Women and nature: using memory-work to rethink our relationship to the natural world


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Memory-work is a feminist research methodology that is used by research collectives to study socialization within the dominant values that make up a particular culture. The power of memory-work lies with its potential to interrupt hegemonic ways of seeing and knowing the world. Consequently, it can open up possibilities for individual and social transformation. Intrigued by memory-work, the authors of this article formed a research collective and studied their socialization in relation to the natural world. We examined our early memories of trees and the natural elements earth, air, fire, and water. Initial analysis of these memories showed predictable and gendered patterns of socialization reflecting dominant values in relation to nature. For example, fathers defined many of our experiences in the natural world and taught us that nature was separate from the human realm and subject to control. Additional analysis of the memories moved us below this layer of socialization. We found sensual connection with the elements and discovered the influence of our mothers.

How do we become conscious in the world? How do we interrogate and interrupt the hegemonic messages that have shaped who we are in the world? How do we begin to question our traditional ways of knowing the world? How do we loosen the stranglehold of the dominant culture? As Maxine Greene has asked, how do we make the familiar strange and the strange familiar? These are not new questions and presently as well as historically we have developed tools for seeing and knowing that move us beyond the dominant paradigm. Critical theory, conscientization, consciousness raising, hermeneutics, phenomenology, deconstruction, and poststructuralism all represent approaches, theories and methods meant to move us beyond dominant ways of knowing and relating to each other.
Among this genre of tools that function to pry open dominant paradigms is a research methodology known as memory-work. The method is focused on the roots of our immersion into the dominant culture. It functions to uncover the hegemonic messages that shape our early lives. Using the data of childhood memories, memory-work researchers generate theories of socialization relevant to particular research questions. So for example, in the work reported here, our memory-work group wanted to understand how we were socialized to think about and relate to the natural world. Through collective analysis of our memories of the elements (air, earth, fire, and water) and trees we found that each of us learned to relate to the natural environment in ways that de-emphasized the influence of our mothers, that devalued our sensual connections with nature and devalued the ways in which we investigated nature. These findings lead to larger theoretical views of socialization and the natural world and contribute to our understanding of how we are taught to perceive ourselves as separate from the natural world and how we are taught that nature is an object, subject to control and exploitation.

Background of the Study and Method

We are five women academics spanning the disciplines of education, biology, and child development. We are European-American, middle class and vary in sexual identity and spirituality. What linked us when we began this project was a discontent with traditional research methods. We wanted to try something new and in 1994, the first author organized our group and presented memory-work as a radically different methodology for approaching research questions. Intrigued by the method, we decided to investigate our own socialization as scientists through examining our childhood relationships to the natural world. The question that frames our project is: What do our memories reveal about how our relationship to the natural world is socially constructed? And a second question, once we interrogate these memories using memory-work: How are our relationships to the natural world changed or reconstructed as a result of doing memory-work?

Two memory-work research projects guided our efforts. The first is the work of a German feminist collective presented in Female Sexualization: a collective work of memory (Haug, 1987); the second is the work of Australian feminists June Crawford, Susan Kippax, Jenny Onyx, Una Gault and Pam Benton in Emotion and Gender: constructing meaning from memory (1992). Haug’s (1987) text describes the collective’s attempts to analyze women’s socialization by writing stories out of their own personal memories; ‘stories within which socialization comes to appear as a process of sexualization of the female body’ (p. 13). The collective used the method termed ‘memory-work’, derived from Haug’s theory of socialization, ‘as a bridge to span the gap between “theory” and “experience”’ (1987, p. 14).

Haug’s collective first used personal memories related to love, marriage, happiness, and the desire for children to study various forms of feminine socialization. They also studied various parts of the female body such as legs or body hair and how they come to be sexualized (Haug, 1987). The eventual aim, for Haug, is liberation from
oppressive social structures through understanding the process both by which we are socialized and how we participate in our socialization.

Memory-work can be viewed as a form of narrative inquiry (Connelly & Clandinin, 1990) or currere (Pinar, 1975; Pinar & Grumet, 1976), but it has a distinctive characteristic that sets it apart from the narrative forms of biography and autobiography. While the stories/memories produced in both methods are subjected to (sometimes collective) interpretation and critical reflection, the impetus for a memory in memory-work is a single word or idea intended to cue a single memory of a moment in time. In contrast, an autobiography extends through time and tends toward the causal so that we weave together a logical sequence of events that resonates with our present view of our selves. The discrete memory generated through memory-work more easily eludes the trap of causality or need to justify who we are now, and as such, the memories are easier to unpack or interpret and subject to critical reflection. The memories are also written in the third person in an explicit attempt to avoid autobiography. This rule facilitates writing a description of an event as opposed to an abstraction or summary of an event, something that is easier to accomplish in the third person because of greater distance from the narrative. A third person narrative challenges the urge to interpret and justify, resulting in the writing of a memory that is more open to analysis.

The discrete memory is an attempt to grapple with the problem of invisibility that is endemic in autobiography. As Grumet (1981) has noted, ‘the problem of studying the curriculum is that we are the curriculum’. In other words, the problem of studying how we have been socialized is that we are socialization. The discrete memory is an attempt to use our own memories of self to gain some distance from our selves. Nonetheless, we must keep in mind that memories are still ‘reflections that return the past to the present’ (Grumet, 1990, p. 322). To revisit a memory is to ‘see oneself seeing’ (Grumet, 1990, p. 322), but through a new construction. We can never recall a memory as it was because we are no longer the same individuals whose experiences created the memory. Therefore, memories are constructions and reconstructions based upon who we were, are, and are becoming.

Drawn by a theory and method that requires collective participation and the collapse of subject and object (i.e. the researcher as her own subject), Crawford et al. (1992) selected emotion as a topic. They used memories cued by emotion terms to examine the ways in which women socially construct themselves. Their perspectives on the purposes of research seemed ideally suited to our own work.

Memory-work allows the investigation of processes, which involve the social construction of selves, and is not individualistic. Working at the interface between the individual and society, looking at ways in which individuals construct themselves involves doing research in an area, which both sociology and psychology might claim, but for which neither provides fully adequate tools. (Crawford et al., 1992, p. 4)

Relying on most of the injunctions developed by Haug’s collective (1987), Crawford et al. (1992) modified and refined the method over the 4 years in which they studied emotion. They describe at least three primary phases of memory-work. The first involves the writing and collection of memories according to a set of specific rules. Each member writes her earliest memory of a particular episode, action or
event. The memory is written in the third person with as much detail as possible, including trivial and sensory components. At all times, interpretation, explanation or biography should be avoided (Crawford et al., 1992).

The second phase involves collective discussion and analysis of the memories. Each member expresses opinions and ideas about each memory in turn. All should consider differences and commonalities or continuous elements across the memories. Autobiography and biography are avoided because they shift the focus from an analysis of social meanings to an analysis of the individual. This is important to keep in mind because the focus on social meaning sets memory-work apart from therapy. Memory-work can be therapeutic in the sense that as you begin to understand how you have been socialized, you can begin to free yourself from oppressive forms of socialization. Although memory-work involves understanding the social construction of self, the meaning generated moves well beyond the individual. As Haug (1987) notes:

Human beings produce their lives collectively. It is within the domain of collective production that individual experience becomes possible. If therefore a given experience is possible, it is also subject to universalization. What we perceive as ‘personal’ ways of adapting to the social are also potentially generalizable modes of appropriation. (p. 44).

Schratz and Walker (1995) argue that memory-work is intended to ‘close the gaps between theory and experience in ways that are intended to change the nature of experience, not simply to accept it’ (p. 41). Therapy is sometimes meant to help an individual change so she or he can cope or adjust to some set of social demands—the social is accepted as a given. In memory-work, the social is scrutinized and critiqued and the insights gained from understanding how members have appropriated social structures can be used to loosen the restraints of those structures. This is memory-work’s connection with political and social action. Schratz and Walker (1995) point out that the tension in memory-work arises in the duality between, on the one hand, the role that memories play in socialization and social control and, on the other hand, the persistent potential those same memories have to undermine that control (p. 42). In relation to our own group, we understand the development of our relation to the natural world differently for doing memory-work. We understand the socialization issues more clearly and can rethink them.

In addition to the activities already mentioned for the second phase of memory-work, members also identify clichés, generalizations, contradictions, cultural imperatives and metaphors, and discuss theories, popular conceptions, saying and images about the topic. Finally, each member should examine what is not written in the memories (but what might be expected to be), and rewrite their own memories given this review and analysis. Along with Crawford et al. (1992) we did not find rewriting to be particularly productive. However, after we had finished generating memories and engaged in analysis and theorizing, we selected several memories for rewriting. The memories selected were ones that were particularly compelling and evocative for the collective.

The third phase involves reappraisal of the memories and analysis within the context of a broader range of theories. All the memories across different cue words
(e.g., air, earth, and water) generated by the collective are compared and contrasted. Earlier theories are reevaluated in light of later theorizing and these revised theories are examined in light of particular theoretical positions and commonsense understandings. New understandings are recursively used to reappraise initial analyses of the memories.

Memory-work as a social-scientific methodology challenges a number of conventions associated with the generation of scientific knowledge. It challenges the schism between theory and everyday experience, and validates personal experience as a legitimate source of knowledge. Therefore everything about our experience is open to interpretation. Nothing is accepted as fixed such as ‘character traits and modes of behavior’ (Haug, 1987, p. 35). Instead, there is a search for ‘possible indications of how we have participated actively in the formation of our own past experience’ (Haug, 1987, p. 35).

The traditional distinction between subject and object is challenged with the use of memory-work. Both implicate ‘fixed and knowable entities’ (Haug, 1987, p. 35), ideas that conflict with memory-work’s aims of change and potential liberation. ‘Indeed, memory-work is only possible if the subject and object of research are one and the same person’ (Haug, 1987, p. 35).

A final point to be made about the method of memory-work concerns the limits of language and the need to engage collectively when using the method. Haug’s socialist-feminist collective analyzed their past experience with the aim of discerning their own participation in their subordination and oppression as women. They recognized, however, that they were constrained by the language of the patriarchy. As the collective noted, ‘we found ourselves speaking, thinking, and experiencing ourselves with the perception of men, without ever having discovered what our aims as human beings might be’ (Haug, 1987, p. 36). Individually, it is difficult, if not impossible, to rethink and question ideas and ideologies which shape and become a part of our being; collectively, though, the task becomes possible. Each member, with her differing perception, has the potential to see what was previously unseen and to say what was previously unsaid. New ideas emerge from collective scrutiny of memories and the continuing struggle to be more conscious of the use of language.

Haug’s theory shares many aspects with social constructivist descriptions of development as expressed by Lave and Wenger (1991), Rogoff (1990), Vygotsky (1978), and Wertch (1991). A central premise of social constructivism is that development involves the increasing appropriation of what is valued in a community. Essentially, if we want to understand the development (read social construction) of a child in a community or culture, what we need do is identify the values of that community and then describe how adults in that community facilitate the internalization of those values in their children. Intersubjectivity and apprenticeship in families, communities and schools are all ways in which children gradually appropriate values. Combining the notion of values in community with Haug’s theory provides a useful tool for analyzing our memories in order to scrutinize our relationships to the natural world.

At our first meeting in January 1994, we discussed a variety of ideas as possibilities for memory work investigation. Nature was a topic common among all our interests
and we decided to use the four elements (air, earth, fire, and water) as cues for our earliest memories. We reasoned that the memories cued by the elements would help us examine our socialization in relation to the natural world. Early on we expanded the cues to include tree. We were interested in adding a cue more closely connected with the living world than are the classical elements. We began by recalling our earliest childhood memories.

We met during the academic year, on the average of once a week for 2 hours from January 1994 through May 1996. We wrote the narrative of a memory prior to each meeting. We started with fire, progressed through water, air, earth, and ended with tree. The memories were mostly written in the third person and present tense, consistent with Crawford et al.’s (1992) method. We limited our discussions to one memory per person per session. All of our meetings were audiotaped and transcribed to aid us in our analysis. Following Crawford et al.’s strategies, we read the memories aloud, asked questions, clarified details present and missing, and added needed context.

Selected Findings

Multiple themes emerged from our analysis of the stories we wrote out of our personal memories. They include insights on the role of the family, our shifting use of metaphor in the memory narratives, the importance of the sensual in our connections to nature, our sense of agency in the natural world, and our play and creativity in the natural world. However, for the purposes of this article we will narrow our discussion to our findings on the role of family and specifically focus on the roles of fathers and mothers.

Analyzing the similarities and differences in the ways our fathers and mothers are presented and not presented in our memories reveals the ways in which our relationships to the natural world are socially prescribed and the ways in which we participate in these prescriptions. The relationships and related emotions across these memories signify to us and to others what is valued and hence what is learned from our encounters in the natural world.

Role of Fathers

Our fathers are present (and for Rae [²]—her brothers) in many of our early memories. Taken as a whole, our analysis of the memories suggests that the natural world took on particular kinds of values through the presence of our fathers and brothers. In these memories, control is one value that comes through fathers and control takes on different meaning depending on the context in which it is exerted. Cele’s rewrite of an early water memory shows control in the form of a father arranging an experiment for his young daughter.

Her father took her to a flat piece of land a few miles from the hospital. It was covered with quarter-sized rocks, which squished when she walked on them ... He took her over to a small stream that ran through the piece of land. She wanted to play in the water, but he suggested that they change the course of the stream. Puzzled, she asked how they could do
that. He showed her how to build a dam with sticks and rocks. She helped her father build the dam, and enjoyed playing in the clear cold water. When she tried to taste it, her father quickly scolded her and said the water was bad, that it was mine runoff and could make her very sick. Much too soon, her father said he must leave, but that they would come back next week and see if the water changed its course. He asked her to be sure to note where the stream ran now. A week or so later, they returned to the site. Much to Cele’s surprise, the stream had indeed changed its course.

In our initial discussions of this memory, control was central. Cele’s father arranged the activity and he is teaching her how to control a stream. She wanted to play in the water; he wanted to engage her in diverting the stream. She wanted to taste the clear cold water and he scolded her because it was mine runoff. In later discussions, we began to analyze the sensual detail in our memories and questioned whether such detail was a missing piece from some of our constructions. In our dialogue on this issue, Cele noted that in her first telling and in our early discussions, she glossed over the sensory detail.

…I got caught [up in the detail of] being scolded by Dad for tasting this mine water … and yet the important part was that it was cold, it was sweet, it was all of these things that were part of this fascinating stream, but I was so hung up on the relationship issues [it wasn’t relevant].

Our analysis here was a powerful one for us. Cele’s memory illustrates that our relationships to the natural world are embedded in and constituted by our relationships with others, in this case our fathers. However, once we excavate the memory through memory-work, other aspects of the memory are reclaimed. In this case, Cele reclaimed her sensual enjoyment of the water.

Sue’s relationship with the natural world is also embedded in control issues with her father, but these issues revolve around rules. Her rewritten earth memory is illustrative.

She loves playing in the sand of her sandbox … The best sand to work with is cool and moist, because it can be molded and cut the best. Cool and moist sand requires water and in the heat of the Alabama summer, her sand required water. Water was available too from the sprinkler circulating just a few yards from the edge of the sandbox. She carefully, oh so carefully, put some sand in one of her many containers and placed it first on the grass just inside the perimeter of the sprinkler’s course. Her father admonished this action; sand would get in the grass and belonged in the sandbox only. Her father then moved the sprinkler a bit closer to the box, but not quite close enough. Keeping the sand carefully in her container, she balanced the container on the edge of the sandbox. In this way, the sand would still be ‘in the box’ but it could absorb water faster because it was closer to the source, the sprinkler. This was the perfect solution that allowed her to follow the rules yet achieve her goal, wet sand. The perfect solution was only her perfect solution. Her father saw it as breaking the rules and kicked the container back into the sandbox, dousing her and her friend with sand. She was yanked from the box and spanked all the way into the house...

When we discussed Sue’s memories, it appeared that her father had made the natural world an uncomfortable place for her. Sue turned away from the elements of the outside world and was driven inside. She commented that for the rest of us, water was
in a stream or an ocean, for her it was in a teacup. Theorizing, we thought the natural world as constituted by Sue’s father, was defined by control. Sue was uncomfortable with this idea and when she rewrote the memory (shown above), control was specified in terms of rule-knowing. She hates to play the ‘game’ by the wrong rules, she wants to do it right and with her father the rules were never clear. He never taught Sue how to play and thus, she withdrew.

Anna’s early memory of fire is defined around feelings of incompetence and being perceived as a ‘floozy’ by her father. In contrast to Cele’s memory though, the sensory detail in Anna’s rewrite is rich and not submerged by the feelings raised in relationship to her father. Anna recognized that she accessed her memories through her senses, and it was the vividness of her detail that brought the sensory aspect of the memories to the attention of the group.

[A] spring ritual was beginning and the fragrance of smoke lingered among the other spring odors. Smoke moved slowly because Anna’s father picked a day without much wind to burn the grasses around the house. The fence lines couldn’t be mowed and the cows didn’t seem to eat the long strands of blonde grasses along the perimeter of the homestead. The entire front acreage would be burned although the reasoning for it escaped Anna.

After a winter of indoor play, school, and routine that was deadly predictable, the lure of playing with the fire as it licked its way under the swing was overpowering. Anna ran to the swing and jumped on the huge wood-piece...

Pushing the swing higher meant that Anna had an encounter with fire only once during each long arc as she neared the earth. The fire was nearing and Dad started yelling above the crackling fire. ‘Hey, get down from there! Have you got no sense in your head? Don’t you have the sense to know the floozy crap you are wearing to that school will burn like kerosene? Anna, wake up and get off that swing! That dancing can-can …’. Anna thought she heard an analogy of burning in hell and sin, but perhaps it was imagination or guilt. She knew better and completed her fun with a jump off the swing out of the range of danger. It was a pretty good jump, too.

In all of these memories, the sensual relationship with the elements is prominent; Cele’s cool clear water, Sue’s cool wet sand, and Anna’s vivid descriptions of the smells of spring and smoke. Play is also present in these memories, particularly in Anna’s. Even after the scolding from her father, Anna completes her fun with a pretty good jump off the swing out of the range of danger. It was a pretty good jump, too.

The elements took on negative value through the control exerted by fathers, but that is not all we learned from our fathers and brothers in our interactions with the elements. Rae’s brothers appear in some of her early memories. They are much older
and apprentice Rae in some of her interactions with the elements. Rae wrote a series of three early fire memories. In the first memory, she is six.

She sits at the supper table watching her brothers pass their fingers through the candle flame. She really wants to do this and so she does, delighted and surprised at not really feeling the flame as her finger passes through it.

Rae is about eight. She is watching her brother Sam getting ready to light a cigarette. They stand in the basement, which her brothers have recently fixed up. Beer kegs, tables and chairs are painted on the walls. She and her brother stand near an old white enameled gas stove. Her brother strikes a match without closing the cover of the matchbook and the whole thing bursts into flame burning his hand. She is amazed and frightened at what could happen striking a match.

Rae is about nine. She stands in the empty lot next to their house. It is fall, the leaves dry and brown, rustling underfoot when she and her brother Fred walk to this spot. He lights a tiny fire of leaves under a balloon he has made by folding a newspaper into a ball with an opening in the bottom. He explains that the air will heat and raise the balloon into the air. It does not happen. The paper balloon does not rise and Rae feels sorry for him.

The apprenticeship in these memories is both intentioned and unintentioned. In the first two memories, Rae learns by watching her brothers as they interact with fire. In the third, her brother Fred wants to show her what heat can do, but the demonstration fails. In an early air memory, Rae describes watching a thunderstorm from the shelter of a garage with her older brother Fred. Air cued this memory of the smell of rain in the air, which serves as background for learning about electrical storms.

They watch the thunderstorm together. She loves the dark clouds, the smell of the air, the lightning and thunder, the feel of rain and Fred’s company. They count the seconds between lightning and thunder, judging how far away the storm is. She knows she needs to practice this so she can tell how long it’s safe to stay out in the storms.

When we analyze the values conveyed and learned in these memories, they center on the idea that you can observe and make predictions about events in the natural world. In Rae’s series of memories, there is little imposition of control. The emotions around her relationships with her brothers are a part of the memories, they provide a supportive backdrop; a comfort with Fred, feeling sorry for Fred, amazement and fear around matches. Unlike some of our other early memories, the emotions in Rae’s memories do not occupy the foreground and define the memory. The emotions are blended with the element and in that blending, values associated with fire emerge.

An interesting shift in how a relationship is perceived is illustrated in Anna’s early tree memory. In this memory the relationship is the focus of learning and the tree provides the background.

It was a warm summer day on the west side of the hayfield. Anna, her sister Katybeth, and their Dad had walked out to the fence line between the Solomon sisters’ farm and the Nelson family farm. The adult task was probably to check for necessary fence repairs, suspecting that this fence line in the trees and brush took a greater hit in the recent winter or spring storms. Goldie, the family golden retriever was along and joined Anna and Katybeth in inspecting the brush along the fence line. At one point, while impatiently waiting for Dad to tinker with the fence, Anna and Katybeth asked to go home or get involved with the job. At this time, Dad took out the black, large jackknife from his right
hand jeans pocket and cut a piece of new shoot from a willow tree. After slicing here and cutting there, Dad slid the inside of the shoot out of its bark. One or two more cuts on the bark, then Dad blew on the hollow tube of tree (now about six to eight inches long) and played melodiously. Of course, this amazed and delighted both girls and another willow flute was made so the girls could each have one.

In our discussions of this memory, what is prominent is Anna’s surprise at her father doing something fun, being musical, and using his jackknife for something other than work. There is also a transition from being bored to being surprised, and Anna’s surprise at her father having these kinds of parenting skills. She learned what you could do with a willow branch and she and her sister Katybeth were amazed and delighted by this, but Anna also learned something new about her father. It is this broader context of her father and his parenting skills that envelops the learning about the tree.

If we look again at an element for which relationship is background, we see a difference as illustrated by Anna’s early air memory. Unlike Rae's fire memories, there is no obvious apprenticeship either intentioned or unintentioned, but relationship is an important piece of this memory.

One late summer afternoon, Anna, at a later preschool age, and her toddling sister, Katybeth, found Dad in one of his usual resting places near the kitchen counter. He had been out in the fields during the day, making hay, and would come in for something to drink and a short nap. Dad could nap anywhere and one favorite afternoon spot was on the floor. He stretched out with his head on the bottom drawer of the cabinets that were handmade by his father, Grandpa Nelson ... Katybeth and Anna believed that their Dad lay on the floor to play with them or nap with them. So, as the girls rested their heads on their Dad’s chest they were astonished by the sound of his breath. In and out with rhythm and harmony to the heartbeat. It sounded like the air had to go a long, long ways to or through Dad’s body and it would come out warm. ‘Was this the same air that went into Dad? Is the air going in the mouth and out the nose, or what? Does Katybeth’s air do the same thing and can I hear it if I listen to her chest?’ The game of playing with the sound and touch of air continued.

Anna’s father is a vehicle in this memory. She and her sister perceive him as being there for them and they use him to play and explore air. In our discussion of this memory, Anna related her process of recalling it. She acknowledged the science in the memory and the idea that she was experimenting and asking questions of herself. She also used Katybeth, made her lie down and listened to her air going in and out. This is her only memory of intentional experimentation. It is her experiment and her father provides the stage.

A final memory illustrates a very different view of fathers and the natural world. In this rewritten memory, Bell’s father sets the stage, but does not interfere with the events being described. Bell is sitting next to her father, but she is not with him. She is in her own world.

It felt like late morning on a summer day when the heat and humidity were just beginning to be uncomfortable. Interstate 495, though, was a cool road that was laid through tall trees that stretched for miles on either side—lots of shade to drive through. Her window was open and she was probably sticking her head in and out to let the force of
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the wind play with her hair. She was bored—the stretch on 495 always seemed the longest and went on forever. There was silence in the car, no radio and Dad wasn’t saying anything. Focusing on the boredom always seemed so torturous to her and made the time stretch even further. She put her hand out the window and felt the wind play with her fingers. She opened her hand flat and the wind pushed it back. She could resist it and bring her hand forward to let the wind blow it back again. Then she put her arm out there with the palm of her hand down and forward. Her arm rode the wind like a surfboard, then she’d lift her hand and let the wind bring up her hand and forearm and sometimes let her arm be pushed back almost behind her shoulder. Then she would resist the wind and struggle to bring her hand and forearm back down so she could ride the wind again like a surfboard. She’d do this over and over again. She would get lost in the sensation of giving up control of her arm to the wind, letting it be whipped back and then struggling to bring her arm through the wind and lay it flat again so it could just ride through it. She was in another world, exploring the sensations of the moment, the sensation of her arm being controlled by something else. This world was removed from the inside of that car, removed from boredom and time. The novelty of the sensations, the novelty of that altered state only lasted so long. Soon enough she was back in the front seat and thinking about being bored.

What is interesting about this memory is its contrast with the others. The vivid descriptions of interactions with air, experimentation and novelty are paramount. Her father has created a space for exploration. This is another view of fathers’ influence in the natural world. Bell is not engaged with her father so she finds something to do, with his tacit approval. Like many children she found something to entertain herself to fight boredom. The question, from a social constructivist perspective is what is learned? What values are internalized? It is likely that Bell is learning a skill relevant to the value of occupying time.

Role of Mothers

The presence of fathers in our memories of the natural world brought us to ask why are they so present and why our mothers are absent or peripheral to the memory. As children, some of our fathers worked away from the home and our mothers worked in the home. Thus, our fathers were scarce commodities and this made them memorable. They came home and into our days and we took notice of interesting things with them. In Rae’s case, her brothers started leaving home when she was six, so they were also scarce and noticeable. In farm families fathers are close at hand throughout the day. Most of our fathers were also more likely to be outdoors. Encounters with them and the elements were more likely than with our mothers. However, in Bell’s case, her mother was outside much more often than her father was and she appears, albeit peripherally, in most of her early memories. Do we not notice our mothers because they are always there—in the background, reading a book, gardening, visiting with friends, cleaning or seeing that something was on the table for supper? Theorizing about this we are brought back to the ‘role that memories play in socialization and social control’ (Schratz & Walker, 1995, p. 41) and the potential those same memories, remembered, explored and transformed, have to undermine that control. Socialization in a patriarchal culture may lead us to see fathers but not
mothers as having power in our relationship to the natural world. This illustrates the values we have internalized (e.g., men belong in the natural world) and the control they exert through unexamined memories.

We spent time analyzing our peripheral mothers and additional memories and transformations emerged. Sue’s mother was transformed from a peripheral figure to a central figure in her relationship to the natural world. Collectively, we had theorized that Sue’s relationship to the natural world was constituted by her father and the control he exerted when she was outside with him. When Sue rewrote the sandbox memory (which appears above) control gave way and rule-knowing emerged as a clearer articulation of her feelings. Her father taught her in a way that made it impossible to know or control whether or not she could succeed. Conversely, when she went inside, her mother was there and taught her in a way that made it eminently possible to succeed. Her mother taught her the rules and those rules allowed control and choice. When Sue moved her interests inside, she chose to learn in the environment created by her mother. In this world, she did her own science with ant farms, gerbils, fish, etc. Inside learning with her mother was ‘natural, safe, easy and fun’. This transformation is powerfully illustrative of the social control exerted by unexamined memories. This ‘inside science’ was never remembered in the initial memories we generated, and in fact Sue judged her early memories as ‘not as good’ as ours, because they were not ‘sciencey’.

This idea that our mothers are more influential than we had initially thought in our relationships to the natural world also emerges in Bell’s memories. We initially noticed that Bell is with some exceptions, solitary in her memories and very absorbed as she interacts with the elements. However, an adolescent earth memory brings her mother and Bell’s characteristic absorption into sharper focus. In the memory, Bell and her brother are digging up the vegetable garden for her mother. The memory is focused on huge boulders that must ‘grow back every year,’ because despite their best efforts at digging them up, they always seem to reappear.

As we discussed the context around this memory, her mother’s love and total absorption with gardening emerges. In spring and summer, her mother could work in the garden for 10 to 12 hours a day. The family perceived this as her leaving and forcing them to fend for themselves around mealtimes. The conflict this created is what is initially remembered, but during our discussion, we observed a parallel between the absorption in thought that characterizes Bell’s early memories and her mother’s absorption in her hobbies. In terms of values and socialization, we theorized that perhaps Bell learned the value of absorption and incorporated it into her own interactions with nature. This theory of absorption is useful for Bell in a biographical sense, but what is more important here is an idea relating to the larger question of socialization. In our initial interpretation of these memories, we do not ‘see’ that our mothers could have been influential. We have been taught not to see them as potential agents of socialization in the context of the natural world and science; that is the province of our fathers. However, when we rethink these memories we begin to see the agency of our mothers.
Our work with Cele’s memories reveals this same pattern. Initially, our discussions of Cele’s early memories centered on the strong influence of her physician father. He arranged experiments for her as in the stream diversion memory (see above) or pushed her to go further as illustrated in this excerpt from her early air memory.

‘I did it! I did it!’ she said, gulping a breath of the longed for air. ‘I finally swam across the pool and back!’ ‘Great! Now you can swim the length of the pool,’ said her Dad. ‘Let’s try that next.’ But Cele was too busy gasping for air and enjoying that feeling of air, not water into the lungs, to think about what was soon to be just one more swimming accomplishment.

These conclusions about the influence of Cele’s father fit with our expectations for fathers. And in fact, Cele learned to value science from her father. He apprenticed her and his version of science has strongly influenced her experience with science. However, as we delved further and examined Cele’s memories within the context of all our memories, we noticed that Cele’s memories are filled with social interactions. Cele’s adolescent memory of a campfire expertly constructed by knowledgeable women led us to the observation that strong women were a characteristic of Cele’s childhood. She was surrounded by older and younger women who were brought into her life through her mother. Her mother was a nurse at the camp Cele attended and closely connected with powerful women in the small Kansas town that Cele grew up in. In our discussion, we began to theorize that social relationships represent a value that Cele learned from her mother. The importance of relationship and its link to childhood experiences had been apparent to Cele, but linking the social to her early science and relationships to the natural world is a new understanding. Social relationship provides the backdrop for her interaction with the elements and this opens up the idea that Cele’s mother, like Sue and Bell’s takes on agency in her relationship the natural world.

**From Experience to Theory to Transformation**

Our memories reveal a great deal concerning our socialization in relation to the natural world. They also illustrate the powerful way in which memory-work is capable of unearthing layers of socialization and revealing additional ideas and values learned. In the memories pertaining to the stream diversion, sandbox, and spring burn, fathers exert a great deal of control and what is initially remembered about the elements of water, earth and fire are the emotions or conflict around this control. The conflicts stemming from the interactions with fathers appear to constitute the memory. This is also true in the flute memory. Though this memory conveys conflict pertaining to surprise, it appears to constitute the memory. In terms of socialization, what was learned from these memories has more to do with fathers than with the natural world. However, the focus on fathers shifts when we begin to collectively analyze the memories. We reconstruct our connection and sensual pleasure in experiencing the element, or feel the success experienced in a more predictable environment.

The absence of our mothers in our memories is also quite revealing in terms of our socialization. In a patriarchal world, we were taught not to see them as influential or
powerful in the natural world, but again when we collectively analyzed the memories, this layer of socialization was removed. Our mothers became visible and we saw them as agents of socialization in our interactions in the natural world. Sue remembered the science she did with her mother, Cele recognized the influence of her mother on her science, and Bell noticed a parallel between her absorption in thought and experiences in the natural world and a similar characteristic of her mother.

Rae’s interactions with her brothers, Anna listening to her father’s breath, and Bell’s play with her arm in the wind reveal aspects of socialization that differ from those already discussed. Rae’s memories are among only a few early childhood memories that are clearly about an element. In these memories the elements are explicit and pleasurable emotions integrated with the idea that the natural world is something to learn about. In Rae’s memories, the breath memory, and the arm in the wind there are no conflicts or strong emotions obscuring inner layers of learning or values. They are overt narratives of what was learned and valued. Anna trusted that she could play on her father when he was sleeping and she learned about the rhythm of his breath. Bell was learning how to fight boredom and with the tacit approval of her father, incidentally learned about the force of wind on her arm hanging outside of a moving car.

Connection to nature, sensual pleasure in nature, the agency of our mothers in learning about nature, our direct observations of and experiments with nature are generalizations rooted in our particular experiences. They communicate a different story or theory about our relationships to nature and interrupt a narrative rooted in the dominant culture that portrays nature as separate and controllable.

Our relationship to nature has been altered as a result of memory-work. Through our memories we experienced our connection to nature, an idea that challenges the cultural distinction between the individual and nature. This is not a new way of thinking about nature, but it illustrates the way in which memory-work facilitates the connection between theory and experience. Through memory-work we were able to experience/remember our connections to nature. Our experience affirms that humans are not dissociated from nature. The sensual experience of a cool stream, the sensual descriptions of hot and cold sand, and the play of an arm in the wind, expresses as wholeness or connectedness between body and nature. This is embodied knowing; remembering that our learning about the elements and trees as embodied reconnects us with the body as a way of knowing about the world. The dominant culture does not value embodied knowing, and hence this ability is not explored or expanded as we grow.

The theory that we are developing is connected to a broader range of theories that also challenge dominant ways of thinking about the human relationship to nature. For example, the wholeness or connection between body and nature that is expressed in our memories has historic roots in organic theories of nature that date back to the Romantic Movement of the late 18th and early 19th century. Writers such as Thoreau, Emerson, and Muir articulated an organic worldview that challenged the mechanistic ideas of the scientific revolution where nature functioned within a machine that was easily manipulated and repaired if damaged. Merchant (1980)
describes organicism as ‘a vital animating principle binding together the whole created world (p. 100)’. Similarly, Bigwood (1993) addresses the relation between the body and nature through Merleau-Ponty’s phenomenology. She notes that we have a ‘unique sensitivity’ to our environs. We experience the world as opposed to merely recording it. According to O’Loughlin, (1995) Merleau-Ponty argues that intelligent bodies have understandings of the world that are independent of cognition; the ‘world is the body’s directly’ (p. 3). As aware subjects, we experience the world as an object, however as O’Loughlin notes:

Merleau-Ponty is concerned with the moments of daily living in which as subjects we interpenetrate the world and are fused with it. So, for him there are no ontological ‘cracks’ between persons and nature, the self and world … They are one and the same. Merleau-Ponty’s account of body-subject and ‘flesh’ demands that we pay attention to the connectedness of body-subject to world and to the immersion-in-world that is the reality of human existence. (p. 5)

O’Loughlin observes that this interpenetration of the body with the environment is a reality that Merleau-Ponty was convinced of, but one that is very difficult to capture ‘because it travels through the prereflective forces of body and feelings’ (p. 6). We think that through memory-work we have managed to capture the experience of ‘immersion-in-world’. Our experiences of connection with the natural world are echoed in counter-hegemonic theories of the body and herein lies the transformative potential of memory-work. In the roots of our own experience, joined with theory, lie stories that challenge dominant ideologies about the natural world.

Memory-work draws our attention to the multiple and varied stories that we can tell based on the memories that we construct out of the continuous moments of our lives. However, we tend to tell a few rather than many stories and the stories that we do tell often reveal and are constrained by the dominant values of the cultures within which we are situated. In effect, those values function to select the moments that we take from the time stream in order to tell a tightly woven narrative of our lives. We are aware of these values in varying degrees, but many of them are so familiar and taken for granted, they are invisible and sometimes oppressive influences in and around our lives. They shape what we see and know and we participate in perpetuating their influence in the dominant culture. In this context, memory-work functions to make the invisible visible, to make the familiar strange. By using discrete memories of moments in time, collectively joining subject with object, and linking personal experience with theory we are able to scrutinize the socializing forces of our lives. Our initial stories about our early lives in the natural world revolved around our fathers, control, absence of mothers, prediction, observation, and learning. Some of the stories reflect dominant cultural values relevant to science and nature, namely that nature is a masculine realm that can and should be controlled. Through memory-work we are able to delve beneath these values and find stories that interrupt the dominant narrative of the natural world. We found stories of mothers, connection, and social relationships; in short a different way of thinking about the natural world.
Memory-work and Education

For the readers of this journal, a central question concerns the relevance of memory-work to environmental education. In 1998 and 1999, several issues of the journal were devoted to significant life experience (SLE) research (Tanner, 1998) and related commentary. Despite extended discussion of a number of theoretical and methodological problems, many of the commentators saw merit in continuing work with this line of research (Dillon et al., 1999; Annette Gough, 1999; Noel Gough, 1999; Stephen Gough, 1999; Payne, 1999). A consideration of SLE research within the context of memory-work addresses a number of problems. The first has to do with the notion of developmental causality and the relation between significant life events and environmental activism. Memory-work demonstrates that we shape the stories we tell about our lives in response to the dominant culture. Thus, memories of significant life events may merely reproduce dominant values, a problem identified by Noel Gough (1999) and Payne (1999). If the goal is to identify experiences that might frame a curriculum aimed at nurturing future environmental activists, we will need to interrogate and move beyond existing values. SLE researchers might reconsider their exclusive focus on the life histories of activists and consider posing questions concerning how we are socialized to think about/relate to the environment. This approach avoids the a priori assumption that we can find causality in autobiography. Relying on the methodology of memory-work, researcher/subjects can generate cue words meant to elicit discrete memories relevant to the environmental question. This approach solves additional problems in the research, such as the larger notion of what constitutes a significant life event (Payne, 1999). The memories generated would likely be insignificant life events; ‘the moments of daily living in which as subjects we interpenetrate the world and are fused with it’ (O’Loughlin, 1995). Payne (1999) points out that if we incorporated such insignificant events into a curriculum, it is more likely that they would be regularly practiced outside of school settings. In our own work, the evidence that we found for our sensual connections with the elements have direct implications for providing opportunities for related experiences in a classroom. For example, in science classrooms we engage students in activities that involve observing and predicting what will happen to water under various conditions, but distance from water is an implicit value in these activities. Along with observation and prediction, why not engage students in describing how water feels on their bodies under various conditions? What does it feel like to build something under water, to immerse your arm in cold water, in warm water? What does the warm air of a spring day feel like on your face? Activities such as these might help students become familiar with a discourse of connection. We think it is valuable to sustain and nourish connections in response to a dominant culture that teaches us to forget them.

A second problem in SLE research that can be approached through memory-work concerns the lack of attention paid to cross-cultural issues (Dillon, et al., 1999; Annette Gough, 1999, Payne, 1999). Definitions of ‘environmental activism’ and ‘significant’ events that ignore culture, class, and gender, and generalizing findings across categories of identity are problems that deserve attention from SLE researchers,
but they are interestingly reworked within the context of memory-work (while recognizing that interrogating memory in this way grows out of a particular cultural view). In collectives for which this method makes sense, the work is situated in the community of the collective and such collectives can be formed along categories of gender, ethnicity, class, sexuality, country, etc. Additionally, valuable insights can be gained by comparing memories across differently situated memory-work collectives.

Finally, Annette Gough (1999) draws attention to intergenerational differences that are largely ignored in SLE research. The significant life experiences of older generations are likely to have limited relevance to the youth of today and thus, it is problematic to use those experiences to frame curriculum. Gough rightly suggests investigating the current generation. Within the context of memory-work, student-run collectives can be formed. We have tried memory-work with students as young as 13, and one of us has facilitated memory-work groups with undergraduate pre-service teachers in a semester-long course. In a secondary or higher education setting, there are problems that need to be addressed having to do with ‘requiring’ memory-work and trying to mold it to the confines of a course of study format.

These are radical proposals within the context of SLE research and would require rethinking the entire paradigm, particularly the traditional idea of the researcher as separate from the subject. Apart from SLE, memory-work offers a number of possibilities for the environmental educator. Narratives of memories contain within them possibilities for rethinking our relationships to nature. From our work, the single notion of embodied connection suggests that activities reflecting connection can be valued and nurtured in a classroom community. Additional findings from memory-work collectives locally organized and reflecting identities relevant to gender, ethnicity, class, sexuality, etc. could similarly be used to frame classroom communities. Each member of our collective has experienced change; we have altered the way we think about ourselves in the natural world. However, this new consciousness must be constantly practiced. It is easy to fall into the old ways of seeing because we continue to live in a social world that constantly reinforces old boundaries and meanings. Classroom communities can be powerful sites for practicing new ways of seeing and being in the world.

Notes


2. Rae, Cele, Sue, Bell, and Anna are used as pseudonyms to relate our memories. This protects our anonymity and as Crawford et al. caution, it helps us resist the ‘temptation to write biography’ (p. 6).

References


