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Exploring the Narrative-Oriented Qualities of the Learner's Encounter with Unfamiliarity

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ABSTRACT

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Learning, as embodied familiarization, is described as an embodied, non-representational, and non-mechanistic experience. Within this theoretical framework, a qualitative study is presented that offers a deeper understanding of the learner's encounter with unfamiliarity – a key lived experience of embodied familiarization. Assertions related to encounters with unfamiliarity are made through a multiple case study analysis and a deeper understanding of the assertions is offered by way of a narrative-oriented framework. From this perspective, agentive, concernful, dispositional and meaningful aspects of learning are discernible.

Keywords: Embodied, cognition, familiarization, narrative, agentive, encounters, unfamiliarity, mechanism, representationalism

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I dedicate this dissertation to my wife, Debra. She made it possible.

I also dedicate this dissertation to my parents for the values they passed down to me.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1: Encountering Unfamiliarity

On November 26, 2003, Bethany Hamilton paddled out into the ocean to surf some waves. She had been surfing for years; only now, she was paddling out with one arm for the first time. Her arm had been lost in a nearly fatal shark attack 26 days earlier, when she had lost 60% of her blood. More afraid that she would never surf again than of another shark attack, she paddled for the waves. About two years later, she would win the NSSA United States National Under-18 Surf Championship, but on that day in November, as she attempted to re-learn how to surf, she encountered unfamiliarity in the water. She was no longer at home in the ocean—seemingly effortlessly catching and surfing waves. Her coordinated, skilled judgments and movements had been replaced with awkwardness and wipeouts. A few days later, she would return to the surf with a surfboard modified by her dad with a handle used to steady the board as she duck-dived under larger crashing waves. Her courageous journey has been the topic of news reports, books, and a movie.

On April 12, 1945, Harry S. Truman was summoned to the White House, where he received the news from Mrs. Roosevelt that President Roosevelt was dead. Vice President Truman was stunned and fought off tears. He was aware of his inadequacies and his first day on the job was spent mostly reading. His first decision was whether to continue with a United Nations conference scheduled April 25—an easy decision. It was likely to be his last easy decision. He told a group of reporters the next day, "If you ever pray, pray for me now." He is also quoted as saying, "I felt as if I had lived five lifetimes in those first days as President" and called it his "mighty leap."

On April 19, 2010, brandoon111 uploaded an 8 minute YouTube video (see http://www.youtube.com/watch?v=9qYQGrt_DrE) that showed a few people using the iPad for

the first time. While I watched this video, it became apparent that none of the first time users knew how to hold it. They tried different ways to hold it, but did not appear to be comfortable with any of them. At one point, someone said, "I found it super hard to find a way to hold it." Another said, "I can't find the right way to hold it." It also became apparent that scrolling, zooming, and typing on the screen were all new experiences and were described by one user as "awkward at first."

Learning can be described as "a journey into the unknown" (Osborne 1987, p. 498) initiated by an "encounter with unfamiliarity" (Yanchar, Spackman, & Faulconer, 2013). In other words, people come across unfamiliar things in the course of living in the world. Sometimes, as in Bethany's and President Truman's cases, an encounter is momentous. Often, an encounter is not momentous, but has an everydayness about it. As I will clarify, all of these encounters may create opportunities for learning.

From this perspective, learning is becoming familiar with something. In other words, a learner goes from a sense of un-coordination, awkwardness, foreignness, incompetence, and discomfort to a sense of coordination, capability, at-home-ness, mastery, and comfort with a given situation.

Although these encounters can provide a rich topic of research, they are, as I will argue, rarely mentioned as part of mainstream cognitive research. With some reflection on one's daily activities, these encounters become unmistakably apparent, but cognitive theories rarely focus on understanding these encounters and until recently, there wasn't an adequate theory for talking about them.

Embodied familiarization, as I will describe, represents what I call the third conceptual shift in the shifting nature of cognitive science theories. Starting points for theories might be

thought of as axioms (i.e. deemed true without any proof). These are the assumed ideas theories are based on. According to James (1897), these axioms, all of them, are "altars to unknown gods" (p. 147). As such, any theory, whether scientific or philosophical, asks the reader to concede the need for at least one worthy, but assumed idea. As uncomfortable as this may seem to the reader—that is, founding theories on unproven ideas—even Newton's long-standing axioms are arguably not the only axioms in physics given Einstein's theory of general relativity. In other words, there are many starting points and both the theorist and reader accept them based on the belief that the theorizing will be worthwhile (i.e. new understanding is possible). Embodied familiarization, then, is based on axioms that differ or have shifted significantly from traditional cognitive theories.

Before describing this third shift—mechanism to non-mechanism, I review how the long-standing axioms of cognitive theories have been shifting over the last twenty years or so: the first shift—disembodiment to embodiment and the second shift—representationalism to non-representationalism. Also, I provide a framework, language, and method for studying these encounters based on that theory: embodied familiarization (Yanchar et al, 2013) and based on the narrative-oriented qualities of instructional design (Parrish, 2009). Moreover, I qualitatively research the narrative-oriented qualities of several varied learning experiences from the learner's perspective using the approach of multiple case study analysis (Stake, 2006). Specifically, I intend to address the following question from the embodied familiarization viewpoint: *Are encounters with unfamiliarity part of the lived experience of learning at all and, if so, what narrative-oriented qualities are commonly experienced during these encounters?*

Chapter 2: Embodied Cognition—The First Shift

Traditional cognitive science views the mind as an abstract information processor, fundamentally computational in operation. According to Hunt and Ellis (1999, p. 21-23), in the early 1950s the computer program became the model for talking about the mind:

> …a startling new device was available, a machine that could process and store information. The analogy to the mind was quickly realized…A computer is controlled by software, or a program. The program is a set of rules written in symbolic form, usually words or numbers. Both the rules and symbolic nature of the program seem to be analogous to rational knowledge…The program can be written to solve problems, and that is certainly a major function of thinking…The computer began to look like a thinking machine…The computer model continues to be an important influence on cognitive psychology…The analogy between computer functioning and human cognitive functioning is obvious. People take in information in the form of environmental energy and store it for later use…The storage function of the computer is analogous to the process we normally think of as memory.

Lakoff and Johnson (1999), referred to this traditional view as studying a "disembodied mind" (p. 75). That is, a mind where the "peculiarities of the body and brain contribute nothing to the nature of human concepts and reason" (p. 76). Although the computer program version of the mind attributes little theoretical importance to what is often referred to as the mind's peripheral input and output devices (Lakoff & Johnson, 1999; Wilson, 2002; Osbeck, 2009), according to Wilson (2002), "there is a growing commitment to the idea that the mind must be understood in the context of its relationship to a physical body that interacts with the world" (p. 625). This commitment, as Lakoff and Johnson (1999) frame it, is a study of the "embodied mind" (p. 77).

This shift towards embodiment is described by Varela, Thompson, & Rosch (1991, p. 149) as a mind dependent on "being in the world that is inseparable from our bodies, our language, and our social history." Many generally refer to this first conceptual shift as *embodied cognition* (Varela et al, 1991; Wilson, 2002; Barsalou, 2007; Osbeck, 2009; Black, Segal, Vitale, & Fadjo, 2012).

Embodied cognition has taken an assortment of research directions such as color cognition (Varela et al., 1991), perceptually-grounded cognition (Zwaan, 1999; Pecher & Zwaan, 2005; Black, Segal, Vitale, & Fadjo, 2012), metaphor cognition (Lakoff & Johnson, 1999; Gibbs, Lima, & Francozo, 2004; Gibbs, 2003, 2005, 2006), language cognition (Glenberg, Havas, Becker, & Rink, 2005; MacWhinney, 2005; Zwaan & Madden, 2005; Spivey, Richardson, & Gonzalez-Marquez, 2005), conceptual cognition (Barsalou & Wiemer-Hastings, 2005; Langacker, 2005; Goldstone, Feng, & Rogosky, 2005), distributed cognition (Hutchins, 1995; Clark & Chalmers, 1998; Gibbs, 2005; Hollan & Hutchins, 2010; Clark, 2001, 2010), and spatial cognition (Kirsh & Maglio, 1994; Carlson & Kenny, 2005). Wilson (2002) describes the embodied cognition approach in terms of six claims. According to Wilson (2002, p. 625), "If the term embodied cognition is to retain meaningful use, we need to disentangle and evaluate these diverse claims." While her purpose was to bring some unity to this emerging viewpoint, my purpose is to describe the viewpoint, augmented with research since 2002, by thematizing the more distinctive departures from traditional cognitive science that make up the embodied cognition shift. My updated description of embodied cognition is comprised of four prominent themes that cut across this body of research. These themes are:

1. Embodied mind is comprised of body, environment/tools, social history, and mental representations.

2. Memory is distributed across the body, environment, and tools and is encoded

situationally.

3. Language and abstract concepts are understood through situated embodied action.

4. Perception and action are inseparable.

I will now clarify each of these themes.

Theme 1: Embodied Mind

Clark and Chalmers (1998, p. 7) asked, "Where does the mind stop and the rest of the world begin?" Their question is answered within the body of research as follows: the embodied mind includes the body (Lakoff & Johnson, 1999; Bechara, 2004; Allman, Hakeem, Erwin, Nimchinsky, & Hof, 2001; Varela et al, 1991; Carlson & Kenny, 2005; Gibbs, 2003, 2005, 2006), the environment/technology (Borghi, 2005; Goldstone et al, 2005; Black et al, 2012; Hollan & Hutchins, 2010; Clark, 2010), and social history (MacWhinney, 2005; Zwaan & Madden, 2005). Additionally, the embodied mind, keeping with the assumptions of traditional cognitive science, continues to include mental representations (Wilson 2002, Chemero, 2009).

Physical body. The activities of a disembodied mind, ignoring the brain and body, are known as functional states, mental states, or in general, functionalism (Putnam, 1967). Early cognitive scientists assumed that the mind (e.g. cognitive functions, concepts, representations, and reason) could be studied ignoring the brain and body (Lakoff & Johnson, 1999). In other words, the mind could be thought of as software and the brain and body, hardware, where the hardware did not determine anything about the software. On the other hand, while studying conceptual structures and practical know-how; embodied cognitive scientists found this type of knowledge often arose from situated embodied experience (Varela et al, 1991; Lakoff & Johnson, 1999). This means that in keeping with the software/hardware metaphor, they found

embodiment, the hardware, did actually influence cognitive functions—that is, the software—contrary to the beliefs of traditional cognitive science. As I will clarify, perceiving color (Varela et al, 1991), perceiving space (Carlson & Kenny, 2005), and understanding metaphors (Gibbs, 2003, 2005, 2006) illustrate how the body is involved in cognition.

According to Varela et al (1991), color is made possible through the embodied categorization of perceptual experience. In other words, an embodied mind categorizes colors based on the retina's three cone cells that sense long-wave, middle-wave, and short-wave light. These visual sensors see various hues of red, green, yellow, and blue. The disembodied mind, on the other hand—that is, a mind that is not determined by its hardware: sight sense—could not perceive color as it is seen, as there would be no body to make this physical experience possible. For instance, a person blind from birth would not experience color sensations and would not know what it is like to see color or fully understand color (Harman, 1996) nor would a disembodied mind.

Another way in which the body is involved in cognition is illustrated by the way people perceive space through functionally manipulating physical objects (Carlson & Kenny, 2005). A disembodied mind could not rely on the experience of manipulating physical objects to understand spatial relationships between objects without a body. Thus, a disembodied mind could only rely on the mental concepts such as geometry. Studies have shown; however, that spatial placement decisions of objects paired with functionally compatible objects were guided by the paired objects' combined functionality, as well as were guided by geometry (Carlson & Kenny, 2004; Carlson & Kenny, 2005). For example, when a toothbrush was placed horizontally on a table and the participant was asked to place a tube of toothpaste (i.e. functionally compatible object) above the toothbrush; the results showed that the toothpaste was placed above the bristles

with the tube lid facing the bristles more often than when a participant was given the same task with a similarly shaped tube of acrylic paint (i.e. functionally non-compatible object). Thus, the understanding and interpretation of the spatial word "above" involves the person's past embodied, functional manipulation of the referenced objects.

As a final example, the body is involved in understanding metaphors. Studies show that metaphors correlate strongly to everyday embodied experience (Gibbs, 2003, 2006). For example, the act of standing up is an everyday embodied experience and the metaphor: "standing up for a cause" is then understood because of a person's past experience with the act of physically standing up. Other examples include being weighed down by an issue, being bowled over by a new idea, and thirsting for knowledge (Gibbs, 2003; Lakoff & Johnson, 1999). According to Lakoff and Johnson (1999), there are *primary metaphors* (i.e. frequently used metaphor categories) that all arise out of embodied functioning in the world. Understanding a metaphor would be difficult for the disembodied mind since it has no possible reference to bodily experiences that gives rise to metaphorical meaning.

Environment/tools. The embodied mind includes the environment and tools. There are several views of how the embodied mind includes the environment and tools such as perceived affordance (Borghi, 2005), grounded concepts (Goldstone et al, 2005), perceptually grounded cognition (Black et al, 2012), cognitive system (Wilson, 2002), distributed cognition (Hollan & Hutchins, 2010), extra-bodily cognition (Clark, 2010), active externalism (Clark & Chalmers, 1998), and epistemic action (Kirsh & Maglio, 1994). As these studies illustrate, both the naturally occurring environment and man-made tools augment cognitive resources. Because the environment tends to have a reliable presence as it is physically sensed, studies claim that a person's so-called cognitive function capacities evolve in ways that rely on the environment for

cognitive shortcuts and exploit the possibilities of the environment's reliability (Clark & Chalmers, 1998). In other words, there is a symbiotic coupling of person and environment during cognition. Additionally, tools typically offer cognitive operations that facilitate those naturally occurring in the brain (Clark, 2001). Stated differently, tools are thought to process information that is difficult or time-consuming to compute mentally (Kirsh & Maglio, 1994). For example, manipulating a hand-held calculator may answer mentally time-consuming mathematical problems and thus, becomes part of the embodied mind as a person engages in this sort of mental labor.

Social history. The embodied mind depends on social history, cultural embedded-ness, and tradition (Varela et al, 1991). Much in the same way cognitive functions evolve to rely on the environment and tools, they evolve to rely on social history. For example, it is thought that studies in language comprehension show that children create cognitive pathways and mental models supported by their culture based on listening to their culture's spoken language (MacWhinney, 2005). Another example of this reliance on social history is apparent in the act of understanding metaphors. According to Gibbs (2003), metaphors are understood through their correlation to everyday, embodied experience set against a shared, historical backdrop. For example, a person without a fishing background would have difficulty understanding phrases like the project hit a snag, he is quite a catch, bottom feeding, there are plenty of other fish in the sea, and he reeled in another customer.

Mental representations. The embodied mind includes mental representations. At this point, I want to clarify what is meant by mental representations. According to Fodor and Pylyshyn (1988), modern theories about the mind follow two major traditions: representationalist and non-representationalist (i.e., "eliminativist" per Fodor & Pylyshyn). Representationalists

theorize in terms of mental representations, where mental representations are symbols that have properties like internal entities. For example, a representationalist would say the only experience with the world that can be had is through a mental replica of one's sensory interpretation actually "inside" the mind, not with the real world; whereas non-representationalists typically theorize in behavioral or neurological terms, not mental. According to Chemero (2009, p. 20), "cognitive science has been squarely on the side of the representationalists." Is embodied cognition also squarely on the side of the representationalists? According to Wilson (2002), the answer to this question is clearly yes. As she states:

> But the fact that we are limited in how much we can attend to and absorb in a single brief encounter does not alter the fact that we can and do build up robust detailed representations with repeated exposure (p. 632).

Others share this view about mental representations from the embodied cognition viewpoint such as Borghi (2005, p. 8): "…there exists a process by which sensorimotor experience is translated into amodal symbols" and Chemero (2009): "…embodied cognitive science is still a computational theory of mind" (p. 27) and "…embodied cognitive scientists typically are not antirepresentationalists" (p. 26).

Theme 2: Memory

The second theme of embodied cognition is that memory is distributed across the body, environment, and tools and is encoded situationally. Traditional cognitive science describes memory, in general, as three basic processes: encoding, storage, and retrieval; and three basic types: short-term, working, and long-term (Bernstein, Penner, Clark-Stewart, & Roy, 2006). Encoding happens when sensory input becomes mental representations. These mental representations are stored in memory and retrieval of these stored mental representations happens

when they are located and brought into consciousness. Memory is categorized as short-term, working, and long-term based on how it is functioning. Short-term memory can hold a limited amount of information for a limited amount of time and is a component of working memory. Working memory is where conscious thought occurs and where information can be manipulated. Long-term memory is where memories can be stored that last a long period of time.

The embodied cognition view of memory expands it to include the body for storage and retrieval, meaning encoding at the sensorimotor level (Wilson, 2002), as well as "off-loading" memories even further to the environment and tools (Hollan & Hutchins, 2010; Clark, 2001; Kirsh & Maglio, 1994). Although this bodily and "off-loaded" memory does not take on the form of mental representations like the traditional view of memory, mental representations are still important to embodied cognitive scientists. In other words, embodied cognition's view of memory includes both encoding of mental representations stored in the mind and encoding of non-mental representations stored in the body, environment, and tools. Studies in rehearsal loops (Gupta and MacWhinney, 1995), phonological speech processing (LeCompte, Neely, & Wilson, 1997), sign language (Wilson & Emmorey, 1998), and how a cockpit remembers (Hutchins, 1995) provide evidence of encoding of non-mental representations. For example, according to Wilson (2001), sign language offers a form of bodily, non-mental representations. As such, it is thought that during sign language, the deaf subject's memory encodes serially in terms of space (e.g. hand and arm forms, relation of hands to torso, movement, etc.). In studies, these deaf subjects outperform hearing subjects on performing a backward report (i.e. retaining serial order while reversing the order). That is, deaf subjects can remember the reverse order of a signed conversation more easily than hearing subjects can remember the reverse order of a spoken conversation. This outperformance suggests that deaf subjects must be retaining the

memory of the signs "in some form that is amenable to the task of reversing the order" (Wilson, 2001, p. 51) and lends plausibility to the bodily, non-mental representations.

An embodied memory is situationally encoded. That is, it is thought that memories are stored with links to other memories with similar experiential situations (Zwaan & Madden, 2005). A mechanism called "co-occurrence" emerges to establish these linked connections between stored memories (Hebb, 1949). Studies such as mouth shapes connected to certain words (Bloom, 2000; McGurk & MacDonald, 1976) and objects connected to spoken sound patterns (Carey & Barlett, 1978) show co-occurrence encoding creates these linked memories. A simple example is when experiences lead one to believe that clouds are generally found in the sky. Clouds and sky are situationally encoded in embodied memory.

Theme 3: Language and Abstract Concepts

For embodied cognition, language is grounded in situated embodied experience. Language becomes understandable only when it is mapped to experiences that are already understandable (Glenberg et al, 2005). For example, the infinite loop of looking up words in a foreign language dictionary only to find other foreign words resolves itself when a foreign word is finally grounded in something that isn't foreign (Harnad, 1990).

It seems straightforward to argue that the more concrete concepts are, the more they can be understood through situated embodied action. For example, the fairly concrete concept of a "computer" is understood by interacting with a specific computer (e.g. pushing keys on the keyboard, moving the mouse, clicking, etc.) (Borghi, 2005). Does it follow then that the less concrete concepts are, the less they can be understood through situated embodied action? Cognitive scientists would say yes, given the traditional position that abstract concepts are decontextualized, enduring mental representations (Gibbs, 2006). However, embodied cognition

scientists would say no. Studies in context availability (Schwanenflugel, 1991), word-meaning association (Murphy & Medin, 1985), and metaphors (Gibbs, 2005) show that abstract concepts are also understood by situated embodied actions. For example, freedom can be understood by choice among alternatives, the full payment of a debt, the release from jail, the obtaining of a driver's license, and the democratic act of voting, which are all situated embodied actions. Studies also show that people generally have difficulty with abstract concepts when received out of context (i.e. situational vacuums) (Barsalou & Wiemer-Hasting, 2005).

Theme 4: Perception and Action

The fourth theme is that perception and action are inseparable. Perception is traditionally defined as the building up of a mental representation of the world by processing information from the input of the senses (Gibbs, 2006; Wilson, 2002). The embodied cognitive scientist adds to this definition the idea that perception is built up through functional actions, not just through sensory input (Wilson, 2002; Gibbs, 2006; Carlson & Kenny, 2005). For example, in a study where participants were asked to place a wig "above" a curling iron, they usually placed the wig above the functional tip of the curling iron, not above the center or above the plug end (Carlson & Kenny, 2005). This study shows that the word "above" was understood through the functional understanding of the curling iron (i.e. motor experience of curling hair with the metal part); thus, the perception of space was built up through the act of curling hair. Stated differently, there is no completely static, stationary perception of space (Gibbs, 2006). From the embodied cognition view, perception is inevitably coupled with embodied action.

Another way to look at the inseparability of perception and action is that they "co-determine" each other (Gibbs, 2006, p. 45). A good example of this is color perception. Studies of various animals' different perceptual experiences with color show that these differences

partially arise from their co-evolution with the environment with regards to the functional use of color. For example, bees have color vision that is shifted toward detecting flowers and flowers have colors that shifted towards being seen by bees (Thompson, Palacios, & Varela, 1992).

Summary of Embodied Cognition Themes

The four more distinctive departures from traditional cognitive science that make up the embodied cognition shift have been presented. These themes were based on Wilson's (2002) claims of embodied cognition and post-2002 embodied cognition research in areas such as perceptually-grounded cognition, metaphor cognition, language cognition, conceptual cognition, distributed cognition, and spatial cognition. These themes are:

1. Embodied mind is comprised of body, environment/tools, social history, and mental representations.
2. Memory is distributed across the body, environment, and tools and is encoded situationally.
3. Language and abstract concepts are understood through situated embodied action.
4. Perception and action are inseparable.

Embodied cognition offers an important conceptual shift. The embodied mind helps avoid the problems with disembodiment such as perceiving color, perceiving space, and understanding metaphors as well as the problems with mind-body dualism. Embodiment also helps avoid the problems with mental-only memory such as the existence of sensorimotor memory in the body and off-loaded memory stored in the environment and tools. In addition, situated embodied action provides the much needed context for language and abstract concept understanding, not present in a disembodied mind. Finally, the shift to embodied cognition helps

clarify that perceptions (i.e. the built-up mental representations of the world) are not formed in action-free states of being, but are co-determined by embodied activity. However, in the next chapter, I critically evaluate two assumptions of traditional cognitive science that are perpetuated by embodied cognition: representationalism and mechanism.

Chapter 3: Critique of Embodied Cognition—The Second Shift

As shown in the previous chapter, embodied cognition has shifted from the study of the disembodied mind of traditional cognitive science to the study of an embodied mind. This conceptual shift has resulted in important understandings of cognition, memory, language, concepts, and perception. Nonetheless, embodied cognition perpetuates two assumptions of cognitive science: representationalism and mechanism (see Table 1). In this chapter, I will critically challenge these assumptions and describe non-representational and non-mechanistic views.

Table 1

Shifting Axioms of Cognition Theories—First Shift

	Embodiment	Representationalism	Mechanism
Cognitive Science	Disembodied	Representational	Mechanistic
Embodied Cognition	Embodied	Representational	Mechanistic

Representationalism

Representationalism is sometimes described as indirect realism. According to Lehar (2002), there are two opposing views: direct realism – "the world we see around us is the real world itself" (p. 1) and indirect realism – the world we see "is merely a copy of the world presented to consciousness by our brain in response to input from our senses" (p. 1). At the heart of representationalism is the dualistic position that humans experience reality indirectly through internal representations or mental replicas of the world (i.e. mental interpretations of sensory

input). In other words, humans cannot acquire knowledge of the outside world that is unfiltered by the interpretation of the sensory layer between the outer world and the inner mind. Stated differently, representationalism suggests that an experience with the world can only be had through a mental replica of one's sensory interpretation, not with the real world (Chemero, 2009).

Representationalism goes far back in history, perhaps starting with Aristotle's description of *ideas* and famously advocated in Locke's concept of *sense-datum* and the *tabula rasa*. More recently, Fodor (1981) described *mental representations* as follows:

> Mental representations are symbols: they have both formal and semantic properties…Mental representations have their causal roles by virtue of their formal properties…Propositional attitudes inherit their semantic properties from those of the mental representations (p. 26).

According to Chemero (2009), mental representations have been described as "causally potent, information-carrying vehicles" (p. 50). As such, cognitive processes, following representationalism, could be thought of as "the manipulation of the mental representations" (Chemero, 2009, p. 21). In other words, all of one's awareness is in the form of mental representations; for example, petting a dog's head, smelling a rose, hearing a song, tasting food, and seeing a sunset are only experienced because they are first encoded as mental representations inside the mind. Embodied cognition perpetuates representationalism, as shown in the previous chapter where I reviewed literature indicating that under embodied cognition; the embodied mind is comprised of body, environment/tools, social history, and *mental representations*.

Radical embodied cognitive science. Notwithstanding the historical prominence of dualistic representationalism, some contemporary theorists have rejected this assumption. In

general, I will clarify that this type of dualism introduces questions about how the inner non-physical interacts with the outer physical and vice-versa as well as questions about where this interaction actually takes place. I will review a non-representationalist's version of embodied cognition (see Table 2) known as radical embodied cognitive science (Chemero, 2009) and then others who have shifted away from representationalism.

Table 2

Shifting Axioms of Cognition Theories—Second Shift

	Embodiment	Representationalism	Mechanism
Cognitive Science	Disembodied	Representational	Mechanistic
Embodied Cognition	Embodied	Representational	Mechanistic
Radical Embodied Cognitive Science	Embodied	Non-representational	Mechanistic

According to Chemero (2009, p. 29), radical embodied cognitive science is defined as "the scientific study of perception, cognition, and action as necessarily embodied phenomenon, using explanatory tools that do not posit mental representations…cognitive science without mental gymnastics." His thesis is that mental representations are unnecessary or at least not the best theoretical option for explaining human cognition. His primary claim is that representations are unnecessary as explanatory tools, because of the "dynamical stance" (Chemero, 2009, p. 67). The dynamical stance is that "one must have the dynamical story first, before one can concoct a representational story" (Chemero, 2009, p. 73) and that the "representational story could be told but…[is] not particularly relevant, because the dynamical…explanation tells us everything

important about the system" (p. 72). Chemero (2009, p. 68) references a Watt governor as the example of a dynamical system:

> In a landmark paper that introduced dynamical modeling to the philosophical community, Tim van Gelder (1995) describes the operation of the Watt governor of steam engines, which he intends as a benchmark dynamical system, and argues that it supports antirepresentationalism.

A Watt governor is used to mechanically control the speed of a steam engine. The "dynamical story" of the Watt governor is mathematical. Since the Watt governor's behavior can be predicted mathematically, the dynamical explanation is a formula with variables like arm angle, change in arm angle, and engine speed. Once the formula is known, a "representational story" like a computerized version can be described, which would include a program of measuring, comparing, and calculating. However, as Chemero (2009) points out, the "representational story" is superfluous to explaining the Watt governor since the "dynamical story" already pre-exists the representational one.

In studies of robots, Chemero (2009, p. 73) also finds evidence for the antirepresentationalist's view:

> Work in robotics at the University of Sussex ("Sussex robots" hereafter; see Harvey, Husbands, and Cliff 1994; Husbands, Harvey, and Cliff 1995; Harvey et al. 1997; Di Paolo 2003; Wheeler 2005) present a case of dynamical cognitive science that, we will see, supports the epistemological claim.

The epistemological claim referred to by Chemero is that "our best explanations of cognitive systems will not involve representations" (p. 67). In these robotics studies, it appears that "the

robots get by not just without a set of representations constructed by their builders, but without any representations at all" (p. 74). For example, the way the robots "get by" is by having the robot and the environment coupled as a dynamical system. The robot's sensors and motors respond to environmental cues no matter where the robot finds itself in the environment without the need for a representational model of the environment. By placing the robot in the environment and building it to respond appropriately to the actual environment, there was no need to pre-build a representational model or even have the robot accumulate and store the environmental data. Stated differently, a representational model of the environment would not have helped the robot perform its tasks any better because the robot was able to sense the actual environment.

In other robotic research, a female robot cricket hears and identifies a male robot cricket's song and then relocates to find the male robot cricket. As Clark (2001, p. 130) describes:

> There is no need, for example, to actively discriminate the song of your own species, because the specifics of your auditory system are structurally incapable of generating the directional response to other sounds. Nor, of course, do you bother to build a model of your local surroundings so as to plan a route. Instead, you (the cricket) exploit neat tricks, heuristics, and features of your body and world. Moreover you…seem to succeed without relying on anything really worth calling internal representations.

Additionally, Clark (2001) mentions that research in heuristics (i.e. discovery-based techniques for problem-solving) shows that performance is sometimes better when employing heuristics rather than representational techniques:

> There is a growing body of recent work (see especially Gigerenzer, Todd, and the ABC

> Research Group, 1999) that display the remarkable efficacy of special-purpose routines and heuristics even in 'advanced' human problem-solving. Such procedures, the authors show, can often be shown to perform as well (or sometimes better) than more traditionally 'rational' and knowledge-intensive procedures (p. 130).

Chemero's (2009) thesis that mental representations are unnecessary as explanatory tools seems to be evident in the robot's use of heuristics and robot-environment coupling. Although, humans are not robots, these studies show that if robots can get by without representations, then perhaps humans also get by without representations or perhaps a new human cognition paradigm is possible.

Other non-representational views. Others have argued for non-representationalism. For example, philosophers such as Heidegger (1962), Merleau-Ponty (1962), Wittgenstein (1958), and Taylor (1985) present non-representational views of human activities. Among those arguments in learning research are non-representationalist views of cognition (Greeno, 1994; Dreyfus, 1992; Osbeck, 2009; Slife, 1995), human experience (Westerman & Steen, 2007; Yanchar, 2005, 2011), and skill learning (Dreyfus & Dreyfus, 1986; Dreyfus, 2001, 2002). I will now clarify these arguments.

Non-representational views of cognition. There are a few approaches in cognitive science that "dissent from orthodox representationalism" (Osbeck, 2009, p. 19). The reasons for the dissent are varied: representationalism is too simple to really be useful (Greeno, 1994), representationalism is not as good at explaining certain phenomenon as non-representationalism (Gibson, 1966), parts of cognition occur outside the head (Borghi, 2005; Goldstone et al, 2005; Black et al, 2012; Hollan & Hutchins, 2010; Clark, 2010), and representationalism assumes a problematic view of time (Slife, 1995). I will review these reasons.

Representationalism is too simple to really be useful. According to Greeno (1994), ecological psychology claims that using mental representations as explanatory tools is scientifically unproductive given the subtleties and complexities of cognition. In other words, representationalism is too simple a theory for explaining a complex phenomenon. For example, representationalism requires what is called *factoring*; that is, the joining of the dualistic external-physical with the internal-mental – how the world ends up as a mental representation "inside" the mind.

> Although there have been occasional objections to the factoring assumption (e.g. by Dewey, 1896; Lashley, 1951), factoring of processes – especially into events occurring outside and inside the mental system – has been a persistent methodological commitment of psychological research. Gibson was already suspicious that perception and the observer's movement did not factor neatly in the perception of motion (Greeno, 1994, p. 337; also see Gibson, 1954 for more on his objection to factoring).

With the simplicity of factoring as the explanatory tool being questioned, the usefulness of representationalism was also being questioned.

Representationalism is not as good at explaining certain phenomenon as non-representationalism. Studies by Gibson (1966) found that perception was better explained by a person-environment epistemological connection rather than by factoring. Also studies in robotics found that guided robots did as well or better by using heuristic-coupling techniques than by using the factoring techniques of representationalism (Chemero, 2009, Clark, 2001). Other successful studies in robotics have "attempted to turn Heidegger's account of ongoing skillful coping into an alternative research program" (Dreyfus, 1992, p. xxxi). In other words, heuristic-coupling is thought of as a better explanation for robotic guided movement than

factoring.

Parts of cognition, broadly construed, occur outside the head. Many non-representational views claim cognition can be somehow off-loaded outside the head, so to speak. Additionally, the distributed cognition approach claims cognition is co-constituted with the environment (Borghi, 2005; Goldstone et al, 2005; Black et al, 2012; Hollan & Hutchins, 2010; Clark, 2010). In other words, humans and the environment each mutually pressure and rely on one another during cognition. According to Clark and Chalmers (1998), " the human organism is linked with an external entity in a two-way interaction, creating a *coupled system* that can be seen as a cognitive system in its own right...If we remove the external component the system's behavioral competence will drop" (p. 8). As such, at the very least, parts of cognition (e.g. environment, tools, etc.) are not utilizing mental representations since they occur outside the head and cannot be adequately explained by representationalism.

Representationalism assumes a problematic view of time. According to Slife (1995), a primary concern of cognition in traditional cognitive science is its depictions of how information is thought to be represented and stored in memory—that is, information-processing models (e.g. the mind is like a computer). In particular, he offers an analysis focused on the assumption of linear time (i.e. one dimensional time line) as the fundamental problem. As he argues, a computer processes one piece of information at a time in linear fashion like a stream of ones or zeros passing through a gate in single file formation. At any point in this linear stream, the processor (if the stream were frozen) would only "know" the current zero or one. If a mind, like a computer that receives a flow of information in this fashion, is based on linear time as well, then it receives one piece of information at a time, whether from sensory input or from memory. The notion of linear time prohibits any *direct* access to the whole stream at once. As such, this

linear stream of information cannot be understood holistically or meaningfully:

> As applied to the flow of information, we can never understand the meaning of each data piece (its relation to the whole) as we encounter it in time. Without the meaning of each piece, we cannot know the meaning of the whole. We have the same problem we had before: trying to figure out the qualities of parts and wholes from independent pieces of information given to us in a linear sequence. It cannot be done (p. 540)…The problem is that time itself is viewed in a manner that precludes meaning (p. 541).

Following Heidegger's (1962; 1968) rejection of the concept of linear time, Slife's (1995) argument replaces the one dimensional time line with a three dimensional "now" where the three dimensions are the present, the past, and the future. In other words, humans live in the present with their present views of the past and present views of the future. They can holistically "see" the entire time line all at once or stated differently, they experience the past, present, and future co-occurring. This co-occurrence is essential for meaning. Slife (1995) states it this way, "no one dimension of time can truly be a meaningful dimension without the context provided by the other two dimensions" (p. 541). For example, the present is not meaningful without the context of the past and future.

Non-representational views of human experience. According to Westerman and Steen (2007, p. 326), the representational view places the person as a spectator, "who reflects on the world from a distance." This distance is the unexplained space between the inner mind and everything else (e.g. body, environment, and other people). An alternative to the representational view is the idea that:

> …the person is part of the world fundamentally and not secondarily…the person is always *in medias res* (in the middle of things), as Fischer and Bidell (1998) aptly put it…

(Westerman & Steen, 2007, p. 328).

Representationalism does not fit well with lived experience. According to the situated cognition claim that everyday problem solving starts with situated activity, at a non-representational level (see Dewey & Bentley, 1949; Vygotsky, 1978; Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991; and Greeno, 1994); mental representations only exist after the problem solving activities have occurred, not before. In other words, it is thought that the act of learning involves, first, interaction with people, places, and things; and second, internal mental representations of people, places, and things. For example, learning could be construed as activities within a community or becoming a member of a community (i.e. communities of practice, see Lave & Wenger, 1991).

According to Yanchar (2005), contextualism is an alternative, non-representational view of human experience. Contextualism makes three assumptions, two of which deal with the theory of representationalism: (1) experience is holistic and (2) the lifeworld is fundamental. The third assumption is known as the narrative structure, which I will review as it relates to mechanism in the next section. The first assumption, the holistic experience, is described as "direct contact with objects and people that already exist as organized patterns and that together form the whole context surrounding the experience" (Yanchar, 2005, p. 174). In other words:

> According to the contextualist assumption of holism, then, there are no "sensory impressions" or representations – as independent bits of information – traveling across time and space to be received by the cognitive system and organized into a meaningful pattern…A stone, then, is not a processed and reconstructed representation of sensory impressions, but a whole pattern meaningfully situated within a broader context (Yanchar, 2005, p. 174).

Stated differently, one has direct access to an organized, meaningful pattern (e.g. a stone) and one does not disorganize the pattern into un-meaningful sensory bits of information and re-organize the pattern mentally into a representation. The holism assumption is consistent with the previously mentioned dynamical system approach; that is, a person-environment coupling where there is direct access to the environment.

The second assumption of contextualism is that the lifeworld is fundamental. What is meant by the term *lifeworld* is the world of lived, meaningful human activity. According to Yanchar (2005, p. 176), "humans experience themselves as fully part of the world around them, engaging it in a seamless and direct way rather than processing and manipulating representations of objects and people that are 'out there' in the external reality." In other words, the dualism of the inner-representations of the world and outer-reality of the world does not exist for the contextualists. They situate the person in the world; that is, the person negotiates directly with the world without the need for mediating representations.

Non-representational views of skill learning. According to Dreyfus (2001), skill learning takes on an intuitive rather than analytical framing as the student moves from novice to expert. This intuitive framing is "normally experienced as a spontaneous response to the demands of the whole situation" (Dreyfus, 2001, p. 414) or experienced as the skillful coping as the world presents itself. He sets apart this intuitive framing as learning that does not involve mental representations. For example, an expert hockey player has honed the skill of skating to the point that his/her attention can focus on game strategy, aiming a shot, or checking an opponent. His/her skating appears to just intuitively and contextually happen.

Visualization. At this point, I wish to clarify a misconception with regards to representationalism. The everyday act of imagining a future or remembering the past might

appear to support parts of the representational assumption (e.g. the existence of mental replicas of the environment that can be manipulated). By closing one's eyes, it appears that a mental image of one's setting can be remembered easily. However, the ability to "see" mental images (i.e. visualization) and representationalism are different. At the core of representationalism is the assumption that humans can *only* interact with representations of their environment and not the actual environment. In other words, there is an inner-reality for humans made up of sensory representations of the outer-reality and cognition *only* has access to the inner-reality. Humans may only have access to cognition about the future or the past by way of mental images; however, they also have access to the present *without* relying on representations, as has been discussed in detail in this chapter so far (e.g. person-environment coupling, holism, etc.). Stated differently, the ability to "see" mental images does not necessarily support the representational assumption that humans cannot interact with the actual environment, only that humans can and do engage in the meaningful act of visualization when it comes to remembering or imagining.

Mechanism

The second assumption of cognitive science that is perpetuated in embodied cognition is mechanism. Historically, cognitive science has based its explanations of cognition on the mechanistic worldview of physical science (Williams, 1987; Hunt & Ellis, 1999). According to Hunt and Ellis (1999), cognitive scientists refer to mental processes in terms such as "human intellectual machinery" (p. 3) and "psychophysics" (p. 5). They claim almost all contemporary cognitive scientists are mechanists where "mechanistic explanations describe parts working together in an automatic, machinelike fashion to produce the phenomenon to be explained" (p. 8).

Also according to Hunt and Ellis (1999, p. 20), "The model of computer science was

essential to cognitive psychology in that it provided a language with which to talk about mental processes." Williams (1987, p. 212) claims that the computer model went beyond just a language:

> To propose the existence of a structure such as sensory memory may seem like a rather harmless bit of speculation about our cognitive capacity. We see here, however, the easy movement – evident in cognitive modeling – from observation to the postulation of some function that accounts for the observation, and finally, to the postulation of a structure to account for the function. Unless it is remembered that the meaning and indeed the existence of the structure is entirely restricted to the observation itself, the postulation of structure can easily lead to unwarranted reification of the functional and structural components of the model.

In other words, the reified (i.e., making the abstract into the concrete or real) computer model granted it physical, mechanistic functioning as if the assumptions of physical science could be simply applied to human thinking. Embodied cognition continues the mechanistic assumptions of input, output, and information processing mechanisms (Wilson, 2002; Chemero, 2009). Wilson (2002, p. 626) describes embodied cognition with phrases such as "information-processing abilities", "information flow", "cognitive mechanisms such as perception and memory", and "mechanisms of sensory processing". According to Chemero (2009), embodied cognition is a computational theory of the mind. Gibbs (2006, p. 12) shows how embodied cognitive scientists add upon the traditional mechanistic view, but do not dispense with it: "cognitive processes are not located *exclusively* [emphasis added] inside a person's skin as computations upon mental representations…cognitive processes are *partly* [emphasis added] constituted by physical and bodily movements and manipulations of objects in real-world

environments."

A fundamental rule of mechanism is efficient causality—namely that, "events are rendered inevitable by the state of the universe at some prior time together with the laws of physics" (Guignon, 2002, p. 323) or "actions are merely the inevitable product of lawful causes stemming from prior events" (Baumeister, 2008, p.14). In other words, efficient causality means one event determines the next in a long, unbroken, linked chain of events. This is because the appearance of a highly stable environment leads one to predict that a certain event leads to another. For example, no matter how many times Galileo dropped a ball from the leaning tower of Pisa, the ball's time of descent was the same. The predictability of descent time is thought to be *caused* by the physical *law* of gravity (i.e. a description of the environment's stability in terms of things falling towards the ground). Mechanism in cognition research leads to a search for the *laws* that *cause* cognition.

The result of adopting efficient causality as a guiding assumption for human cognition is that mechanistic explanations of cognition seem to search for these causal *laws* and as a result, manifest hypothetical scenarios contrary to everyday lived experience. For example, if cognition is subject to efficient causality, then humans are mechanical automata (Williams, 1992), moral and ethical judgments are necessarily determined by antecedent conditions and therefore are not judgments at all (Gantt & Williams, 2002; Gergen, 1995), and a belief in future possibility is fundamentally mistaken (Baumeister, 2008). In other words, if human cognition is subject to efficient causality, then according to Wegner (2008, p. 243), everyday human life (e.g. making decisions, being morally responsible, having a will, accomplishing a goal, etc.) is a magical illusion:

The life of the magician is not easy. Like Harry Potter, each of us must make sense of

> our amazing tricks of action and somehow fit our understanding into a sensible view of the world…The solution begins with recognizing that the magic is a little show we put on for ourselves. The sense of what we consciously will is only part of an authorship estimation system of mind, which can thus be mistaken.

To summarize Wegner's point, he believes humans are mechanistic, but since humans can't accept that about themselves, they make up alternative explanations like free will, which are ultimately illusions of a magical sort. Finally, if human cognition is subject to efficient causality, then explanations of cognition lead to nihilism (Yanchar, 2011)—that it is meaningless and without purpose. In other words, there is no purposeful living when life is completely and already determined (i.e. no agentive, willful ability to alter course, so to speak). That type of life negates the meaningful aspects of everyday living (e.g. setting a goal, taking a risk, creating art, regretting a decision, making a difference, etc.). Thus, everyday lived experience appears to refute the mechanistic worldview that human cognition is determined in an efficient causal sense.

As mentioned in the previous section, contextualism also rejects the "machine metaphor" as an analog for human activity (Yanchar, 2005). For example, the third assumption of contextualism is the narrative structure. The narrative structure is an alternative to the mechanistic explanation. In other words, where the mechanistic view would theorize in terms of past informational inputs and memory storage determining cognition, the narrative view would theorize in terms of an "unfolding story in which one event or situation provides a meaningful context for another, as in a novel in which one event or scene flows into the next and they form coherent prose." (Yanchar, 2005, p.178). Stated differently, mechanism views the past as a determining *cause* and the narrative assumption views the past as an enabling *context*. A primary difference between cause and context is that context allows for multiple possible futures

and cause does not.

Chapter 4: Embodied Familiarization—The Third Shift

As I will clarify, embodied familiarization (Yanchar et al, 2013) is a suitable candidate for an embodied, non-representational, and non-mechanistic theory of cognition (see Table 3).

Table 3

Shifting Axioms of Cognition Theories—Third Shift

	Embodiment	Representationalism	Mechanism
Cognitive Science	Disembodied	Representational	Mechanistic
Embodied Cognition	Embodied	Representational	Mechanistic
Radical Embodied Cognitive Science	Embodied	Non-representational	Mechanistic
Embodied Familiarization	Embodied	Non-representational	Non-mechanistic

Embodied

Embodied familiarization treats embodiment similarly to the way embodied cognition describes it. As mentioned in a previous chapter, embodied cognition describes embodiment as "being in the world that is inseparable from our bodies, our language, and our social history" (Varela et al, 1999, p. 149). Embodied familiarization considers embodiment as the situated, holistic ways of being involved in the world as drawn out in the assumptions of participational agency (Yanchar, 2011), which I will clarify later.

Non-representational

One way to view the representational/non-representational discussion of cognition is in

terms of two prominent learning metaphors: acquisition and participation. According to Sfard (1998); the acquisition metaphor "makes us think about the human mind as a container to be filled with certain materials and about the learner as becoming an owner of these materials" (p. 5). This metaphor aligns with the representationalist views where knowledge is accumulated as mental representations. She describes the participation metaphor as an alternative to the acquisition metaphor where the "permanence of *having* gives way to the constant flux of *doing*" (p. 6). In other words, learning is not accumulating or possessing mental representations; learning is becoming a part of or participating in activities. Embodied familiarization could be thought of as following the participation metaphor. As such, embodied familiarization posits *exploring unfamiliarity* as learning without any commitment to the acquisition of mental representations, which I review later.

At this point, I wish to clarify why embodied familiarization is not a behaviorist theory. Behaviorism is a non-representational theory based on a stimulus-response model (Hunt & Ellis, 1999; Skinner, 1961). That is, there is a reflex-like response to stimulus. In other words, behaviorism focuses on observable behavior changes (i.e. responses), not mental representations, that occur as a result of conditioning due to reinforcements (i.e. stimulus). Although behaviorism and embodied familiarization share the non-representational assumption, they differ on mechanism. As I will clarify in the next section, embodied familiarization is non-mechanistic; however, behaviorism assumes mechanism (Williams, 1987), that is, stimulus-response is akin to cause-effect.

Non-mechanistic

The non-mechanistic assumptions of embodied familiarization are primarily based on participational agency (Yanchar, 2011). According to Williams (1992, p. 752), there is a

growing movement to describe the human world in non-mechanistic ways:

> …the traditional practice of explaining the human world in the same deterministic terms as the natural world is unproductive and inappropriate. These arguments have come from works of traditional humanistic psychologists (e.g. Maslow, 1968; Rogers, 1961; see Tageson, 1982), from the phenomenological and hermeneutic movements (e.g. Aanstoos, 1985; Giogi, 1970, 1985; Polkinghorne, 1983; Ricoeur, 1981; Wertz, 1986; and the essays in Faulconer & Williams, 1990), from the social contextualists (e.g. Gergen, 1982, 1985; Harre, 1984), and from others not so closely identified with a current, larger philosophical movement (e.g. Howard, 1986; Rychlak, 1977, 1979, 1981).

The theory of participational agency (Yanchar, 2011) is a recent example of this movement. It makes no attempt to mechanically explain human action through some deterministic inner workings. In other words, no efficient causality is assumed for human activity and therefore, no mechanism is assumed. Participational agency, as a human experience, is defined as meaningful engagement in the world and is described by four themes: situated participation, existential concern, dispositional action, and narrative orientation.

The first theme of participational agency is situated participation. According to Yanchar (2011) and others (e.g. Heidegger, 1962; Merleau-Ponty, 1962; Taylor, 2006; Westerman & Steen, 2007), human activity is always and already part of a situation and setting. In other words, human activity can't be isolated from the elements of a situation such as the environment, relationships, and social history, among other elements. As contrasted with the act of isolating variables to determine cause and effect in a mechanistic, scientific way, situated participation is a commitment to more holistic studies (i.e. studies that attempt to get at the whole meaning of a phenomenon). That is, the actions of an agent are the actions of "a whole person, involved in

personally and culturally significant practices, rather than the result of a complex interaction of endogenous and exogenous variables" (Yanchar, 2011, p. 279). As such, the study of human activities, from the view of participational agency, makes no appeal to internal mechanisms or reified constructs. An appeal to internal mechanisms leads to deterministic explanations, which remove genuine agency and this type of appeal is, thus, avoided.

The second theme is existential concern. Existential concern is being concerned about the affairs of life. For example, a computer reading a web page entitled, "New computer virus sweeps the country" does so mechanically without any concern or caring; however, a human reading a web page entitled, "New human virus sweeps the country" does so meaningfully with concern and caring. This is because humans have existential concern (i.e., a sense that life and everyday living matter) and computers do not. Stated simply, life matters because it makes a difference to people. They care about it. It has fundamental significance. In addition, this existential concern applies to seemingly trivial activities because those activities are part of a broader situation that is significant. For example:

> …the task of selecting one of several nearly identical pencils to write a note may be trivial, but that activity understood within a broader context will be quite significant, as in an instance where the note conveys important information to be remembered. In this situation, picking up and using a pencil is a meaningful act… (Yanchar, 2011, p. 281).

Dispositional action, the third theme of participational agency, is defined as human activity that displays the specific way living matters to an individual or a person's particular existential concern. According to Yanchar (2011, p. 281), dispositional action is "engaged participation marked fundamentally by a sense of what matters most, ends worth pursuing, how to treat others, and so on, always within concrete situations." It could be thought of as a posture

one takes towards the world or a directional thrust. In other words, human action that is viewed as evidence of a person's particular existential concern is dispositional action. All meaningful action is dispositional action because all of meaningful action flows out of the way living matters individually. This has reference to the hermeneutic phrase "concernful dealings" (Heidegger, 1962). "Put simply, a person's specific manner of choosing in a given situation is simply one expression of his or her meaningful engagement in the world" (Yanchar, 2011, p. 282). Dispositional actions show one's meaningful engagement in the world.

The final theme of participational agency, narrative orientation, proposes that lived experience can be narratively understood. According to Yanchar (2011, p. 282) and others (e.g. Heidegger, 1962; Ricoeur, 1981, 1984, 1992; and Guignon, 2002), human life is a *happening* in the form of a life story and "the background context against which agentive action and experience will unfold can be thought of as having a type of narrative structure – that is, it constitutes a broader narrative context in which one's personal life story will transpire." Also according to Yanchar (2011, p. 283):

> As in any story, then, the past provides a meaningful context for the present. But viewing the past as a meaningful context for the present should not be confused with the notion that present activity is fully and directly determined by prior events (in an efficient causal sense), and that the particulars of the present will, of necessity, follow predictably from the particulars of the past.

The importance of the narrative orientation is that it allows for the description of agentive action and meaningful engagement without the need to appeal to efficient causality as an explanation. As such, the past provides context for, but does not *cause* the activities as would be the case in a mechanistic model.

Up to this point, for consistency sake, I have referred to embodied familiarization as an embodied, non-representational, non-mechanistic cognition theory. I have described embodied familiarization in phrases consistent with those typically used in the embodied cognition research; however, as the research focus shifts from representational to non-representational and mechanistic to non-mechanistic, so do the phrases shift from relying on explanatory, reified nouns to relying on descriptive action verbs. For example, embodied familiarization does not explain the noun, "cognition"; it describes the lived experience of the verb "learning".

Before describing the lived experience of learning from the view of embodied familiarization, that is, its lived phenomena; I wish to clarify how embodied familiarization flows out of participational agency. Learning, as an action, is a dispositional action, as described in participational agency. As such, learning is meaningful engagement in the world, which means the learner cares about and participates in the exploratory acts of learning. In addition to being meaningful, learning actions will also increase the learner's familiarity with what is being learned. Stated succinctly, learning is meaningful engagement in the world that involves a change in embodied familiarity.

Lived Phenomena of Embodied Familiarization

Embodied familiarization is described in terms of four lived experiences or phenomena: (1) antecedent familiarity, (2) encounters with unfamiliarity, (3) exploration, and (4) tacitization. These lived experiences are non-linear events in which a meaningfully engaged agent becomes increasingly familiar with a particular situation. In other words, embodied familiarization is the act of learning where learning is defined as meaningful engagement in the world that involves a change in embodied familiarity. Stated differently, learning is an embodied experience where familiarity, coordination, or capability are increased.

Antecedent familiarity. The first lived experience of embodied familiarization is antecedent familiarity. It is an agent's sense of familiarity and capability within a given situation. It is based on the hermeneutic notion of fore-structure (Heidegger, 1962) and the act of inarticulate knowing (Taylor, 1995; Merleau-Ponty, 1962). That is, the agent always and already has pre-reflective background when encountering a given situation. This is an ontological starting point because by definition antecedent familiarity makes meaningful engagement possible. Without any sense of familiarity or capability, the agent would be completely unable to meaningfully engage in any situation. For example, a person "reading" a book in a language completely unfamiliar to him/her can meaningfully engage in seeing the symbols because of his/her antecedent familiarity with seeing; but cannot meaningfully engage in reading since there is no antecedent familiarity with the foreign language. As mentioned in a previous chapter, an infinite loop of looking up foreign words in a foreign dictionary only to find other foreign words ends when a foreign word is finally grounded in something that is not foreign (Harnad, 1990). Simply put, antecedent familiarity is the sense of being grounded in the un-foreign parts of the situation.

Encounters with unfamiliarity. The second lived experience of embodied familiarization is when agents encounter unexpected, challenging, fascinating, novel, instructive, revealing, or puzzling situations. Aspects of these situations will be unfamiliar. Thus, they are referred to as *encounters with unfamiliarity*. Various types of encounters have been described as situations of opacity (Giogi, 1989), journeys into the unknown (Osborne, 1987), and the un-ready-to-hand (Heidegger, 1962). The use of the term opacity is meant to describe the agent's sense of difficulty in seeing a way through or a perplexing characteristic of the situation. The phrase, journey into the unknown, narratively describes what it is like to live through (or walk

through) an encounter with unfamiliarity. It illustrates an exploratory attitude where each step can bring new understanding as the agent journeys through the unknown. The phrase, ready-to-hand, has reference to a tool being useful, familiar, and handy. When a tool isn't yet useful, familiar, or handy; it is consider un-ready-to-hand. An agent that initially negotiates a situation in an unskilled, inexperienced way (i.e. un-ready-to-hand way) is said to have encountered unfamiliarity.

Learning may result from encounters with unfamiliarity. However, in order for learning to occur, the agent must meaningfully engage in the encounter with unfamiliarity. If the agent chooses to ignore an encounter (e.g. it is judged to be unworthy of attention), then embodied familiarization does not ensue. In other words, an agent's degree of engagement with a specific encounter can generally be categorized on a continuum between fully exploring and fully ignoring depending on his/her existential concern, which can be thought of as a dispositional thrust (i.e. the way this specific encounter matters to him/her). It is only through exploring the unfamiliarity that learning can occur.

Exploration. The third lived experience of embodied familiarization is exploration. Simply put, exploration is attempting to achieve a greater sense of familiarity with a given situation. Learning occurs, through exploration, when a greater sense of familiarity is actually achieved (i.e. embodied familiarization). Of course, this means exploration does not necessarily lead to learning. It may lead to frustration (e.g. a tension that familiarity will remain out of reach indefinitely). According to Yanchar et al. (2013), a more concrete sense of what is meant by exploration include examples such as questioning, deliberate study, acclimation, emulation, amelioration, innovation, apprenticeship, self-reflection, and methodical inquiry.

At this point, I wish to re-emphasize that embodied familiarization is made up of *non-*

linear lived experiences. That is to say that the event of an encounter with unfamiliarity creates the opportunity for exploration initially guided by antecedent familiarity; however, greater familiarity (i.e. the result of learning) gives way to new situations that call for more exploration. In other words, antecedent familiarity and exploration are co-constituting within a given situation. This is described by Merleau-Ponty (1962) as the intentional arc: as humans explore and learn in the world, the world discloses itself in new and more finely discriminated ways, resulting in more opportunities for learning. Through embodied familiarization, the world becomes more un-concealed in real, concrete, embodied ways. The revealed or un-concealed world is also known as the "as-structure" according to Heidegger (1962), which can be described as the recursive nature of adjustments via involvement in the world and the accompanying changes in how the world is revealed because of those adjustments.

Tacitization. The fourth lived experience of embodied familiarization is tacitization. Sometimes, through repeated meaningful engagement, an agent becomes so familiar with a situation that tacitization occurs. Tacitization is the process whereby thoughtful, conscious action becomes routine (i.e. very little, if any, thoughtful reflection is involved in the execution). For example, tacitization is the process of forming habits through practice.

A Study of Embodied Familiarization

I have reviewed the lived phenomena of embodied familiarization. Those lived phenomena are antecedent familiarity, encounters with unfamiliarity, exploration, and tacitization. Embodied familiarization opens up research possibilities for studying learning from an embodied, non-representational, non-mechanistic viewpoint. From this viewpoint, I have studied the lived experience of learning as embodied familiarization and specifically, the encounter with unfamiliarity.

In general, I sought a better description of these "encounters." Because it was thought that these encounters invite learning or enable the act of learning, studying them was important. Although concepts similar to the encounter with unfamiliarity have been studied for decades, for example, association, dissociation, and attention (Dewey, 1896); psychogenesis (Piaget, 1980); teaching machines to simulate encounters (Skinner, 1961); constructivist's contextual and problem based nature of learning (Gagne, 1985; Driscoll, 2005; Jonassen, 1991; Savery & Duffy, 1996); discovery learning (Bruner, 1961); activities within the zone of proximal development (Vygotsky, 1978); participation in communities of practice (Wenger, 1998; Lave, 1991); cognitive apprenticeship (Collins, Brown,& Holum, 1991); situational opacity (Giogi, 1989); situational demands (Dreyfus, 2001); experiential flow (Csikszentmihalyi, 1991); and existential and phenomenological *genuine* learning (Colaizzi, 1978); little, if any, in-depth research has been conducted on these encounters specifically from the embodied, non-representational, non-mechanistic perspective of embodied familiarization. As such, I addressed the following question from the embodied familiarization viewpoint: *Are encounters with unfamiliarity part of the lived experience of learning at all and, if so, what narrative-oriented qualities are commonly experienced during these encounters?* Since learning as embodied familiarization was based on the narrative orientation of participational agency, uncovering the narrative-oriented qualities commonly experienced during these encounters contributed significantly to a better understanding of this meaningful phenomenon. Additionally, without the need to appeal to disembodiment, representationalism, or mechanism as explanations of learning, I was able to qualitatively study learning from this narrative orientation.

Narrative is known as a fundamental structure of understanding events and actions of one's life (Bruner, 1986, 2002; Polkinghorne, 1988). Story-based teaching is pervasive because

it is believable, remember-able, and entertaining (Rossiter, 2002). As such, the narrative-oriented qualities, as I will specify, have become important to instructional design. The descriptions of narrative-oriented qualities in this study came from recent work in the field of instructional design. According to Parrish (2009), there are five categories of narrative-oriented qualities important to designing instruction: plot, lead character, theme, context, and supporting characters. If these categories are important for instructional design, it reasonably follows that these categories and others will be present during learning experiences. I will describe these qualities.

Narrative-oriented quality 1: plot. Plot is the first narrative-oriented quality I studied with regards to the learner's encounter with unfamiliarity. According to Parrish (2009, p. 515), plot is part of instruction:

> Learning experiences have beginnings, middles, and endings (i.e. plots)…There is more we can do in our designs to attend to the unique needs and potentials of the three basic phases of aesthetic experiences – beginning, middle, and end – as articulated by Aristotle in describing drama and poetry (Aristotle, trans. 1984). Learners have different thoughts and feelings when they first become engaged, when the pattern of the instruction becomes evident and accepted (or resisted), and when learning is approaching its culmination. For example, beginnings call for creating tension or mystery and developing trust that the tension can be resolved, middles often call for continued renewal of the initial engagement and reinforcement of the potential for consummation, and endings call for both an emotional intensity that heightens the experience and a change for reflection that connects everything that has come before into logical and organic unity.

Plot, as a narrative-oriented quality, can be thought of as the story of the learning experience,

where the learner is the protagonist of the story. As such, the learner is the lead character of the plot. Although the encounter with unfamiliarity primarily relates to the beginning of a learning experience, I focused on that part of the plot, but the middles and endings were also studied as they related to the encounters.

Narrative-oriented quality 2: lead character. The second narrative-oriented quality of a learning experience is the lead character role. This quality primarily comes from the learner's self-image during the learning experience. In other words, "learners have different learning experiences depending on how they view their relationship to the situation" (Parrish, 2009, p. 516). For example, a relationship to the situation or self-image could be victim, hero, clown, bum, fool, know-it-all, hopeless case, villain and martyr among others.

Narrative-oriented quality 3: theme. The third narrative-oriented quality is theme. Theme represents the fundamental premise of the story. In other words, it is the whole point or lesson of the story. It is often manifested as a generative goal like attempting to solve a problem. The learner's experience with an encounter with unfamiliarity will likely take on a theme that reflects his or her goals related to the exploration of the encounter.

Narrative-oriented quality 4: context. The next narrative-oriented quality I will study is context. Context is the opposite of a vacuum. In other words, situational vacuums do not exist during a learning experience. Context includes, among other things: time, setting, social history, mood, weather, and goals. According to Parrish (2009, p. 517):

> Context contributes to immersion in the instructional situation…Context must contribute to the cohesiveness of the learning experience by reinforcing all its components. Because art is also about experience, cohesiveness plays a similar critical role. The many elements of any artwork of quality – whether color, texture, tone, tempo, site, lighting,

mood, or voice – are either purposefully controlled or creatively appropriated by the artist to make the experience immersive.

In other words, everything that surrounds the learner during the learning experience can be thought of as context, except for the supporting characters, which I studied separately.

Narrative-oriented quality 5: supporting characters. The final narrative-oriented quality in this study is supporting characters. Supporting characters, as narrative-oriented qualities in a learning experience, are the other people who happen to be involved in the learner's experience. Situationally, they can take on different roles such as narrator, instructor, guide, cheerleader, antagonist, fellow sufferer, team members, role model, mentor, care-giver and care-receiver among other roles.

Chapter 5: Method

In this chapter, I describe a study of the lived experience of learning as embodied familiarization, specifically a study of the encounter with unfamiliarity and I describe the study's methodology. I addressed the following question from the embodied familiarization viewpoint: *Are encounters with unfamiliarity part of the lived experience of learning at all and, if so, what narrative-oriented qualities are commonly experienced during these encounters?*

Procedures

I employed a multiple case studies analysis approach (Stake, 2006) to study the learner's lived experience. This approach studies phenomena (i.e. learning experience) by understanding multiple individual cases of the phenomena. It is primarily used to seek a better description of the phenomena or defend assertions regarding the phenomena. The cases I analyzed were the actual learning experiences themselves from the learner's perspective, either recorded live or remembered by the participant. In other words, each learning experience as a separate case study helped me make cross-case assertions about the phenomena. In addition to each individual case report written with thick descriptions (i.e., sufficiently detailed account including context, intentions, and meanings), seven worksheets (Stake, 2006) will be used to manage the data and analysis. The worksheets are:

1. Graphic design of a case
2. Case themes
3. Analyst's notes while reading a case report (each case will have its own worksheet #3)
4. Ratings of expected utility of each case for each theme
5. Ratings of importance of each case finding for each theme
6. Assertions

7. Planning the final report

Participants and Data Gathering

I recruited adult individuals who had recently had a learning experience (type A) or were likely to have a learning experience in the near future (type B) or based on purposive sampling methods (Patton, 1990; Krathwohl, 1998). Specifically, type A cases will be based on mixed purpose sampling, attempting to have varied cases, but also taking advantage of available opportunities and type B cases will be selected based on opportunistic sampling. The multiple case study analysis approach (Stake, 2006) is designed to study the phenomenon occurring in different environments. Thus, variety in situation is important as long as the same phenomenon is occurring. Because each case was the lived experience of the participants, learning experiences were not determined in advance.

I gathered data on three type A individuals and one type B group, given the resources and timing of the study. Data gathering for the case studies employed observation, for type B (e.g. video recording, audio recording, and field notes), and interviews for both types A and B. The data consisted of the ordinary happenings of the learning experience, the learner's self-image during the experience, involvement of other persons, and the setting.

Interviews

The interviews were conducted following both the *informal conversation* and *semi-structured* designs (Turner, 2010; see also Gall, Gall, & Borg, 2003; Reynolds & Gutman, 1988). The semi-structured interview design is also called non-directive (Reynolds & Gutman, 1988). This type of interview design allows the researcher to cover certain topics of interest without specifically directing the interview. The non-directive, but guiding questions should not cause

bias in the responses, but allow the interviewee to explore a particular area until the researcher is satisfied with the depth of the responses. See appendix A for the interview protocol.

The informal conversation design relies on constructing subsequent questions based on the participant's answers to previous questions. This design aligns well with the interview's purpose, which is to capture thick descriptions of participants' learning experiences. Since each learning experience will be a different participant and different situation, this design allows for the interview flexibility needed to capture the inevitable diversity across cases. According to McNamara (2009), this design of interview requires the interviewer to go with the flow, that is, understand the purpose of the interview and guide subsequent questions in a smooth conversational way. He suggests the following in order to facilitate the flow: (1) get the participant immersed in the interview as soon as possible, (2) warm-up with questions about facts, but then move on to feelings and conclusions, (3) avoid long lists of fact based questions, intersperse them throughout the interview, (4) ask first about the present, before asking about the past or future, and (5) the last question should allow the participant to provide any other information and their impressions of the interview itself. He also advises that questions be open-ended, as neutral as possible, and asked one at a time as well as advises against asking "why" questions.

In addition, the type B interviews were aided by watching the video during the interviews. Questions were asked to clarify what was happening in the video as well as to understand the non-visible elements like the participant's thoughts, feelings, intentions, and attitudes. The type A interviews began with a neutral question: what have you learned recently? The interview then proceeded by asking the participant to explain how he or she had learned it. Follow-up questions included asking about specific situations the participant felt were involved

in the learning and the details of those situations. By utilizing this design, I captured enough of the participant's complete learning experience in their own words in order to provide evidence that encounters either were or were not part of the learning experience and, if so, to make assertions about the five categories of narrative-oriented qualities: plot, lead character, theme, context, and supporting characters as well as being open to identify other indications of embodiment, non-representationalism, and non-mechanism.

Data Analysis

I created a case analysis for each case. Each case was initially analyzed on its own (see case findings procedures per Stake, 2006). Each case analysis was written to provide the reader with a vicarious experience of the learning experiences through thick descriptions. Each case analysis was also described through the five narrative-oriented qualities and other identified qualities and was rated for utility and for importance in answering the overall research questions related to the phenomenon. By comparing cases, assertions about the general phenomenon were made. Each assertion was supported persuasively with evidence from the individual cases.

Trustworthiness of Assertions

Trustworthiness of assertions in a multiple case study analysis comes from the persuasiveness of the assertions. According to Lincoln and Guba (1985), trustworthiness in this type of research has the following criteria: credibility, transferability, dependability, and confirmability. I will review each of these criteria.

Credibility. The first criterion of trustworthiness is credibility. Given that this type of research method is used to seek a better description of a phenomenon, credibility represents the extent to which reality is accurately described. Credibility is demonstrated by representing

multiple, varied constructions of the phenomenon using triangulation of multiple cases (e.g., assertions will be based on the evidence of multiple cases) and by gathering data in credible ways; that is, proper procedures that capture authenticity. In other words, in order to demonstrate the credibility criterion, I represented the cases of learning experiences captured authentically as they transpire through video, audio, observation, and post-observation interviews, if possible, or as captured authentically in the participants' own words through an interview process. I also utilized member checking (e.g., letting the participants review and correct the data during the interview process) and negative case analysis (e.g., searching for and discussing data that do not support the assertions) within the individual cases.

Transferability. The second criterion of trustworthiness is transferability. Transferability represents the extent to which findings can be applied in other contexts. Transferability is demonstrated in multiple case study analysis through the assertions. Assertions are claims about the phenomenon that are supported by thick descriptions across contextually varied multiple case studies. As such, the assertions about the narrative-oriented qualities of encounters with unfamiliarity were evidenced across the thick descriptions of multiple cases. In other words, proper thick descriptions provided the reader with a vicarious experience of the encounter with unfamiliarity.

Dependability and confirmability. The third and fourth criteria of trustworthiness are dependability and confirmability. Dependability is represented by the extent to which the study's procedures are properly performed. Confirmability is represented by the extent to which the findings could be confirmed. One way to accomplish both of these is by maintaining an audit trail of dependable procedures that can be confirmed by someone other than the researcher. As such, the seven worksheets of multiple case study analysis provided this audit trail of dependable

procedures and an audit of the worksheets was performed by someone other than the researcher in order to evaluate the dependability of procedures and to confirm the findings.

Chapter 6: Case Summaries

In this chapter, I describe the cases. Each case represents a learning experience. There were eight type A cases (interview only) and three type B cases (live video recording and interview). These case summaries present a narrative-oriented approach to organizing each case. Each case summary contains an overview and a theme (i.e., a basic premise). Within the summary, there are also references to the case's context, plot, lead character and supporting characters. These narrative-oriented case summaries were used to draw out the embodied, non-representational, non-mechanistic details of each learning experience in their raw form, that is, without regard to the embodied familiarization framework.

I selected individuals who were not familiar with the embodied familiarization framework and I was careful to avoid leading them into answers that aligned with the framework. I piloted my interview protocol on three individuals, not included in the data reported here; in order to make sure the types of questions I asked would not be leading. These case summaries are supported by participant quotes that have been confirmed by the participant checking for accuracy. Also, I have protected the confidentiality of all participants by using pseudonyms.

Type A Cases

The participants in the type A interviews were Sally, Terrell and Edna. Sally was a new mother. She was 19 years old and had been married a little over a year. She lived in a second-story walk-up apartment in Provo, Utah. Her son was a little over one month old and was born six weeks early. Her interview occurred in her apartment on December 10, 2012 and lasted 44 minutes. During this interview, she talked in detail about three recent learning experiences: "how to make a baby stop crying in the middle of the night when you really can't think" (Case

1), "how to bathe a baby without being scared I am going to drop him on his head" (Case 2) and "how to dress a baby" (Case 3).

Terrell was a self-employed owner of a franchise. He was 37 years old and married with three children. He lived in a two-story single family house in Lehi, Utah. He started his business about three years ago. His interview occurred in his home on December 8, 2012 and lasted 55 minutes. During his interview, he talked about two learning experiences in detail. He said, "I have had to manage people again and the environment that I am in has changed since the last time I have had to manage people" (Case 4) and "I tie my shoes in a different way now" (Case 5).

Edna was a student at Brigham Young University (BYU). She was 25 years old and the oldest of three children (a brother age 22 and a sister age 18). She served an LDS mission to Arizona. She lived in an apartment in Provo, Utah. Her interview occurred in a BYU conference room in the McKay School of Education on December 13, 2012 and lasted 53 minutes. Edna spoke in detail about three learning experiences. She said, "I [was] taking my final. So, it was a take home and we had three hours to take it and it was open book, open note, open internet, open everything, but neighbors…he wanted us to talk about what he meant by contingence" (Case 6), "I had tendinitis at the beginning of the semester" (Case 7) and "I looked at the solar eclipse over the summer and my eye was affected by it" (Case 8). In the following sections, I describe each type A case using the narrative-oriented framework.

Case 1: how to make a baby stop crying. Sally recounted that after her aunt, who had helped during the first night her son was home, left her with her baby; it took her "…about three hours every single time [she] tried to get him back to sleep." She remembered that over about a week or two, she learned different things about her son that would help him calm down. Those

things were: (1) he liked light, (2) he would take a bottle cold, (3) he liked his diaper changed, (4) he liked being rocked back and forth, (5) he didn't like clothes that were wet around the neck from drool, and (6) he liked constant static noise. All of these learning experiences happened in her home. She attributed some of her learning success to being in her home as opposed to somewhere else. She said, "I think because I was in my own house I was willing to take the patience and let him cry so I could figure it out. If I was somewhere else I would probably get a lot more frustrated."

Theme. This learning experience had the basic premises of trying to help her son stop crying and providing more sleep for both of them.

He liked light. Sally learned that her son liked light. One night when he was crying, she was trying to bounce him with one hand and make a bottle with the other hand in the kitchen. She "couldn't see anything" so she turned the kitchen light on. She remembered, "I turned on the light and he stopped and I was like really [laughing]. So the next night, I tried the same thing and he was crying in the dark and everything and I turned it on and it was amazing."

Context. This learning experience occurred over at least two nights and continued to be reinforced several nights afterward. It occurred in Sally's kitchen at night. It also involved her son's crying, a bottle, a dark kitchen, a light fixture, a brightly lit kitchen, and a goal to quiet and calm down her son.

Plot. The plot of this learning experience began with a crying son and the goal to quiet and calm him. Sally was surprised when the brightly lit room seemed to calm him right down. She decided to try it again and again, night after night, until she was convinced that amazingly the turning on of the kitchen light really did seem to calm her son down.

Lead character. Sally was the lead character of this learning experience and her relationship to this situation was that of a mother and care-giver. She felt somewhat obligated to act in that role. She mentioned, "I have to go and wake myself up." She also indicated that she didn't have much help in that she was bouncing the baby with one hand and making a bottle with the other.

Supporting characters. The supporting characters in this learning experience were her son and her husband. Her son played the role of care-receiver. Her learning experience was learning how to give him the care he wanted. Her husband may have played a role because it was his absence that might have made it necessary for her to carry the baby into kitchen to make the bottle.

He would take a bottle cold. Sally learned that her son would drink a cold bottle from the refrigerator without her warming it up. One night, he was crying and Sally didn't want to wait the time it took to warm up the bottle. She remembered, "I really really didn't want to go warm it up because it takes like 15 minutes to warm it up and he would just sit there and scream the entire time." She decided to just give him the bottle straight from the refrigerator without warming it up. She remembered, "he drank it and he didn't cry after that." She was relieved, "luckily, I have a baby that will actually take it cold."

Context. The learning experience occurred at night in Sally's kitchen. It involved a crying son, a cold bottle, a refrigerator, a process to warm up the bottle that takes about 15 minutes, and a goal to quiet and calm down her son.

Plot. The plot of this learning experience began with a crying son and a goal to quiet and calm him down. Sally didn't want to listen to him cry while the warming up of the bottle took place. She wanted to try an alternative to the warm bottle, so she gave him a cold bottle. She

was relieved that he drank it cold because it calmed him down faster.

Lead character. Sally is the lead character of this learning experience and her relationship to this situation is that of a mother and care-giver. She felt that the wait time of warming the bottle was too long. This was likely because she wanted to quiet and calm him down as fast as possible, but also because of the need for sleep. She answered a general question about how these learning experiences (related to quieting and calming down her son) mattered to her, "well, first of all, I am getting more sleep…we were both getting more sleep and so we were both happier."

Supporting characters. The supporting character in this learning experience was her son. He played the role of care-receiver. Her learning experience was learning how to give him the care he wanted.

He liked his diaper changed. Sally learned that her son liked to have his diaper changed. She felt like she learned this, but continued to forget to do it. She remembered, "it took me forever…it happened for like the first month." She would wake up with him and then about 20 minutes later would remember to check his diaper. She remember, "I realized I finally learned it when I had my husband wake up with [their son] and [her husband] was up for three hours and couldn't get him to stop crying." She finally woke up and asked him, "when was the last time you changed his diaper?" She remembered, "soon as it was changed he stopped crying."

Context. This learning experience occurred over about a month period. It happened at night in Sally's apartment. It involved a crying son, a dirty diaper, a fresh diaper, a frustrated husband, a three-hour period when the husband was trying to quiet and calm their son, and a goal to quiet and calm their son.

Plot. The plot of this learning experience began with a crying son and a goal to quiet and calm him down. Over about a month, Sally would initially forget that changing his diaper would help quiet and calm him down until she had tried other things. One night, her husband was on duty to quiet and calm their son down, without having much success during a three hour period of the night. Sally woke up near the end of that period and asked him if he had changed their son's diaper. At that point she realized she had finally learned to remember the diaper. She remembered, "I was like, yep see, I knew it was [his diaper] now."

Lead character. Sally was the lead character of this learning experience and her relationship to this situation was that of a mother, teacher and care-giver. She felt like a slow learner. Learning that her son liked his diaper changed took too long for her in her opinion. She was pleased with herself that she was able to teach her husband and that she finally felt she had learned.

Supporting characters. The supporting characters in this learning experience were her son and husband. Her son played the role of care-receiver. Her learning experience was learning how to give him the care he wanted. Her husband played the role of father, co-care-giver and co-learner. Sally recognized her learning through a teaching experience with her husband.

He liked being rocked back and forth. Sally learned that her son liked being rocked back and forth. She learned that rocking him for about two minutes would put him to sleep. Unfortunately, early on when she would rock him back and forth sitting in bed, she only had strength to do it for about 30 seconds. She remembered, "I could only keep that up for like 30 seconds before I was like I am so tired." Besides being tired, she thought it was also a lack of patience on her part. She worked at it for about four days. She remembered her amazement, "it was amazing…as soon as I could do it for the two minutes he was out." Later, she bought a

rocking chair to make rocking him easier on her.

Context. This learning experience occurred nightly for about four days. It happened in Sally's bedroom. It involved a crying son, a bed, a rocking chair, and a goal to quiet and calm their son.

Plot. The plot of this learning experience began with a crying son and a goal to quiet and calm him down. Sally discovered she didn't have the strength or the patience while sitting in bed to rock her son long enough to get him to sleep. For about four nights, she worked on her strength and patience. Finally, she was able to rock him long enough and "he was out." Later, to help make it easier, she bought a rocking chair and moved the rocking from her bed to the chair.

Lead character. Sally was the lead character of this learning experience and her relationship to this situation was that of a mother and care-giver. She began this experience feeling like she didn't have enough strength or patience to give her son the care he wanted. She worked on it for about four days and got to the point that she did have enough strength and patience. She also bought a rocking chair to help her.

Supporting characters. The supporting character in this learning experience was her son. He played the role of care-receiver. Her learning experience was learning how to give him the care he wanted.

He doesn't like clothes that are wet. Sally learned that her son doesn't like clothes that are wet around the neck from drool. One morning, she found her son with "disgusting", "crusty" hair. She remembered thinking, "what in the world is wrong with my child's head…I was a little worried, but it was more like confused…I had no clue what it was." She wondered if she had somehow neglected her son. She didn't panic because she believed it wasn't life threatening, but

felt "kind of guilty." She remembered, "it was my fault and so I guess I was feeling kind of guilty…so that is why I was trying to find some reason behind it." She learned that he drooled the bottle formula when he drank. It would end up seeping into his neck and pooling in his hair. She looked for it the next night and changed his pajamas and onesie. That night he slept for longer periods of time. She remembered, "it just made the entire experience better…it made him sleep longer once I put him back to bed. Instead of waking up every hour or two you know he would sleep for three hours." She felt relieved that she had figured out his disgusting, crusty hair. She remembered, "once I found the reason I was like whew, ok, good, not my fault…[laugh]." She felt like she should have realized this a little earlier and felt guilty about that, but was happy, glad and relieved that she had found a reason for it.

Context. This experience lasted about two days. It occurred in Sally's apartment. It involved a crying son, dried formula in her son's hair, wet clothes, and a goal to quiet and calm their son.

Plot. The plot of this learning experience began with a crying son and a goal to quiet and calm him down. One morning, Sally was checking on her son and found he had something in his hair. She was worried about it. She looked for reasons for it during the next night. She found that he drooled as he drank and that it was the dried formula. She realized that he would sleep longer if she changed his drool-covered clothes and she was relieved.

Lead character. Sally was the lead character of this learning experience and her relationship to this situation was that of a mother and care-giver. She began this experience wondering if she had neglected the care of her son. She felt guilty and worried. Once she learned how to better care for her son by changing his clothes, she felt happy, glad and relieved.

Supporting characters. The supporting character in this learning experience was her son.

He played the role of care-receiver. Her learning experience was learning how to give him the care he wanted.

He liked constant static noise. Sally learned that her son liked constant static noise. Sally's older sister visited Utah during the Thanksgiving holiday. While she was visiting, Sally couldn't understand why it seemed like her sister's newborn didn't cry much. One day, Sally was sitting with her son and couldn't quiet and calm him down. Her sister offered to take him and began whispering a shushing noise into his ear as she stood and bounced him. Sally remembered, "she took him from me and stood up and started bouncing him and just doing 'shhhhh' really quietly, you know, just barely even doing it, just right in his ear." Sally was surprised that he calmed down completely. Sally felt like she should have been able to figure that out, but was grateful to her sister. She also remembered, "watching her with her own kids made me a lot more comfortable with her handling my child…I am going to trust you this time." Later, Sally tried the same shushing technique with some success, but ran out of breath after about ten seconds. Eventually, she bought a stuffed giraffe that made the same shushing noise with the same results.

Context. This learning experience occurred over a Thanksgiving holiday visit from her sister and continued to be reinforced afterward. It occurred in Sally's apartment. It also involved her son's crying, her sister, her sister's kids, a toy giraffe, and a goal to quiet and calm down her son.

Plot. The plot of this learning experience began with a crying son and a goal to quiet and calm him down. One day, Sally was surprised that her sister could quiet and calm down Sally's son by shushing quietly in his ear. She decided to emulate her sister's technique. Her breath would only hold out for ten seconds, but she had some success. She bought a toy giraffe that

made the same shushing noise.

Lead character. Sally was the lead character of this learning experience and her relationship to this situation was that of a mother, sister and care-giver. She began this experience not knowing what to do for the care of her son. He was crying and she couldn't quiet and calm him, and couldn't figure out why. She decided to rely on her sister to help.

Supporting characters. The supporting characters in this learning experience were her son and her sister. Her son played the role of care-receiver and model. Her learning experience was learning how to give him the care he wanted. Her sister played the role of advice-giver and teacher. Her sister demonstrated a shushing technique on Sally's son as a model for giving him the care he wanted.

Case 2: how to bathe a baby. Sally recounted that during her hospital stay she was taught a way to bathe a baby by the nurses; then once she came home, her aunt taught her an entirely different way. Both ways made her feel uncomfortable for different reasons. Her sister introduced her to a bathing chair for babies that ended up not working the way she thought it would.

Theme. This learning experience had the basic premises of trying to bathe her son without dropping him and being able to clean every part.

Nurses' bathing method. While in the hospital, the nurses bathed Sally's son every other night. Sally was invited to participate. At first, it was wipe downs using cotton balls. Her son was about six weeks premature when he was born. She remembered, "I did a little bit of it, you know, like I wiped down his ear with a cotton ball." She deferred most of the wipe downs to the nurses. She said, "I was like ok, I am good. You guys can bathe him the rest of the way because

I was afraid I was going to hurt him." Eventually, the nurses started bathing him in a bath of warm water. Sally was surprised that her son was being bathed while still wrapped in a blanket. The nurses would unwrap a part at a time in the water to wash it and then wrap it back up. She remembered, "I was doubtful…It really didn't make any sense to me. I was like huh? That's weird. I don't remember my mom ever bathing babies in blankets." After her initial doubts, she decided that the nurses must know what they are doing. She said, "Well, they are experts, right? I mean this is their job…They get paid for this so they know what they are doing." Sally believed that this was how she would bathe him once she got home. She remembered, "so when I got home that is how I thought it was done, you know, wrap him up in a blanket and stick him in the water with the blanket on and everything." Her aunt was present for the first bath at home and convinced her that she shouldn't use the nurses' bathing method.

Context. This learning experience occurred over her hospital stay after the birth of her son. It occurred in the hospital. It also involved her son, the nurses, remembering her mom, cotton balls, a blanket, a bathtub, water, and a goal to bathe her son.

Plot. The plot of this learning experience began with a scheduled bath and a goal to bathe her son. During Sally's hospital stay, the nurses wanted her to learn how to bathe her son. They demonstrated cotton ball wipe downs and baths with her son wrapped up in a blanket. Sally was invited to participate in these demonstrations. Her participation was limited due to her fear of hurting her son. When she took her son home, she thought she knew what she was supposed to do to bathe him, but because of the presence of her aunt, she never attempted the nurses' bathing methods on her own.

Lead character. Sally was the lead character of this learning experience and her relationship to this situation was that of a mother, hospital patient, niece and care-giver. She

began this experience deferring most of the bathing responsibilities she felt as the mother to the nurses.

Supporting characters. The supporting characters in this learning experience were her son, the nurses and her aunt. Her son played the role of care-receiver and model. Her learning experience was learning how to give him a bath. The nurses played the role of co-care-giver and teacher. They demonstrated the nurses' bathing method. Her aunt played the role of advice-giver and alternative method provider.

Aunt's bathing method. The first day at home, Sally's aunt bathed Sally's son. As Sally watched her aunt hold the baby with one hand and wash him with the other, she became very uncomfortable with the idea of doing that herself. She remembered that although she trusted her aunt more than the nurses, "I was so uncomfortable with that idea because I mean what if I am not strong enough to hold up an 8 pound baby. He is going to hit his head on the sink." Sally was in awe of the way her aunt was easily "flipping him over" as she bathed him. After the bath, Sally felt "really under-qualified" to bathe her son using her aunt's method. When her aunt left the next day, she decided to use a bathing chair her sister had given her because she was worried about dropping him. That bath did not go well (see "Bathing chair method" section below for details on the first bath). For her son's next bath, she decided she would try her aunt's method. She remembered thinking, "everyone else can do this. I am pretty sure I can learn this." She tried a quick bath and was successful. After that she progressed toward longer baths. She remembered, "hey, I actually did it for a little while…So, the next time it gave me, you know, a push to see how long I could do it for and if I could actually finish the bath and everything."

Context. This learning experience occurred over the first few days after bringing her son home. It occurred around the kitchen sink. It also involved her son, her aunt, water and a goal to

bathe her son.

Plot. The plot of this learning experience began with a demonstration of bathing by her aunt and a goal to bathe her son. Sally watched her aunt bathe her son the first day he came home from the hospital. She remembered, "I was in awe basically because I was like how in the world does someone like, you know, flip a baby like that." She felt "under-qualified" and feared for her son's safety, not while her aunt was bathing him, but when she would have to do it. She trusted her aunt's method because she remembered, "it was, you know, shown to me by someone who had six kids all at home…and had done this so many times." She mustered enough courage by thinking she could learn this and then tried it and had success.

Lead character. Sally was the lead character of this learning experience and her relationship to this situation was that of a mother, niece and care-giver. She began this experience deferring the first home bathing experience to her aunt. She was afraid to bathe him by herself, but did it anyway. She believed that she needed to push herself and progress as a bath-giver.

Supporting characters. The supporting characters in this learning experience were her son and her aunt. Her son played the role of care-receiver and model. Her learning experience was learning how to give him a bath. Her aunt played the role of co-care-giver and teacher. Her aunt demonstrated the aunt's bathing method. Her aunt was trusted like "a second mom."

Other. During this experience learning the aunt's bathing method, Sally decided it was time to pay attention to the details of bathing her son. She remembered, "[Her aunt] was like, ok, we are going to give him a bath…I was like, ok, well, let me then, you know, actually pay attention to this so I learn from this…I want to make sure I am doing it right."

Bathing chair method. During the first bath that Sally gave her son without any help, she decided to use a bathing chair her sister had recommended. This decision was made because of her fear of dropping her son, if she were to use her aunt's method. She remembered thinking that with the bathing chair "all I have to do is keep my hand on top of him and the bathing chair will keep him up…He won't, you know, drown in the water and he won't hit his head on anything…I trusted the chair a lot more than myself." Unfortunately, her son screamed the entire bath. She remembered, "I couldn't understand why…I was like goodness gracious, you loved baths before this. Why are you screaming?...It was awful." After the bath, she realized that because the bathing chair didn't fit inside the sink, her son wasn't always in the warm water. She figured, "he was freezing." She decided not to use that method in the sink again.

Context. This learning experience occurred over the first few days after bringing her son home. It occurred around the kitchen sink. It also involved her son, water, the bathing chair and a goal to bathe her son.

Plot. The plot of this learning experience began with Sally attempting to bathe her son without any help and a goal to bathe her son. Sally watched her aunt bathe her son the first day he came home from the hospital (see "Aunt's bathing method" section above). She trusted her aunt's method, but was afraid she couldn't do it properly. Her sister had recommended a bathing chair, which looked easier than trying to hold her son. She remembered, "the bathing chair is something that my sister got me because she said it made bathing so much easier." So, she tried the bathing chair method. Her son's experience with the bathing chair was terribly cold. Even though the bathing chair did give Sally some assurance that her son wouldn't accidentally drown, she decided she couldn't put him through that again.

Lead character. Sally was the lead character of this learning experience and her

relationship to this situation was that of a mother and care-giver. She began this experience by taking the advice of her sister, which was to use a bathing chair. She was afraid to bathe her son by herself and she thought the bathing chair would help. She believed that she needed to push herself and progress as a bath-giver.

Supporting characters. The supporting characters in this learning experience were her son and her sister. Her son played the role of care-receiver. Her learning experience was learning how to give him a bath. Her sister played the role of advice-giver and bathing chair provider.

Washing the neck under the chin. During the first bath that her aunt gave her son, Sally was surprised when her aunt made specific mention of washing the neck under the chin. She remembered, "the nurses never said anything about it, but once I got home my aunt, the first time she bathed him, she said make sure you get underneath the neck." Sally watched in amazement as her aunt showed her what was in the skin folds underneath his chin. She remembered, "I was like yep, there is nastiness underneath there [laugh]." She was "seriously amazed" at how her aunt was able to clean under there as well.

Context. This learning experience occurred on the first day after bringing her son home. It occurred around the kitchen sink. It also involved her son, his dirty neck, her aunt, water and a goal to bathe her son.

Plot. The plot of this learning experience began with a demonstration of a bath by her aunt and a goal to bathe her son. Sally watched her aunt bath her son the first day he came home from the hospital. She was surprised by the need to wash the skin folds underneath the chin and amazed by what it took to actually clean that part of her son's body. It was confirmed to her the importance of washing there when her aunt showed her the "nastiness" deposited in the skin

folds.

Lead character. Sally was the lead character of this learning experience and her relationship to this situation was that of a mother, niece and care-giver. She began this experience deferring the first home bathing experience to her aunt. She felt uninformed, but willing to learn the details.

Supporting characters. The supporting characters in this learning experience were her son and her aunt. Her son played the role of care-receiver. Her learning experience was learning that she needed to wash under the chin. Her aunt played the role of teacher.

Case 3: how to dress the baby. When asked to talk about a few learning experiences she had had recently, one of the learning experiences she mentioned was "…how to dress a baby." Sally began by talking about an experience she had when she was 13 years old and she was asked to dress a baby (her cousin). Then she talked about actually dressing her son. These were interrelated learning experiences.

Theme. This learning experience had the basic premises of trying to dress her son without hurting him.

Experience at 13. She was about 13 years old when her aunt asked her to dress her baby cousin. She remembered, "I was afraid that I would drop the baby." Her aunt, the mother, told her she trusted her and to try and dress her baby. It didn't go very well. She remembered, "I got the onesie on her head. I didn't even get any arms through or anything. I was shaking so bad [my aunt] took her baby and was like, ok, how about in a couple of years." She described the way she felt about dressing a baby as "this deep down fear…like a phobia."

Context. This learning experience occurred when Sally was 13 years old. It occurred at

her aunt's house. It also involved her aunt, her aunt's daughter, clothes and a goal to dress her cousin.

Plot. The plot of this learning experience began with an invitation to dress her baby cousin by her aunt. She was afraid she would hurt her cousin. Her aunt told her that newborns are "way more durable than you think" and also told her that she "seriously" trusted Sally. Sally tried to dress her baby cousin, but only managed to get the onesie over her head. This experience created a fear of dressing babies.

Lead character. Sally was the lead character of this learning experience and her relationship to this situation was that of a niece and baby-dresser. She felt like she didn't want to, but tried anyway. She remembered, "I was like no [laugh]. I am not going to do that…[my aunt] goes, no seriously Sally, I trust you and then I was like, ok."

Supporting characters. The supporting characters in this learning experience were her baby cousin and her aunt. Her baby cousin played the role of baby to be dressed. Her learning experience was learning how to dress a baby. Her aunt played the role of cheerleader.

Dressed her son for the first time. Once her aunt left, Sally was faced with dressing her son for the first time. She toyed with the idea of her husband always dressing her son, but knew that wasn't practical because he was gone a lot. She remembered, "it was like this deep down fear, you know, that I wasn't going to be able to dress him…I would have to be like, here [husband], can you dress [our son] for me because I am too afraid I am going to shake and everything…like a phobia for me for, you know, years." She knew she had to do it even though she remembered, "I am still way, I was still scared." When it came time to dress her baby on her own, she wished she could defer the experience. She remembered, "just put him in diapers…if it had been summer, I would have been like, I will learn how to dress you when you can lift up

your own head." Because he was born in the winter, she felt like she had to dress him to keep him warm. She attributed her ability to push through the fear and dress her son to her recently learning how to bathe him, something else that was scary. She believed it gave her more confidence in her abilities. This time she dressed the baby successfully.

Context. This learning experience occurred when Sally had to dress her son for the first time. It occurred at her house. It was winter. It also involved her past experience, her aunt, her aunt's daughter, her son, clothes and a goal to dress her son.

Plot. The plot of this learning experience began with a scared, doubting Sally with the goal to dress her son. She remembered, "more than just nervousness, it was more like, I hope I can do this, you know. I was kind of doubting myself and my ability to, you know, deal with a newborn…I was scared." Then she successfully dressed him. Afterwards, she remembered, "I was less scared…I wasn't really scared anymore. I was careful, but I wasn't scared."

Lead character. Sally was the lead character of this learning experience and her relationship to this situation was that of a mother and baby-dresser. Because of an earlier experience, she was somewhat of a victim of a phobia. She found confidence in bathing her son, which translated into courage to dress him. She also felt like she had to dress him in order to fulfill a need of her son (to be warm). She would have liked to defer this experience, but felt she couldn't because it was winter.

Supporting characters. The supporting character in this learning experience was her son. Her son played the role of baby to be dressed. Her learning experience was learning how to dress a baby.

Other. Clearly, remembering her experience trying to dress her baby cousin when Sally

was 13 years old had an impact on this learning experience. Remembering that experience almost prevented Sally from attempting to dress her son.

Case 4: how to manage people as the business owner. When asked to talk about a few learning experiences Terrell had had recently, one of the learning experiences he mentioned was "…it was different back then…I had 14 to 23 reps that were under me at the time and really a role that was focused entirely on sales and now I pretty much have to do everything and I have one rep who is with me constantly." He mentioned a few specific things he learned as a result of this difference: (1) how to "recalibrate" his work because of hiring non-traditional applicants, (2) why Erin wasn't showing initiative initially, (3) the impact of mentoring and (4) the impact of not putting enough time and effort into managing people.

Theme. This learning experience had the basic premise of trying to better manage his employee.

How to "recalibrate" his work. Terrell learned that he had to "recalibrate" or change the way he managed people because he hired someone "a little off the profile [he] normally [hired]" named Erin. He remembered, "bringing her in was really unique from the other fifty or some odd people I had hired in California because her background was so different." Normally, he would hire college graduates with one year of sales experience. Erin had experience as an office manager and no college education, but was "off the charts on some of the core metrics that [he looked] for" like determination and interpersonal skills. He learned that he couldn't train her the same way he had trained his other employees. He said, "I remember hiring people in our Las Vegas market. I would just show up, work a day or two with them, and then say alright, you are on your own." With Erin, it was a much slower process. He remembered, "if I had hired her before in California, I don't know if she would have worked out." He believed that because he

changed his management style, she has been very successful. He said, "the results really have been amazing. She has qualified for our president's club. It's like the top level of sales people. She has won her training class. She will win her new hire acceleration contest."

Context. This learning experience occurred over at least a few months and continued to be reinforced up to the date of the interview. It occurred at Terrell's place of business, in his car and during visits to several businesses across northern Utah. It also involved Erin's background, Terrell's previous management experience in California and Las Vegas, an employee-employer relationship, making phone calls, writing emails, visiting businesses, making sales, and a goal to have a successful business and improve his management skills.

Plot. The plot of this learning experience began with hiring someone with a unique background and a goal to have a successful business. Terrell was surprised when he could not just work a day or two with Erin and then tell her she was on her own like he had down with others. He decided to take things much slower with Erin. He remembered that her success "had to do with [him] slowing things down and really trying to build on her brick by brick."

Lead character. Terrell was the lead character of this learning experience and his relationship to this situation was that of a business owner and supervisor. He felt like he had to do everything. He remembered, "I pretty much have to do everything." As a supervisor, he felt he had an obligation to teach and coach his employee, so they both could be successful. He talked about her success being his success as well.

Supporting characters. The supporting character in this learning experience was his employee named Erin. Erin played the role of new and only employee at the time. His learning experience was learning how to manage Erin. His other past employees played the role of models.

Why Erin wasn't showing initiative initially. Terrell learned that his past management style wasn't going to work with Erin. He remembered, "it was obvious that everything I was trying to convey to her wasn't sinking in…there is just too much, you know, product knowledge, sales skills, and jargon and all the other things you have to learn…she had to basically come in with a completely clean slate." Specifically, he remembered two experiences that frustrated him: (1) the first day they went knocking on doors asking for business and (2) the first time they were calling businesses off of bills of lading. He remembered, "there was a lot of tension in the beginning. I am just used to people picking up the ball running with it…she would show a lot of trepidation and then that would frustrate me." The first day they went knocking doors, he remembered, "that whole day, I had to do it and she was taking notes." He said, "I remember being kind of annoyed." He wanted her to show some initiative, but later he found out she didn't want to mess up any potential sales by not doing it right. The same thing happened with making phone calls, only this time he told her she had to do it. He remembered, "her first three or four calls really did not go very well and then she came over to me and was frustrated…[she said] I wasted this opportunity because if you had made these calls then they would be customers." He realized that he had to make it ok for her to fail in order to learn how to become a good sales person. He remembered saying to her, "there are 15 million companies that potentially could use, you know, this service. Having a set back with one or two of them just doesn't make a difference."

Context. This learning experience occurred over the first few days of Erin's employment. It occurred at Terrell's place of business and during visits to several businesses across northern Utah. It also involved Erin's background, Terrell's previous management experience in California and Las Vegas, an employee-employer relationship, making phone calls, visiting

businesses, making sales, and a goal to have a successful business and improve his management skills.

Plot. The plot of this learning experience began with a day of knocking doors asking for business that annoyed and frustrated Terrell because Erin didn't want to take the lead on any of the doors. Terrell saw the same sort of thing happen when he asked her to make some sales phone calls, but this time he convinced her to do it despite the tension. Her first few calls did not go well and she expressed her frustration to Terrell. He realized that she considered those calls wasted opportunities and understood why she had been so timid.

Lead character. Terrell was the lead character of this learning experience and his relationship to this situation was that of a business owner and supervisor. He felt like he was the model, the teacher, and the persuader, as well as a reader of body language and investigator as to why someone with high scores on determination and interpersonal skill would be so timid when it came to making sales calls in person and on the phone.

Supporting characters. The supporting characters in this learning experience were his employee named Erin, and other business owners and employees they were contacting. Erin played the role of new and only employee at the time. His learning experience was learning how to manage Erin. His other past employees played the role of models. The other business owners and employees they were contacting played the roles of sales-tests for Erin to gain experience and revenue for Terrell's business.

The impact of mentoring. Terrell learned the impact of mentoring his employee. He remembered thinking that "sales reps in particular, we are all a little insecure about our relationships, you know. We want feedback." Because Erin didn't have a sales background, Terrell thought she needed more feedback. Once she started knocking doors and making sales

calls, Terrell moved into an evaluator type role. He coached her by "reading body language," asking questions, role-playing and making suggestions. He also learned that mentoring included monitoring her mood and refocusing her on the task. He remembered, "obviously I don't really want to delve into anyone else's family drama and, you know, I didn't try to solve the problem. [I] did…hear her out and see what it was that was important to her and let her get all of that off her chest and then I could refocus her back to…work mode." He also remembered, "I don't really want to be anyone's therapist, but I am heavily invested in her professionally…you don't want to see someone you know well go through pain and so just hearing her out was useful and I think that built some trust between us." Although this is a new way of managing for Terrell, he thought it was working well. He stated, "something I think I do well is interacting with people, interpersonal skills, and trying to get them focused back on what it is that they ought to be doing…so again that exposure to her while new for me has been very useful for me."

Context. This learning experience occurred over a few months. It occurred at Terrell's place of business and during visits to several businesses across northern Utah. It also involved Erin's background, Terrell's previous management experience in California and Las Vegas, an employee-employer relationship, making phone calls, visiting businesses, making sales, and a goal to have a successful business and improve his management skills.

Plot. The plot of this learning experience began with Terrell wanting to give Erin more feedback. She had several rough sales calls and some family drama that was upsetting her. Terrell wanted her to become better and stay focused on the sale, but felt like he didn't want to get too involved. At the same time, he was invested in her job performance and wanted to help in any way he could. He was confident that he could help her become better and stay focused through his interpersonal skills. She improved her sales skills after Terrell showed her through

role-plays and instruction. During a particularly bad day for family drama, he was able to refocus her on a sales call by listening to her family situation, being sympathetic, and then talking about the upcoming visit, which she eventually closed.

Lead character. Terrell was the lead character of this learning experience and his relationship to this situation was that of a business owner and supervisor. He felt like he was the quasi-therapist, investor in Erin's future, trust-builder and mood manager.

Supporting characters. The supporting character in this learning experience was his employee named Erin. Erin played the role of new and only employee at the time. His learning experience was learning how to manage Erin. Also, Erin's mom, dad and dad's younger brother were supporting characters as Erin told her family drama stories.

The impact of not putting enough time into managing people. Terrell learned the impact of not being able to have the time to manage his employees. He remembered, "managing sales personalities takes a lot of effort and a lot of time and I was not able to put enough of both into [his first employee]." In the beginning, his first employee was successful at sales. However, because Terrell's family was still in California, he was commuting to Utah. This situation did not allow Terrell to spend as much time as he would have like to with his employee. After a while, his employee "eased off the throttle in sales…and things started kind of slowing down into a trickle." About that time, Terrell had hired another sales person. The two hires did not get along very well. He remembered, "those two did not get along and that was a dynamic that really I should have been around to police…there would have been plenty of opportunity to kind of correct [it]." He believed that if he had been around more, they would have been as successful as Erin, but the first quit and the second transferred to another office. He believed it was his failure and he feels bad about those hires.

Context. This learning experience occurred over several months. It occurred at Terrell's place of business and during visits to several businesses across northern Utah. It also involved commuting from California, Terrell's family responsibilities, an employee-employer relationship and a goal to have a successful business.

Plot. The plot of this learning experience began with a decline in productivity from his first employee. There was tension between spending enough time with his employee and commuting home to California to spend time with his family. The tension increased when his first and second hires did not get along. They both ended up leaving and Terrell was left with what he considered a failure.

Lead character. Terrell was the lead character of this learning experience and his relationship to this situation was that of a business owner and supervisor. He felt like he was the police, victim of circumstances beyond his control, person sacrificing for the business and a disappointment.

Supporting characters. The supporting characters in this learning experience were his first two employees and his family. His first two employees represented his work responsibilities and his family represented his home life. He wanted to balance both, but the long commute made it more difficult to spend enough time with his employees. Their departures represent his failure to manage them well.

Case 5: how to tie his shoes differently. When asked to talk about a few learning experiences Terrell had had recently, one of the learning experiences he mentioned was "…I tie my shoes in a different way now."

Theme. This learning experience had the basic premises of trying something new

because he was bored during a camping trip and his father was very excited about the new way to tie shoes.

New shoe-tying method. While camping with his extended family, Terrell's father was excited about the new way he tied his shoes and began showing everyone at camp. Terrell remembered, "he was really fired up about it…this is a 65 year old retired banker, you know, who is excited about how he ties his shoes." It was explained to him that the new way of tying shoes "could untie just by pulling on one of the strings and…it won't untie for any other reason." He thought there was some value in that kind of knot. So, he tried it. Through trial and error, he learned the knot. He remembered, "I was relieved [laughing]. I was more relieved than jubilant. No, it was we were all camping together and, you know, my dad being who he is, he follows up on everything and asked me how it was going. I was able to report that yes, I had in fact tied using the knot." He also mentioned, "it has held together through multiple marathons for me. Never had to tie my shoes on any training run or marathon run."

Context. This learning experience occurred over a camping trip. It happened with shoes, a camp, boredom, peer pressure from other campers, follow-up pressure from his father and a goal to tie his shoes a new way.

Plot. The plot of this learning experience began with his father introducing a new way to tie shoes. His father was very excited about it. Terrell was bored at camp. Everyone was trying it. Terrell decided he "would give it a shot." Through a little instruction from his father and trial and error, he was able to successfully tie the knot. This was a source of relief because "there were people much younger than [him] in the family who didn't seem to have a problem with this knot" and because he knew his father would follow up on his progress.

Lead character. Terrell was the lead character of this learning experience and his

relationship to this situation was that of a son, family member, knot tier and camper. He felt like he should be competent. He maintained his pride. He was a value-seeker in terms of the value of a knot that could stay tied during long runs.

Supporting characters. The supporting characters in this learning experience were his father and his extended family. His father motivated Terrell to try the new knot through his excitement. His extended family played the role of peer group.

Case 6: biology class final. When asked to talk about a few learning experiences Edna had had recently, one of the learning experiences she mentioned was taking a class on the metaphysics of biology and learning the concept of contingence. She remembered, "I [was] taking my final. So, it was a take home and we had three hours to take it and it was open book, open note, open internet, open everything, but neighbors…he wanted us to talk about what he meant by contingence."

Theme. This learning experience had the basic premise of answering a test question. Her primary motivation was "to get a good grade in the class."

What is contingence? Edna learned what contingence was. She was taking an open book final for a class and one of the essay questions was regarding contingence. She remembered, "I was really worried that I wasn't going to be able to read it and find the answer and write about it well." She looked the word up in a dictionary and then began reading a scholarly article related to contingence. About five paragraphs into the article, she remembered something from another class she had taken. She remembered, "we talked about how you couldn't get to the moon using a ladder…once I had that idea everything else kind of fit together better in my mind." She finished reading the article and taking notes in the margins. As she pieced her notes and thoughts together, she "came to that realization of…what contingency was."

She "wasn't as stressed" after that.

Context. This learning experience occurred over a few hours. It occurred at Edna's desk. It also involved a final exam, a college class, a question about contingence, a dictionary, an article about contingence, the study of science, writing notes in the margin of the pages of the article, remembering another previously attended college class, the goal to get a "good grade," a general love of learning and a goal to become a biology teacher.

Plot. The plot of this learning experience began with a test question on contingence. Edna was worried about the question. She remembered, "At first, I was feeling really stressed like I was not going to be able to find out what he meant by contingence." She decided to start reading. She remembered, "So, I started reading and I tried to calm myself down." Eventually, she felt she knew what contingence meant and was able to write about it.

Lead character. Edna was the lead character of this learning experience and her relationship to this situation was that of a student and future teacher. She was told she could not receive help from anyone, so she was on her own. She was able to use the dictionary, the internet, articles and her own notes, which she did since she was proficient in the use of these resources.

Supporting characters. The supporting characters in this learning experience were the teacher who created the test, the author of the scholarly article and the other teacher who held the lecture she remembered.

Case 7: tendinitis And love. When asked to talk about a few learning experiences she had had recently, one of the learning experiences Edna mentioned was having tendinitis. She remembered, "then I had tendinitis at the beginning of this semester." She mentioned two

specific events related to her learning to cope with tendinitis as a student: (1) finishing a large bug collection for an entomology class and (2) typing classwork.

Theme. This learning experience had the basic premises of trying to complete her classwork without the use of one hand.

Finishing a large bug collection for an entomology class. Edna took an entomology class. The final project for the class was a bug collection with 300 bugs. Each bug had to be collected, pinned, identified, and organized in orders and families. The bug collection had to cover 18 orders and 80 families. She remembered, "I couldn't pin the bugs because it hurt my hand so much." She was concerned that she wouldn't be able to finish this project. A fellow student and friend, who had taken the class the previous year, heard that she was having problems with pinning her bug collection. He offered to help her pin her bug collection and also told her his wife, an entomologist, would help as well. She remembered, "I was thinking about how much I was relieved that he offered to help." She remembered, "so I went over [to his house] twice and it was a huge relief because we got most of my collection, like 90% of it pinned." She realized that her friend loved her, not in a romantic way, but a different type of love. She remembered, "there are other types of love [besides romantic love] that make you want to help people and like give of yourself when you can." She also realized, "I needed to accept that love from other people."

Context. This learning experience occurred over a semester. It involved an entomology class's final project, 300 bugs, class field trips to Hobble Creek, Rock Canyon, and Vivian Park, a vacation to Arizona to look for bugs, orders and families of bugs, an aspirator, pins and non-romantic love, as well as a goal to not fall behind in her schooling.

Plot. The plot of this learning experience began with the realization that she couldn't pin

her bugs for her final project because of her tendinitis. Not knowing how she was going to finish the project, she talked to a friend about how worried she was about her bug collection. He offered to help pin the bugs. She remembered, "because I couldn't have done that on my own, it was nice to realize that…I do have a friend that cares about me." This experience taught her about non-romantic love in "a huge way."

Lead character. Edna was the lead character of this learning experience and her relationship to this situation was that of a student and friend. She also felt disabled by her tendinitis.

Supporting characters. The supporting characters in this learning experience were her friend, his wife and the teacher who assigned the final project. Her friend and his wife enabled the completion of her bug collection.

Typing homework. Edna's finger started hurting at the beginning of the semester. It was a gradual process, but eventually the pain spread to the rest of the hand and wrist. She remembered, "I was worried that it was carpal tunnel and I think I had been trying to just go along like normal and do my papers on my own." One day, the pain was too much and she called her dad to tell him what was happening. Her dad wanted to buy her some speech recognition software, but she thought it was too expensive. She spoke to her mom, who offered to transcribe for her. She spoke to her sister, who offered to type for her as well. She remembered, "I was really, really upset. It was kind of like a roller coaster. I would, like some days, I would feel ok and I was like, I am not going to let this be the most important thing in my life, but then the next, I would be like in tears because I was so frustrated that it wasn't getting better." Although her mother, sister, and even another friend were typing for her, she finally decided to visit the University's accessibility office. She didn't want to be a burden. She

remembered, "for the longest time I was like, I don't need that kind of help. I can do this on my own." The office told her to visit a doctor. She was afraid the doctor would say she needed surgery, but went anyway. He diagnosed her condition as tendinitis and recommended physical therapy. After about three sessions, she could feel it was helping. She remembered, "I was really happy…and I was frustrated with myself for being so stubborn for so long." Her dad surprised her by buying the speech recognition software for her birthday.

Context. This learning experience occurred over about a semester. It involved Edna's hand and wrist, classwork, audio recordings, transcription, the University accessibility office, fear of surgery, a doctor, physical therapy, speech recognition software, high prices, and Edna's desire to be independent and to graduate.

Plot. The plot of this learning experience began with Edna's hand and wrist hurting. She was worried she wouldn't be able to complete her classwork. She decided to discuss it with her parents, sister and friends. All had advice for her. Eventually, she accepted everyone's help and learned that with their help she could continue her school work.

Lead character. Edna was the lead character of this learning experience and her relationship to this situation was that of a student, daughter, sister, friend and patient. She felt disabled and frustrated by her lack of independence. She also felt like a burden for her mother and sister as they transcribed her classwork.

Supporting characters. The supporting characters in this learning experience were her father, mother, sister, friends, University accessibility office personnel and doctor. Each of the supporting characters were advice-givers. Her mother, sister and one of her friends were transcribers. Her father was a provider of funds for speech recognition software. Her doctor helped care for her tendinitis.

Case 8: partial blindness and perspective. When asked to talk about a few learning experiences she had had recently, one of the learning experiences Edna mentioned was having her sight affected by a solar eclipse. She remembered, "so I looked at the solar eclipse over the summer and my eye was affected by it." As she coped with this injury, she learned more about perspective. She remembered, "that was a huge challenge for a couple of months and it was frustrating. I wanted it to just go back to the way that I was, but it helped me realize that you can look at things in a different perspective." By writing about this experience, she reflected on the topic of perspective. She wrote, "After a few days of this pain and altered perspective, I realized that there was a powerful connection between my physical sight and my spiritual perspective on life."

Theme. This learning experience had the basic premise of trying to complete her classwork without the use of one eye and with significant headaches, neck aches, and tense shoulders.

Coping with the effects of the solar eclipse. Edna decided to travel three hours to Cedar City, Utah with a friend to view a solar eclipse because she could get a better view of the eclipse there. While in Cedar City and during the eclipse, she attempted to take pictures. She wrote in her journal, "The actual eclipse was unlike anything I had ever seen—a perfect golden ring in the sky. I had my camera with me and I tried to capture the experience by taking pictures of the eclipse through the special glasses we used to view the eclipse." While taking pictures, her left eye was accidentally exposed to the sunlight. During the drive home, her eye started hurting. The next day, her vision in that eye was blurry and the headaches started. She felt the pain also in her neck and shoulders. She wrote in her journal, "I was amazed by how one imperfection in my eye could affect so many parts of my body. It wasn't just limited to my eye. The defect in my

vision not only affected my ability to see clearly, it affected my mind, and therefore my ability to think, as well as my neck and shoulders, which made sitting in class uncomfortable. Suddenly life was quite different than what I was used to and I realized how many things I had taken for granted up to that point." As a student, the pain and blurry vision made studying, concentrating and focusing more difficult. Through trial and error, she learned that certain things made it better and others made it worse. Exercising, especially running, made it better. Reading computer screens made it worse, but reading print-outs was as bad. Eventually and reluctantly, she visited the eye doctor. She was prescribed glasses. She learned that her condition may be permanent. At the time of the interview, she said, "I can see fine right now [without her glasses] because I feel like my eyes are compensating for each other, but this one [pointing to left eye] is still a little bit blurry when I read stuff."

Context. This learning experience occurred over a few months. It involved a solar eclipse, a trip to Cedar City, Utah, a camera, pictures, Edna's blurry vision, headaches, neck and shoulder aches, exercising, a computer, print outs, homework, doctor visit, glasses and a goal to continue with her studies as planned.

Plot. The plot of this learning experience began with the realization that her left eye started hurting and then she experienced blurry vision. She thought if she rested her eye it would get better. She remembered, "maybe if I just rest my eye tonight and then tomorrow morning it will be better and then it wasn't and I was really upset." Soon she was experiencing headaches and neck and shoulder pain, which made it hard to concentrate and focus on her homework. She explored several ways to continue her studies. Some have helped. She visited an eye doctor and began using glasses. She feels like her eye is getting better, but it still not the same as before the eclipse.

Lead character. Edna was the lead character of this learning experience and her relationship to this situation was that of a student. She also felt disabled by her eye condition.

Supporting characters. The supporting characters in this learning experience were her friend, who made the trip to Cedar City, Utah with her and the eye doctor. Her friend was a fellow photographer of the eclipse. Her eye doctor was a bearer of bad news and tool provider (glasses).

Other. During the interview, Edna said, "now that we are talking about this I realize I am really stubborn in asking for help." Later, she said, "I guess it was interesting to learn things about myself that I am really stubborn [laughing] when it comes to asking for help."

Reflecting on the topic of perspective. Edna said she likes to write journal entries about what she can learn from her experiences. While she was struggling with the effects of the solar eclipse, she wrote a personal reflection on the topic of perspective. She wrote, "The eternal perspective the Lord has is like having perfect 20/20 vision. There are times in our lives that we have this vision too. But all too often, our vision is skewed and blurry, just like my left eye." Her personal reflection examined what made our vision skewed and blurry. She wrote about pride, weakness and short-term thinking as affecting our vision. She closed her personal reflection writing about the need to remember who she really is: child of God and to remember that her mistakes can be forgiven through the atonement of Jesus Christ. She wrote, "Only through the Atonement can we learn to see things as they really are."

Context. This learning experience occurred in about an hour. It involved Edna's blurry vision and pain, a journal, her reflection on perspective, and Edna's desire to write in her journal about things she can learn from her experiences.

Plot. The plot of this learning experience began with Edna wanting to write a journal entry on perspective related to her eye problems. She was amazed that the situation with her left eye could affect so much of her body and life and decided to write something about it. She realized there was a connection between what she was going through and the topic of perspective.

Lead character. Edna was the lead character of this learning experience and her relationship to this situation was that of a reflective journal writer.

Supporting characters. There were no supporting characters.

Type B Cases

The participants in the type B video recording and interview were Matty, Samantha, Joan and Allison. Matty was 36 years old, lived in Highland, Utah, and had six children. Samantha was 28 years old, lived in Lehi, Utah, had four children and loved games. Joan was 31 years old, lived in Saratoga Springs, Utah, had three children and liked games. Allison was 23 years old, lived in Provo, Utah, had one child and was pregnant. Matty and Allison were sisters. All were sisters-in-law. In the video, the women were seated (from left to right): Joan, Matty, Samantha and Allison (see Figure 1). I selected three Type B cases based on three distinct sections of the video that appeared to be where changes in their learning occurred: the time period that lasted from the opening of the box to the first move (Case 9), the first moves of each player (Case 10) and after the first moves of each player (Case 11).

Figure 1. Sample screenshot of the video showing the three camera views recorded.

In an attempt to capture on video a learning experience happening, four women, who regularly get together to play board games, were asked to play a game together that they had never played before. The four women met at the University Mall in Orem, Utah, to select a game, which I purchased. The four women then met at my home to play the game. The video recording lasted 47 minutes. A couple of weeks later, the four women watched the video for the first time. Their comments were recorded in audio format. During the watching of the video, I paused it occasionally to allow for my questions and their answers, and they asked me to pause it occasionally to allow for their discussions surrounding specific learning experiences the women would identify while watching. The audio recording was one hour and 33 minutes. Matty, Samantha and Allison learned the game to compete and win. Joan learned the game to understand it, primarily. She said she had no desire to win, although she clarified that it was fun to win. This was the basic premise across all the type B cases (Case 9-11).

Case 9: before the first move. The video time frame for this case is 0:00 to 9:58. The video begins with Samantha opening the box and the others getting settled into their seats. Samantha starts reading the instructions (0:42). Matty asks a question about playing in teams or as individuals (0:43). They decide to find out more about the game before deciding on playing as teams or as individuals. Allison begins to set up the board (1:10). Samantha reads aloud the

object of the game (1:11). Matty opens the packaging that holds the trivia cards and the bag that holds the player pieces (1:22). Samantha reads aloud about the game pieces and board (1:32). Allison says she wants to be green, so she grabs the green pieces and puts one on each of the four corners. At about the same time, Matty places all four orange pieces on the orange corner. Joan picks up the yellow pieces and puts them all in the yellow corner (1:47). Allison notices and explains that she thinks the pieces go in each corner. While Samantha scans the instructions to find the answer, Allison moves her pieces to the green corner, but is questioning it. Samantha asks if the paper she has is the only instructions for the game (2:24). She can't find the answer to where the pieces start. Then she finds what she is looking for and reads it aloud (2:34). Matty starts to move the orange pieces to each corner and Allison follows suit with the green pieces. Joan is content to let the others move the yellow pieces. Samantha reads aloud the instructions about card types, answering cards, clues and number of spaces to move for each answer (2:59). Allison asks a question about moving pieces around the board (3:17). Joan comments that she hopes the others understand the rules because she is counting on them to show her how to play (3:57). Samantha reads aloud the instructions regarding guesses per turn and stealing (3:58). Joan asks a question about whether stealing is only allowed if they are playing teams (4:15). Matty and Samantha answer together and Samantha re-reads aloud the instructions regarding stealing and then provides her personal understanding of how it works. There seems to be a consensus. Samantha continues reading aloud the instructions and covers sections on moving pieces around the board and bumping (4:38). Allison, after hearing the instructions on bumping, believes the player pieces are not set up correctly. She moves the pieces so that each corner has all four pieces of the same color that match the color of the corner (5:19). Joan expresses confusion, but appears to like the new set up. Samantha comments that the setup is like the game

Sorry (5:25). Samantha continues to read aloud about safety zones (5:35). Joan asks again just to confirm that the game board is like the game Sorry (5:48). Samantha reads aloud about strategy (6:10). Joan asks where the safety zones are located (6:34). Allison points them out on the board. Samantha reads aloud the ultimate goal of the game (7:26). Joan asks if there are any dice (7:35). Allison explains that the cards determine how far you move. Matty asks for the instructions (7:50). Allison announces she gets to go first because she is the youngest (as stated in the instructions). Allison is now confused because where her green pieces are starting is not making any sense (7:58). Matty takes the cards out of their box and asks whether they need to be separated (8:02). Matty and Joan try to figure out how to place the cards face down since there is printing on both sides (8:18). Allison is still trying to figure out how to start and asks a question about the movement of pieces on a corner (8:34). At the same time, Joan asks whether the cards have an easy and hard side. Joan then asks who picks the cards up during a turn (9:00). Allison asks about the pieces. She doesn't think the way the game is set up is correct (9:04). Matty reads aloud the instructions regarding the set-up of pieces at the beginning of the game (9:10). Samantha and Allison appear to have several things start to make sense as they put one of their pieces in each corner according to the instructions (9:18). At the same time, Joan confirms that all yellow pieces are still her pieces even though they are in separate corners. Matty reads aloud the instructions about moving pieces to the color chutes and asks a question about the color chutes (9:40). Allison answers and then begins her turn.

Where do these pieces start? During the interview, Samantha remembered learning where to start the players' pieces on the board (2:37). She remembered, "Allison and I are trying to decide if all the pieces go in one corner or if we spread all of them out in the corners." In the video, Allison has placed one green piece on each of the four corners, but Matty placed all four

orange pieces on the orange corner and Joan has placed all the yellow pieces in the yellow corner (1:47). Samantha reads aloud the instructions that confirm each color should have a piece on each corner. Matty (2:47) remembered during the interview, "I just figured out where they go. Can we stop [the video] somewhere else because look at me right there [laughing]. When she was reading that, it clicked that that's what it meant that they needed to go in every single corner." However, around (5:23) in the video, Allison thought all the pieces were supposed to be in their own corner (e.g., all green pieces in the green corner). Allison remembered, "I think because we were talking about bumping and being able to put it back the furthest place from their chute. They all had to be starting from the furthest place from their chute." Matty remembered in the interview, "and do you see my face? I am like ummm…the rule said pieces in every corner, but whatever [laughing]." Matty (7:38) didn't want to be rude on camera by changing them back. She also remembered, "I think part too was I wasn't 100% positive…I was pretty sure that they should be in the other corners, but where I hadn't actually read the rules myself [yet] I wasn't 100% positive." Matty (7:59) is trying to find the part in the instructions that explains where the pieces start. Allison still believes the pieces might be correct because she thinks the corners might be special like purple spaces in the Cranium game. Allison remembered, "I guess I was thinking…like Cranium when you are on purple you get to choose whatever you want." Eventually, Allison asks about the pieces and Matty finds and reads aloud the instructions regarding the setup of pieces at the beginning of the game (9:10). Samantha said in the interview, "How did we miss that it says it straight in a sentence we all have a piece in each corner of the board?"

Context. This learning experience occurred over about 10 minutes. It occurred at a game table. It also involved a game called "Hidden Identity", instructions, game pieces, game board,

and the goals to play the game, understand the game, have fun and enjoy each other's company.

Plot. The plot of this learning experience began with opening the bag of game pieces and placing the pieces on the board. Two different placements of pieces happened simultaneously. Allison placed her pieces in each corner and Matty and Joan placed their pieces in a single corner matching the color of the pieces. The instructions were consulted and Allison's placement was correct. Later, Allison changed her placement while learning about bumping. She was convinced that the pieces should be placed the way Matty and Joan had originally placed them: all in one corner. Matty was not completely sure Allison was wrong, but she was doubting the new set up. Matty found the section in the instructions again and read it aloud. The pieces were put back into every corner.

Characters. Joan, Matty, Samantha and Allison were the characters of this learning experience and their relationship to this situation was that of players, friends and extended family. Joan was helpful, but not really engaged in the process of figuring out the correct placement. She was more interested in learning as she played. Matty was interested in the rules of the game and reread them to figure out the correct placement. Samantha was occupied with being the reader of the instructions for most of this experience. Allison tried different placements to try and make sense of the instructions.

Matty needs to read the instructions herself. During the interview, Matty (7:59) remembered, "as soon as we are about to start, I asked for the instructions because I realized at that point, I have no idea how to play this game." Even though she had listened to Samantha read the instructions, she couldn't "put the different things…in place so it was right." She realized that typically when they play a new game, she was the one who reads the instructions, but this time it was different. She remembered, "I thought this is why I always read the

directions. This is why I am always the person who reads the directions because I don't get it otherwise." She believed that "in order for [her] to understand it, [she] had to actually read it."

Context. This learning experience occurred over about 10 minutes. It occurred at a game table. It also involved a game called "Hidden Identity", instructions, game pieces, game board, and the goals to play the game, understand the game, have fun and enjoy each other's company.

Plot. The plot of this learning experience began with Samantha opening the box and reading aloud the instructions. After the instruction had been read, Matty did not feel comfortable starting the game, so she asked for the instructions. It appeared that being able to read and consult the instructions periodically made Matty more comfortable.

Lead character. Matty was the lead character of this learning experience and her relationship to this situation was that of a player, friend and extended family. She also felt uncomfortable without having the instructions in hand.

Supporting characters. The supporting characters in this learning experience were Joan, Samantha and Allison. Joan was a player waiting to begin play. Samantha was a player, who had been the one who initially read aloud the instructions, which helped Matty realize she needed to read them herself. Allison was a player, who had asked some questions near the time Matty obtained the instructions, which prompted Matty to review the instructions.

Case 10: the first move of each player. The video time frame for this case is 9:58 to 23:41. The video continues with Allison making the first move. Since she has pieces starting on all the colors, she can choose any category. She decides to answer a "what" card. Matty asks if "what" is yellow (10:04). Samantha thinks "what" is purple (10:07). The cards are on cardboard "place cards here" type holders. The "what" category is actually the yellow squares on the

board, but the holder is predominately purple. Matty then explains that Samantha should read the card because Joan is able to steal if Allison doesn't know the answer (10:12). Samantha asks why the blank card on top and Matty answers that the blank card is so you can't read the cards in the pile (10:18). Joan then asks if the answers are on the back or on the front and Matty at the same time informs Allison that she has to tell them which piece she is going to move (10:20). No one answers Joan. Samantha asks if Allison is ready for the first clue on the "what" card and Allison jokingly says no. Allison then asks if she needs to tell them that she needs another clue before it is read (10:42). Joan answers yes. Samantha gives the first clue (10:54). She guesses Buckingham Palace (11:16). Samantha said incorrect, Allison says to give her another clue, and Samantha gives the next clue. Allison guesses Big Ben, which is correct (11:25). Allison moves a green piece from a purple square into a color chute and exclaims, "Yes, I am safe!" Matty asks about moving so quickly to a color chute as she scans the instructions. Samantha and Allison explain that each corner piece is further away from the color chute, but that she had chosen to move the one closest to the color chute (11:40). Samantha and Allison have a conversation about how to discard the card they just used, including whether to put it on the bottom of the deck and whether to flip it.

Joan begins her turn by pointing to the one she wants to move (12:00). Allison confirms she wants to move green and then picks up a card from the deck with a predominately green color. No one realizes that green is the "when" category and the card she picked up is from the "who" category (12:05). Allison gives the first clue (12:17). Joan guesses Babe Ruth, which is incorrect (12:29). Joan asks for another clue, then another, then the final clue. She can't think of another baseball player. Matty is rereading the instructions during Joan's turn and has a conversation with Samantha (13:22) about stealing. Samantha confirms that the player that

steals is awarded the number of spaces based on the number of clues that had been given before the steal. Joan gives up and Matty gives the correct answer (13:55). Matty and Allison have a conversation about which of her pieces Matty gets to move with her successful steal (14:06). Matty confirms that the instructions are silent as to which piece gets to move. Allison thinks it should correspond to the color category, but Samantha gives an example where that wouldn't work (14:19). They agree that after a steal the player can move any of their pieces. Matty is confused because she just realized that Joan wanted a green card and green is the color of the "when" category, not the "who" category (14:50). Allison doesn't agree. She points to the color of the holder and say that green is the "who" category. They come to the conclusion that the game manufacturer messed up the colors and the categories by being inconsistent across the board and the card holders (15:00). With this new understanding, Matty decides to move a different piece for her steal.

Matty chooses her piece on a yellow square for her turn (15:25). Joan will be reading the card. Joan wants the card decks to correspond with the board colors, not the card holder colors, so she moves the decks. She realizes that she should have had a different card (15:33). Allison doesn't think she read the wrong card, but Matty convinces Allison she did read the wrong card because the decks were in the wrong place. Allison playfully blames Samantha for the incorrect deck placement and Samantha defends herself by stating she asked and Allison had said the decks don't have to be in certain spots on the board (15:39). Matty confirms she wants to do yellow by pointing to the square. Allison asks if during her turn she had had the wrong card, but it turns out she wanted a "what" category and got a "what" card. What they don't realize is Allison moved her piece that was on a purple square after successfully answering the question. Purple squares on the board do not represent the "what" category. They represent the "where"

category. Joan asks if you start with the top clue and Samantha confirms. She realizes the answers are on the same side and then gives the first clue (16:22). Matty asks for the second clue and Joan gives it. Matty guesses "Newsies", which is incorrect. Matty asks for the next clue. Samantha confirms that if Matty guesses and is wrong, she can steal for four spaces (17:49). Matty doesn't know so she asks for the final clue and then guesses "Apollo 8" which is incorrect. Samantha steals successful by saying "Apollo 13" (18:27).

Samantha begins her turn by choosing the "where" category (19:14). Allison rearranges the card holders, so she can see them better. Matty picks up a "where" card, but then asks Samantha which piece she was moving (19:29). Samantha realizes that she doesn't have any pieces on a purple square, which is the "where" category because she had moved one from her steal (19:42). Samantha changes to the "what" category and Matty reads the "what" card's first clue (20:00). The second and third clues are read without any guesses. Samantha's daughter starts crying (21:27). Samantha pauses the game to take care of her daughter (21:42). Matty gives the final clue (22:29). Samantha guesses "Stonehenge" and then passes (22:45). Allison doesn't have an answer. Matty asks Joan if she wants to steal since Allison didn't, but Allison thinks it is only the next player that can steal. Matty consults the instructions and Samantha confirms it is only the next player (22:53).

Which card? During the interview, all four women decided that the game was flawed in the color coding of question categories on the board and the cards. Matty said, "the game's flawed." Joan said, "the color coding is wrong." Samantha said, "we put the border next to the correct color corner, but we should have been paying attention to the little circle next to it." Allison said, "it really bugged me that I couldn't see what cards were which."

During Allison's first turn, she wanted a "what" category card. The "what" category is

represented by the yellow squares on the board, but when she answered correctly, she moved her piece from a purple square (11:25). At the time, no one realized the mistake.

During Joan's first turn, she wanted to move her piece located on the green square. At the time, no one realized that green was the "when" category and the card Allison picked up was from the "who" category (12:05). Once Matty steals the question from Joan, she is confused because Joan wanted a green card and green is the color of the "when" category, but she was given a "who" category card (14:50). Allison doesn't agree and points to the color of the card holder where she picked the card and says that green is the "who" category. They come to the conclusion that the game manufacturer messed up the colors and the categories by being inconsistent across the board and the card holders (15:00). Matty said about this part of the video, in the interview, "This is the exact moment when we realized there was a flaw in the cards because she did a green card. It should have been a 'when' because green is 'when' looking at the picture [on the board]." Allison wondered how none of them "noticed that when [she] was reading the card…it had nothing to do with time." Joan replied that she was focused on answering the question, not the category at that point.

During Matty's first turn, she wanted to move her piece on a yellow square (15:25). Because Joan would be reading the card, she wanted the card decks to correspond with the board colors, not the card holder colors, so she moved the decks. While watching this part of the video, Joan commented, "I realized at that point we were looking at the picture and not the color and I like things matching [laughing] so I wanted to move them."

During Samantha's first turn, she wanted a card from the "where" category (19:14). At about the same time, Allison rearranged the card holders, so she could see them better. Allison commented about this, "It really bugged me that I couldn't see what cards were which…I still

needed the little cards underneath [the card holders] to be showing." Samantha also remembered thinking of better designs like "there is the white card on top that is covering the next question, just write…this is the 'who,' the 'what,' the 'when,' and the 'where'." Matty picks up a "where" card, but then asks Samantha which piece she was moving (19:29). Samantha realizes that she doesn't have any pieces on a purple square, which is the "where" category (19:42). Samantha changes to the "what" category and Matty reads the "what" card's first clue (20:00).

Context. This learning experience occurred over about 13 minutes. It occurred at a game table. It also involved a game called "Hidden Identity", instructions, game pieces, game board, game cards, card holders, card categories, and the goals to play the game, understand the game, have fun and enjoy each other's company.

Plot. The plot of this learning experience began with both Allison and Joan answering the wrong category during their first turns. Matty realized this after she stole Joan's question. There was general confusion about the color coding of the squares on the board, the card holders and the question categories. They rearranged the cards and card holders to make it easier to pick the correct card. There was consensus that the game had a design flaw.

Characters. Joan, Matty, Samantha and Allison were the characters of this learning experience and their relationship to this situation was that of players, friends and extended family. Joan was more engaged in the process of figuring out the correct cards than during the initial reading of the instructions, but she wasn't concerned that she had been given the wrong question and it had been stolen. She remembered, "Well, I probably wouldn't have gotten the other one anyways, so I was like eeenh [laughing]." Matty was concerned that the wrong cards were being read. For her, it was about strategy. She wanted to avoid certain categories, but she wasn't initially sure which colors represented which categories. She remembered, "One of the

ones I didn't want to do was 'when' because I am no good with dates and so I was seeing which one was 'when.' I don't want to do that one and then I noticed it was the green one…that is what made me notice because hers didn't have a date in it." Samantha wasn't that concerned, but realized the colors were confusing and wanted the mechanics of the game to be easier. Allison was "bugged" by the color coding even after they had figured out the flaw.

Other. It appeared that the video helped the women remember the details of their experiences during the interview.

Stealing. During the interview, the act of stealing a question from another player was a topic. It first came up during Joan's turn. Her final guess was incorrect and Matty stole her question and answered it correctly (13:55). After consulting the instructions, Matty was unclear on which of her pieces she could move as a result of the steal. She commented, "This is when I realized, as with most games, there are situations that come up that are not covered in the rules." In the video, Matty and Allison agreed that since she stole a green card, she should move a piece from a green square. Samantha didn't agree (14:24). She pointed out that there could be a situation where the player that steals the question doesn't have a piece on that particular color.

Earlier in the video, Matty was rereading the instructions during Joan's turn and had a conversation with Samantha (13:22) about stealing. Samantha confirmed that the player that steals is awarded the number of spaces based on the number of clues that had been given before the steal. Although this appeared to be a learning experience for Matty as she prepared to steal a question for the first time, she did not bring it up during the interview.

During Matty's first turn, Samantha confirmed that if Matty guessed and was wrong, she could steal for four spaces (17:49). Samantha commented about this part of the video, "I was trying not to give it away [that I knew the answer]…because I wanted her to pass it to me

knowing that I am getting more points if she passes, if she guesses wrong and passes it now than going all the way to the end of the card."

During Samantha's first turn, Allison was given the opportunity to steal, but failed. Matty asked Joan if she wanted to steal since Allison didn't, but Allison thought it was only the next player that could steal. Matty consulted the instructions and Samantha confirmed it was only the next player (22:53). Although this appeared to be a learning experience regarding the number of players that could steal, there were no comments made about it during the interview.

Context. This learning experience occurred over about 13 minutes. It occurred at a game table. It also involved a game called "Hidden Identity", instructions, game pieces, game board, game cards, card holders, card categories, and the goals to play the game, understand the game, have fun and enjoy each other's company.

Plot. The plot of this learning experience began while Matty was preparing to steal Joan's question. Matty asked a question about the number of spaces she would be awarded for stealing Joan's question. Now with a steal, Matty was supposed to move a piece on the board, but she didn't know which pieces could be moved and the instructions were silent on the matter. After a discussion, there was consensus that any piece could be moved. During Matty's turn, Samantha asked about stealing Matty's question. During Samantha's turn, Matty asked about whether the steal could continue to multiple players. After the first round of turns, several stealing situations had occurred.

Characters. Joan, Matty, Samantha and Allison were the characters of this learning experience and their relationship to this situation was that of players, friends and extended family. Joan didn't get the opportunity to steal a question because Allison answered her question correctly. Matty was concerned about stealing when she had the opportunity to steal from Joan.

Samantha was concerned about stealing when she had the opportunity to steal from Matty. Allison was concerned about working out the details of the game with regards to stealing throughout the 13 minutes.

Case 11: after the first moves by each player. The video time frame for this case is 23:41 to 47:24. The video continues with Allison deciding to answer a "what" card (24:12). It takes her a while to figure out what her choices are because of the color coding. Samantha picks a "what" card and reads the first clue. Allison needs another clue, so Samantha reads the next clue. Allison answers correctly (24:53). Joan decides to answer a "when" card (25:16). Allison picks a "when" card and reads the first clue. The players are temporarily distracted by Samantha's toddler as she is handed to Samantha (25:56). Joan guesses "birds" and Allison reminds her she is answering a "when" card and is looking for a year. Samantha begins to nurse her child under a blanket (26:24). Allison reads the next clue and Joan guesses "1998," but is incorrect (26:30). Allison reads the third clue and Joan uses her hands to count presidential election years and guesses correctly, "1996" (26:52). It seems she is given a pass on her first guess of "birds." Matty decides to answer a "what" card (27:37). Matty places her hand over the deck to cover the next card while Joan picks up a "what" card. Matty thinks a card device, like they had used in another game they had played called Cranium, would work better. Joan reads the first clue (28:03). Matty wants another clue and Joan reads the next one. Matty guesses, but is incorrect (28:45). Joan reads the third clue. Matty guesses, but is incorrect and Joan gives her the correct answer (29:10). Samantha blurts out, "Don't tell me because that is what I was going to guess." It was Samantha's question to steal at that point, but the correct answer had already been given. Matty tells Samantha she would have gotten it, so play continues as if she had stolen the question (29:14). Samantha is done nursing, but continues to hold her child (29:15).

Samantha asks what color the "who" questions are because she wants to move off of that color (29:35). She realizes that moving four spaces will put her back on the same color, so she can't get off of the "who" color with this steal. While Samantha is looking for a piece to move, Joan realizes that during her turn she moved someone else's piece (29:45). She corrects the error. Samantha realizes it is her turn and she is still somewhat preoccupied with her child, but she chooses "what" (30:15). Matty picks a "what" card and reads the first clue. Samantha asks for the next clue and Matty reads it. Samantha asks for the third clue and Matty reads it. Samantha guesses, but it is incorrect. Samantha wants her last clue and Matty reads it. Samantha wants the last clue read again. Samantha passes and Allison doesn't have a guess. Allison begins her turn looking at her options (31:45). She has three pieces on "when" and one on "who." She picks "who" and Matty asks if she is on an orange square since "who" is orange (32:15). Allison points to her piece on an orange square. Samantha, still holding her child, asks if she should read this orange card (pointing to the orange card holder), which happens to be a "when" card. Matty, distracted by something in another room, answers yes. Samantha reads the first clue (32: 28). The clue starts with "during this decade," but no one seems to realize it is a "when" card. Allison wants another clue and Samantha reads it. Allison guesses correctly and moves her piece. Matty comments that Allison answered a "when" correctly and then realizes that she asked for a "who" and also moved her piece that was on a "who" (orange) square (33:30). Allison put her piece back and then asked what she should move now. The consensus was to let her choose to move one of the pieces on the green squares (33:40). Joan decides to answer a "who" card and Allison picks a "who" card and reads the first clue (34:35). As Allison is picking the card, Joan and Matty have a conversation about how to make it easier to pick the correct card. Joan wants another clue and Allison reads it. Joan wants the third clue and Allison

reads it. Joan guesses correctly. Matty decides to answer a "what" question (37:05). Joan picks a "what" card and reads the first clue. Matty guesses correctly and moves her piece (37:45). Samantha decides to answer a "who" question (38:09). Matty picks a "who" card. Samantha asks Matty to make it an easy one. Matty looks on both sides of the card, chooses a side and reads the first clue. Samantha wants another clue and Matty reads the next clue. Samantha wants the third clue and Matty reads it. Samantha wants the last clue and Matty reads it. Samantha can't think of an answer and passes. Allison steals the question and answers correctly (39:58). While Allison is moving her piece for the steal, she ends up landing on a space occupied by one of Matty's pieces. This is known as a bump. Allison moves Matty's piece back to a corner. Matty, somewhat jokingly and somewhat seriously, tells Allison her bump was "pretty rude." (40:20) Allison decides to answer a "where" question (40:44). Samantha, still holding her child, asks someone to point out the card she is supposed to read. Allison points to the deck and Samantha picks a "where" question. Samantha reads the first clue. Allison asks for another clue and Samantha reads it. Allison asks for the third clue and Samantha reads it. Allison guesses correctly and moves her piece. Joan decides to answer a "what" question (42:10). Allison picks a "what" card and reads the first clue. Joan guesses incorrectly and Allison reads the next clue. Joan wants the third clue and Allison reads it. Joan guesses incorrectly and Matty steals the question with a correct answer (43:20). Matty realizes that she can bump Joan as she moves her piece from the steal. Matty decides to bump Joan's piece that is closest to her home back to the corner furthest from Joan's home. This is the worst possible scenario for Joan. Matty decides to answer a "when" card (44:20). Allison hands a "when" card to Joan and Joan reads the first clue. Matty asks for the next clue and Joan reads it. Matty asks for the third clue and Joan reads it. Matty guesses incorrectly and asks for the last clue. Joan

reads it. Matty guesses incorrectly and Samantha tries to steal, but answers incorrectly. Samantha decides to answer a "when" card (46:15). Matty asks which one of her pieces she is using. Matty picks a "when" card and reads the first clue. Samantha answers incorrectly and Matty reads the next clue. Samantha asks for the next clue and Matty reads it. Samantha asks for the last clue and Matty reads it. Samantha answers correctly.

Bumping and competition. Besides the initial reading aloud of the instructions, bumping didn't get any attention until Allison stole a question from Samantha (39:58). While Allison was moving her piece for the steal, she ended up landing on a space occupied by one of Matty's pieces. When Allison moves Matty's piece back to a corner, Matty, somewhat jokingly and somewhat seriously, tells Allison her bump was "pretty rude." (40:20). Neither Allison nor Matty mentioned this during the interview as a learning experience, but it was their first encounter with the act of bumping.

Later in the video, Matty had the opportunity to bump Joan's piece (43:20). There actually were two different pieces Matty could potentially bump. Matty decided to bump Joan's piece that was closest to her home back to the corner furthest from Joan's home. Matty remembered this as a learning experience, "I think it was funny that I went from, oh, I have to bump you Joan. I am really sorry [to] ohhhh, how far back can I send you." Matty, in the interview, thought that the reason she bumped Joan back the furthest possible bump was her "competitive streak." She considered Joan a very good trivia player and wanted to disadvantage her.

Matty had another learning experience. While picking a "who" card for Samantha, Samantha asked Matty to make it an easy one. Matty looked on both sides of the card. She commented, "So I learned something about myself here. I am very competitive, but who I am

playing with matters because I looked at both sides of the card…[Samantha] is one of my best friends [so] I picked the side that had a name I actually recognized."

Context. This learning experience occurred over about 5 minutes. It occurred at a game table. It also involved a game called "Hidden Identity", instructions, game pieces, game board, game cards, card holders, card categories, and the goals to play the game, understand the game, have fun and enjoy each other's company.

Plot. The plot of this learning experience began with the second bump of the game. Matty learned that with an opportunity to bump one of Joan's pieces, her "competitive streak" came alive. She contrasted this against giving an easier card to Samantha. She realized that who she was playing against mattered.

Lead character. Matty was the lead character of this learning experience and her relationship to this situation was that of player, friend and extended family. She also felt more competitive against Joan than Samantha.

Supporting characters. The supporting characters in this learning experience were Joan, Samantha and Allison. Joan was a player with good trivia skills. Samantha was a player that was Matty's best friend. Allison was a player who had initially bumped Matty's piece.

Other. Both Allison and Joan admitted to being afraid of messing up when reading the cards.

Chapter 7: Cross-Case Analysis

In this chapter, I describe the analysis of the cases. This multiple case study analysis was intended to go beyond the individual case summaries and bind them together for purposes of making cross-case assertions about encounters with unfamiliarity. Each case was studied with regards to the particularization of encounters with unfamiliarity and then was studied with a focus on understanding encounters with unfamiliarity across several particular situations. A cross-case understanding or assertion may be thought of as a generalization; however, it is always supported and rooted in multiple, specific cases. There is a healthy tension between particularization and generalization in multiple case study analyses (Stake, 2006).

The results of the multiple case study analysis were organized into ten cross-case assertions. These assertions were supported by participant quotes that were confirmed through the participant checking for accuracy. As I describe through the assertions, *encounters with unfamiliarity* were identifiable within the learning experiences and had distinct narrative-oriented qualities.

Negative Case Analysis

The purpose of the negative case analysis involved searching for parts of the cases that did not appear to support the potential assertions and then refining the assertions until they described the majority of the cases, including the deviant or negative cases. I found that there were negative cases that helped refine some of the assertions. For example, two participants appeared to have encounters with unfamiliarity, but decided to ignore them in the sense that they didn't really meaningfully engage in the situation. These negatives cases resulted in assertion 5, that is, encounters with unfamiliarity were ignorable. Another example is the assertion that encounters with unfamiliarity had varied eventfulness (i.e., assertion 8). Some encounters like

partial blindness and overcoming a phobia were eventful or momentous. Other cases had fairly commonplace encounters like figuring out where a game piece starts or tying one's shoes. These examples helped refine this assertion to be inclusive of a wide range of eventfulness. A final example is assertion 10, that is, encounters were not always problems to be solved. Most of the cases could be described as problems to be solved, but there were a few negative cases that helped refine this assertion. Those cases included personal reflection, emulation, and playing. As such all of the assertions were made following this analysis process.

Assertions Summary

Although I looked for learning experiences within the data that didn't fit the embodied familiarization framework, all of the learning experiences mentioned by the participants had identifiable encounters with unfamiliarity (Assertion 1). I queried participants as to the significance of their learning experiences and why they mattered to them personally. It appeared that, the encounters were connected to the participant's sense of significance. The encounters with unfamiliarity showed clear evidence of mattering to them (Assertion 2). Additionally, the encounters with unfamiliarity invited the participants to act. Their actions were indicative of their concernful involvement or meaningful engagement as described in the participational agency framework. In other words, encounters with unfamiliarity invited dispositional action (Assertion 3). As a related assertion, participants appeared to be emotionally involved in the encounters as part of their dispositional action; that is, participants' ways of being involved in the encounters and in the ensuing learning experiences were marked by various emotive states—frustration, curiosity, excitement, and so on (Assertion 4). Also, this involvement ranged in its intensity based on context. Participants dealt with some encounters intensely, some half-heartedly, and some not at all. (Assertion 5). Not only did the encounters with unfamiliarity

invite concernful involvement, they made it possible. Encounters with unfamiliarity provided the situation and setting that enabled dispositional action (i.e., concernful involvement) by the participant. This interactive situation and setting constituted the encounter itself (Assertion 6). Also, this interactive, enabling, actionable situation and setting could be quick or one-time events, could be extended over years, or could be mixed up with other encounters in a non-linear, complex experience. Learning experiences were often jumbled blends of multiple encounters with unfamiliarity (Assertion 7). Within this mashed up experience, encounters with unfamiliarity ranged from momentous to fairly commonplace, all often combined together as everyday life continued. In other words, encounters with unfamiliarity had varied eventfulness for the learning experience (Assertion 8). An unexpected type of encounter with unfamiliarity occurred as participants learned things about themselves as a result of being interviewed or watching their actions on the video recording. In other words, the act of participating in the study was itself a learning experience with identifiable encounters with unfamiliarity (Assertion 9). Finally, encounters were not always problems to be solved. Sometimes, they were related to personal reflection, emulation, or play (Assertion 10).

Assertion 1: encounters with unfamiliarity were identifiable. Across all the cases, learning experiences, when viewed through the embodied familiarization framework, had some kind of identifiable encounter with unfamiliarity. I searched the interview transcripts and video recording for negative cases and was unable to find a learning experience that was devoid of any kind of encounter with unfamiliarity. It appeared that as an interpretive framework, encounters with unfamiliarity would be useful for discussing and describing learning experiences. Tangentially and beyond these cases, I could think of only one situation where learning might happen without an encounter with unfamiliarity: inspiration out of the blue. Under this assertion,

I summarize each case's identified encounters with unfamiliarity.

Case 1. Sally's learning experience of how to make her son stop crying was filled with encounters with unfamiliarity. Sally unexpectedly discovered that the bright kitchen light helped calm her newborn son. She said, "I turned it on and it was amazing." The use of the word "amazing" aligned with the concept of an encounter with unfamiliarity (i.e., when agents encounter unexpected, challenging, fascinating, novel, instructive, revealing, or puzzling situations). She was amazed that a bright kitchen light helped calm her son.

Another encounter was when she realized her son would take a cold bottle. She said, "Luckily, I have a baby that will actually take it cold." She did not expect him to take it cold happily. Unexpected situations are encounters with unfamiliarity.

Learning that her son wouldn't stop crying until his diaper was changed took longer than Sally expected. She remembered,

> [Laughing] It took me forever. It took me like every single time I would wake up with him. Seriously, 20 minutes later I was like ohhh, I forgot to change his diaper and it happened for like the first month. It wasn't even like, you know, after eight times a day, you would think I would learn, but no, it took me forever to learn that.

This situation was revealing to her in at least two ways. First, because she kept forgetting that her son wouldn't stop crying until his diaper was changed, each time he cried was essentially new puzzle: why won't he stop crying? These were encounters with unfamiliarity because she couldn't remember parts of her prior experience with the same situation. Second, this situation revealed to Sally that she was slow to learn this (at least slower than she expected).

Sally learned that her son liked to be rocked back and forth, but would only fall back

asleep if he was rocked for about two minutes. Early on, she didn't have the strength or patience to rock her son back and forth for long enough to get him to calm down and fall sleep. She described when he finally fell asleep through rocking him as "amazing." Again, this type of amazement aligns well with the concept of an encounter with unfamiliarity.

When she learned her son drooled, it was as if she had solved a mystery. She found her son with disgustingly crusty hair and a wet shirt one morning. At first she thought there was something wrong with her son's head. She recalled,

> I was a little worried, but it was more like confused because I had no clue what it was and then I thought, you know, when was the last time I gave my child a bath.

She investigated a crusty trail from his hair back to the corner of his mouth and figured it was bottle formula that had drooled out his mouth and that had puddled in his hair as he lay asleep. In addition to solving the crusty hair mystery, she started washing him and putting dry clothes on after his feeding, which she found helped him sleep longer.

She was surprised by the calming effect when her sister introduced her to a shushing technique to calm her son. She remembered,

> She took him from me and stood up and started bouncing him and just doing shhhh really quietly, you know, just barely even doing it, just right in his ear. Completely just, happy little camper and I was like, what?

The statement "I was like, what?" expressed a question. Sally had a question and questions, within the embodied familiarization framework, are a form of exploration of encounters. Sally was exploring an encounter with unfamiliarity by asking that question.

Within case 1, I found that Sally's learning experiences had her encountering amazing,

unexpected, revealing, mysterious and questionable situations.

Case 2. In the hospital, Sally was exposed to a blanket wrap bathing method demonstrated by the nurses. She doubted this method because she didn't remember her mom ever bathing a baby that way. She said,

> I was doubtful because I was, I really was like, really? People bathe their children in blankets? It really didn't make any sense to me. I was like, huh, that's weird. I don't remember my mom ever bathing babies in blankets.

This method of bathing was an encounter with unfamiliarity because she found it weird and her mom, someone she trusted as a source of bathing methods, had never done it that way. Despite her doubts, she was going to use this method because she considered the nurses experts.

At home, her aunt introduced her to another bathing method. She trusted her aunt more than she trusted the nurses. She remembered,

> [My aunt] made it look way too easy. It couldn't have been that easy…I was like, dude. I don't know, I was in awe basically because I was like, how in the world does someone like, you know, flip a baby like that. Well, she wasn't like going fast or anything, but it was just like, you know…I felt like I was under-qualified.

Her question that starts "how in the world does someone…" illustrated the initiation of, in embodied familiarization terms, an exploration of her encounter with this unfamiliar way of bathing her son.

Once her aunt left, Sally was afraid to bathe her son using her aunt's method. She said, "I was so uncomfortable with that idea because, I mean, what if I am not strong enough to hold up an eight pound baby. He is going to hit his head on the sink." She decided to try a bathing

chair her sister had recommended. Her sister had said that the bathing chair made baths easier. Sally remembered thinking that at least her son wouldn't drown or hit his head on something. She attempted to bathe him for the first time alone using the bathing chair. This attempt to bathe him with the chair was an encounter with unfamiliarity because she had never done it before. It was a novel situation. She also never tried it again because her son was so upset during the bath. She recalled,

> He screamed the entire time and I couldn't understand why. I was like, goodness gracious, you loved baths before this. Why are you screaming? It was awful.

Through an investigation, she realized that the bathing chair kept her son too far out of the water and she suspected that he was freezing during the bath. Her next encounter with unfamiliarity was attempting to bath him using her aunt's method for the first time alone—another novel situation.

She also encountered surprising "nastiness" underneath her son's neck (i.e., in the folds of his neck) that she hadn't expected. Her aunt informed her that the folds of the neck would get dirty. Sally said,

> [My aunt] said, make sure you get underneath the neck, which seriously amazed me that she was holding him in one hand and pulling up his head so she could clean underneath his neck, but I was like, yep, there is nastiness underneath there [laughing].

Sally encountered both the surprising existence of nastiness in the folds of her son's neck and the amazing way that her aunt was able to smoothly clean underneath there.

Within case 2, I found that Sally's learning experiences had her encountering doubtful, weird, questionable, uncomfortable, novel, surprising and amazing situations.

Case 3. Sally's learning experience related to dressing her son started when she was 13 years old. At 13, her aunt asked her to dress one of Sally's newborn cousins. She had never before dressed a baby. This encounter with unfamiliarity proved too much for her and did not result in her learning how to dress a baby, but resulted in her fearing the next time. She remembered,

> I was afraid that I would drop the baby…so, all, I got the onesie on her head. I didn't even get any arms through or anything. I was shaking so bad, [my aunt] took her baby and was like, ok, how about in a couple of years…It was like this deep down fear, you know, that I wasn't going to be able to dress [my son].

This situation was a learning experience, but not in the same way her other learning experiences played out. She did have an encounter with unfamiliarity (i.e., dressing her baby cousin for the first time); however, failing to successfully dress him – something apparently beyond her capability at the time – revealed something different. Instead of her learning how to dress a baby, she developed a phobia of dressing babies. She said, "I am afraid I am going to shake and everything…like a phobia for me for, you know, years."

Her next encounter with unfamiliarity was dressing her son for the first time alone. She wanted to defer this encounter. She said, "If it had been the summer, I would have been like, I will learn how to dress you when you can lift up your own head." She doubted herself and was scared, but during the first dressing realized that her son was more durable than she expected.

Within case 3, I found that Sally's learning experiences had her encountering fearful, failing, non-deferrable and scary situations.

Case 4. Terrell's learning experiences were filled with encounters with unfamiliarity.

He hired an employee that had a different profile than he usually hired. He recalled,

> Bringing her in was really unique from the other fifty or some odd people I had hired in California because her background was so different and I really, kind of, had to build her from scratch and it is amazing what we were able to do.

His phrase of "really unique" aligns well with the concept of an encounter with unfamiliarity. This was a unique situation for him that turned out to be "amazing."

Another encounter with unfamiliarity happened when he tried to train her. He couldn't train her the same way he had trained the others. He said,

> I had to learn to be a little more adaptive in how we do things, how I represent things to her, exposing her to, you know, more complex parts of the sale very slowly and then circling back and reinforcing it and so specific examples, you know, there are systems integrations and there is all kinds of crazy things you can do and really I have just had to introduce her to that very slowly to make sure she can do that, which really is a big change for me.

He described his learning experience in terms of his adapting and changing. These actions fit well within the framework of embodied familiarization, especially the definition of learning (i.e., learning as meaningful engagement or concernful involvement in the world that involves a change in familiarity). The encounter with unfamiliarity facilitates this change. By saying "[this] really is a big change for me," Terrell helped me identify this encounter with unfamiliarity. He also explicated it. He remembered, "I realized that things weren't really sinking in with her the way that I wanted them to…I noticed there was a disconnect between what I was telling her to do, early on, and what she was actually able to do."

Another encounter with unfamiliarity occurred when annoyingly his employee wasn't showing initiative initially. Terrell said,

> I remember being kind of annoyed with that, at the beginning, I am like, oh, you know, show me some initiative. That is why I hired you.

Terrell expected her to show some initiative and this encounter with the unexpected lack of initiative annoyed him.

Terrell learned the importance of mentoring. His learning experience included an encounter with unfamiliarity. He began reading her body language, asking more questions, role-playing, and making suggestions. These were perhaps not new actions, but he had never had to do them in a work supervisory role the way he had to do them with her. He said, "that exposure to her, while new for me, has been very useful for me."

Another learning experience was discovering the impact of putting enough time and effort into managing employees as a business owner. His previous two employees had both worked more on their own and had not performed well. He explained,

> Managing sales personalities takes a lot of effort and a lot of time and I was not able to put enough of both in to [his first employee]…I ended up hiring another person…but those two did not get along and that was a dynamic that really I should have been around to police…If I had been able to be around more and consistently more, I think both of them would have had similar success to what [his current employee] has had.

This experience was more confirmatory than revelatory for Terrell. During this early period of his business, he was commuting from California to Utah and could only spend a limited amount of time in Utah. He appeared to hope his Utah employees would be more self-managing, but it

was confirmed to him that there was a negative impact from his absence. As an encounter with unfamiliarity, this was unusual. He was familiar enough with the impact his absence would have, but hoped it wouldn't have a big impact in this particular situation. He learned that it still did. He remembered, "This particular rep was completely on his own and so we had some initial success where he did really well and then…things sort of spun out of control with him."

Within case 4, I found that Terrell's learning experiences had him encountering really unique, amazing, disconnected, changing, useful and confirming situations.

Case 5. Terrell encountered a novel way to tie his shoes when his father showed him an unfamiliar kind of knot in his shoes during a camping trip. I found that this particular learning experience represented the most uncomplicated case for identifying an encounter with unfamiliarity. Terrell's encounter was simply a demonstration of his father tying his shoes in a new way.

Case 6. As a college student, one of Edna's learning experiences was related to her Biology class coursework. Her related encounter with unfamiliarity came during an open-book final exam, when she read an unfamiliar term, contingence, and had to write about it. She said,

> I was nervous and I was stressed…I was really worried that I wasn't going to be able to read it and find the answer and write about it.

It appears that, as I will discuss later in detail regarding the narrative-oriented quality called plot, nervousness, stress, fear and worry can accompany the beginning of an encounter with unfamiliarity. Edna experienced it during her exam.

Case 7. Edna had tendinitis, but she learned to cope with it. Related to this learning experience was an encounter with unfamiliarity that came when she realized that finishing a

large bug collection for an entomology class was going to be impossible with tendinitis because catching and pinning bugs was too painful. This encounter came in the form of a disability. She recalled,

> I was really concerned that I would fall behind in this project. I couldn't pin the bugs because it hurt my hand so much.

She had a similar experience with typing. She said,

> I guess I had a lot of papers and things to do this semester so I tried to find ways to be adaptive and instead of typing like I normally would I recorded what I wanted to say in my paper on my phone and I emailed it to my mom and then she would transcribe it for me.

Here again, as with Terrell, the encounter is a backdrop for Edna's becoming adaptive to her situation.

Through unexpected service from others, Edna also learned about "other types of love." She had help with her bug collection and typing her papers. She encountered this other type of love through these experiences. She said,

> So, that was a huge way that I learned about love and that it is not just romantic love, but there are other types of love that make you want to help people and like give of yourself when you can.

Although she was somewhat familiar with the "other types of love," her first-hand experience being the recipient of the service gave her a deeper understand, especially because of the interplay between her feeling of wanting independence, and her vulnerability and disability. She commented,

> I guess just being willing to change the way I looked at myself and be vulnerable definitely helped me learn and like overcome the problem instead of always looking at myself in the way that I had and wanting to be independent.

Within case 7, I found that Edna's learning experiences had her encountering impossible, painful, disabling, adaptable and loving situations.

Case 8. Edna learned to cope with the use of only one eye. This learning experience specifically included learning how to study, concentrate, read and view computer screens with significant headaches and tense neck and shoulders – the effects of her unexpectedly vulnerable encounter with the blinding solar eclipse. This experience resulted in her learning first, what happens when you look at a solar eclipse, but also how to continue doing the things she needed to do as a student while suffering from its effects. She remembered,

> I was trying to take a picture of the solar eclipse through the glasses and my eye wasn't totally covered…then on the way home my eye started hurting…[I] was like maybe if I just rest my eye tonight and then tomorrow morning it will be better and then it wasn't and I was really upset.

Edna also took time to reflect on this upsetting experience and wrote about it in her personal journal. As she pondered her condition and struggles, she had some insights on the concept of perception. She compared her blurry vision to a limited and short-term perspective on life and afterlife. She concluded that only with divine help can she really see clearly. This particular learning experience comes close to the hypothetical learning experience that happens without an encounter with unfamiliarity – inspiration. In this case though, she reflected on an unexpected event (i.e., partial blindness from a solar eclipse), so there was a related encounter with unfamiliarity.

Case 9. Before the first move, while the players were setting up the game, there were several learning experiences. Each experience appeared to be accompanied with encounters with unfamiliarity. The more straight forward of these experiences included (1) learning new game rules and goals, which was accompanied with the reading of unfamiliar instructions; (2) learning the layout of the game board, which was accompanied with the unpacking of the board and seeing it for the first time; and (3) learning the nature and categories of the trivia questions, which was accompanied with the unpacking of the cards and reading them for the first time.

A particularly challenging learning experience, before the first move, was figuring out where the players' pieces started. The participants were conflicted between two placements and changed the placement back and forth between those two placements four times as the instructions were read aloud and different topics such as bumping, color chutes and stealing were discussed. Part of the reason for the confusion was that the incorrect placement was like the setup of another game with which they were all familiar called Sorry. It isn't until a second reading of the instructions about nine minutes into the video, which confirms the correct placement, that the players settle on the placement. Samantha commented while watching the video during the second reading of the instructions, "How did we miss that? It says it straight in a sentence. We all have a piece in each corner of the board." This learning experience introduced a different way to look at encounters. Here, there was a conflict between a familiar placement, which was incorrect, and an unfamiliar placement, which was correct. The players were easily drawn back to the familiar placement, even though it wasn't what the instructions were telling them.

Also before the first move, Matty learned something about herself. She commented while watching the video,

> When we have a new game or people are coming to play a game for the first time, I am usually the one that gets out the directions and reads it to everybody…but when we were playing, Samantha did that…so I learned that the reason I take that role usually is because in order for me to understand it, I have to actually read it. Just listening to someone else read it doesn't sink in.

Once the instructions were read by Samantha, Matty asked for them. She looked unsettled about the game board and how to play. She commented on how she looked at this point in the video, "I realized at that point I have no idea how to play this game even though I listened to everything. I am like I don't even know how this game starts. I don't know what the first step is." She also commented that as she read the instructions to herself, she was looking for the section on where the players' pieces start because she thought the board was, at that moment, set-up incorrectly.

The initial encounter with unfamiliarity that accompanied Matty's learning was the realization that she had listened to the instructions and still did not know how to play; however, it was as if she also encountered her video-recorded-self as she watched, which confirmed what she had been thinking about the experience. She commented, "So it was right then when I grabbed that, that I thought this is why I always read the directions. This is why I am always the person who reads the directions."

Case 10. During each player's first move, two particular learning experiences were identified. The first was learning which trivia question card should be read when a piece was on a certain color. Allison took her turn and did this incorrectly, but no one noticed including Allison. Joan then took her turn and did this incorrectly as well, but because Matty stole the question, Matty was faced with moving one of her pieces. She realized that the card and color space did not match and they should have matched. She encountered a scenario that shouldn't

have happened and the color coding looked flawed. She commented as she watched this part of the video, "The color coding is wacked."

At about the same time as the discovery of the card coding issue, the game paused because they encountered their first instance of stealing. Matty had just stolen Joan's question. Additionally, after consulting the instructions, they realized the question they had about stealing was not answered in the instructions. They discussed possible alternative rules to play by and agreed on one. In this particular situation, the players reached a solution without much effort. They had played games together before and relied on previously used methods to reach this solution. Matty commented about this part of the video,

> Most games as you are playing for the first time or second time, you come across situations that you are like, what are we supposed to do here and there is nothing in the rules that covers it. I think it, you know, requires a little cooperativeness amongst the players.

Case 11. Game play proceeded more smoothly after each player's first move until Allison stole Samantha's question on her third turn. Allison was then faced with an opportunity to bump one of Matty's pieces. This was the first instance of bumping, but it appeared the initial reading of the instructions were sufficient for Allison to make the move without much additional learning; however, she did learn that Matty didn't like being bumped. Shortly thereafter, Matty had an opportunity to bump two of Joan's pieces and decided to bump the one that hurt Joan's chances of winning the most. Matty realized while watching this on the video that her competitive streak had come out. She commented,

> I think it was funny that I went from oh, I have to bump you, Joan. I am really sorry. Ohhhh, how far back can I send you and I picked the furthest back. That is my

> competitive streak coming in there…Trivia games are hard for me to play with Joan because she just knows that stuff and it irritates me [laughing].

Within the game cases, I found that the game players' learning experiences were accompanied with first-time, unsettling, "wacked," un-instructed and self-reflective situations. I summarized the examples of how these situations were described by participants of this study in Table 4.

Table 4

Examples Of Varied Descriptions Of Encounters With Unfamiliarity

Situations identified as encounters
Amazing, unexpected, revealing, mysterious, questionable, doubtful, weird, uncomfortable, novel, surprising, fearful, failing, non-deferrable, scary, really unique, disconnected, changing, useful, confirming, stressful, encountering impossible, painful, disabling, adaptable, loving, blinding, unpacking, confusing, first-time, unsettling, wacked, un-instructed and self-reflective

Assertion 2: encounters with unfamiliarity mattered to the participants. Across all the cases, these identifiable encounters with unfamiliarity were significant to the participants in that they cared about the situation or it simply mattered to them. In order to better understand each learning experience, I queried participants as to the significance of the experience and why it mattered to them personally. Participants mentioned, across cases, what I interpreted as *concern* – as seen within the participational agency framework. It was clear that the concern they related to their learning experience translated directly to their concern for these identifiable encounters with unfamiliarity. In this section, I review several cross-case examples.

For example, Sally's encounters with her crying son seemed to matter to her. She was concerned about the crying each time and wanted to figure out why he was crying and soothe him.

Interviewer: So, how did that particular experience matter to you?

Sally: Well, because I was getting to know my son better. You know, it always feels good to, you know, figure something out about your child because they can't talk to you. They can't communicate in anyway except for crying and so to figure out why they are crying is always great. It is always like, cool, you know, and then you feel a little bit of a connection that wasn't there before.

In Terrell's first case (Case 4), he believed "a bad hire [was] the most expensive thing [he] could do." However, in addition to his concern for running a successful business, he revealed other deeper concerns when I queried him about the significance of his learning experience. He said,

> What makes me the happiest is she is a girl that, you know, her parents split when she was 16, she never went to college. Because of that, graduated a year early just to get away from that kind of toxic environment and moved in with a guy, got pregnant and left the guy. Now, she is a single mom and I am thinking, what kind of future does she and this kid have? Statistically speaking, it is not a very good one, but in her case, she will have a very good income because of what she has been able to do here and her son will certainly go to college because there is no question. I mean, it's a high priority to her and frankly, it's a high priority to me, you know, I would love to see that cycle of, kind of, systematic failure or social pressure down on them be broken up.

Even something as simple as learning to tie his shoes differently revealed why it mattered to Terrell in his second case (Case 5). He was concerned that if he couldn't tie his shoes with the new knot, he would be viewed by his family as incompetent. Also, as a runner, shoe tying during a run, especially a race, was a concern. He said,

> If you single knot them, they just come undone. If you double knot them, they might still come undone or they are going to be impossible to undo, you know, because they are so tight and then you have to pick them apart with your fingernail to get the knot loosened up and so [my dad] found a knot that incorporates the best of both worlds. It comes apart as easily as a single knot, but it stays together as well as a double knot and it has held together through multiple marathons for me. Never had to tie my shoes on any training run or marathon run.

As a student, Edna's primary concern in all three cases (Cases 6-8) was getting good grades and graduating on time. Also, she mentioned a love for learning things in general and how learning these things would help her become a teacher. She remembered,

> My attitude toward learning has been changing in the past year. So, I was a biology education major and because I have been thinking of teaching classes, I want to understand things so I can teach them to other people.

Each participant in the type B cases started the game with varying levels of concern about winning the game, having fun and being able to understand the rules. Matty admitted to being competitive, but didn't mind losing "as long as everybody followed the rules." She also "didn't want to look like an idiot on camera [laughing]." Besides winning, Samantha wanted to "just sit there and have fun." She would have just read the cards and tried to answer them, if the group didn't want to play all the rules of the game. She said, "I think that is fun, just enjoy being with women and talking and playing." She was concerned about not being able to learn how to play the game on camera. Joan said, "I would rather just play to play." She believed that "part of having fun [is] understanding it and playing it." Like Samantha, she could have just read the cards and tried to answer them without all the other parts of the game. Allison said,

"Competition makes things more fun for me. It is never as much fun, if you are just, there is no score kept or anything like that."

Although these examples showed how the encounters mattered to the participants, they also showed how much they mattered. In other words, there were varying degrees of concern or mattering. For example, concern varied from Sally's encounters with her son that deeply mattered to her as a mother to the concern of playing a game that was just for fun. This could be thought of as a concern continuum from barely mattering to life or death significance.

Assertion 3: encounters with unfamiliarity invited dispositional action. Because these identifiable encounters with unfamiliarity mattered to the participants, the encounters invited dispositional or concernful actions, that is, "engaged participation marked fundamentally by a sense of what matters most, ends worth pursuing, how to treat others, and so on, always within concrete situations" (Yanchar, 2011, p. 281). This concernful involvement within the encounters with unfamiliarity related to the narrative-oriented quality of lead character, that is, "learners have different learning experiences depending on how they view their relationship to the situation" (Parrish, 2009, p. 516). I found that participants, viewing themselves as having a certain relationship to the situation, acted dispositionally within that relationship. In other words, the participants' dispositional and concernful thrust into a situation was aimed by their view of their relationship to that situation.

For example, Sally was the lead character in her learning experiences, narratively speaking. When she encountered her son's crying; the situation invited her to act within her view of her relationship to the situation, which was that of a concerned mother (i.e., her role, narratively speaking). Her role as a concerned mother framed what would be her experience within the situation of her son's crying. Simply put, her son's crying invited her to act as a

concerned mother. Her dispositional thrust into the situation was that of a concerned mother (i.e., her view of her relationship to the situation). This concernful motherly action was illustrated in the following quote from Sally:

> I was holding [my son] in one hand and I was making his bottle in the other hand and…I was bouncing him and he was crying…I, first off, thought, what in the world is wrong…I was a little worried.

Likewise, Terrell was the lead character in his learning experiences. When his new employee didn't show initiative, this situation invited him to act. He viewed his relationship to the situation as that of a business owner and supervisor. His dispositional thrust into this situation was apparent in the following quote from Terrell:

> I remember being kind of annoyed with [his employee's lack of initiative] at the beginning. I am like, oh, you know, show me some initiative. That is why I hired you.

Additionally, Terrell viewed his relationship with the situation as that of an enabler of a better future for his employee and her family. He said, "I would love to see that cycle of, kind of, systematic failure or social pressure down on them be broken up."

Edna's view of her relationship to her situations was primarily that of a student wanting good grades. When she encountered pain in her hand, it invited her to act. Her actions were framed by her role as a student or the way she viewed her relationship to the situation. She said, "I was really concerned that I would fall behind in this project. I couldn't pin the bugs because it hurt my hand so much."

The best example of this lead-character-type dispositional action in the data reported in this study came from the game cases. The same encounter invited different actions from the

players—actions framed by their dispositional thrusts. I use examples of two players' actions to illustrate the differences. Right after opening the box and placing the game board on the table, Samantha began reading the instructions. A few paragraphs into the instructions, she commented as she watched the video, "Allison and I are trying to decide if all the pieces go in one corner or if we spread all of them out in the corners." All of the players encountered unfamiliarity regarding the beginning placement of the pieces. This encounter invited dispositional action. Samantha, who described herself as a player primarily motivated to win the game, engaged in figuring out where the pieces started. Joan, who described herself as a player who "would rather play to play" and who didn't really have any aspirations to win the game, commented while watching the video, "I didn't pay attention to one thing Samantha said [while she read the instructions]." The following also illustrated the difference between Samantha's and Joan's dispositional thrust into the same situation:

> Samantha: So, we just learned that even if you are at the bottom of the chute on your safety color, it is not a safety space. You have to already be going up the chute.
>
> Researcher: Ok.
>
> Joan: I haven't learned anything yet [laughing].

Assertion 4: encounters with unfamiliarity were experienced with emotion. Across several cases, participants were emotionally involved with their encounters with unfamiliarity. These emotions were varied and tended to change throughout the encounter (see Table 5). Edna commented, "It was definitely a roller coaster with a lot of emotions involved." For example, Terrell was "annoyed" by an encounter with his employee's lack of initiative. He said, "There was a lot of tension in the beginning…She would show a lot of trepidation and then that would frustrate me." Slowly, he figured out how to help her become a good salesperson. He described,

"I really, kind of, had to build her from scratch and it is amazing what we were able to do." During an encounter, Terrell experienced annoyance, tension, frustration, and then amazement.

Sally was disgusted, confused, worried, and felt guilty at the beginning of her encounter with her son's wet clothes and crusty hair. She remembered, "Once I found the reason, I was like, whew, ok good, not my fault [laughing]." She felt relieved.

Table 5

Examples Of Varied Emotions During Encounters

Emotions invited by the encounters	Emotions near the end of the encounters
Surprised, patient, disgusted, confused, worried, guilty, afraid, uncomfortable, awful, scared, in awe, under-qualified, trusting, distrusting, believing in ability, amazed, doubting, obligated, nervous, disconnected, annoyed, frustrated, tense, bossy, insecure, invested, unable, inconsistent, excitement, prideful, bored, stressed, concerned, vulnerable, stubborn, stupid, upset, sorry, pretty sure, no good, bugged, competitive, uninterested and enthusiastic	Relieved, glad, happy, grateful, confident, able, not afraid, careful, evolved, bad, competent, not stressed, adaptable, willing, open, fine, right, missing the obvious and creative

Assertion 5: encounters with unfamiliarity were ignorable. Two participants appeared to have encounters with unfamiliarity, but decided to ignore them in the sense that they didn't really meaningfully engage in the situation. For example, Sally didn't participate significantly in the hospital bathing situation (i.e., try to learn). She deferred the bathing of her son to the nurses while in the hospital and preferred not to be very involved. She said,

> They wanted me there, you know, to learn it and everything…I did a little bit of it, you know, like I wiped down his ear with a cotton ball and I was like, ok, I am good, you guys can bathe him the rest of the way because I was afraid I was going to hurt him.

In this case, the bathing of her son (i.e., encounter with unfamiliarity) invited Sally to action, but she viewed her relationship to the situation more as a patient who had the option to defer most of the bathing of her son to the nurses rather than a mother responsible for bathing her son. Her timid approach illustrated her dispositional action and emotion (i.e., fearful involvement regarding the possibility of hurting her premature son).

Another example can be found in the game, where three of the participants were interested in winning the game and one was not. They each had encounters with the new rules, game pieces, and game strategies and invited action. The participants, for whom winning mattered, concernfully involved themselves in these encounters as competitive players. The other player was concernfully involved as a fun-seeker and as such, she paid less attention to (i.e., somewhat ignored) the parts of the encounter that related to competition and strategy. Her comments as she watched herself on the video recording illustrated that she had ignored several encounters with unfamiliarity. Joan, the player who said she didn't care about winning the game as much as the other players; appeared to ignore Samantha's reading of the instructions. She commented about this, "I didn't pay attention to one thing Samantha said and assumed that I would get it as we went along." Also, she commented on how she looked at one point in the video recording, "At this point in time, I am completely ignoring everything [laughing]." About six minutes into the setup of the game and the reading of the instructions, Joan commented about herself while watching the video recording, "I haven't learned anything yet [laughing]." At the end of the video playback, Joan commented, "You know, throughout this whole thing, I don't remember ever one time paying attention to where my pieces were. I did not care…I don't even know what color I was [laughing]." By ignoring these encounters, it appeared she remained unfamiliar with certain parts of the game.

Assertion 6: encounters with unfamiliarity provided the interactive situation and setting for concernful involvement. Not only did the encounters with unfamiliarity invite concernful involvement, but they made concernful involvement possible. As stated before, according to Yanchar (2011) and others (e.g. Heidegger, 1962; Merleau-Ponty, 1962; Taylor, 2006; Westerman & Steen, 2007), human activity is always and already part of a situation and setting. The encounters provided these actionable, interactive situations and settings. In order to better describe these enabling situations and settings from the embodied familiarization perspective, I turned to the narrative-oriented qualities of plot, context and supporting characters within the encounters. In this section, I describe these enabling qualities.

Plot. There is not a tidy linear relationship between antecedent familiarity, encounters with unfamiliarity and exploration of encounters, which somehow creates more antecedent familiarity in some cyclical fashion. However, I found that some of the enabling aspects of encounters with unfamiliarity could be described within plot-like beginnings, middles and endings. I found that where tension or mystery increased, an encounter with unfamiliarity could be identified. These encounters also provided a backdrop for which the participant could concernfully engage. I also found that at the beginning of the encounter there was a plot-like development of trust that the situation was solvable or resolvable or that the participant's situational goal was attainable. With respect to plot-like middles, I found that the encounters facilitated a renewal of the initial tension or mystery surrounding the situation, which allowed for more concernful involvement. The plot-like endings to these learning experiences were basically where learning ended (i.e., where the unfamiliar became the familiar).

For example, Sally's learning experience related to her crying son displayed plot-like qualities. The instances of crying created a tension or mystery surrounding Sally's desire to calm

him – could she calm him down this time? Sally's dedication and obligation to her role of mother in these situations made the resolution of the plot a practical necessity. It was clear she loved her son but also craved sleep, which made it easy for her to believe that there had to be a possible way to calm her son's crying. She recalled,

> Well, [my aunt] was really good at it, but as soon as she left, it took me about three hours every single time I tried to get him back to sleep and by the end of it, he wanted to eat again and so I would have to feed him twice before he would fall back to sleep. And so it took me a week or two [laughing], but I learned different things, just about my son that would make him calm down.

This tension or mystery (e.g., could she get him back to sleep?) and a belief that there was a possible solution represented plot-like beginnings. These varied situations (e.g., kitchen light, cold bottle, static noise, etc.) provided renewed opportunities and backdrops for which Sally could engage in her attempts to calm her son, which represented plot-like middles.

Likewise, plot-like qualities surrounded Sally's learning experience related to bathing her son. Initially, tension or mystery was created regarding an unfamiliar bathing method demonstrated by the nurses – should she use this method? More tension or mystery was created regarding her aunt's bathing method – will she be able to bathe her son this way without hurting him? These tensions or mysteries were plot-like beginnings.

In the hospital, she deferred bathing her son to the nurses for fear of hurting him and because of doubts about the nurses' method. The first day home, her aunt, a trusted relative, gave her another bathing method option, but she was uncomfortable with it as well. Somewhat out of love and somewhat out of the obligation she felt as a mother, she made herself bathe him alone, first trying a bathing chair and then trying her aunt's method. Each opportunity to bathe her son

renewed her engagement with these tensions and mysteries and could be seen as plot-like middles. She said,

> I saw two or three different nurses do it and then I saw my aunt do it and I thought, you know, everyone else can do this. I am pretty sure I can learn this…hey, I am actually doing it…hey, I actually did it for a little while.

Sometimes there were overlapping plots. Within Sally's learning experience of dressing her son, she had unresolved tension or mystery related to her abilities because of the experience she had at age 13. The lack of opportunities for six years to dress babies following this experience increased her anxiety about her abilities. This span of about six years represented a plot-like beginning to her encounter with unfamiliarity. About the time she was presented with an opportunity to dress her son alone for the first time, she was in the middle of her can-I-bathe-my son-without-hurting-him? plot. They overlapped. The bathing plot was nearing the end and the dressing plot was nearing the middle. Sally found confidence from her bathing experience that helped her overcome her fear of dressing her son. She remembered,

> When I actually had to change his clothes for the first time was when, after I had bathed him and was like, look, I can do it. I was, it was so much easier to, you know, be like, ok, this goes over his head, you know, and I mean, I am still way, I was still scared, but it was easier because I had already done something else to make it so I had more confidence in myself.

Some plots twist and turn through failures and successes. As Terrell learned how to manage his employees as a business owner, he failed with the first two employees before succeeding with the current employee. He said,

> If I had been able to be around more and consistently more, I think both of them would have had similar success to what [his current employee] has had…man, that really didn't work…I do feel bad about that because it wasn't just my career I was playing with, it was those other two.

Some plots are simple. Even though Terrell's encounter of tying shoes differently was not very complex, there were still plot-like qualities to it. Essentially, the plot-like beginning was the tension or mystery surrounding Terrell's ability to tie his shoes the new way. Would he be able to do it? He saw others do it, including his father and concluded that he was likely to be successful. He said,

> There was a pride element involved because there were people much younger than me in the family who didn't seem to have a problem with this knot and I wanted to make sure that, you know, I was someone who is seen as competent [laughing].

Through several trials, Terrell was able to become proficient at tying the new knot (i.e., plot-like middle and ending).

There were plot-like qualities in academic situations. Edna's final exam created a tension or mystery about her course grade – something she said "was a huge motivation." The unfamiliar topic of "contingence" heightened this tension or mystery about her grade, but also created a tension or mystery related to what exactly contingence was. When she started to find information about contingence, she developed confidence that she could write about this topic. This was her plot-like beginning. She remembered,

> At first, it didn't really make sense because he was introducing the idea and probably five paragraphs into it, I was like, oh yeah, that makes sense.

Through scanning her resources (e.g., textbook, articles, dictionary, internet, etc.), she renewed her engagement with this topic (i.e., plot-like middle).

There were plot-like qualities in health situations. Unexpected pain, both in her hand and her eye, created tension or mystery for Edna. Her encounters with a large bug collection assignment and her typed reports renewed this tension or mystery and provided a backdrop for her concernful involvement. Her family and friends gave her hope she could cope with her health situation. This represented a plot-like beginning and her continued pain and struggle to complete her work represented a plot-like middle.

There were plot-like qualities in love situations. Accepting help and service from her family and friends and initially experiencing vulnerability and dependence created tension or mystery for Edna and provided a backdrop for her to deepen her understanding of charity (i.e., a plot-like beginning). Her renewed dependence throughout her disability and continued service from her family and friends were part of a plot-like middle.

There were plot-like qualities in game situations. For example, with players confident in their ability to learn a new game; the act of unpacking the box, setting up the game, and reading the instructions created tension or mystery. How would the game be played? Who would win? Would it be fun? How long will each game take? These mysteries would be renewed throughout the game as players took their turns (i.e, plot-like middle).

Across several cases, dealing with (i.e., exploring) these encounters tended to lead to a plot-like ending with an emotionally intense resolution. These resolutions were described by the participants using phrases such as “it was amazing,” “I knew it,” “it worked,” “I was glad,” “I was happy,” “it was, whew, you know, relieved,” “this way definitely made an impact,” “it ended up being a great account,” “it has given me a lot more freedom,” “that really didn’t work,”

"that's the funnest part of the job," "I was relieved," "everything else kind of fit together better" and "it was a huge relief."

Context. I found that some of the enabling aspects of encounters with unfamiliarity could be described as a narrative-oriented context. As stated before, context is the opposite of a vacuum. It includes everything surrounding the participant, although in this study I broke out supporting characters as a separate quality. Within the cases, context made concernful involvement possible. For example, what kind of dispositional action related to bathing her son would be possible for Sally if there were no sink, water, soap or "nastiness?" What kind of concernful involvement related to managing his employee would be possible for Terrell if there were no business, telephones, computers, doors to knock on or sales processes? What kind of meaningful engagement related to academic pursuits would be possible for Edna if there were no courses, books, internet, articles or topics? What kind of interaction related to playing a game would occur if there were no game to play? I found that across the cases, concernful action was enabled by context.

Supporting characters. I found that some of the enabling aspects of encounters with unfamiliarity could be described through the roles of supporting characters. Although it is possible to encounter unfamiliarity without supporting characters getting involved, I found supporting characters throughout most of the cases. For example, obviously Sally's son played a key role in all of her encounters with unfamiliarity making her dispositional actions related to calming, bathing and dressing him possible. However, Sally's concernful involvement would have been very different at least, and perhaps impossible in some instances, without the nurses, her aunt, her husband, her sister and her mother. Similarly, what kind of possible meaningful action related to managing an employee could Terrell take if he hadn't hired anyone? Could

Edna's academic graduation pursuits exist without teachers, authors, friends and family? Could Samantha have encountered all the meaningful aspects of a new multi-player game without other players? Perhaps concernful involvement is possible without supporting characters, but when they are involved, they represent an enabling quality of the experience. That said, I found that across several cases concernful action was enabled by supporting characters.

Assertion 7: learning experiences were often jumbled blends of multiple encounters with unfamiliarity. Across many of the cases, what the participant considered a single learning experience was filled with multiple encounters with unfamiliarity. Some encounters were quick and some were extended (e.g., in one case, it was extended for years). These encounters were not linear or systematic, but had a jumbled, everyday-lived, stretchable, blend-able quality to them. In this section, I illustrate several examples of this quality.

Case 1. Sally's experience included several overlapping, related encounters as she struggled with her crying infant. These encounters occurred multiple times every day. At the end of this learning experience, she had learned "how to make a baby stop crying," but she had also learned: (1) he liked light, (2) he would take a bottle cold, (3) he liked his diaper changed, (4) he liked being rocked back and forth, (5) he doesn't like clothes that are wet around the neck from drool and (6) he liked static noise.

Each of these learning experiences had memorable initial encounters that she was able to express, and each subsequent encounter had the potential to enable her to refine her initial learning. She recalled that it took her "a week or two" to learn all of these things. She also mentioned, "eight times a day," so I will use that as an estimate. In two weeks, she would have had about 112 encounters with her son crying and 112 opportunities to figure out how to soothe him. Some of these encounters would have occurred in the middle of the night in the dark and

some during the day in the light.

I also found that she mixed and matched methods as the situation required. For example, she combined the effect of rocking him in a rocking chair and the static noise to soothe him. Another example was when her husband had been having a difficult time soothing her son and so she woke up and told him to turn on the light and change his diaper.

Case 3. Sally also encountered the task of changing her son's clothes. This learning experience was connected to an encounter six years earlier with her aunt who asked her to dress Sally's baby cousin. That particular encounter plagued her with a phobia for years until she learned to dress her son. She said, "it was like this deep down fear…that I wasn't going to be able to dress [my son]…like a phobia." This six year old encounter was jumbled into the encounter with the first time dressing of her son. Also, her first encounter with bathing her son was jumbled into her first time dressing her son. She remembered,

> After my aunt showed me how to bathe him and in the next day [after she left] when I tried to do it and that is when I actually had to change his clothes for the first time was when, after I had bathed him and was like, look, I can do it. I was, it was so much easier to, you know, be like, ok, this goes over his head, you know, and I mean, I am still way, I was still scared, but it was easier because I had already done something else…so, I had more confidence in myself.

The encounter of bathing her son flowed into the encounter of dressing her son with this everyday, blendable quality of encounters with unfamiliarity.

Case 4. Similarly, Terrell's encounters with his current employee were related to earlier encounters on the job with other employees. His encounters with his first two employees, as a

business owner, didn't work out. His encounters with his current employee worked out and he realized that as a business owner, "managing sales personalities takes a lot of effort and a lot of time." He "felt bad" about those first two employees and resolved to be more involved with his current employee. He said, "If I had been able to be around more and consistently more, I think both of them would have had similar success to what [my current employee] has had."

Case 7. Edna faced a complex encounter when coping with tendinitis, which was constant throughout the learning experience, impinging on a number of everyday tasks. This minute-by-minute painful encounter taught her patience, among other things. These encounters were not linear, just ever-present, creating unique opportunities to adapt to situations at nearly every turn. These encounters blended with her daily student responsibilities where she encountered the unexpected offer of a friend willing to help her pin her large bug collection and learned more about non-romantic love and how to accept that kind of love.

Case 10. This jumbled, everyday-lived, blend-able quality of encounters with unfamiliarity was even more discernible in a group of learners. For example, each of the player's first moves was, for that individual player, an encounter with unfamiliarity. It was her first time taking a turn. However, it was also an encounter with unfamiliarity for the other players as well. The other players learned from watching each player take a turn. The individual encounters with unfamiliarity were combined together into the group's shared encounters with unfamiliarity where each individual blended the learning from her turn with learning from watching the others.

Learning which card to play was an example of this shared encounter. Allison's first encounter with the cards was to answer a "what" category card. She answered correctly, but moved a piece that wasn't on a "what" category space. No one noticed. During the next turn,

Joan wanted to move her piece that was on a green square, which represented the "when" category, but she was asked a question from a "who" category card. No one noticed, until Matty stole the question. Matty realized the discrepancy and then all four players learned from Allison's, Joan's and Matty's individual encounters as they blended together. Matty said, "This is the exact moment when we realized there was a flaw in the cards." Matty said, "We realized," which somewhat illustrated the sharing and blending of multiple encounters.

Assertion 8: encounters with unfamiliarity had varied eventfulness for their associated learning experiences. Across several cases, the eventfulness of encounters with unfamiliarity ranged from momentous to fairly commonplace in the sense that some encounters were more extraordinary than others. For example, going blind and facing a phobia were momentous. Dressing and bathing a baby for the first time, hiring and managing an employee, and taking a final exam were somewhat eventful (i.e., not quite momentous, but not commonplace either). Tying a shoe differently and playing a new game were fairly commonplace. All of these—whether momentous, somewhat eventful, or commonplace—shared the common characteristics that made them identifiable as encounters with unfamiliarity, that is, situations described in Table 4.

Assertion 9: participating in this study was an encounter with unfamiliarity. Four of the participants appeared to learn something during the act of being interviewed or watching the video in the research study. For example, Edna said, "Now that we are talking about this, I realize I am really stubborn in asking for help." By talking about her learning experiences with me, she learned something about herself, that is, she was stubborn. The study's interview process itself was the encounter with unfamiliarity that enabled this learning. Somehow, the act of being interviewed had invited her to talk about things in such a way that her stubbornness was

revealed to her.

Terrell realized during the interview process that his answers weren't coming across to him as part of what he considered a learning experience even though that is what I asked him to talk about. He broke into his telling me about an experience he had had and said, "It's been funny, you know, you are asking me what I have learned from this, but really it's been kind of like this evolution of how she and I interact with each other." As he had quickly reflected on what he had been saying, he learned that from his perspective of learning he hadn't been talking about learning. I think unexpectedly for him, he had been talking about learning from the embodied familiarization perspective, which he referred to as "evolution."

Matty also had a few similar revelations. She said during the interview session while watching a video recording of her playing the game, "I realized I ate the whole time." At another part of the video she commented, "So, I learned something about myself here. I am very competitive, but who I am playing with matters." She realized she had been less competitive during one turn because she was picking a card for her best friend to answer and she actually chose the side of the card she thought was easier. In these examples, Matty was encountering unfamiliar details about herself. The act of watching herself on video invited her to reflect on her recorded actions.

Samantha, while watching herself on the video, began to apologize to another player for something she said in the video. She commented, "I am sorry I said what I said. I am sorry. It sounded rude…harsher on camera." She apparently encountered an embarrassing version of herself on the video. She was surprised by how she sounded and wanted to make sure she amended what was shown on the video. She learned that she had said something that she hadn't intended.

Assertion 10: encounters with unfamiliarity were not always problems to be solved. In many cases, the encounters with unfamiliarity could be seen as problems to be solved. For example, Edna had an exam problem to answer, a problem with tendinitis and a problem with partial blindness. Terrell had the problem of managing an employee and Sally had the problem of soothing a crying baby. These experiences could easily be viewed and described as problems, especially from the theoretical lens of well-known problem-based learning where a subject is learned through the experience of problem solving. However, there were other cases where the encounters with unfamiliarity didn't seem like problems to be solved. In this section, I describe three non-problem encounters.

Personal reflection. The first encounter with unfamiliarity that didn't seem like a problem to be solved was Edna writing her journal entry about perspective. She commented,

> I am often looking for things that I have experienced in my life that I can write analogies about. That seemed to be a good one, so that's why I learned about perspective because I was trying to write this analogy.

She was in the habit of writing analogies and she enjoyed it. She said, "I like to write analogies." The journal entry appeared to be a reflection on her life for the sake of reflecting, written in the form of a personal observation about applying her partial blindness experience to more religious topics like pride, weakness, eternity, the Lord's will and progression. Through personal reflection on these topics with the backdrop of her partial blindness, she became more familiar with the concept of perspective. It could be argued that Edna's change in familiarity with regards to perspective was problem solving, but perhaps a better description would be personal reflection.

Emulation. The second example of an encounter that didn't seem like a problem to be

solved was Terrell being introduced to a new way to tie his shoes. Terrell didn't have a problem with tying his shoes. He wasn't looking for a new way to tie his shoes. However, his father was so excited about it, he paid attention. He remembered, "[My father] did it, showed me how and then I did it." By emulating his father, he learned to tie his shoes differently. It could be argued that learning the new way to tie his shoes solved the problems of his old way (e.g., laces would come untied as he jogged), but he appeared to learn the new way prior to any attempt to solve those problems. He wasn't looking to solve those problems from the outset. He was simply emulating his excited father.

Playing. The third example of non-problem-based encounters was illustrated in the learning experiences of playing a new game. This overall experience was viewed by the participants as a game to be played, not a problem to be solved. They described the experiences as "competition," "fun," and "[enjoying] being with women and talking and playing." It could be argued that all throughout the game, the participants were problem-solvers, that is, solving the problems of game board set-up, of card selection rules or of proper strategy; but that description seems externally fitted upon them. For example, the participants viewed themselves as players, not problem-solvers. Also, the game instructions reinforced this view by describing *players playing the game*, not problem-solvers solving problems.

Chapter 8: Discussion

My specific research question was: *Are encounters with unfamiliarity part of the lived experience of learning at all and, if so, what narrative-oriented qualities are commonly experienced during these encounters?* In this chapter, I discuss my answers to this question, some limitations of my study, some implications of my results and my conclusions.

As shown in the assertions of the cross-case analysis, I found that encounters with unfamiliarity were identifiable throughout the participants' lived experiences of learning. Having identified them, I made nine other assertions about encounters with unfamiliarity that were supported across multiple cases. These assertions answered the second part of my research question related to the narrative-oriented qualities of the encounters. In the next section, I describe how these narrative-oriented qualities were experienced.

Reflection on Narrative-Oriented Qualities

According to Parrish (2009), there are five categories of narrative-oriented qualities important to designing instruction: theme, lead character, plot, context and supporting characters. Four of his five qualities were experienced during the encounters with unfamiliarity. Theme was not. I could always find theme, but it was discovered retroactively as an abstraction of the learning experience. It summarized the experience. For example, the theme of Terrell's learning experience was how to better manage his employee. This was the fundamental premise to his learning experience. His encounters with unfamiliarity during this learning experience were related, but the theme became clear only after the encounters had occurred. In this section, I discuss the deeper understanding of the assertions made possible by viewing them through the perspective of the other four narrative-oriented qualities.

Lead character. The lead character quality represents the learner's self-image during the learning experience. By summarizing learning experiences this way, I found more richness and humanness to the assertions. Assertion 2 (i.e., encounters with unfamiliarity mattered to the participants) was closely related to the learner's self-image or lead role. For example, Sally was concerned about her son's crying. It mattered to her, but it mattered to her as a mother. Likewise, Terrell was concerned about his employee's performance from the perspective of a business owner, not as a customer or passer-by. Edna was concerned about finishing her bug collection. Her concern was not that of a hobby bug collector or a curator of a museum exhibit on bugs. Her concern was that of a student. Playing the game mattered to Allison, for example, because she enjoyed competition. She viewed herself as a player.

The lead character quality also clarified assertion 3 (i.e., encounters with unfamiliarity invited dispositional action). Across several cases, I found this invitation linked to how the participant viewed their relationship to the situation. Sally viewed her relationship to her situations (e.g., soothing her son, bathing her son and dressing her son) as a mother. The encounters invited her to act like a mother. Terrell viewed his relationship to his situations with his employee as a business owner and likewise his encounters invited him to act like a business owner. In a similar way, Edna was invited to act like a student and Allison, Matty, Samantha and Joan were invited to act like players by their various encounters.

Additionally, the lead character quality refined assertion 4 (i.e., encounters with unfamiliarity were experienced with emotion). As expected, Sally's encounters were experienced with motherly emotions such as love, fear, relief and happiness, whereas Terrell's encounters were experienced with business owner-type emotions such as annoyed, invested, careful and competent. As a student, Edna's encounters were experienced with feelings like

vulnerable, stressed, stupid and adaptable. Not surprisingly, the game was experienced with competitive feelings for some of the players and fun-loving feelings for all of the players.

Finally, the lead character quality developed more deeply assertion 5 (i.e., encounters with unfamiliarity were ignorable). Sally encountered an unfamiliar way to bathe her son while in the hospital. She was invited to participate in bathing him, but deferred to the nurses. Although her relationship to the situation was that of a mother, she was also a patient at the time. Her patient role appeared to enable her to ignore this encounter because a patient didn't have to do the bathing. Another example was Joan. She ignored many of her encounters with the unfamiliar parts of the game that dealt with competition or strategy. She commented, "I could not have cared less and I had no idea where any of my pieces ended up." While watching the video of her turn, she also said, "You moved me. Yeah, see? And I didn't even know and I don't have a clue and I didn't even know I had spaces to go back." Her lead character role was a non-competitive player. As such, she ignored her encounters with many of the rules and tactics.

Plot. The narrative-oriented quality called plot represents the beginnings, middles and endings of a narrative. According to Parrish (2009, p. 515),

> Beginnings call for creating tension or mystery and developing trust that the tension can be resolved, middles often call for continued renewal of the initial engagement and reinforcement of the potential for consummation, and endings call for both an emotional intensity that heightens the experience and a change for reflection that connects everything that has come before into logical and organic unity.

In this section, I found a deeper understanding of the assertions through describing the encounters with the narrative-oriented quality of plot.

Within assertion 6 (i.e., encounters with unfamiliarity provided the interactive situations and setting for concernful involvement), the interactivity of the encounters could be described in terms of plot-like characteristics. Several examples of how this interactivity enabled the plot-like tension or mystery appeared across multiple cases: the tension of a crying son, the mystery of bathing methods, the tension of overcoming a phobia, the mystery of an employee's bad performance, the tension of a final exam, the tension of a disability and the mystery of a new game and its outcome. The participants sensed these tensions and mysteries. In addition, there were several parts of the interactive situations that were revealed through plot-like middles associated with the various encounters: Sally's different opportunities to calm, bathe and dress her son, Terrell's renewed contacts with his employee, Edna's daily living with tendinitis or partial blindness and the various turn-taking situations accompanying the playing of the new game. These interactions renewed the tensions and mysteries sensed by the participants. Finally, these interactive situations concluded is ways that could be examined also through the lens of a plot-like ending (i.e., emotional resolution of the tension or mystery). Participants often felt different kinds of emotions at the end of an encounter than during the encounter (see assertion 4 for more details).

Plot-like qualities were helpful in deepening an understanding of assertion 7 (i.e., learning experiences were often jumbled blends of multiple encounters with unfamiliarity). Because encounters were beginning and ending on top of each other and influencing each other, it appeared that there was not a tidy linear or cyclical relationship between antecedent familiarity and exploration of encounters. As they did so, the tensions and mysteries of one encounter could blend into another encounter and then both resolve at the same time. Summarizing these experiences using plot-like characteristics helped make sense of the jumbled blends. For

example, Sally's experience at age 13 where she developed her fear of dressing babies remained unresolved as a tension. It blended with her encounter of dressing her son and culminated in a nervous, scary attempt to dress her son. It ended successfully and she summed it up by saying, "Then I wasn't really scared anymore. I was careful, but I wasn't scared." Similarly, Edna's tensions and mysteries related to tendinitis collided with her tensions and mysteries related to her bug collection assignment and her typing assignments. She had to deal with both and how they blended with each other.

Finally, summarizing learning experiences using the plot-like qualities facilitated a unique understanding of assertion 8 (i.e., encounters with unfamiliarity had varied eventfulness for their associated learning experiences). Some tensions and mysteries and their associated resolutions were poignant, while others were commonplace. An encounter with partial blindness and the related coping were momentously eventful. An encounter with an unfamiliar knot and related attempts to tie shoelaces were fairly commonplace.

Context. Context is the opposite of a vacuum. The learner was always and already engaging within a context and by describing the experience in this way, a deeper understanding of assertion 6 (i.e., encounters with unfamiliarity provided the interactive situation and setting for concernful involvement) was discernible. As mentioned, context contributed to the interactivity of the situations, which made concernful involvement possible. In other words, without context, concernful involvement would be impossible. Sally experienced water, soap and dirtiness, which were enabling and interactive during her learning experience. Terrell's learning was enabled by his shoes and knots in one case, and enabled by his business, computers, places, and systems in another case. Edna was concernfully involved in her academic pursuits because she had access to classes, books, articles, assignments, grades and computers. Allison, Samantha,

Matty and Joan learned to play the new game by interacting with the necessary game pieces, instructions, rules, game board and cards.

Supporting characters. Everyone involved in the situation is a character supporting the lead character. Unlike context, concernful involvement is possible without supporting characters (e.g., personal reflection), although it could be argued that every lead character has at least two supporting characters: a mother and a father, given their roles in providing the lead character with a life. However, for purposes of this study, I focused on the immediate supporting characters within the situations. Assertion 6 (i.e., encounters with unfamiliarity provided the interactive situation and setting for concernful involvement) was illustrated more fully through how the lead character engaged with these supporting characters. The most obvious example in the cases of a supporting character was Sally's son. His interaction with her provided an opportunity for her concernful motherly involvement. Likewise, Terrell's employee and Edna's friends and family were examples of supporting characters enabling concernful involvement. All of the game players were supporting characters for each other.

General Insights About Encounters With Unfamiliarity As A Part Of Learning

The ten assertions claimed in this study provided some general insights about encounters as a part of learning. First, the framework of embodied familiarization and specifically encounters with unfamiliarity support *possibility*. While there are claims that possibility is a magical illusion (Wegner, 2008) and that human actions are ultimately governed by efficient causality, that is, one event determines the next in a long, unbroken, linked chain of events, a general insight of this study is that it supports a viable alternative to mechanism. As such, I found that encounters concernfully matter to the learner, are experienced with emotion, and invite dispositional action. When they are ignored little or no learning occurs. Also, they

provide an interactive situation and setting that enables learning. Without them, most learning may not be possible.

The second general insight is that this framework and specifically encounters with unfamiliarity support *concern*. In other words, they support concernful, meaningful, dispositional actions that aren't well supported in other learning theories. Encounters supported imperfect, incomplete, disorderly, jumbled, dynamic, eventful, inviting, and interactive situations and settings that enabled and invited this dispositional action. Additionally, they seem ubiquitous. Even the research itself tended to be an encounter with unfamiliarity for the participants in a holistic fashion. Contrary to many other learning theories, no attempt was made to break up the learner into parts and create reified constructs to describe learning. As a result, I found that there was more humanness to these descriptions of learning, as opposed to the traditional mechanistic descriptions.

The third general insight is that describing learning experiences in terms of embodied, non-representational, and non-mechanistic encounters with unfamiliarity supports *holistic research*. This framework opens up promising areas of holistic (i.e., whole learner/whole learning) inquiry for learning-related issues (e.g., failure, transfer, memory, problem-solving, development, exploration, socialization, community, etc.) and instruction-related issues (e.g., simulation, intervention, feedback, media, layers, coaching, scaffolding, modeling, apprenticeship, etc.). Future research should include using the theoretical framework of embodied familiarization to study these learning and instruction topics.

Perhaps, this type of holistic research would result in a new instructional design theory that supports embodied familiarization and would produce instruction that looked like crafted, semi-authentic encounters with unfamiliarity designed to invite students to dispositionally

explore. Examples of this might be instruction that invited a student to experience what it would be like to be: an economist in a shampoo manufacturer that is going bankrupt, a historian putting together a documentary on World War II from a working-class German citizen's perspective to be aired in Tel Aviv, a professor grading an essay on the strengths and weakness of MOOCs, an artist exploring mediums to be used in a Middle-eastern tribute to beauty, an engineer designing a sound stage for a rock band performing in a ruin of a stone castle, a chemist inventing pain medicine that is not habit forming, a farmer in Chile deciding which crop to plant, a nurse reviving a patient in cardiac arrest or a dancer emulating the steps of one of the great dancers.

Limitations Of The Study

One limitation of this study was the exclusion of potential participants. The sampling design decision excluded people under 18 years old, people located outside a short driving distance from the researcher's house and people who were not willing to commit to a certain amount of time for the study. This limitation was a trade-off due to the resource constraints of the study.

Another limitation of this study was related to the type A case design. The case data prompted by interview questions was an incomplete account of the potentially abundant details of their participants' experiences either because I didn't ask about them or the participants didn't remember them. Also, because the interview questions were regarding recent past learning experiences, the case data was deficient in some immediacy.

With regards to the other case design (type B), there were limitations concerning authenticity. I had planned to follow a participant with a camera capturing naturally occurring learning experiences, but being able to do this required site consents and person consents from all sites and persons appearing in the video. As an alternative, I decided to control the site and

persons who could appear in the video recording by having the recording take place at my home with four players. That said; playing a board game does naturally occur in a home, but usually doesn't include three cameras recording the activity.

Conclusion

Although these cases do not cover all aspects of possible learning experiences, the ten assertions about encounters with unfamiliarity contributed significantly to highlighting the strengths of a theoretical framework based on an embodied, non-representational, and non-mechanistic approach and to understanding the lived experience of learning.

The study highlighted the strengths of a theoretical framework based on an embodied, non-representational, and non-mechanistic approach. A major strength of this approach is its commitment to a holistic view of learning. Whole patterns, not bits or isolated variables, are studied. It brought out the entire learning experience where the learner, as an agent, is always and already dispositionally engaged in a situation within an interactive setting.

Another strength of this approach is its way of dealing with learning experiences without resorting to mechanism or representationalism. This approach avoids mechanism and representationalism by employing narrative-oriented qualities as summarization tools. These qualities make more discernible the agentive, meaningful aspects of learning; whereas, mechanistic and representational approaches tend to theorize away any discernible forms of learner agency. Yanchar, Gantt, and Clay (2005, p. 31) stated it this way,

> For example, although traditional, quantitative methods have been considered very successful in many of the natural sciences, they seem to have fallen short in the investigation of human phenomena. Indeed, critics within psychology have convincingly

argued that the received scientific method does not permit meaningful accounts of many aspects of human life and experience (e.g., Gantt & Williams, 2002; Giorgi, 1970; Harre & Secord, 1972; Koch, 1999; Morgan, 1983; Polkinghorne, 1983; Slife & Williams, 1995; Yanchar & Hill, 2003; Yuille, 1986).

A final strength of this approach is it requires very little, if any, translation of human activity into abstractions. As Williams (1987) claimed, abstractions tend to easily move from harmless speculations to reifications (i.e., making the abstract into the concrete or real). In other words, abstractions tend to become mechanistic. This approach; however, doesn't rely much on abstractions to describe learning and avoids reification of mechanism.

The lived experience of learning is meaningful, concernful, human, and agentive and the narrative perspective allowed for the lived experience to be explicated. In other words, a humanizing of the learner happened within the narrative framework that gave way to a meaningful account of the learning experience. By situating the learner within an interactive context and drawing attention to the learner's concernful involvement through the narrative framework, a meaningful account of the human, lived experience of learning was discernible.

These accounts were made possible in part by utilizing narrative-oriented qualities (i.e., lead character, plot, context, theme and supporting characters) as summarization tools. Learning was described as lead characters encountering unfamiliar, interactive situations and settings at times aided by supporting characters in their concernful engagement through a plot-like beginning, middle, and ending. Lead characters experienced their roles as concerned, agentive participants dispositionally and emotionally engaged. The encounter invited their meaningful involvement and enabled it. Encounters blended with other encounters, had varying eventfulness, and were not always problems to be solved, that is, they were sometimes situations

initiated for the sake of curiosity or wonder.

Stated simply, this approach anthropomorphizes the learner. It venerates the learner's agentive humanness and esteems the participational learning experience.

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APPENDIX A: Interview Protocol

1. General participant background questions (Briefly tell me about yourself)
    a. Occupation
    b. Education
    c. The participant's overall situation in general
2. Selecting a recent learning experience to discuss
    a. What are a couple of learning experiences you have had recently?
    b. Which one would you like to talk about or which one do you think you can remember the best?
3. Describe the learning experience. (Make affirming comments as needed to move this part of the interview along; but let the participant tell the "story" as they experienced it, without leading him or her.)
4. Clarify any vague details about the selected experience
    a. Draw out general details
        i. What was the specific situation? What was involved or what did you have to do?
        ii. Where did it happen? What is that location like?
        iii. Who was involved? What is your relationship to him or her?
        iv. When did it happen?
        v. What was [this or that] like?
        vi. What were you thinking at [this or that] point?
        vii. What were you feeling at [this or that] point?

b. Draw out the participant's sense of exploration, if any
    i. At what point did you feel like you had learned [the topic or task]?
    ii. Did you feel a sense of accomplishment, arrival, certainty or ease at the completion of this learning experience?
    iii. What equipment or technology was involved?
    iv. Observe and document any artifacts related to the experience
c. Draw out the participant's sense of antecedent familiarity, if any
    i. What background did you have [with the topic or task] prior to the learning experience?
    ii. Were you prepared for [the topic or task]?
    iii. Is there any history I should know?
    iv. Did you draw on any resources at this or that point?
d. Draw out the participant's sense of encounters with unfamiliarity, if any
    i. Can you describe the experience of being presented with [the topic or task]?
    ii. Was [the topic or task] difficult?
    iii. Did you feeling any tension, uncertainty, or awkwardness?
    iv. Did you doubt that you could learn [the topic or task]?
    v. What challenges did you face as you attempted to deal with [the topic or task]?

5. Clarify any vague details about what mattered to the participant about the selected experience
    a. How did [the topic or task] matter to you?

b. What were the important decisions you made during the experience?

c. What were your goals related to this experience (goals at the beginning, middle, and end)?

d. What was your motivation at this or that point?

e. Why did you engage in some aspect of the situation in a certain way?

f. A question that gets at how the participant evaluated important aspects of the experience?

6. Opportunity for participant to say anything else

a. Is there anything else you would like to add about this experience?