, consider a consumer who is planning to purchase a new vehicle for leisure purposes. They may feel pressure to balance their obligation to maximize the economic value they gain, in terms of price and performance, with the goal of minimizing damage to the natural environment. Their beliefs about the natural environment in general, and about the effect of vehicles on the environment, will shape their thinking and the ultimate purchase decision. This in particular is a noted trend amongst younger generations, who purport to prioritize environmentally friendly alternatives in their consumption behavior (Bulut et al., 2021). One could also consider this paradox in other aspects of consumption behavior, considering a hobby hunter for example, who may balance the adrenaline rush, against the potential cruelty to an animal, and the resultant destruction of wild creatures (e.g., Komppula & Gartner, 2013).

It is important to note that these paradoxes occur frequently in different consumption contexts (Garritty, 2012). For example, consumers may boycott a particular product or brand as a result of ethical and/or environmental concerns, whereas these concerns may not extend to other product categories (Soneryd & Ugglä, 2015). In this manner, consumers are negotiating opposing values in an attempt to make sense of their role as a responsible consumer (Soneryd & Ugglä, 2015).

One way of improving our understanding of how consumers think about nature is by employing the theoretical lens of sensemaking. The sensemaking paradigm suggests that as humans we are constantly striving to understand the world around us. We do so by means of a cognitive process through which we notice and interpret cues from our social worlds and create narratives that assist with understanding them (Bruner, 1990; Robichaud et al., 2004; Vough et al., 2015). Individuals then retain those narratives and draw on them in future encounters (Maitlis, 2005; Weick, 1995). The notion of sensemaking has been considered in varying marketing contexts. For example, using sensemaking as a sales approach has been considered in the business-to-business (B2B) marketing context, whereby salespeople are driven to help customers make sense of information to encourage confident purchase decisions (Adamson, 2022). Whiteman and Cooper (2011, pp. 890–891) applied the notion of sensemaking to human interactions with the natural world by introducing the concept of *ecological sensemaking*, which they describe as “how actors notice and bracket ecologically material cues from a stream of experience and build connections and causal networks between various cues and with past enacted environments.” They further argued that ecological sensemaking is critical to our ability to be *ecologically embedded* (Whiteman & Cooper, 2000), that is, to develop more or less accurate understandings of the material functioning of a particular ecosystem.

Consumptive recreation activities, such as hunting, bring direct change to wildlife populations, whereas nonconsumptive recreational activities, such as skiing, do not intend to exert the same direct

impact on the environment (Minton et al., 2020). However, researchers have identified that nonconsumptive recreational activities may also result in negative impacts on wildlife and the resultant environment (Blanc et al., 2006; Larson et al., 2016; Olsen, 2022). In the research described here, we build on Whiteman and Cooper's (2011) research by exploring ecological sensemaking in the context of catch-and-release fishing. Depending on the intentions of the fisher, this could be viewed as either a consumptive or nonconsumptive recreation activity. Catch-and-release (hereafter C&R) is a type of recreational fishing practiced by millions of anglers worldwide (Arlinghaus et al., 2002). It typically involves the use of angling methods (using rods, reels, and hooks) to catch fish, but instead of killing the fish, the angler releases it back into the water, presumably to survive. It is a controversial activity, enjoyed by many but viewed with approbation by others who regard it as exploitive, with animal cruelty concerns (Arlinghaus 2007). We began our inquiry with the following general research question: How do fishers view the experience of C&R fishing?

To investigate this question, the first author (FA) conducted an autoethnographic inquiry over the course of four fishing trips in 2019. As the research proceeded, we realized that the FA's views of C&R fishing reflected their own ecological sensemaking regarding the experience. As we considered the data and revisited the literature, we concluded that this research had the potential to not only shed light on the mindsets of C&R fishers, but also on how consumers think about the natural world. To foreshadow the findings, we introduce a new concept that we suggest provides a critical link between ecological sensemaking and ecological embeddedness. We term this new concept *ecological reasoning*, and it is reflected in the development of focused narratives explaining aspects of ecological functioning. Later in the manuscript, we elucidate how these, and other findings contribute to our understanding of how individuals think about the natural world, and present practical insights thereof. In particular, the notion that a subjective personal experience can be used to offer insights into the role of customer value in a consumption experience is further explicated.

2 | UNDERSTANDING ECOLOGICAL SENSEMAKING

Scholars in many different fields have explored the attitudes and beliefs that precede how individuals behave toward the natural world, and have identified two prominent paradigms (Pienaar et al., 2015). The first is termed the Dominant Social Paradigm (DSP), as it was said to reflect the most widely held perspective in western industrial society (Dunlap & van Liere, 1984). Those who subscribe to the DSP tend to believe that humans should have dominion over nature, that nature is bountiful and resilient, and human ingenuity will enable us to overcome any challenges faced when interacting with the natural world (Kilbourne et al., 1997). From a consumption perspective, the DSP present in western societies has largely contributed to environmental decline (Kilbourne & Carlson, 2008).

Research suggests that a consumer's environmental attitude is directly influenced by their position on the DSP (Kilbourne et al., 2002). A contrasting paradigm was originally articulated by Dunlap and van Liere (1978), first termed the New Environmental Paradigm, then later updated to the New Ecological Paradigm (NEP). The NEP holds that humans can upset the balance of nature, that we are using up nature's valuable resources, and we need to change our ways to avoid an environmental crisis. The NEP scale (Dunlap et al., 2000) is now one of the most widely used means of assessing environmental attitudes (Cordano et al., 2003; Pienaar et al., 2015). Research suggests that the consumption behavior of consumers subscribing to the NEP tends to be aligned with pro-environmental consumption (Derdowski et al., 2020). Individuals who score high on the NEP tend to also report higher concerns regarding environmental issues, will be more supportive of environmental regulation, and engage in higher levels of pro-environmental behaviors (Cordano et al., 2003; Dunlap et al., 2000). This contrasts with individuals who subscribe to the DSP, who tend to show less concern for the natural world (Kilbourne et al., 1997).

While the NEP and DSP provide useful guidance to understand how human beings think about the natural world, they do not necessarily offer insight into how people will behave. As marketing scholars, our guiding principle to understand consumer behavior pertains to the perception of value, whereby the subjective assessment of value comprises an evaluation and comparison of the perceived benefits and costs associated with a particular behavior (Kotler & Armstrong, 2013). For example, imagine an off-road vehicle enthusiast, which inevitably involves doing some harm, therefore a cost, to the natural environment, by damaging the terrain and polluting the air. However the existence of this activity suggests that in some instances, the perceived benefits associated with the activity may outweigh the costs. If we assume that off-road vehicle enthusiasts are concerned with the natural world and its preservation, do they experience cognitive dissonance between pursuing their hobby and striving to protect natural processes from harm? And if so, how do they resolve that dissonance? This cognitive dissonance has been repeatedly identified in consumption contexts where the pro-environmental attitudes and beliefs of a consumer may not necessarily align with their consumption decisions (White, Habib, et al., 2019; White, Hardisty, et al., 2019).

The theoretical lens of ecological sensemaking (Whiteman & Cooper, 2011) offers a potentially useful lens to improve our understanding of these issues. When engaging in ecological sensemaking, one begins with prior knowledge about a particular set of ecological conditions. Next, as one enters the natural world and encounters those conditions in person, their prior experience allows them to notice certain things. One then engages in cognitive work to tell a plausible story about what they noticed, and that story then becomes part of their ongoing knowledge about the natural world. It is predicted that a similar process exists in consumer interactions with the natural world, whereby existing knowledge guides how one interacts with the natural world from a consumption perspective, impacting the development of a narrative that guides future consumption activity.

One of the critical insights of Whiteman and Cooper's (2000, 2011) research is that nature is not simply a social construction of humans but exists in a material sense. For example, when one angles on a lake there are plants, insects, and fish in the water; there are prevailing weather conditions; and the lake is at a certain geographical location, subject to local ecological processes. All of these things exist regardless of whether or not the angler notices them. Whiteman and Cooper (2011, p. 889) argue that "ecological materiality" is an important part of ecological sensemaking, particularly in the sense that we can have a more or less accurate understanding of local ecological processes. People that are more embedded are more likely to make sense of the natural world in effective ways. To illustrate what effectiveness in this context can mean, in their 2011 paper, they describe how the first author, Gail Whiteman was walking near a river on the first day of her field research. However, she did not realize that there could be black ice on the rocks. She slipped and fell into the freezing water with rapids a mere 30 feet away. Fortunately, she was accompanied by a local Cree guide named Freddy, whose knowledge of the local environment meant he had stayed off the rocks that Gail slipped on, which enabled him to pull her from the river without falling in himself and save her from hypothermia by insisting she put on dry clothes. Freddy's ecological embeddedness enabled him to avoid hazards and save Gail's life; in contrast, Gail's lack of embeddedness meant she did not notice those hazards, and as a result she put herself in grave danger. Ecological embeddedness may therefore enable people to survive, or to be resilient in the face of threats from the natural world (Weick, 1993; Whiteman & Cooper, 2011).

In the business context, for consumers who wish to interact with the natural world in ways that allow them to enjoy their hobbies and pursuits, ecological embeddedness may allow them to do so, while minimizing the impact of their actions on ecosystems. Ecological embeddedness can further extend to the manner in which business systems are developed. For example, in the development of food production and supply systems, the concept of ecological embeddedness encompasses more than the recognition of the influence of the natural environment on economic activity (Morris & Kirwan, 2011). This suggests that ecological sensemaking can lead to ecological embeddedness, which can in turn help individuals to interact effectively with the natural world. However, ecological sensemaking does not necessarily result in accurate understandings of the natural world. For example, as Gail began her field research, she doubtless had preliminary, incomplete understandings of the natural world she was about to enter, based on initial or anticipatory experiences. While through sensemaking she could fill in gaps in her understanding, she may not necessarily fill in those gaps accurately. She may construct narratives that involve misunderstandings of the natural world or missed important aspects of it. This in turn begs the question of what factors will influence whether ecological sensemaking leads to more or less accurate understandings of the natural world (i.e., to greater or lesser ecological embeddedness). In this research we contribute new insights to this question through a study of C&R fishing.

3 | CATCH AND RELEASE FISHING

While macromarketing scholars have studied human interaction with animals (e.g., Wunderlich et al., 2021), the focus has largely been on mammals, with fish, reptiles and other creatures receiving less attention. This may be the result of a terrestrial bias, thereby placing the primary focus on land animals (Keel & Wolf, 2020). Human interaction with fish is the focus of this paper, specifically the activity of catching, and then releasing, fish. C&R fishing is an extraordinarily common pursuit, with millions of anglers participating every year, releasing billions of fish worldwide (Arlinghaus et al., 2007). It has been examined for many years by fisheries scientists (Cooke & Suski, 2005; Fedler & Ditton, 1986), and in 2007 leading scholar Robert Arlinghaus and colleagues conducted an extensive review and identified four categories of C&R research: historical, ethical, biological, and social (Arlinghaus et al., 2007). The historical study of C&R fishing considers how attitudes and practices toward C&R fishing have varied over time and place; the ethical perspective comprises often-vigorous debates about the moral justifiability of C&R fishing; and the biological viewpoint focuses largely on the effects of C&R fishing on the fish themselves, especially whether they are likely to survive, after being caught and then released. The social aspect involves studying human attitudes and behaviors that are relevant to catching and releasing fish (Brownscombe et al., 2017; Danylchuk et al., 2018; Hunt et al., 2013; Stern & Sutton, 2003). The social category of C&R research is most relevant to the current research, and we next summarize its key findings.

When considering how consumers view the act of C&R fishing, researchers have focused on one of two variables, termed consumptive orientation (Anderson et al., 2007; Fedler & Ditton, 1986; Sutton & Ditton, 2001) and angler specialization (Bryan, 1977; Fisher, 1997). Anglers with a high consumptive orientation prefer to catch and keep fish, whereas anglers with a low consumptive orientation place less emphasis on keeping fish, and greater emphasis on the fishing experience (Arlinghaus et al., 2007). By examining the consumptive orientation amongst recreational anglers, researchers have been able to establish distinctive segments (Kyle et al., 2007). Angler specialization (Bryan, 1977; Ditton et al., 1992) is a multifaceted, complex concept, incorporating both attitudinal and behavioral components (Bricker and Kerstetter 2000; Bryan, 2000), intended to capture the importance of angling in an individual's life. Some indicators of specialization are an individual's level of economic investment; their level of skill; and the degree of centrality angling has in one's life. A fisher who is highly skilled, has invested significant financial resources, and fishes frequently is more specialized than a novice with little financial investment who rarely fishes (Bricker and Kerstetter 2000). In general, more specialized anglers are more likely to release their fish (Arlinghaus et al., 2007).

Although the concepts of consumptive orientation and angler specialization have shed some light on anglers' C&R attitudes and behaviors, their application in empirical research has also reflected the complexities involved. For example, consumptive orientation and specialization can vary not only across different anglers and groups of

anglers (Ditton et al., 1992; Kyle et al., 2007), but also across different species and sizes of fish (Arlinghaus et al., 2007). A fisher may be highly specialized and have a low consumptive orientation toward rainbow trout, but have a very different orientation toward sockeye salmon, preferring to keep as many fish as legal. Further, attitudes toward C&R fishing in general, and toward the merits of keeping or releasing particular species of fish, can vary widely both within and across different geographic locations (Fedler & Ditton, 1994; Kyle et al., 2007).

Rather than delving into the complexities of the individual-level tendencies of anglers, an ecological sensemaking lens allows for a different approach to understanding C&R fishing. As an avid angler, the FA, when reading the relevant literature found elements that were able to explain some of their actions (e.g., they are a specialized fly fisherman, and value the enjoyment of the fishing experience). Further, the FA could also relate to ideas from both the DSP and the NEP: they have the right to catch and release fish, yet also feel some responsibility toward individual fish and the broader population in a given body of water. However, they also felt that there was much more to their experience of C&R fishing than the considerations that were currently present in the literature. We therefore set out to develop new insights into C&R fishing by analyzing the FA's own experiences and incorporated the lens of ecological sensemaking during the research process.

4 | METHODOLOGY

The choice to analyze the FA's C&R fishing provided an opportunity to combine personal passion with professional work. They typically go fishing between 8 and 10 times per year, sometimes on day trips to rivers and oceans but more often on multi-day trips to lakes in their home province of British Columbia, Canada. As students of human behavior in the social sciences, it is our wont to reflect on why individuals behave in certain ways, and it is our hope that this may inform consumer researchers and other scholars. The FA had long pondered why different anglers would approach the task of fishing in different ways, and on the very different stories about why an angler was successful. Many of these stories appeared to be a form of bullshit, that is, assertions made without evidence (Ferreira et al., 2022; McCarthy et al., 2020), yet fishers seemed attached to their stories. More importantly, those stories would shape their subsequent actions in the natural world. As it pertains to C&R fishing, while the FA took great pleasure in fishing in this way, others described C&R as a waste of time, with the potential for animal suffering. We sought to explore these issues systematically over a series of fishing trips.

With the FA as both principal investigator and research subject, we conducted what Anderson (2006) termed analytic autoethnography. The process of autoethnography is one in which the ethnographer becomes "fully situated as members of the group being studied" (McAlexander et al., 2002, p. 41). Autoethnography offers "one way for consumer researchers to tap into the

long-sought-for understanding of why we do what we do as consumers" (Olsen, 2022, p. 208). This approach to ethnographic inquiry involves five key features: (1) complete member researcher status, (2) analytic reflexivity, (3) narrative visibility of the researcher's self, (4) dialogue with informants beyond the self, and (5) commitment to theoretical analysis (Anderson, 2006, p. 378). The role of autoethnography in academic research can oftentimes "create a sense of discomfort" as it presents an opposing view western research ideologies suggesting that scientific knowledge must be objective (Hackley, 2020, p. 176). Despite this, autoethnography has a substantial history in consumer research, dating back to the work of Gould (1991, 1995), subsequently critiqued by Wallendorf and Brucks (1993; see also Emile, 2011, for a retrospection) for its lack of separation of the roles of the researcher and introspector, and its exclusive focus on one individual. Gould's (1995) response to this censure was that consumer researchers should adopt a more open approach to autoethnography because of its potential to simultaneously contribute to our understanding of both consumer behavior and researcher dynamics.

Referring to the conceptualization of, and approach to autoethnography in consumer research as subjective personal introspection, Holbrook (1986, 1995, 2005, 2006) describes it as focusing on impressionistic narrative accounts of the writer's own private consumption experiences. In Holbrook's work on the personal meanings of a photograph collection, they note that subjective personal introspection (or autoethnography) permits the researcher/writer to elucidate "some aspect of humanity as reflected in the everyday life of the consumer in general and the author in particular. To paraphrase Montaigne (in the 16th century), I believe that—because I am human—when I write about myself, I inevitably describe some aspect of the human condition" (Holbrook, 2005, p. 45). Holbrook (2006) suggests that while the methodology of subjective personal introspection stems from the humanities, it could offer significant contributions to our understanding of social sciences phenomena.

The data were derived from four fishing trips over a 4-month period between July and November 2019 and reflect the FA's own experiences as a C&R fisher during those trips. To enable analytic reflexivity the FA regularly recorded observations before, during, and after fishing, and later transcribed those recordings. In the evenings after days of fishing the FA also took field notes. To analyze the data, a grounded theory approach (Strauss & Corbin, 1994) was used, allowing for theory to emerge from the data. While the formal data itself was not voluminous (fewer than 20 transcribed pages), the FA also engaged in frequent trial-and-error thinking (Weick, 1989) for days, weeks, and months after the trips, especially when in the company of their fellow fishers and the second and third authors, who have acted as both informants and as occasional sense-givers (Maitlis & Lawrence, 2007), pushing the FA to reflect further on their own sensemaking. We followed Sutton's (1997, p. 100) advice to think of the data as "stimuli that can guide and inspire new ideas," and agree with their insight that effective qualitative research involves a process of mental testing that "...may be triggered and guided by a large pile or a small scrap of qualitative data." In addition, following

the recommendations of Holbrook (2006), insights from the autoethnography have been captured in the form of an illustrative photographic essay. Holbrook (2006, p. 716) suggests that the incorporation of "photographs taken by oneself or others may itself become the primary vehicle for exploring the nature and types of relevant consumption experiences."

We made the decision to take a narrative, sensemaking approach to the analysis of the data after the first of the FA's four trips. One evening when discussing the fishing day with two companions, the FA noted that they were making sense of the day by thinking in terms of multiple phases: first the preparation for fishing, then a process of trying to find and hook fish, followed by the fighting of a fish, and subsequently the release. The FA reflected further on those phases throughout that first trip, and upon returning home noted the parallels to Pentland's (1999) descriptions of five components of narratives: sequential order, focal actors, narrative voice, an evaluative frame of reference, and indicators of context. The phases the FA had identified came in a sequential order, and the focal actors are the fisher (the FA) and the fish, who, as we will explain in more detail later, change their roles in the narratives from hidden mysteries to antagonists to the subjects of care. Third, the narrative is told from the FA's perspective as the fisher. Fourth, there are indicators of what is right and wrong in the narrative, which include appropriate, skillful ways of finding, fighting and releasing fish, that stand in contrast to behavior that results in fewer fish caught and greater harm to fish. Finally, there are other indicators of content and context, most notably the time and place of the fishing and the presence of others.

On subsequent trips we sought to deepen our understanding of the overall narrative of C&R fishing that the FA had identified, with the aim of generating theoretically useful insights into ecological sensemaking. To do so, we modified Whiteman and Cooper's (2011) approach (which they adapted from Weick (1979)) of breaking down sensemaking into three temporally sequential phases, which we termed *retained knowledge*, *enactment*, and *selected stories*. Retained knowledge represented understanding of the natural world; enactment comprised the actions the FA took and the information they took in; and selected stories comprised the narratives that were used to account for what happened after the FA had taken those actions. Finally, we dug deeper into these descriptive narratives to generate insights that we felt would help understand the relationship between ecological sensemaking and ecological embeddedness. We present these insights in detail later in the findings, but first, to provide readers with some insight into the phenomenon of interest, we describe the process of fly fishing for rainbow trout in lakes.

5 | FLY FISHING FOR TROUT: THE BASICS

Fly fishing is an extraordinarily complicated activity. The "flies" used are artificial representations of various kinds of insects, chosen to match what the fish are feeding on in a particular lake at a particular time of year. Figure 1 below provides an example of flies used to hook fish, whereby the top fly is unused and the following two have



FIGURE 1 Examples of flies used in C&R fishing.

been used multiple times over several days to successfully catch and release fish.

The flies chosen are lightweight, so must be cast away from the boat using a weighted line. That weighted line is attached to another, thinner line (called the “leader”) that is more difficult for fish to see. Other gear includes a reel to store the line, and a rod which is used to cast the line and is an essential part of fighting fish. Fishers will also carry a variety of accessories, usually including a net to land the fish, as well as tools such as clippers to cut line, and forceps to help remove hooks from a fish's mouth. While one can fly fish for many different species of fish and in lakes, rivers, or oceans, on the trips for this research the FA fished in lakes for rainbow trout, *oncorhynchus mykiss*, a species of salmonid commonly found in both rivers and lakes in the Pacific Northwest of North America.

Most of the FA's fishing was done with a floating line and a bobber on the surface that gives a visual indication when a fish has taken the fly. Less often the FA fished with a sinking line, designed to sink deeper into the water, and is either retrieved by a stationary fisher or pulled behind a moving boat. The movement of the sinking line through the water is intended to simulate the movement of an insect. When a fish is hooked, the “fight” between the fish and the angler begins—an example of which is presented in Figure 2 below.

An angler's goal is to win the fight by bringing the fish close at hand, often into a net. When anglers chooses to keep a trout, they



FIGURE 2 An example of the “fight” between a fish and the angler.

will remove it from the water, kill it and store it for later preparation. When anglers choose to release a trout, they will seek to remove the hook from its body (typically the mouth) and allow it to swim away. These activities are governed by laws and regulations. Lakes in British Columbia are under provincial jurisdiction, and each lake can have a slightly different set of rules regarding whether keeping fish is allowed, how many, and of what size. Regulations also govern what kinds of gear can be used to catch fish. Some lakes allow fly fishing only, whereas others permit a wider variety of fishing methods.

5.1 | Early ecological sensemaking

The FA has always loved to fish, and as a child took every opportunity to do so. However, they were not born into a fishing family, being the only one with a passion for fishing. It was only in adulthood that they found a group of friends sharing this passion. Approximately 2 decades ago, these friends first invited the FA to join them on their regular fly fishing trips to lakes in the interior region of the Canadian province of British Columbia. The FA remembers a few things about those initial trips. First and foremost, they did not know what they were doing, resulting in many mistakes, and as a result spent lots of time with a fishing setup that was unlikely to catch fish.

In these early trips, the FA remembers feeling overwhelmed with the many details to consider, making them wholly dependent on the knowledge of other, more experienced anglers. On the few occasions when they did catch fish, the FA struggled to release them without harm. The FA remembers on one trip they caught a large trout and wanted to see how heavy it was. The FA had seen people weigh fish before, so they had purchased a scale with a hook on the end, and gently threaded the hook into the fish's mouth and out through its gill openings, not knowing that fish gills are extremely sensitive, and the smallest movement could cause harm, in this case fatally. The FA did not realize this until they put the fish back in the water, after which

they felt immense guilt. Later that evening the FA learned the correct method to weigh a fish, compounding the feelings of guilt for their lack of knowledge.

These early interactions made the FA highly motivated to become more effective. On the infrequent occasions when they caught fish, they were delighted. There was a magical feeling about putting a fishing line in the water, and having the fly taken by an unseen fish. And while initially the FA relied entirely on the advice of their friends, as time went by, they turned their attention to the *why* of what they were doing. In hindsight the FA sees this shift as fundamental to the development of their ecological reasoning. By the time they took the trips that provided the data for this research, the FA had spent close to 20 years learning about both the how and the why of C&R fly fishing and the ecological processes that they were encountering. Next, we explain how this knowledge has been captured in narratives.

5.2 | Ecological sensemaking and catch and release fishing

As noted earlier, as we analyzed the FA's sensemaking about C&R fishing we realized that they were constructing an overarching narrative of the experience. As we analyzed that narrative further, we identified four subnarratives, which we termed *planner*, *seeker*, *warrior*, and *guardian*, that ran in a chronological sequence and together comprised the full experience of C&R fishing. The *planner* subnarrative involves bringing both general and local knowledge to bear to arrive at a preliminary understanding of the ecological conditions at a given lake, both before traveling to a lake and after arriving at that lake but before going out on the water. The *seeker* subnarrative involves trying to find fish and hook them, often through a process of trial-and-error involving the exploration of different locations in the lake, different depths, and different flies. When a fish is finally hooked, the *warrior* subnarrative involves the fight with the fish, where the fisher is trying to tire the fish out and bring it to hand and the fish is trying to escape. The *guardian* narrative begins with the triumphant moment of successfully winning the battle, usually when the fish is in a net. At that point there is a switch in mindset from fighting the fish to being responsible for a fish's welfare, and a preoccupation with releasing it safely. The successful release of the fish also provides a sense of finishing the narrative arc: "...for the people who like to catch and release, the completion is in the act of netting the fish, catching the fish, and then releasing it back."

Table 1 includes more details of each subnarrative and descriptions of the ecological sensemaking therein. Next, we explain what we believe were the theoretically significant aspects of the existence and nature of those subnarratives: (1) their focused, nuanced nature; the interconnections between them that allow for (2) continuous learning and (3) the reconciliation of apparent contradictions; and (4) their contribution to feeling a sense of connection with nature.

5.2.1 | Focused subnarratives

The first step in sensemaking is noticing, and in ecological sensemaking, this involves noticing certain aspects of ecological processes. When the FA was a novice fisher, they noticed what the experienced fishers told them to notice, but as their knowledge developed, they began to pay attention to issues without prompting. At first, they attended to more general things, for example, knowing how the time of year would impact insect-life in the lake, but over time as their knowledge increased, they sharpened their focus to aspects of the natural world that they felt were more closely connected to their goal of catching fish. In essence, through experience they learned *what to notice* to increase their chances of catching fish. For example, in the *warrior* subnarrative, a fisher is trying to win the battle with the fish. If a hooked fish is fighting vigorously by swimming strongly away or jumping in the air, they are putting more pressure on the fishing line, so one must fight the fish differently than if the fish is passive. Thus, in the initial stages of a fight, they now notices the size and strength of the fish, and its reaction to being hooked. FA explains in this excerpt from their field notes:

The fish on my line was obviously big, because I could see it even when it was very deep in the water. It put up a powerful fight. It would run away from the boat, I would reel it back in, and it would run away again. When fighting a big fish, it is critical to not be reeling in at the same time as the fish swims away because the opposing pressures can cause the line to break. So, you have to be very in touch with the fish and what it is doing.

In the *guardian* subnarrative the focus shifts to the welfare of the fish, and attention switches to signals of the fish's health. In their notes, the FA describes "*the sinking feeling when a fish does not seem healthy upon release, especially if it is bleeding.*" In contrast, they also note "*...the absolute pleasure of watching a big fish fought hard, well caught, swimming back down to the bottom of the lake apparently healthy.*"

In addition to providing information about what to notice, these more focused narratives also connect what one notices to other things, in effect enacting a more complex, detailed narrative about the natural world. To illustrate, when the FA began fishing their expert companions told them to take note of bird activity, as this meant fish activity. However, as they learned more about the ecological processes in lakes, they developed a more detailed narrative of what bird activity signified. If one arrives at a lake and sees a particular type of bird (a swallow) diving toward the surface of the water, hesitating, then swooping upwards again, this is a sign that adult insects are "emerging" (exiting their pupal forms and flying away) in that part of the lake, indicating that trout are likely to be feeding on the pupal forms as they swim upwards to the surface. In those circumstances they will drive their boat directly to that spot and start fishing. However, if the swallows are clustering higher up in the air, it means the insects hatched some time ago and might not be emerging any longer.

We suggest that these detailed, focused narratives are critical to the development of a better understanding of ecological processes.

TABLE 1 Catch and release fishing narratives and ecological sensemaking.

	Planner	Seeker	Warrior	Guardian
	Strive to understand the environmental conditions before going on the lake, and choose what gear is needed	After going out on the lake, use trial and error to find fish and hook them	After hooking the fish, fight it, and bring it to hand	Release the fish back into the lake
Existing Knowledge	<ul style="list-style-type: none"> - Knowledge of lake: altitude, depth, and features - Common insect activity at that time of year 	<ul style="list-style-type: none"> - Knowledge of the lake - Executing the plan - Awareness of gear setup 	<ul style="list-style-type: none"> - Keep the line taut - Knowledge of fish, size, and how they fight - Awareness of gear setup - Awareness of hazards 	<ul style="list-style-type: none"> - Best practices for releasing fish - How to throat pump fish
Enactment	<ul style="list-style-type: none"> - Arriving at lake, looking for insect and wildlife activity - Talking to other fishers - Setting up gear: choosing lines, pinching hooks, preparing accessories 	<ul style="list-style-type: none"> - Try different flies, depths and spots - Observe and talk to other fishers - If getting bites, consider why - Observe specifics of surroundings 	<ul style="list-style-type: none"> - Excitement of "fish on!" - Respond to the fish's behavior, keeping in mind the gear - Don't fight the fish to exhaustion 	<ul style="list-style-type: none"> - Minimize contact with fish when removing hook - Pump the fish for throat contents - Release fish from net, observe its behavior
Selected stories	<ul style="list-style-type: none"> - I think this is what is happening - I will start fishing in this place for these reasons - I would like more of this kind of information 	<ul style="list-style-type: none"> - I am not successful because... - I will switch my approach - Or...this is working, fish on! 	<ul style="list-style-type: none"> - Have I got things figured out, or was this lucky? - If I lost the fish, what went wrong? 	<ul style="list-style-type: none"> - The fish is released and is healthy - happy ending! - The fish looks bad, it has been harmed by the experience
Illustrative quotation	"Heading out on day two for R Lake fishing. We only caught about three yesterday, but a friend had a lot of luck fishing deeper so we are going to try fishing deeper today and see what we can do."	"The 'search' is all about looking for fish, trying to get them to bite. There is nothing about the catch and release mentality in this aspect. It is hunting. Searching."	"During the fight there is only a mild concern for the welfare of the fish, and sometimes not any concern when the fight is particularly exciting. One can be conscious of not harming the fish during the fight, not fighting it for too long, but also tiring it enough that it doesn't thrash when the hook is being removed."	"The release is mostly focused on the welfare of the fish, trying to remove the hook with as little damage as possible, keeping the fish in the water as much as possible."

They were present in all four subnarratives, directing attention toward certain processes in the natural world, and providing guidance about how to behave in response. Later we will draw on insights from cognitive science to suggest that these subnarratives are akin to the deep knowledge structures that distinguish experts in a field from novices. Next, we turn to another important feature of these subnarratives, the connections between them.

5.2.2 | Narrative interconnections

Although the subnarratives functioned well as distinct representations of knowledge in their own domains (preparing, finding fish, fighting them, and releasing them), they were also interconnected, in the sense that the meanings from one subnarrative were often significant to another subnarrative. For example, the steps one takes while planning, set the scene for the later subnarratives. How one sets out one's gear will shape how one is able to fish, for example, if an angler decides to use stronger line, they can pull back more strongly on a fish without fear of breaking the line. Thus, actions in the planning phase influence the subsequent phases. Further, stronger line is usually thicker, so an angler would be reluctant to fish in shallow, clear water with strong line because the fish would be more likely to see it. When seeking fish, the FA would take these factors into account. A critical effect of these subnarrative interconnections is to enable learning. Consider the following field notes of the FA:

We were not catching any fish at all, until we spoke to another fisherman who was catching lots of fish, and he was fishing in deeper water than we were. We moved into deeper water and started catching fish.

One of the first things a trout fisher learns is the critical importance of fishing at the correct depth. At a particular point in time trout will often feed at a specific depth, so one must fish at that depth to be successful. For this trip, during the planning phase the FA and their companions had set up their lines with the ability to fish at a maximum of 20 ft, which is already slightly deeper than their usual of 12–15 ft, so they felt this gave them plenty of room to work with. To locate fish and discern depth, they use an electronic device called a depth finder, which tells them the depth of the lake directly below them and provides information about fish activity. They started fishing at about 22 ft of water, which was the deepest they could fish without changing how their lines were set up. However, they caught few fish, and were seeing few fish on the depth finder, so they began seeking out additional information. A friend fishing near to them, catching many more fish, advised them to move into 26 ft of water. They had to stop fishing and lengthen their lines so that they could reach greater depths. They then moved into deeper water and, as the field notes state, started catching more fish. The move from the seeker subnarrative (trying to find the fish) back to the planner subnarrative (changing the gear set up) is an illustration of how these

interconnections can enable learning. The FA planned how they were going to try to catch fish, observed that their plan was not working, and then changed their approach based on new information. These learning processes can also take place over longer periods of time: *"We, going into this third day have a lot more knowledge about where the fish have been and where to catch them, so hopefully that helps us to catch a lot more fish."*

In another example, even after one catches a fish and is in the guardian phase of C&R fishing, one can gain information that can be used to adjust how one fishes:

After catching one of the fish, I throat-pumped it to see what it had been eating. Throat pumping involves inserting a plastic tube with a bulb at the end (like a small turkey baster) into a fish's throat and collecting the bugs in there to see what it has been eating. I found that the fish had been feeding on chironomids that were chrome-colored with black wraps and a black bead head. I switched my fly to a matching chironomid, and shortly had a very strong "take", where my indicator is pulled below the surface.

The best way to know what kind of pupa fish are eating is to extract them from a feeding fish's throat. Figure 3 above provides a photograph of a vial with a chironomid pupa. Fly fishermen will then try to "match the hatch" by using a fly pattern that closely resembles what the fish are feeding on. In the latter case, when the FA switched their fly pattern to the one that the fish had been feeding on, a few minutes later they caught the biggest trout of their life:

As I got the fish close to the boat and could see it more clearly, it was even more evident that this was a very big fish. It would come close to the boat, then swim straight down toward the bottom of the lake. I'd use the rod to tire the fish out (by letting the fish pull against the rod



FIGURE 3 A vial with chironomid pupa.



FIGURE 4 The FA successfully catching a fish.

itself), then reel up, then the fish would swim down again. After several minutes the fish was finally tired enough that I could bring him in for my friend to net. When we brought the net into the boat, we both knew that this was one of the biggest rainbows we had seen. We weighed it and it was 8 pounds 4 ounces with the net, which we knew weighed 1 pound 10 ounces. This made the fish 6 lbs 10 oz, the biggest rainbow of my life! I was delighted, full of adrenaline, and super excited.

As a specialized fly fisherman, the exhilaration of successfully catching a fish is evident in Figure 4 below. The photograph below provides a clear illustration of the delight and excitement experienced from this recreational activity.

The successful release of that fish was extremely gratifying and was enabled by learning during the guardian subnarrative and incorporating that learning into the earlier planning subnarrative. It bears noting that the nature of C&R fishing lends itself to this kind of rapid, iterative learning, as changes can be made relatively quickly and without the time pressure present in the kinds of unusual crisis situations described by Whiteman and Cooper (2011) and Weick (1993). It also seems likely that this iterative learning may be common in consumer interactions with the natural world, particularly ones that have the potential for focused, interconnected subnarratives.

5.2.3 | Reconciling contradictions

Many types of human interactions with the natural world contain apparently contradictory aspects. For example, the FA once spent a day fly fishing for steelhead trout with a logger, who was passionate about steelhead fishing and about protecting the natural world yet spent many of their days harming ecological processes. Similarly, as noted earlier C&R fishing is a socially contested activity, viewed negatively by many. Until we began this research, we had been

unaware of the inherent contradictions of C&R fishing, but as we considered the FA's actions more carefully, we noted these contradictions and surfaced the aspects of the FA's narratives that seemed to be aiding an apparent reconciliation of these contradictions. Perhaps the most apparent contradiction was the switch from fighting a fish to feeling like its guardian and being responsible for its welfare.

First, the concern for the fish's welfare was not just present in the guardian subnarrative but was also present in earlier subnarratives. One example is during the planner phase, when the FA would make sure that the hooks they were using did not have barbs on the end. Barbs are angled protrusions on hooks that can slide into flesh easily, but then are difficult to pull out without badly injuring the fish. Many fishers (often as required by law) take pains to "pinch down" the barbs on their hooks so that hooks can be removed without injury. By pinching down the barbs in the planner subnarrative, the FA was evidencing a concern that would recur later in other subnarratives, especially in the concluding guardian subnarrative. In another example, a concern for the fish can also be present during the fighting phase. The FA notes:

One can be conscious of not harming the fish during the fight, not fighting it for too long, but also tiring it enough that it doesn't thrash when the hook is being removed.

When a fish is excessively tired from a fight, it is vulnerable to predation. On a trip before this research, a companion of the FA released a fish back into the lake and it was snapped up by a circling predator bird that often lingers close to boats, hoping to feed on tired just-released fish. On occasion fish can be so depleted by the ordeal of fighting that they die, particularly if environmental conditions are unfavorable. On the other hand, when releasing a fish it is critical to remove the hook from its mouth without injuring it further, and this is difficult to do if the fish is thrashing about in the net. Thus, when fighting a fish, there is a balance to be struck, and fishers are often conscious of this balance, particularly in the latter stages of a fight when a fish begins to tire. Finally, the nature of the guardian subnarrative means that the FA pays close attention to the fish and its welfare during this phase. They note:

When you catch and release, you have a number of other variables that you are immediately concerned about the moment you've got the fish in the net. Primarily the safe and non-damaging removal of the hook, and then if you want to take a photo, if you want to weigh it, you are going to try to do that quickly as well. And then keeping the fish in the water as much as you can when doing so.

There are many readily available narratives about what one should do to minimize harm to fish when releasing them, comprising "best practices" that one should follow (Brownscombe et al., 2017). These include keeping the fish in the water (to allow it to keep taking oxygen in through its gills), minimizing handling of the fish (to avoid

scraping the protective slime off its body) and removing the hook without causing injury. We suggest that the detailed nature of the subnarrative of the guardian phase means that when attending to all those details, one stays intently focused on the welfare of the fish. Perhaps this in turn has a kind of moral cleansing (Jordan et al., 2011) effect, allowing one to wash away guilt over the harm done to the fish by acting in its best interests.

5.2.4 | Sense of connection

We believe these subnarratives both contribute to and reflect a sense of connection to the natural world. As noted earlier, in the FA's field notes, they described being in touch with the fish during the warrior subnarrative. When fighting a fish, the fisher is connected to the fish through the fishing line and is responding to its actions. If the fish is successfully brought into a net, that sense of connection is heightened during the guardian subnarrative as the angler feels responsible for the fish's welfare. In their notes, the FA commented that this also felt like *"making reparations to the fish, treating it gently, removing the hook with little damage, reviving it in the water."*

If the angler can successfully remove the hook and let the fish go, and watch it swim away, apparently none the worse for wear, this is a pleasurable feeling that brings with it a near-spiritual sense of contentment. The FA commented on this feeling multiple times on different days in their notes:

It was a real pleasure to watch the fish swim away with strength and speed back into the lake. And we were talking about how, what a pleasure it was with the fish at this lake that they are so healthy, because when you release them, they swim away very vigorously. So they give the appearance when they're swimming away of sort of a complete recovery and of, being very healthy, and, not totally unaffected by the experience, but not harmed in any enduring way.

The following quote, taken from the summary of the state of knowledge of C&R fishing, suggests that the FA is not alone in this near-spiritual experience of releasing fish: "For a voluntary C&R angler, the release itself is just as important as the catch, and for some anglers, the release is a little ritual, sometimes even begun by kissing the fish. The release is not just a perfunctory act, but has, for many, a spiritual dimension and, at the same time, is a manifestation of a consumption-critical and conservation-minded attitude. One could say, slightly overstating the case, that the gourmet catch-kill-eat angler is sent into raptures by his meal, while the C&R triggers a quasi-transcendental experience" (Arlinghaus et al., 2007, pp. 95–96).

This sense of connectedness also carries with it a sense of right and wrong. When the FA goes to release a fish and something goes wrong, they feel terrible. On one of the trips involved in this research, they decided not to release a fish, but to keep it for consumption later. The FA had not realized the fish was full of eggs and ready to spawn:

We caught one, we don't want to keep fish that are spawners, that have the potential to make more fish. And we had this fish, and it had a big fat belly, but you can tell a spawning fish it usually has quite dark pink color along its body and on its cheeks, and this one had a slightly pink color, but not much. So, we said, well, probably not a spawner. And when I bonked it over the head, some eggs came out and it felt, terrible. I felt really bad because I sort of felt this is one of the unwritten rules of keeping fish, is you really shouldn't keep the ones that are spawners. And even though I genuinely thought it was not a spawner, it was.

Even though it was an innocent mistake, it meant that the FA found it very difficult to see their actions in a positive light, which in turn meant they could not see themselves in terms that were consistent with the guardian subnarrative. In contrast, when on the same trip, they kept a fish the previous day and killed it cleanly and quickly, and as it was not a spawner, they did not feel the same guilt. More generally, this experience suggested to them that their heightened ability to correctly interpret ecological processes meant that they were better able to catch fish; however, it also appeared to have brought with it a heightened sense of responsibility toward the natural world.

6 | DISCUSSION

The next step in this investigation is to consider the implications of the findings for research and practice. To summarize, as the FA changed from being a passive C&R fisher who followed the directions of their more experienced companions, to one with an organized set of ideas about how to maximize their chances of catching fish, they captured this improved understanding of the natural world in four focused, nuanced subnarratives. These subnarratives enabled more effective interaction with ecological processes, an orientation toward continually learning, an ability to reconcile apparent contradictions in their actions, and a sense of connection with nature. Next, we elucidate the contributions of these findings to our understanding of the relationship between ecological sensemaking and ecological embeddedness, particularly in the context of consumption.

6.1 | Ecological reasoning

As noted earlier, Whiteman and Cooper (2000, 2011) introduced the ideas of ecological embeddedness and ecological sensemaking. Ecological embeddedness comprises the extent to which one has an accurate understanding of material ecological processes, and ecological sensemaking is a process that can lead to ecological embeddedness, through noticing features of the natural world and constructing narratives about the interrelationships between

these features. We suggest that the findings allow us to understand how ecological sensemaking may or may not lead to embeddedness.

We propose the term *ecological reasoning* to comprise the findings about the importance of (a) a desire to feel connected to nature; (b) an intention to continue learning about the natural world, and (c) the creation of focused narratives that explain aspects of ecological processes. We suggest that when an individual desires to feel connected to nature and to continue learning about ecological processes and creates focused narratives that explain aspects of ecological functioning, one is engaging in ecological reasoning. Ecological reasoning can be conceptualized as a characteristic of ecological sensemaking; therefore, one's ecological sensemaking can incorporate more or less ecological reasoning. All the aforementioned elements are important to ecological reasoning. The desire to feel connected provides a motivation for ecological reasoning, which may be particularly critical in the early days when one can feel overwhelmed and even intimidated by the challenge of understanding complex natural ecosystems. The intention to learn allows for the creation of more focused, more accurate narratives as one spends more time engaged with ecological processes. And those narratives provide a repository of knowledge that enables one to effectively interact with the natural world.

Research in cognitive science offers further insights about the role of these focused narratives in developing ecological embeddedness. Researchers have detailed how novice learners focus on shallow features, whereas experts are able to see the deep structures that connect both explicit and implicit aspects of problems, making them better equipped to resolve problems successfully (Chi & VanLehn, 2012). Lord & Hall (2005, p. 995) described this cognitive change from novice to expert in the following terms: "One such critical change is the development of a large repertoire of more targeted, domain-specific productions (a.k.a. problem-specific productions), rather than general heuristics which are applied to all superficially similar situations." Similarly, through ecological sensemaking with a high degree of ecological reasoning, one develops domain-specific narratives of ecological processes. In the research described in this paper, these narratives pertained to specific domains of C&R fishing: preparation, seeking out fish, fighting fish, and then releasing them.

Although the cognitive science literature does not appear to emphasize the role of narratives in the domain-specific cognitive representations, there may be important implications of these deep structures being represented in the forms of narrative, rather than as simple cause-effect relationships. Stories are powerful. They may help us to recall and organize information and provide us with ways of passing that information on to others. It should be noted that many indigenous cultures have narratives of nature built into their cultures (Campbell, 2002; Johnson & Murton, 2007; Plumwood, 2002). Many of these focused narratives of ecological processes may be the products of many years of ecological reasoning and may in fact offer sophisticated ways of encoding knowledge about the natural world, well-aligned with what we know about cognitive science.

6.2 | Sensemaking of contested environmental interactions

One of the features of much human consumption with specific regard to the natural world is that it is contested. Activities such as tourism and travel, as well as the purchase and consumption of certain foodstuffs, while viewed as necessary and important activities by many, are viewed in negative terms by others who are concerned about the negative impact of their consumption experiences on ecological processes. If the individuals who consume these offerings are concerned about the natural world, they may have to deal with the psychic tension of consuming in a way that potentially harms nature, with personal concerns to protect it. C&R fishing is a contested activity, and we believe that the FA's own sensemaking deals with that contestation in the following ways. First, the subnarratives may allow for a balancing of the contested aspects of the activity. The earlier subnarratives emphasize laudatory aspects of the protagonist, including the care and experience of the planner; the perceptiveness of the seeker; and the strength and skill of the warrior. Within each narrative, they allow actors to see their actions in a positive light, a process that has also been observed among employees involved in occupations that are viewed by society as tainted in some fashion (Ashforth & Kreiner, 1999; Ashforth et al., 2007). Across the subnarratives, there may be a moral licensing or cleansing kind of effect (Blanken et al., 2015; Merritt et al., 2010). The idea of moral licensing suggests that in our self-views, we prefer to see ourselves as morally sound people. If we do something bad, we can restore our sense of moral soundness by balancing the bad with something good, a process termed moral cleansing (West & Zhong, 2015). Similarly, if we see ourselves in a negative light because our consumption involves harming the natural world, perhaps we can return to a positive self-view by taking actions that we feel have a positive impact on nature. Research presented by Gholamzadehmir et al. (2019) highlights the presence of both moral licensing and moral cleansing amongst consumers. It is predicted that similar processes may hold in other consumptive contexts where a consumer experiences a dissonance between their consumption behavior and the resultant implications of that behavior in a broader context. Of course, it is unclear when and why consumers will view activities that harm the natural world as being socially stigmatized, but given the growing acceptance of the NEP, one might expect an increased need for consumers to rationalize activities and purchases that are harmful to nature, and to construct narratives that can help them do so.

In a broader sense, the links between subnarratives may enable people to subscribe to elements of what have been argued to be two very different perspectives on the natural world, the DSP and the NEP. One could view the activities of finding and fighting fish as being entirely consistent with the DSP: a fisher has the right to exploit the fish as they wish and may cause it harm for their own pleasure. However, since the narrative also incorporates aspects of caring for the natural world, a more complex image of the protagonist is presented, one that incorporates elements of both the DSP and the NEP. Alternatively, if expressed in terms of research into influential

characteristics of fishers, the protagonist has characteristics of both high consumptive orientation (wanting to catch fish) and low consumptive orientation (wanting to release fish) simultaneously. Perhaps narratives allow for a more complex view of the natural world, one that allows for the coexistence of what might be expected to be contradictory perspectives.

6.3 | Ecological sensemaking and animals

Hannah and Robertson (2017) describe the millions of people engaged in what they termed human-animal work—with the people (consumers) who owned and cared for these animals. They noted the importance of improving our understanding of how humans at work interrelate with animals. Nonhuman animals (usually, pets) occupy a kind of boundary position between humans and nature (Serpell, 1996), in that they are often a part of the natural world and the ecosystems that surround us but are also viewed by many of us as being near humans, even to the point that many consider companion animals to be part of our families (Holbrook, 2008; Holbrook et al., 2001; Serpell, 2006; “The Cat” Holbrook, 1997). It follows that when we engage in ecological sensemaking, many of us may think about animals in different ways than we think of lakes, or landscapes, or other features of nature. Our research suggests there may be a tendency to attribute more agency to animals than to other features of nature, in the sense that they are viewed as having the capacity to take action to further their own interests. For example, in their observations, the FA described large fish as being *smart* in how they fight when hooked, choosing to swim under a boat or into weeds so the line would become tangled, and the fish would escape. This attribution of agency may be a critical way in which our ecological sensemaking and reasoning about animals differs from sensemaking about many other aspects of ecological systems.

Another difference in ecological sensemaking about animals may be the degree to which we anthropomorphize them, or attribute human qualities to them. One of the reasons scholars believe we anthropomorphize animals is because we are trying to understand them (Serpell, 2003). By describing animals' behavior using terms that we already comprehend, such as intelligence, we help ourselves to understand why animals behave as they do. But the fact that the FA described a fish as *smart*, a term with a human meaning, suggests that one can be ecologically embedded and still engage in some anthropomorphism.

6.4 | Implications for research and practice

Marketing research has long been bound to traditional means of data collection including laboratory experiments, quantitative surveys and multivariate statistics (Holbrook, 2006); however, more experiential approaches to research have gained popularity in a field masked by complexity. The current research proposes one such experiential approach—one that is deeply personal in a world that values

hyper-relevance. However, this research methodology does not present a new phenomenon, but rather a research methodology used by industry practitioners across a multitude of diverse industries. Academia, however, has lagged behind these alternative means of data collection in favor of more “traditional” approaches (Hackley, 2016). We could reflect on, for example, the story of Phil Knight—the cofounder of Nike—who engaged in autoethnographic research by attending multiple track meets, becoming fully immersed amongst target consumers to better understand how products were used and further craft their design (Hackley, 2016). This data gathering technique extends beyond observation to fully immerse within the environment of target customers to essentially see the world (and its products) through their eyes. However, Hackley (2016) suggests that this was merely an iteration of the autoethnographic research previously done by Adolf Dassler, the founder of Adidas, in similarly testing and co-designing products through comparable research immersions. A further example can be found in the fast-moving consumer goods company, Procter and Gamble, who had previously launched a program requiring that managers live with target consumers as a form of immersion research (Sims, 2009). This autoethnographic research allowed managers to fully immerse themselves within their consumers day-to-day experiences and establish clear learnings that aided future product innovation (Sims, 2009). Developing our collective understanding of consumption experiences appears to have been usurped by consumer research concerning the measurement of specific attitudes and perceptions (Hackley, 2016), often with a focus on generalizability and sample sizes. However, these nuanced understandings are particularly important when targeting members of distinctive subcultures. As suggested in the autoethnographic research of Schouten and McAlexander (1995), who sought to immerse themselves in the Harley Davidson-oriented subculture of consumption, the immersive experience allowed for the identification of insights that would otherwise not have been possible to obtain without sustained autoethnographic involvement.

This research further elucidates the importance of hedonic value in consumption experiences. The typology of customer value presented by Holbrook (2006) suggests that an experience in which one obtains *intrinsic value* (i.e., where an experience is appreciated for its own sake as an end-in-itself) and *self-oriented value* (i.e., where an experience is valued based on how an individual responds to it or by virtue of the effect that it has on an individual) allows for the creation of hedonic value. Hedonic value is the result of one's pleasure in a consumption experience that is appreciated “for their own sake as ends in themselves” (Holbrook, 2006, p. 716). In this instance, the fun and enjoyment derived from the activity of C&R fishing serves as the value created for the individual. The primarily quantitative nature of marketing research techniques, however, does little to fully capture the complexity of the experiential components of customer value and as such the autoethnographic approach, whereby one acts as a participant observer of their own consumption experiences and the meanings and subsequent emotions that they evoke, has been identified as a possible alternative methodology (Holbrook, 2006),

the use of which is supported by the current research. Research pertaining to consumption, as such, appears a prime candidate for autoethnographic research offering the value of consumer insight over positivistic knowledge (Hackley, 2016). The exemplification of this methodology in the current research offers a more nuanced understanding into the value creation of a consumption experience as the result of an interaction with the natural world.

A further key contribution of this research is the idea that ecological reasoning provides a critical link between ecological sensemaking and ecological embeddedness. As with any new concept, it presents an opportunity for theoretical and empirical investigation. In particular, the role of narratives in ecological reasoning seems critical. As long as human civilizations have strived to understand the natural world, we have relied on narratives to do so. Research in cognitive science suggests that these narratives may capture the kinds of deep structures that characterize the thinking of experts in many different fields. New inquiries that combine insights from cognitive science with those of sensemaking may offer valuable new insights into how humans learn about many different things, including the natural world. Mostafa (2007) found that the link between a consumer's intention to purchase environmentally friendly products and their actual purchase was weak. This cognitive dissonance between wanting to engage in environmentally friendly behavior and actually doing so, may be further explained in the context of the current findings, where pro-environmental attitudes and beliefs may not necessarily align with one's interactions with the natural world. As such, one worthwhile area of inquiry might involve how socially responsible firms help consumers to learn how to interact effectively with the natural world. The nature of marketing communication has the ability to foster sustainable consumption through persuasion (Dangelico & Vocalelli, 2017), awareness and education. Experts who have encoded their knowledge in deep, narrative structures may be most effective in educating consumers if they share their knowledge in the form of narratives. The persuasiveness of stories and the resultant impact that they can have on consumers has been identified in the literature, most notably in advertising (Solja et al., 2018).

Further, since many of consumers' interactions with the natural world are in some way contested, the idea that the content of subnarratives may enable us to rationalize these contested aspects merits further attention. If we desire to change how consumers view the natural world, perhaps we need to surface more of these rationalizations and even challenge them to push consumers toward environmentally sensitive behaviors. On the other hand, perhaps we also need to acknowledge that consumers sometimes find themselves navigating competing pressures and need ways of reconciling or rationalizing these pressures to serve the fundamental human motive of seeing themselves in a positive light.

As to broader implications of the findings, the interconnections between narratives also appear to be a rich area for future research. In this case they allowed for a sense of continuity across the narratives and enabled a process of iterative, experiential learning. A finer-grained analysis of narrative interconnections may well reveal

more details about the structure of the interconnections, including different ways in which they relate and different purposes for interconnection. For example, in the meta-narrative of C&R fishing, the interconnections allowed very different narratives to appear to be consistent. In other narratives, interconnections may be useful in amplifying certain aspects of a narrative through repetition or a kind of foreshadowing.

The findings also have implications for research into how human beings think about the natural world. The DSP and NEP are generally viewed as two different paradigms, with the implication that one cannot subscribe to both. Perhaps that is too stark a distinction. Perhaps one can have a system of beliefs that agrees with elements of both paradigms, for example, that humankind does have the right to have dominion over nature, but also has a responsibility to minimize our impact on natural processes and to be conscious that nature has only finite resources.

Finally, our findings suggest that we may improve our understanding of C&R fishers if we view their actions through a narrative lens. One of the goals of many C&R researchers is to persuade more fishers to release fish more often, and to follow best practices when doing so (Brownscombe et al., 2017; Danylchuk et al., 2018), thereby contributing toward healthier fish populations and a minimized environmental impact. One of the difficulties in achieving this goal, however, is how to craft a persuasive message in the face of the multitude of variables that can shape fishers' attitudes, including the different individual attributes of fishers, different types of fish, different geographical locations, and different cultures. Narratives may provide a more universal way of constructing persuasive messages, because they enable consumers to imagine themselves being transported into a given narrative world, where they are likely to view their experiences in a more favorable light (Green & Brock, 2000). Perhaps by constructing narratives where fishers can view themselves as guardians, caring for the fish they have sought out and bested, they will respond more positively to the idea of releasing fish.

Like all research, this study has limitations, and the largely autoethnographic nature of this research requires further validation of these findings. While we followed the goals of analytic ethnography by engaging with external informants, we acknowledge that the ideas herein primarily represent the FA's personal views of the activity, and it remains to be seen if they are common, accurate representations of how fishers think. However, it should be noted that the autoethnographic nature of the research provides further opportunities for future researchers. While it is widely accepted amongst marketing scholars that the first-person perspective can provide a source of valuable insight into consumption behavior, when the research participant and the author are one and the same, there appears to be less acceptance amongst scholars (Hackley, 2020). The practice of autoethnography seems particularly appropriate within the marketing domain as authors are inherently consumers making consumption decisions on a daily basis. It is argued that the critical reflexivity of authors to examine their own consumptive practices provides a vital lens through which to understand the nuances of consumer behavior. Further, although this research seeks to have implications for how consumers make sense of

the natural world, one weakness is that it is a study of recreational activity. However, given the demonstrated utility of the narrative lens both in consumer research (Gould, 1991, 1995; Hackley, 2007; Holbrook, 2005) and in organizational research (Boje, 2001; Cunliffe et al., 2004), we are confident that the notion of focused, detailed subnarratives as being critical to one's ecological reasoning will generalize from a recreational activity to markets, and will be relevant to different individuals and in different contexts. The narratives noted in the results that identify a cognitive dissonance associated with the recreational activity indicates an alignment with other consumption contexts whereby cognitive dissonance is present between consumer attitudes and subsequent behavior (White, Habib, et al., 2019). The notion of moral cleansing whereby consumers may seek to restore a sense of moral soundness by balancing something bad with something good (West & Zhong, 2015), may offer further insight into the willingness of consumers to engage in certain consumption behaviors while actively avoiding others. Furthermore, for the many organizations that are genuinely striving to have a positive impact on the natural world, it may be critically important to ensure that consumers and the employees who serve them are able to accurately discern the impact of organizational actions on ecological processes. By helping both consumers and employees incorporate greater ecological reasoning into their ecological sensemaking, organizations may be helping themselves to operate in more environmentally sustainable ways.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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