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## Violinmaking Apprenticeship: A Qualitative Investigation of Learning as Embodied Familiarization

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### Abstract

This case study examines Yanchar, Spackman, and Faulconer's "Learning as Embodied Familiarization" (hereafter LAEF) framework in the case of a violinmaking apprenticeship. Its purpose is to critically examine each facet of the LAEF framework as manifest in the lived experience of both master and apprentice. While previous studies investigating this framework have used various qualitative and hermeneutic methodologies, none have done so from a prolonged, ethnographic perspective. This perspective comes from an immersive autoethnography in which I apprenticed under a master violinmaker in an informal, one-on-one workshop environment for six months working four to five days a week for three to four hours each day. By analyzing fieldnotes, interviews, artifacts and video recordings of work sessions, this article situates each facet of the LAEF framework in this lived experience of apprenticeship learning and explores its insights and limitations within this specific case. Findings show that LAEF provides a robust lens through which one may consider human learners as agents, meaningfully engaged in their own learning, where making deliberate choices when presented with unfamiliarity allows them to explore, gain experience, and become in the learning process.

### Keywords

apprenticeship, learning, agency, familiarity, autoethnography, qualitative research, embodied familiarization

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## **Violinmaking Apprenticeship: A Qualitative Investigation of Learning as Embodied Familiarization**

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This case study examines Yanchar, Spackman, and Faulconer’s “Learning as Embodied Familiarization” (hereafter LAEF) framework in the case of a violinmaking apprenticeship. Its purpose is to critically examine each facet of the LAEF framework as manifest in the lived experience of both master and apprentice. While previous studies investigating this framework have used various qualitative and hermeneutic methodologies, none have done so from a prolonged, ethnographic perspective. This perspective comes from an immersive autoethnography in which I apprenticed under a master violinmaker in an informal, one-on-one workshop environment for six months working four to five days a week for three to four hours each day. By analyzing fieldnotes, interviews, artifacts and video recordings of work sessions, this article situates each facet of the LAEF framework in this lived experience of apprenticeship learning and explores its insights and limitations within this specific case. Findings show that LAEF provides a robust lens through which one may consider human learners as agents, meaningfully engaged in their own learning, where making deliberate choices when presented with unfamiliarity allows them to explore, gain experience, and become in the learning process.

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### **Introduction**

Egan and Gajdamaschko (2003) call apprenticeship “the first and most ancient conception of the educator’s task (and) the most common in human cultures across the world” (p. 83). In a similar vein, Lave and Wenger (1991, p. 29) call apprenticeship a broad metaphor for meaningful, situated human learning, rather than a specific educational method. This apprenticeship metaphor, said Rogoff (1990), encompasses one’s lived participation and immersion in the all-encompassing richness of culture whether that be in school, work or even family. From this point of view, apprenticeship envelops and permeates nearly every aspect of one’s meaningful, everyday experience in the world. In short, apprenticeship is built upon an understanding of learning as becoming (Calvert, 2014) and what Marchand calls “the formation of person” (2008).

This sort of learning involves the embodiment of norms, values and, in essence, stepping into an entire “way of life” (De Munck et al., 2007, p. 4). In this light, apprenticeship emphasizes the meaningful and uniquely human dimensions of learning as one’s lived experience of sociocultural involvement in the world. As such, apprenticeship itself is an ideal case in which to investigate the Learning as Embodied Familiarization framework (hereafter LAEF), which itself is based on these very principles.

## Learning as Embodied Familiarization

While a mechanistic interpretation of human learning has characterized broad areas of educational psychology and philosophy (e.g., Delprato & Midgley, 1992; Gardner, 1985; Leahey, 2003; Robinson, 1986; Rychlak, 1988), many have argued that such an approach fails to address the rich, human elements of the learning experience that make it so meaningful as mentioned above (e.g., Bandura, 1986; Bruner, 1990; Colaizzi, 1978; Giorgi, 1989; Rychlak, 1988, 1994). The LAEF framework takes these dimensions of human learning into account and is based upon a fundamental understanding of human agency as described in Yanchar's (2011) Participational Agency. This account of human experience departs from both the mechanistic world of hard determinism as well as radical libertarian agency theories. In essence, Participational Agency lays the foundation for one to consider the processes of learning as neither determined by efficient causation nor entirely unrelated to meaningful antecedence.

**Table 1**  
*Learning as Embodied Familiarization*

MODES OF FAMILIARIZATION	LIVED PHENOMENA	
<p style="text-align: center;">BASIC</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">WORKING</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">SKILLED</p>	Antecedent Familiarity	
	Encounters with Unfamiliarity	
	Exploration / Familiarization	
	<b>EXPLORATION PROCESS</b>	<p>Questioning</p> <p>Purposive Study</p> <p>Acclimation</p> <p>Amelioration</p> <p>Innovation</p> <p>Emulation</p> <p>Self-reflection</p> <p>Apprenticeship</p>
	Tacitization	

The LAEF framework flows out of this account of human agency and bases its description of learning upon the idea that human beings are agents meaningfully engaged in situated activities (like learning) that matter to them. Seen in this way, “learning is conceptualized as meaningful engagement that involves a shift in embodied familiarity—that is, a shift in one’s sense of ‘dwelling’ and capability” (Yanchar et al., 2013). As this type of agency is considered in the learning process, learning itself takes on an added nuance—not as a footnote or addendum within a mechanistic, efficient-causation framework, but as a rich,

alternative description of the meaningfulness that lies at the heart of the significant and ever-present human experience of learning. The Learning as Embodied Familiarization framework describes learning using four lived phenomena—antecedent familiarity, encounters with unfamiliarity, exploration/familiarization, and tacitization, as well as three modes of familiarization that one experiences in the learning process—basic, working, and skilled (see Table 1). The purpose of this article is to critically examine each of these dimensions in the situatedness of a prolonged violinmaking apprenticeship in order to shed light on their applicability in a situated learning context rather than in theory alone.

Antecedent familiarity, the first facet of LAEF, is the recognition of previously experienced situations or actions within a new learning process. Encounters with unfamiliarity occur as a new level of involvement is required, inviting one's agency to propel their learning into the exploration stage. Exploration/familiarization is when an individual chooses to engage with the unfamiliar thus learning through lived experience. According to the LAEF framework this exploration can include questioning, purposive study, acclimation, amelioration, innovation, emulation, self-reflection, apprenticeship, etc. As the skill becomes familiar, it requires less concentration and becomes part of one's way of being. This is referred to as tacitization (see Yanchar et al., 2013).

This article answers the question: What insights are gained by critically examining the learning process through the lens of Learning as Embodied Familiarization in a situated apprenticeship context? Several studies have been previously conducted to investigate the LAEF framework since its beginnings in 2013. While Yanchar and Hawkley (2014) used LAEF as a lens through which to investigate the process of instructional design, its primary purpose was not to investigate the LAEF framework itself. Spackman et al. (2016) had a similar purpose, using LAEF as a lens through which to examine learning more generally rather than a specific learning context as a means of examining the LAEF framework. Other articles focusing on LAEF are not critical examinations of the framework, but represent theoretical frameworks built upon it.<sup>1</sup> Not only have none of these articles had as their primary purpose to critically examine LAEF in detail, but each involved the author of the original theory. This article fills this gap by maintaining as its primary purpose the critical investigation and examination of each facet of LAEF in the rich context of a prolonged autoethnography on apprenticeship, which no other article has yet to do in this way.

## Literature Review

### Apprenticeship: Background

Various works on the history of education specifically mention apprenticeship as a theme that spans several significant civilizations in antiquity. While it is assumed that education in pre-literate societies took place primarily within familial master-apprentice relationships, the priestly schools of ancient Egypt and the scribal education of ancient Mesopotamia offer concrete examples of the foundational role apprenticeship played within several prominent education systems of the ancient Near East (see Eby & Arrowood, 1940, p. 72). Furthermore, the close ties between such apprenticeships and familial bonds, especially among the ancient Israelites (see Eby & Arrowood, 1940, p. 118) hint at how many apprenticeships of antiquity were intended to be a more holistic educational experience. Egan and Gajdamaschko (2003) call apprenticeship “the first and most ancient conception of the educator's task” and “the most common in human cultures across the world and...almost the

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<sup>1</sup> See Spackman and Yanchar's (2014), “Embodied cognition, representationism, and mechanism: a review and analysis” and Yanchar's (2016) “Identity, interpretation, and the moral ecology of learning.”

exclusive mode of instruction in hunter-gatherer societies” (p. 83). According to this perspective, the concept of apprenticeship as a means of education has significant impact both horizontally, in that it spans across cultures and languages all around the world, and vertically, in that it begins in antiquity and extends throughout recorded history to the present day.

The separation of intellectual skills, accomplishments, and professions that exists today in the modern Western philosophical paradigm is only a recent development. Throughout history, an educated mind has been just as valuable as educated hands. Many, in fact, did not consider them isolated traits or pursuits at all. Not until modernity was the concept of craft isolated from general artful skill to apply only to what some see as isolated, quaint, and assumedly obsolete creative pursuits or hobbies (Sennett, 2008). These antiquated definitions of “craft” suggest that the art of human hands was (and perhaps still is) somehow qualitatively different from that which occurs in nature. This again serves to support the notion that human mastery and human teaching, rather than automated versions of the same, play at least a unique, if not indispensable, role in education.

Partly due to a professed inheritance of classical tradition, medieval European education not only established the first Western universities, but also continued the tradition of apprenticeship through its guild systems. Within these systems, apprentices served as indentured servants under their masters over a prolonged period (Baillie, 1956, p. 6). Gradually, however, the concepts of “art” and “craft,” “trade” and “profession” separated from one another (Aldrich, 1999, p. 14) and as university education spread, the master’s role was relegated to “a combination of college-based modules, institutional training and workplace experience” (Gamble, 2001, p. 185). Despite such changes, however, apprenticeships continued (and, in many ways, have continued) to play a significant role in both professional and academic training in the West, including such noteworthy examples as the Oxford tutorial system, the junior partnering of lawyers and residency programs for medical students (Aldrich, 1999, p. 15). When, as Coy (1989a) said, there is a need to “learn things that cannot be easily communicated by conventional means, apprenticeship is employed,” by doctors, lawyers, scholars, tradesmen, and artisans alike. It seems, even after the best efforts of medical, law, business, and trade school, doctors perform their residencies, law students become junior partners to more experienced lawyers, budding businessmen take internships with corporate executives, and tradesmen apprentice under experienced practitioners.

Furthermore, apprenticeship remains a relevant and powerful educative modality today. Among educationalists, for example, it has undergone several significant and influential theoretical reconsiderations in recent decades. Collins et al. (1989) “cognitive apprenticeship” as well as Lave and Wenger’s (1991) “legitimate peripheral participation” frameworks placed apprenticeship in a prominent position within the broader scholarly conversation on education generally.<sup>2</sup> Other significant research on apprenticeship includes works on craft apprenticeship (see Coy, 1989b; Marchand, 2008, 2010a; Portisch, 2010; Argenti, 2002) and the ubiquity of the apprenticeship approach (see Gowlland, 2014; Downey, 2010; Fuller & Unwin, 2011; Wacquant, 2005). Much of apprenticeship research focuses either on whole communities in which one-on-one apprenticeships occur (see Graves, 1989; Lave, 2008), or on workplace apprenticeship in which a group of experienced workmen initiate a group of inexperienced, newly hired trainees (see Cooper, 1980; Gamst, 1989; Simpson, 2006). Higher education hybrid models of apprenticeship play an important role in the development of good quality vocational education and training (Bathmaker, 2017; Chankseliani & James Relly, 2016; James Relly, 2020; James Relly et al., 2022). James Relly et al. (2022) demonstrate that there needs to be more employer engagement with the apprentices to help them further specialize and achieve higher-level skill development. They emphasize the collaborative training both in the

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<sup>2</sup> At the time of this article, Lave and Wenger’s work had been cited over 74,000 times.

vocational college and in the workplace to achieve a transferability of skill that can then be utilized in various companies. These modern apprenticeships prepare individuals for the workplace but lose the personalized learning that only a master can provide within a traditional apprenticeship.

There is even evidence of an increasing demand for traditional craft apprenticeship by employers in the workplace (Keep & James, 2011), professors at research universities (Rogers et al., 2012), professional musicians in conservatories (Nerland & Hanken, 2004), and government specialists on the integration of college-age youth into the workforce (Fuller & Unwin, 2007). The newest literature in this most recent revival of apprenticeship often cites the uniquely intimate, one-on-one relationship between master and apprentice as one of its most valuable characteristics (Dolphin & Lanning, 2011; Fuller & Unwin, 2007; Hoover & Oshineye, 2009; Nerland & Hanken, 2004). The depth and breadth of this body of research further establishes apprenticeship's fit as a lens through which to examine the rich, agentic framework outlined in LAEF.

## Method

### Study Overview

In order to critically examine the LAEF framework in a situated learning context, I apprenticed under a violinmaker (hereafter referred to as William) for a period of six months. The apprenticeship was informal with lessons conducted at William's home workshop four to five days a week for three to four hours each day. I met William at the Jerusalem Center for Near Eastern Studies for a semester study abroad program. In the months that followed, we became fast friends, connecting over our passion for music, despite a near fifty-year difference in our ages. At this time, I was struggling to find purpose and meaning in my life, thus his friendship meant a lot to me. He became a mentor teaching me that I could pursue multiple passions rather than stay within the one-track course pursuing music I had set for myself. Although William's love for music had led him to pursue an education in organ performance all the way to the doctoral level, it was not his only passion. I still remember being completely baffled by that idea. It seemed totally foreign to me that anyone who was that skilled in music could be passionate about anything else. But William didn't live like that. He loved so many things, and made time to pursue them as hobbies, side-jobs, or anything else he could think of. That time studying abroad changed the course of my life. William and others had opened my eyes to other possibilities.

I was led to make the decision to pursue something that I was really excited about—teaching and learning. I wanted to understand the ins and outs of how people learn, how to teach in a way that would invite the passion and dedication of others to grow. I had a music teacher during my time at Abraham Lincoln High School for the Performing Arts in San Jose, California. Her name was Miss K, and she taught me more in the few years I had with her than I learned in the four years I spent majoring in music in college. She knew how to teach in a way that could motivate her students to change—to inspire in them the desire to become greater than they had ever dreamed possible. She inspired me to begin pursuing a greater understanding of the role of teachers and learners. I began studying human teachers, teaching techniques, the difference of teacher and student roles, and the value of student-teacher relationships, and teaching and learning as becoming.

I ran into William one day, telling him about my search, and he told me a story about how he had faced a similar situation as he was learning to make violins from a master violinmaker in Poland several decades earlier. On the chance that he might say yes, I asked if he would ever be interested in allowing me to apprentice under him. After much time and

convincing effort on my end, he consented to allow me to apprentice with him. This became my first autoethnographic case study to understand teaching and learning in a situated context of a violinmaking apprenticeship.

Following accepted qualitative standards as outlined by Lincoln and Guba (1985), the academic purposes of the apprenticeship were made clear to William from the outset of the project. An in-depth, prolonged ethnography (see Spradley, 1979) seemed the most suitable method for investigating the LAEF framework as ethnography's capacity to describe the richness and depth of the human learning experience (see Mills & Morton, 2013) dovetailed well with the agentive, humanistic emphasis of the LAEF framework itself (see Table 1). Hermeneutic analysis (see Fleming et al., 2003; Kvale & Brinkmann, 2009; Stigliano, 1989) further focused and honed the myriad of ethnographic data (interviews, artifacts, video recordings, etc.) that came from field study.

### **Autoethnography as Method**

Due to the experiential nature of craft teaching and learning, as well as the level to which I am involved in the study within the apprenticeship field method, this study will utilize autoethnography. Autoethnography draws on all the richness of a traditional ethnographic methodology, but also adds the self-reflective narrative characteristics of autobiography (Ellis & Bochner, 2000). It includes the rigorous research standards normally required in qualitative or ethnographic studies generally (Lincoln & Guba, 1985), but adds to that richness the depth that comes from a highly self-reflective and introspective researcher. The unique, participatory nature of a traditional, craft apprenticeship (Coy, 1989a; Williams, 1981) lends itself to certain elements of both subjective personal introspection (Rod, 2011) and autoethnography (Ellis & Bochner, 2000).

### **Apprenticeship as Method**

Apprenticeship teaching and learning involves the sharing of tacit knowledge (Polanyi, 1962), craft secrets (Dilley, 1989), rich cultural and sacred traditions (Dow, 1989), moral character (Coy, 1989a), and conscience of craft (Green, 1985). This type of interaction implies a deep relationship between master and apprentice (Williams, 1981). Speaking about the unique ways in which apprenticeship itself approaches the idea of teaching and learning, Coy (1989a) stated:

[Apprenticeship] is personal, hands-on, and experiential. Apprenticeship training is utilized where there is more to performing the role at hand than reading a description of its content can communicate. Apprenticeships seem to be associated with specializations that contain some element that cannot be communicated but can only be experienced. (pp. 1-2)

It is apparent, then, that the very institution of apprenticeship rests on the idea that certain elements of knowing, learning, or becoming must be experienced in the present rather than only communicated in a general or isolated way. Such present, lived experiences are not only a key part of traditional craft apprenticeship, but are central to both the teaching and learning that goes on within it.



## Data Gathering

During each session at the workshop, I conducted conversational interviews in an informal, non-threatening environment (Seidman, 1998) and kept self-reflective field notes via audio and video recording. Conversational interviews are tailored to the individual person, in this case, William (Stake, 2010). I left the questions more open-ended and allowed for narrative to be shared and explored by both me and William. I kept detailed field notes that captured the words and ideas being shared, what I observed and asked further questions about, and what I was thinking about during and after interviews. Kvale (1996) notes, “the research interview is an interpersonal situation, a conversation between two partners about a theme of mutual interest. It is a specific form of human interaction in which knowledge evolves through a dialogue” (p. 125).

Further data came from more in-depth fieldnotes written immediately following each session, as well as from textual analyses of William’s journal from thirty years prior when he was an apprentice himself. Data was also comprised of artifacts from the shop and William’s personal records, including photographs, shop tools and the projects completed during the study (e.g., children’s toys, clocks, a guitar, two mandolins, three violins, and a viola).

## Data Analysis

I transcribed work session recordings and interviews, coding them thematically looking for similarities and contrasts (Spradley, 1979) using the specific facets of the LAEF framework as guiding themes, though not limiting coding to only those provided in the target framework. These themes include antecedent familiarity, encounters with unfamiliarity, exploration and tacitization. In line with Table 1, I paid special attention to the exploration phase, which includes (but is not limited to, in the words of the LAEF framework itself) questioning, purposive study, acclimation, amelioration, innovation, emulation, self-reflection and apprenticeship (Yanchar et al., 2013). As one narrative fieldnote entry accompanied each workshop session of fieldwork, I analyzed data sets in pairs, comparing and coupling each work session with its associated session’s recording. In this way, I was able to see and illustrate significant events during the apprenticeship through the lens of the direct, autoethnographic encounter as well as the rich, thick description that immediately followed such encounters.

The dialogue was on-going, as I conducted multiple interviews based on what was shared. I did not leave the analysis for the end but simultaneously gathered and analyzed the data to inform further interviews. Part of the dialogue was clarified and better understood through analysis of artifacts from the shop and William’s personal records, including photographs, shop tools and the projects completed during the study (e.g., children’s toys, clocks, a guitar, two mandolins, three violins and a viola). I used these artifacts to provide further context, and to go deeper into certain areas of interest that emerged during interviews.

Because each work session and interview were immediately followed by a narrative self-reflection as the principal source of field notes corresponding to each day of work at the shop, the resultant data sets were analyzed in pairs of qualitative fieldwork and researcher introspection. Thus, significant events during this apprenticeship were seen through the lens of direct, lived experience as recorded in the audio-recordings from the shop as well as post-experiential, personal narrative and reflection.

Although this study’s principal methodology is based on autoethnography and apprenticeship methodology, these approaches are combined with ethnographic and phenomenological methods. The interplay between these methods results in both master and apprentice (in this case, William and I) playing the role of autoethnographic researcher. As such, this methodology relies on each of us participating in subjective personal introspection

about the apprenticeship process, intentional instruction, evaluative dynamics within the master-apprentice relationship, etc. In this way, interviews were more collaborative than one-sided, becoming more dialogical than interrogative only.

### **Qualitative Standards**

To establish trustworthiness and transferability, I followed accepted qualitative research standards (Lincoln & Guba, 1985) throughout, including negative case analysis, member checking, transcript review, prolonged engagement, triangulation of data, progressive subjectivity checks, an audit trail and persistent observation. Such persistent observation allowed for the creation of rich description of the data for the sake of transferability, itself a key facet of ethnographic and qualitative traditions. As the study progressed, I reviewed emergent data with William personally, thereby establishing my trustworthiness as researcher through member checking. I triangulated data by comparing interviews, work session audio recording analysis, and artifact analysis. I also kept an extensive audit trail through audio files and text documents of each interview, work session, field notes, and relevant artifacts. Prolonged engagement was characterized by the many hours I spent consecutively each week in work sessions for six months, not including time spent in discussion, debriefing with William, keeping field notes, transcribing audio recordings and subsequent data analysis of those transcripts.

### **Findings and Discussion**

Because dispositional action and the situatedness of human learning play such a significant role in the LAEF framework, I begin this section with an ethnographic narrative to give context to the analyses that follow, which correspond to each theme in the LAEF framework itself. This format does not suggest that these categories perfectly fit within the present case, nor that there were not any significant findings that did not fit within this framework's themes. Rather, it is to critically examine each facet of the LAEF framework in detail:

#### **Making a Violin: A Journey in Apprenticeship**

Ever since I'd met William, I'd been fascinated by his stories—stories that felt like home when you heard them. Fantastic tales sprang from his lips whenever we met, but the best were from his days in Poland. To him, the days he spent learning under the hand of a master violinmaker were the best of his life: living in a creaky old cottage entirely made of wood, waking each morning to the smell of sawdust and working long into the night by the light of a candle. It didn't take long before I longed not just to hear, but to experience such learning for myself. And so, the day came when I asked him, "William, would you ever teach anyone to do what you did? Would you ever, say, teach me?" My words hung in the air for a moment before William's silence snuffed them out. He looked at me then between a raised eyebrow and a pair of lowered bifocals. "No," he said, "I'm sorry." And that was all.

As I walked from his workshop that day, I couldn't help but take what I thought would be one last glance at the handicraft that filled it. Furniture, toys for visiting grandchildren, cabinetry and even a quaint little spoon rack filled nearly every inch of space available. His home, much like his ramshackle shop, was stuffed with evidence of a time when things were different. Decades ago,

before I was ever born, one of William's closest friends returned from Poland to show him the prize violin he had only just purchased there. So impressed was he with its craftsmanship that William not only ordered a cello from the very same maker but felt compelled to travel to Poland himself to retrieve it and shake the hand of the master who had made such a thing. Upon meeting him, William fell under the spell of his cottage, his character and his craft, and asked the same question I would of him so many years later. "May I learn to make these like you do?" he'd asked in broken Polish. And with a smile and a nod, his life was changed forever.

In the shop, William and his teacher worked side by side each at his own workbench. Whenever he wanted to make something, no one jumped to teach him right away. Instead, he had first to try on his own and then, when the moment came when he could no longer move forward without help, he approached his mentor to ask for it. But even then, there was never a simple answer or even a single way to move forward. He always gave William three or four ways to proceed: all different and all challenging in their own right. Then he had to choose, alone, how to take the next step. In this way, William became independent, inventive and over time embodied the same kind of ingenuity and sense of craft that lived in the person of his master. In short, William had become a master himself.

But, for whatever reason, something changed when he came home. Back in the States, he made it perfectly clear to everyone (and many asked) that he would never take on an apprentice. Over the thirty years from that time to this, he'd ever been persuaded to take two students, both with marked reluctance, with the second and last of these ending nearly fifteen years ago. Since that time, he had neither taken another student nor made a single instrument.

But that day, as my feet fell heavy on the shag carpet floors of his antiquated home, I chose not to give up. Over the next several weeks, I converted the small room of my apartment into a makeshift woodshop and began to build. And I built and I built. And whenever I finished a project I would bring it to William, asking him for pointers and advice. He was not kind in his criticism of my craft, but he always listened, and so did I. So back and forth I went, building clocks, guitars, children's toys, and finally a mandolin. When I brought that to him, he gave me his customarily unvarnished opinion of its quality, then sighed. "You know," he said, "I don't think I even have it in me to make another violin, let alone teach someone."

And so, devastated, I walked home, and with every step my wavering resolve hardened. "If he wasn't going to teach me," I thought, "I'll teach myself." So, I began making my own violin, struggling more than ever with a project that, with every passing moment, became more and more clear was far beyond my capacity. And so, it was that one night, I reached a point where I could no longer proceed. I could not, even with the prodigious resources of the Internet, take even one more step in any direction, let alone the right one. So, I went to see William and placing the pile of half-finished violin on his desk, I waited. He gingerly picked up each piece, looking it over as though recalling some vague memory from a long-forgotten past. Then, holding the clumsiest piece in his hands he looked up at me and, gazing over those same bifocals that had held so much disappointment for me only weeks before, said, "You really want to make a violin, don't you?" And with a smile and a nod, our work began.

## **Basic, Working and Skilled Familiarity**

According to LAEF, during my apprenticeship, I passed through three modes of familiarity: basic, working and skilled. Although my initial goal was to make a violin, I began by making simple children's toys. Within this frame, this could be seen as a preliminary step toward basic familiarization with tool use, which is characterized by a marked reliance on following rules with relatively little independent ability (Yanchar et al., 2013). My familiarized capacity to use these tools in a situated context was certainly an essential part of learning to become a violinmaker. After the basic phase of making children's toys, I progressed into what LAEF terms "working familiarity" by crafting more advanced, intricate patterns in a spoon rack, dovetail joints, clocks, a guitar and two mandolins. Finally, I moved toward "skilled familiarity" in making my own violin.

In some ways, LAEF appropriately describes my journey from novice to experienced craftsman. However, there was little evidence in either fieldnotes or interviews with William that either of us separated the progress of my learning into three distinct categories. As such, while there may be theoretical advantages to dividing the learning process into three stages, those stages may not necessarily be readily apparent to those going through the experience itself. These three dimensions, however, are only an introduction to the LAEF framework, which is outlined in much more nuanced themes that follow. Each of the sections that follow represents a specific facet of the learning process as outlined in the LAEF framework. Each is divided into three subsections: an introduction, insights and questions. In the first, I explain the meaning of the theme within the LAEF framework as described by its authors. In the second, I outline the ways in which LAEF provided meaningful insights into the learning process. And in the third, I ask key questions of the LAEF framework based on critical analysis of the ways in which a particular theme may not have appeared in this apprenticeship or how LAEF may have not described a key element of the learning process in this case.

## **Antecedent Familiarity**

Antecedent familiarity is "a basis for the negotiation of novel situations en route to further familiarity and concerned involvement" (Yanchar et al., 2013, p. 223). This idea goes beyond one's cognitive acquaintance with a subject and moves toward an often inarticulate yet deeper awareness of one's environment. Such engagement comes from being consistently engaged as a participant rather than only as an observer.

### ***Insights***

This type of antecedent familiarity played a significant role in the beginnings of my apprenticeship. One example of this occurred when, commenting on my prior involvement with craftsmanship in my family, I told William:

Working with wood and working with my hands has been part of my life, especially with my relationship with my father, that has been really important to me. And I've failed to recognize its importance in the past, but now that I see it, I am just amazed at how at home I feel with wood and with working with my hands.

My everyday participation in woodworking gave me the embodied grounding necessary to further familiarize myself with the tasks at hand. This "embodied grounding" included not

just a practical degree of skill in working with wood, but a qualitative disposition of confidence and comfort within the learning environment that greatly enhanced my learning.

### *Questions*

Interestingly, my prior familiarity with carpentry challenged my progress within the apprenticeship, as well. Again, although my initial purpose was to build a violin, lessons began with making simple children's toys in order to learn basic skills crucial to later dimensions of the violinmaking process. Because of my antecedent familiarity from previous experience working in my father's carpentry shop growing up, I was reluctant to admit that I needed such basic training. Had I not possessed any of this antecedent familiarity, my capacity to submit to whatever lessons William saw fit to teach me would have been far greater and I would have perhaps progressed through the beginning stages of my apprenticeship more quickly and with far less struggle.

### **Encounters with Unfamiliarity**

Encountering the unfamiliar constitutes "an invitation for a different kind of practical involvement" than that which was part of one's antecedent familiarity (Yanchar et al., 2013, p. 224). According to the LAEF framework, meeting and confronting such unfamiliarity constitutes the "initial, enabling condition" for human learning (p. 224). The affective dimension of such encounters can include a broad range of emotional conditions including but not limited to curiosity, frustration, wonder and even failure.

### *Insights*

Throughout the course of my apprenticeship, I encountered unfamiliar tools, concepts, skills and situations many times each day. In many ways, the journey of becoming familiar with that which had only moments before been entirely unfamiliar seemed the central purpose of the apprenticeship itself. In one instance, I failed to recreate a certain carving procedure William had shown me in a previous work session. At first, I assumed this sort of initial failure was to be expected, but when I failed again and again to carve the proper pattern exactly as I'd seen it done, I grew frustrated. Recognizing and acknowledging my disappointment, William attempted to carve the pattern himself using my knife. I was surprised to see that he too had failed to perform the procedure correctly. Thinking for a moment, he then showed me how my failure wasn't because of poor technique but was simply because my knife hadn't been sharpened correctly. After watching me successfully complete the carving with a properly sharpened knife, William stated matter-of-factly, "You know, nothing is really hard. It's just unfamiliar." Guiding me through this encounter with an unfamiliar setback, William invited me into a new type of practical involvement aided by increased familiarity.

While commonplace encounters with unfamiliar skills often characterize the learning process, encountering the drastically unfamiliar in unanticipated ways can also occur socially rather than only pedagogically. As outlined in detail in the earlier ethnographic narrative, when William revealed to me that he no longer wanted to teach anyone violinmaking, I was emotionally devastated. This encounter with an unfamiliar and unanticipated refusal to be taught certainly could have immediately changed the nature of my project from a violinmaking apprenticeship to a study in basic carpentry. "I don't know what to do now," I recorded that day in my fieldnotes, "because I really hoped that this would lead to actually making a violin, but it hasn't and it might not. And that is so disappointing, just plain and simply disappointing. So... [long silence] ... I'm not sure what to do now." While this encounter with

the unfamiliar eventually acted as a catalyst for future purposive study and growth, it felt utterly unnecessary in the moment. Certainly, this emotional dimension of frustration and impatience dovetails well with many of the emotional dimensions of encounters with the unfamiliar outlined in the LAEF framework.

### *Questions*

While encounters with the unfamiliar seemed almost to flood every moment of my apprenticeship, their lack or abundance had more sway on my disposition as a student than the language of the LAEF framework suggests. When several days passed by without any encounters with unfamiliarity to speak of, I often grew restless with the thought that I wasn't progressing quickly enough. On other occasions, when I was confronted by nothing but unfamiliarity from moment to moment, I grew increasingly frustrated and sometimes lost hope that I would ever learn to make anything correctly. While the LAEF framework outlines the necessity of learning through encounters with the unfamiliar, it has yet to explore how the frequency, quality, cadence and quantity of these encounters can affect both the disposition of the student as well as the quality of her learning experience.

LAEF speaks to the profundity of encounters both with other, irreducible agents as well as the objects, places or procedures in the context of their work. Such powerful encounters, it states, may be “frustrating or challenging (p. 225).” During this apprenticeship as well as the records from William's time in Poland, it appears that, while these terms touch upon the powerful human emotions that characterize encountering unfamiliarity, they fall short of conveying the intensity of such emotions. In both my and William's apprenticeships, we invested so much of our cognitive, emotional and temporal resources into learning that, when we encountered a barrier to that learning, we often encountered the unfamiliar within ourselves—that is, frustration, impatience, sadness, even anger. In short, the terminology LAEF employs to account for the emotional dimensions of learning seems too mild to account for the broad spectrum of powerful emotional responses that can occur when learning and its anticipated progress seem (in the eyes of the apprentice, at least) to go wrong.

### **Exploration/Familiarization**

When encountering the unfamiliar, I was often left to choose how to address such unfamiliarity on my own. By following the pedagogic example of his master from Poland, William allowed me to proceed with my learning encounters “by choice.” LAEF would call such moments opportunities for “exploration.” In this kind of situation, “If an agent chooses to engage, then dealing with unfamiliarity involves “exploration,” the effortful inquiry through which an agent achieves greater awareness, deeper understandings, improved skill, new practices, or a transformed disposition” (Yanchar et al., 2013, p. 225). The following themes are sub-categories within the broader conceptualization of LAEF's “exploration/familiarization” framework.

### **Questioning**

Questioning is characterized by “deliberate querying and dialogue with others to better understand the meaning, truth, significance, or history of a given situation or phenomenon” (Yanchar et al., 2013, p. 225). Seen considering questioning's “deliberateness,” a crucial dimension of questioning as described here is that a learner cannot be forced to explore in this way. It is a matter of meaningful, situated action.

**Insights.** Perhaps in part because William had been so reluctant to teach me in the first place, I felt an intense desire to ask many such questions. For example, upon first encountering linseed oil as a wood finish, I asked, “Does linseed oil get darker over time?” to which William replied, “The light woods will go a little bit darker. You see, [pointing at a piece of furniture] this is already darker than what it started out to be.” Rather than explicitly outline an answer beforehand, William waited to give an answer until I asked a question about it. Seen from a certain perspective, this type of question-based pedagogy may seem intentional in allowing the desire for an answer to build up within me, so to speak, so that the answer might mean more once given and thereby perhaps be more easily recalled later.

**Questions.** While both questions and questioning played a significant role throughout my apprenticeship, the presence of questions is to be expected. Indeed, the lack of questions would seem more of an anomaly than their use. Indeed, questions not only make up a significant dimension of teaching and learning but occupy a nearly ubiquitous place in everyday human communication. As such, while the presence of questions was undeniably part of this apprenticeship, I wonder if the LAEF framework could go into more detail about how the frequency, quantity and quality of such questions in encountering the unfamiliar might either add to or detract from such situated learning.

### ***Purposive Study***

Purposive study became a core part of the apprenticeship when I discovered William had lost his desire to teach. Through purposive study, I made “deliberate attempts to better [my] understanding of an unfamiliar topic via reading, observing, formal coursework, training, and so forth” (Yanchar et al., 2013, p. 225). Again, a key characteristic of purposive study within the LAEF framework is active engagement and choice, which manifests itself in this theme as “deliberate attempts.”

**Insights.** Returning to the moment when William was unwilling to teach me, I was offered (whether deliberately or not) an opportunity to intentionally attempt to progress on my own. On the day I learned of William’s lack of interest in teaching, I had already begun to make plans. “I have some hope left,” I told myself in one set of fieldnotes, “because I’m going to make a guitar and a clock and I’m going to give them to him. I’m going to show him that this is something I can do.” Purposive study, in this case, became a method of learning the basics of an art in order to convince William to actively participate in the learning process. This not only proved to be the case within my own apprenticeship, but characterized William’s apprenticeship, too. When he needed help, according to his own records, his master never gave him a method to copy so much as a series of choices about how to proceed, inviting William to participate in purposive study.

**Questions.** While there seems to be value in allowing students to take on purposive study alone, such learning requires a great deal of mental fortitude. Vulnerable populations without the necessary training, experience or skills to weather such trials of their determination to proceed without a specific answer or path could very well flounder in such an educative context. Furthermore, the pedagogy implied by such purposive study seems to rely so heavily on the one-on-one, master-apprentice relationship as to be unfeasible to scale in any significant way. While LAEF describes the nature of purposive study in detail, it leaves the question of how teachers might elicit such purposive dedication largely unexplored.

### *Acclimation*

LAEF describes acclimation as “informal experience with new practices through which an agent becomes acquainted with cultural rules, norms, and activities” (Yanchar et al., 2013, p. 225). This theme broadens the scope of the learning process from one of skill acquisition to a more holistic process of becoming. This implies a degree to which learning a single skill in isolation may not be possible without taking upon oneself other traits, cultural rules and norms that seem almost inextricably linked with the skill in question.

**Insights.** As we worked side by side in the shop, William shared many of his own previous acclimation experiences, not only from his apprenticeship in Poland, but also from his childhood experiences at home. Indeed, his personal and professional life all seemed to knit themselves together as he considered the context of his journey as a craftsman. For instance, he once shared, “When I was a little kid, my mother did professional sewing. So, we made things, too. She never did formally teach us how to sew, but we had been around it and grown up seeing her do it, so that when it came time to do it, we had figured it out.” Recognizing and sharing that some of his own learning experiences had occurred through acclimation, William in turn allowed a degree of autonomy in the workshop that permitted me to have acclimation experiences of my own. One way he invited me to experience acclimation was to set up two separate workbenches—one for his own work, and the other for mine. This created an authentic space for me, as co-participant with him, to familiarize myself with the natural processes of the workshop environment.

**Questions.** While a prolonged apprenticeship of two allows for the temporal, spatial, pedagogical and structural flexibility necessary for such acclimation to occur, these things, again, could prove difficult to scale. Acclimation by its informal nature seems especially suited to an environment in which time constraints do not have a significant role to play. Within more formal learning environments divided into seasons, semesters, or terms, allowing the time necessary for natural acclimation, enculturation or acculturation could prove difficult. As such, while LAEF describes the informality of this process in a way that applies well within the context of this apprenticeship case, it may not be as easily transferrable into the more formal and temporally bound settings of classroom instruction.

### *Amelioration*

Exploration also entails what LAEF calls amelioration, or “deliberate efforts to solve a problem through existing solutions” (Yanchar et al., 2013, p. 225). While like both questioning and purposive inquiry, amelioration specifically focuses upon learning established procedures, rather than discovering new methods altogether.

**Insights.** Amelioration played a significant role in my apprenticeship as so many of the procedures peculiar to the luthier’s art were firmly established by tradition. While some innovation characterized microcosmic encounters with unanticipated problems, most of my efforts involved learning long-established patterns and procedures. For instance, I once watched William use a highly specialized cutting tool, employing the same methods he had seen his master use. On that occasion, I recorded, “It wasn’t like he planned it, but it was understood that ‘I think you’re ready to do this new task, which is going to require a lot more precision.’”

Having become familiar with how to make larger cuts with a coping saw, I was invited to use a similar, but more precise tool (the fret saw) and, in turn, become even more familiar



with William's precision skills. This harkens back to the overarching interplay between antecedent familiarity and exploration more broadly conceived. As I progressed and became accustomed to using specific tools, I began to compare further encounters with even newer tools not only to my experience with carpentry before the apprenticeship, but to the tools I'd grown accustomed to using within it.

**Questions.** One key dimension of amelioration that LAEF does not mention is its strong relationship and even dependence upon trust between the learner and the source of her learning. If one is to spend significant cognitive, emotional and temporal resources to learn methods already prescribed, it seems necessary that one must first place some degree of trust in the source of those methods. In other words, if I did not trust that the techniques William inherited from his master would work to successfully build an instrument, I would have spent an inordinate quantity of time questioning his methods, attempting to innovate new ones on my own and even doubting the integrity of the final product itself. As such, while amelioration does have a significant role to play, it depends on building a relationship of trust between master and apprentice (or any teacher and learner) for it to function and flourish as an aid to learning.

### *Innovation*

Again, violinmaking is often considered a traditional craft in the sense that many of its methods are time-honored and leave little room for innovation. Nevertheless, innovation, what LAEF calls, "solving problems by developing (and thus becoming familiar with) new solutions" (Yanchar et al., 2013, p. 225), played a significant role in my apprenticeship.

**Insights.** For example, in working with one of William's custom-made tools (a "crow's foot" used with a fretsaw), I asked if I could make a copy of it for my own work. In doing so, I saw several opportunities to adapt it to fit the dimensions of my own workbench. In discussing these changes with William, I asked, "I'm wondering if I could cut this part off here," to which he replied, "Sure. Necessity is the mother of 'you-know-what'. And by necessity [pointing to his own work] I'm doing something on this right now that I wouldn't normally do." Not only did William encourage me to innovate in making my own tools, but in this instance, I had caught him in the very act of innovating, as well. Both he and I had chosen to innovate as part of our respective approaches to embodied familiarization. This illustrates how valuable one learner can be to another as each is understood to be a participatory agent, constantly engaged in meaningful, situated learning experiences.

**Questions.** While innovation played a key role in my apprenticeship, LAEF could improve upon its description of this category of exploration by describing different types or degrees of innovation. For instance, while most of the methods I learned in this apprenticeship were long established (and so fell into the "amelioration" theme of LAEF's framework), I was constantly called upon to invent "micro-innovations" when circumstances arose that William had never encountered before. These situations were often the result of unexpected inconsistencies in wood grain that caused problems in carving or the malfunction of a tool which I had brought to the shop myself and with which William was less than familiar. As each piece of wood used to construct an instrument is unique, the capacity to innovate is itself one of the traditional methods of what it means to be a violinmaker. Innovation seemed, in the sense, not so much a procedure as a way of being in the world, or a way of engaging with the wood itself.

Furthermore, LAEF says little about the interplay of innovation within the teacher-learner relationship. While I emulated William's innovations and grew to develop a few of my own, I also invented some with which William himself was rather impressed. This was particularly true of the way in which I varnished the violins I made. William had struggled his entire life with varnishing his beautifully crafted instruments. So, when I was able to bring some new knowledge into the workshop that improved upon the methods, he had taught me, he was only too eager to adopt them. While LAEF describes innovation generally, it leaves the nuanced interplay in which innovations are passed from apprentice to master and from master to apprentice underexamined.

### **Emulation**

The meaningful, master-apprentice relationship facilitated another facet of the exploration phase called emulation, or "following examples to enhance one's skill in a given domain" (Yanchar et al., 2013, p. 225). This theme seems to describe knowledge itself as more of an embodied, holistic ontology than a set of skills or information possessed by a certain person. In the present case, "learning violinmaking" seemed less the purpose than "becoming a violinmaker."

**Insights.** In working with freshly sharpened tools, I would often accidentally cut my hands. At first, I was ashamed to admit that my lack of skill allowed for such accidents. Then William and I had the following interaction:

When I cut my thumb, I tried to hide it. But William discovered it and said, "Well, here's a Band-Aid and here's another one to put in your pocket." He said, "You know, I always hold onto one because..."—he showed me his hands covered in tiny remnants of little cuts he'd gotten throughout his life—"...that's the beauty of hand tools."

By explicitly sharing my own mistakes with William, he felt more open to share his. As a result, I began to feel more comfortable with my own imperfections, and more willing to emulate the practices prescribed by my teacher. Emulation, in this sense, involved more than just the skills that resulted from practiced study, but emulating the whole person of the teacher under whom I studied.

**Questions.** Emulation, like many of the other themes described in the LAEF framework, involves more than the acquisition of skills in isolation. It necessarily involves the norms, cultural understandings and character traits associated with those skills, at the very least in the person of the master in an apprenticeship scenario. As such, this means that, in emulating his master's skill, also emulates dimensions of his character, even those he may not find desirable. While LAEF does mention the cultural, moral and ethical dimensions of learning elsewhere in its framework, it leaves these powerful facets underemphasized in its description of emulation. While transferring one's character may prove advantageous in the case of one who shares similar values as the learner, it could prove undesirable when values of master and apprentice are not so aligned.

### **Self-Reflection**

In taking field notes after each work session, I reflected on the events of each day, and became "more familiar with, and able to critically examine, my own assumptions, values,

beliefs, biases, and so on” (Yanchar et al., 2013, p. 225). Furthermore, there were significant periods of time in the silence of the workshop when I had ample opportunity to simply think about what I was doing and thereby, as LAEF describes it, meaningfully act in the world and deliberately choose to learn.

**Insights.** In one such self-reflection, I reflected on the amount of time we spent in the workshop either in complete silence or simply talking of subjects entirely unrelated to violinmaking. On that occasion, I recorded, “We spoke mostly of nothing at all—whatever came to mind. And why not? Why not take time to just be while you work? We spend most of our lives working, so why not live?” Such self-reflection helped me not only learn more about violinmaking, but also critically reflect on my life’s learning experiences. Recognizing self-reflection as a valuable facet of the learning process allows for a more holistic view of learning itself as a meaningful human experience. Without intentional and consistent self-reflection, these aspects of the apprenticeship may have gone, at least in part, unnoticed.

**Questions.** While self-reflection may have proved a key component of this apprenticeship, it may be a less reliable method in formal learning environments within whose time constraints such prolonged pondering may not be feasible. Furthermore, self-reflection itself seems such a broad category of thought as to encompass nearly anything one wishes to think about when disengaged from conversation with others. In the future, those who work with the LAEF framework could explore different types of self-reflection and the degree to which it could or should be guided by another or simply self-initiated and self-directed.

### ***Apprenticeship***

Yanchar et al. (2013) describe apprenticeship as, “the activities by which an agent learner works with skilled others over time to master a given practice” (p. 225). Such a learning modality allows for a level of personalization and customization that recognizes, encourages and at times even relies upon the bedrock axiom that both master and apprentice are agents.

**Insights.** This theme was the initial inspiration for this case study in violinmaking apprenticeship. Such a personal, one-on-one environment allowed for a degree of customization and self-initiated, deliberate choices to learn as to illustrate and critically examine the LAEF framework well. In one fieldnote entry, I remarked, “When I asked him, ‘Could you please teach me in the same way you were taught by your master?’ I got the feeling that he was already fulfilling that request by customizing it to me because his master customized his teaching to him.” William pulled from his own apprenticeship experience to inform and enrich the customization of the apprenticeship he was leading with me. Apprenticeship, then, not only acknowledges the agency of both master and apprentice, but also utilizes and even relies upon that agency in creating more meaningful learning experiences for both.

**Questions.** The most noteworthy negative case of this study, again, was William’s lack of motivation to teach. His lack of energy, combined with my abundant enthusiasm, created a unique dynamic in the apprenticeship that I hadn’t anticipated. Commenting on this dynamic, I recorded in my fieldnotes, “It’s like the force of his infinite patience and my impatience to move forward and progress creates a beautiful tension.” This unanticipated dynamic supports the idea that, as both master and apprentice are human agents, finding the motivation to teach is just as much of a struggle as finding the motivation to learn. While this finding may be of significant interest philosophically, on a practical, educative level it proves rather problematic.

Apprenticeship learning, or any learning that relies too heavily upon LAEF's emphasis on deliberate, self-initiated study may prove difficult if not impossible to administer within a structured, formal learning environment.

### **Tacitization**

Through "meaningful engagement," one's "vague, undeveloped acquaintance" with the unfamiliar can transition from explicit interaction to tacit familiarity (Yanchar et al., 2013, p. 226). In the learning process, this involves practicing a new skill with an unusual amount of concentration and slowly focusing less and less on that skill until it becomes part of one's way of being in the world.

### ***Insights***

Tacitization not only manifested itself in tool use, but in how we measured aspects of our work. William often used the term "eyeballing" to describe the craftsman's capacity to accurately measure small distances or symmetry by eye without a measuring tool. Referring to his own apprenticeship, he recalled, "My mentor always said that the most important skill of a violinmaker was the ability to see the symmetry of an instrument, even when that symmetry did not measure up in the tools themselves." In my own case, I developed this skill slowly, constantly asking for William's validation of my eyeballing of the violin's symmetry. This skill, and the confidence to use it well, required a great deal of intentional, conscious concentration at first. Through continued experience, however, I became more familiar with the process, and was able to make "eyeballing" judgments confidently. As it required less and less deliberate concentration on my part, "eyeballing" distance and symmetry became a tacit skill.

### ***Questions***

Tacitization in the workshop can be both an advantage as well as a danger. While I longed for some deliberate skills to no longer require so much concentration so that I might move on to mastering others, the danger lay in becoming too casual or overconfident in my tacit skills so that even they deteriorated in quality. If I relied too heavily upon my skill to cut right angles freehand, for instance, that I stopped thinking about it when I cut the plate for a new violin, I often ran the risk of cutting the plate of wood at incorrect angles. LAEF could explore the interplay between the advantages of having a set of tacit skills and the dangers of allowing those skills to deteriorate without consistent, conscious effort and renewal despite their tacitization. The process of resurrecting, as it were, an old, tacit skill and examining it in a renewed, deliberate way could prove a valuable line of research among theorists and philosophers of education.

### **Summary**

During this study's critical analysis, the LAEF framework described the nuances of my apprenticeship accurately and provided key insights into my lived experience. In exploring the advantages and disadvantages of this framework, however, I have found positive and negative facets to each subtheme of LAEF. Nevertheless, LAEF provides a robust lens through which one may consider human learners as agents, meaningfully engaged in the situatedness of a world in which they find meaning and make deliberate choices in the context of that meaning. While the specific nuances of that process by which engaged agents encounter and react to

unfamiliarity are multifaceted, this article provides a first glimpse into what that process looks like in the lived experience of an apprenticeship. Not all the categories applied equally well in this context, nor did they all shed significant light on the learning process itself. Yet, the LAEFs framework provides a well-developed lens through which to view learning considering an axiom of human agency.

Future research in this vein could explore learning as embodied familiarization in other case studies outside the realm of apprenticeship to investigate this theory's applicability to a variety of learning situations. Such research could also explore and add more nuance to the suggested dimensions of the LAEF framework of learning, including the interplay between innovation and amelioration, the conscious examination of previously established tacit skills, the relationship between trust and amelioration and the emotional stress of repeated and frequent encounters with unfamiliarity.

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