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## Making it easy to do hard things': How experts help novices perceive craft as accessible

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# 'Making it Easy to Do Hard Things':
# How experts help novices perceive craft as accessible.

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**Abstract**

Craft offers a path to enchantment and meaningful engagement with creation in an increasingly rationalized society. Yet, entering skilled domains where craft is practiced can be challenging for novices, particularly for those less familiar with these domains. While a growing body of research suggests that craft can be made more accessible through nontraditional pathways, the process whereby novices come to perceive craft as accessible remains undertheorized. We explore these ideas through the case of the makers, a diverse DIY movement that embraces all who build, modify, and invent across a variety of skilled domains. Using interview and observational data from Maker Faires – events wherein makers exhibit their projects and engage attendees in making activities – we induce a model of how experts enable novices to perceive craft as accessible. Our findings reveal how experts convey knowledge and skills using a creative craft approach, detailing how experts engage in scaffolding to facilitate novice creation, relax hierarchy, and cultivate fun and whimsy. In turn, this engenders the experience of enchanted engagement for novices who are able to experience how engaging in craft feels without the requisite skills or knowledge. Ultimately, this experience shapes and reinforces novices' perception that craft is accessible. Our study contributes to the growing scholarship on craft in terms of alternative pathways for entering skilled domains, the role of craft in re-enchanting organizational life, and the emotional rewards of craft.

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## Introduction

> *The whole idea of the maker movement is that we're all makers and this is not specialized knowledge from some priesthood class that's unavailable to the rest of us. And in fact, exactly the opposite.*
>
> –Expert in the maker community

As society becomes increasingly digitized, automated, and algorithmically mediated, rational control has expanded into new domains of work and production. While rationalization facilitates greater efficiency, it often does so at the expense of the worker, and is associated with disempowerment, precarity, and surveillance (Ritzer, 2005; Kellogg, Valentine, & Kristin, 2020). These trends suggest support for Weber's (1946) thesis that the rationalization of modern society is unavoidable, leading to disenchantment, the loss of meaning, autonomy, and authentic expression.

At the same time scholars have pointed to craft—defined as a 'humanist approach to work that prioritizes human engagement over machine control' (Kroezen, Ravasi, Sasaki, Żebrowska, & Suddaby, 2021, p. 503)—as a pathway towards re-enchantment (Bell, Dacin & Toraldo, 2021; Bell, Mangia, Taylor, & Toraldo, 2018; Suddaby, Ganzin & Minkus, 2017). Craft centers human agency, skill, and embodied knowledge such that individuals affectively relate to and identify with their work, whether as an occupation or form of serious leisure, thereby facilitating a sense of meaning and autonomy (Crawford, 2009; Endrissat, Islam, & Noppeney, 2015; Sennett, 2008; Stebbins & Sachsman, 2017; Thurnell-Read, 2014). In short, craft can be a source of enchantment for those who engage in this approach to work (Ranganathan, 2021; Suddaby et al., 2017).

However, entering skilled domains where craft is practiced (hereafter 'skilled domains') can be challenging for novices. Access to learning opportunities and community are essential



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aspects of novice entry into these domains, but such access can be, or appear to be, limited (Bharatan, Swan, & Oborn, 2022; Kaynak, 2024; Lave & Wenger, 1991). Extant research predominantly focuses on two established pathways of novice entry: through apprenticeship models (Cattani, Dunbar, & Shapira, 2013; Hori, Hoshino, & Shimizu, 2020; Kieser, 1989) and occupational socialization (Anteby, Chan, & DeBenigno, 2016, Van Maanen & Barley, 1984). In both pathways, professionals and experts have erected barriers that make it difficult for outsiders to enter these domains. As such, novices who are outside these domains may not perceive craft as accessible, that is, they may not feel that they can engage in craft and participate in craft community.

A growing body of research presents an alternative perspective, suggesting that craft can be made more accessible to newcomers, whether as aspiring professionals or as serious hobbyists, through nontraditional pathways (Kaynak, 2024; Kroezen & Heugens, 2019; Stebbins & Sachsman, 2017). However, despite evidence that novices can develop expertise outside established pathways (Browder, Aldrich, & Bradley, 2019; Croidieu & Kim, 2018; Furnari, 2014), the process whereby novices come to perceive skilled domains as accessible remains undertheorized. We posit that those with greater expertise play a major role in this process because they are typically the ones that convey skills and knowledge to novices. Thus, we ask: How can experts help novices perceive craft as accessible? Answering this question can shed new light on the entry processes into domains that require skill, dedication, and embodied knowledge. Moreover, exploring how experts help novices come to perceive craft as accessible outside traditional pathways may provide insight into craft's potential to re-enchant organizational life and provide individuals with meaning, autonomy, and creative expression (Sennett, 2008; Suddaby et al., 2017).

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To explore our research question, we conducted an inductive qualitative study of makers, a relatively new movement consisting of a diverse set of actors interested in do-it-yourself (DIY) projects, technology, and traditional crafts who build, modify, and invent, often outside traditional structures for production and manufacturing. In particular, we focus on Maker Faires, interactive events where makers exhibit their projects to the public and invite attendees to learn more about making through demonstrations, hands-on activities, and workshops. As the epigraph highlights, makers have an irreverent and non-hierarchical approach to craft, with the goal of increasing participation. Our analysis of makers draws from observations at seven Maker Faires (16 days) as well as interviews with 69 exhibitors and 82 attendees. Our findings show that experts at Maker Faires convey their skills and knowledge using what we call a *creative craft approach* that involves less hierarchy and a focus on playful exploration and expression (Kroezen et al., 2021). The makers apply this creative craft approach to both creative domains as well as domains that typically adopt a more serious and hierarchical approach to craft. We detail how experts provide scaffolding to facilitate creation, relax hierarchy, and cultivate fun and whimsy. In turn, this engenders the experience of enchanted engagement such that novices experience how engaging in craft *feels* without the requisite skills or knowledge, thereby shaping and reinforcing their perception that craft is accessible to them.

Our study makes several contributions. We extend research on alternative pathways for novice entry into skilled domains (Croidieu & Kim, 2018; Kaynak, 2024), showing how experts using a creative craft approach can draw out a novice's sense of creative stimulation and expression prior to them becoming a member of a skilled domain. Second, we deepen understanding of how rationalized technologies and activities can foster enchanting experiences, showing how enchantment can be used to simultaneously beguile and empower novices. We

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build on recent work that challenges the idea that rationalization inevitably leads to disenchantment, instead pointing to the complex interplay between rationality and enchantment (Bell et al., 2018; 2021; Suddaby et al., 2017). Moreover, in showing how novices experience enchantment in the earliest stages of engaging with craft, our study challenges the idea that the emotional rewards of craft are limited to those with advanced skills and embodied technique (Bell & Vacchani, 2020; Ranganathan, 2018; Sennett, 2008) and instead suggests that providing affective experiences may deepen one's commitment to entering skilled domains. Finally, we discuss implications for the growing body of research using the maker context in organizational and management scholarship (Browder et al., 2019, Gorbatai, Dioun, & Lashley, 2021).

**Entry into Skilled Domains and Craft (In)Accessibility**

Research on how novices enter skilled domains that rely on craft approaches to work highlights two established pathways for entry: apprenticeship models and occupational socialization. Both of these pathways depict entry as a difficult journey overseen by experts and marked by barriers that can make craft appear inaccessible to would-be novices.

First, studies on apprenticeship models depict entry to these domains as an onerous process of following in the footsteps of a 'master' or 'guru' to whom apprentices are highly committed (Kieser, 1989). For example, the production of Cremonese stringed instruments involved 'direct, intense, and frequent interactions between mentor and apprentice [to] effectively transfer knowledge' (Cattani et al., 2013: p. 821). These apprentices typically lived in the master's house or were family members, making it difficult for novices without these connections to enter into this domain. Similarly, craft processes for brewing Japanese sake are passed down from master to apprentice through 'paternalistic and hierarchical relations' (Hori et al., 2020, p. 46). Connections between experts and novices typically are portrayed as deep and



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often semi-familial (Bell & Vachhani, 2020; Ranganathan, 2021). Importantly, the secrecy and informal manner by which many master-apprenticeship relationships begin serve to exclude other would-be apprentices (Byrne, Clarke, & Van Der Meer, 2005). Other research, notably studies in the stream of situated learning (Lave & Wenger, 1991; Brown & Duguid, 1991), suggests that novices can serve as an apprentice without holding deep bonds with experts. However, doing so requires a network with existing connections to experts that allows novices to observe, imitate, and practice alongside them. Overall, entry to skilled domains via apprenticeship models necessitates that novices have relationships with experts.

Occupational socialization offers a second established pathway through which novices enter skilled domains. Novices typically enter skilled occupations by enrolling in formal instruction or training programs from educational institutions that teach the craft of the occupation and provide credentials and licensing (Anteby et al., 2016). Experts are considered 'socialization agents' (Saks & Gruman, 2012), and their role is to transfer the knowledge and skills required for the domain, as well as share broader occupational attitudes to newcomers (Ranganathan, 2018; Van Maanen & Barley, 1984). For this reason, occupational socialization can be seen as a process guarded by existing members, with experts maintaining high standards of entry into skilled domains and control over recruitment of novices (Abbott, 1988). In many contexts, professionals have engaged in competitive boundary work to distinguish themselves and establish some kind of advantage, in the process making it more difficult for outsiders to enter and become members of the domain (Langley et al., 2019). To be sure, entering an occupation often involves a combination of formal training and apprenticeship-style learning (internship, residency, etc.), such as in law enforcement (Van Maanen, 1973), medicine (Pratt, Rockmann, & Kaufmann, 2006), business and law (Schleef, 2005). Regardless, entering skilled

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domains via occupational socialization typically requires novices to formally select and commit to a domain as a part of entry and to overcome boundaries put in place by experts around training, certification, and socialization.

Taken together, research on these two established pathways suggests that novices navigate a hierarchy-based process when entering skilled domains, facing potential barriers related to commitment, effort, and various associated costs—be they physical, financial, or emotional. Furthermore, whether novices are students, apprentices, or a combination of both, both pathways assume that novices are insiders who hold at least some level of existing relationships to experts. These barriers to entry can make craft, and associated feelings of enchantment, meaning, and agency, appear all the more inaccessible to novices outside of institutionalized pathway who lack structured participation opportunities (Kaynak, 2024; O'Mahoney & Bechky, 2006). Indeed, scholars have noted significant constraints that impede access to not only the learning of craft skills and attitudes, but also membership in a domain's community (Lave & Wenger, 1991). This makes entry into skilled occupations difficult for outsiders, including those who hope to enter domains as a form of serious leisure rather than a formal occupation.

A different perspective is emerging from a growing group of studies that suggest craft can be made more accessible to novices. Across various skilled domains, scholars have begun to document that novices interact with experts and enter skilled domains outside traditional pathways (Croidieu & Kim, 2018; Kaynak, 2024; Kroezen & Heugens, 2019). For example, in their analysis of the resurgence of Dutch craft brewing, Kroezen and Heugens (2019) showed how experts skilled in traditional brewing banded together with new hobbyists to revive traditional brewing methods. Gathering spaces, beer festivals, and information about brewing



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were freely shared. Novices could easily join these temporary events and learn from both hobbyist and professional brewers with more experience. Likewise, Croidieu and Kim (2018) documented how amateur radio operators formed associations and clubs that facilitated brief exchanges between novices and more experienced operators, thereby encouraging novices' interest, skill, and lay expertise in radio and helping them build technical competence and a shared identity. In addition to skilled hobbies, alternative pathways can also translate to occupational entry, such as in coding bootcamps, where aspiring developers make a less formal commitment to an occupation and learn from 'near peers' outside of formal educational institutions (Kaynak, 2024). Similar interactions between those more and less experienced in craft approaches have also been identified in nontraditional pathways like online forums among Etsy.com crafters (Kuhn & Galloway, 2015), early computer hacker clubs (Furnari, 2014), and the maker movement studied in this paper (Browder et al., 2019; Fitzmaurice et al., 2020). Importantly, these studies hint that affective bonds and enchanted experiences appear to play a role in inviting novices to engage with domains via non-traditional pathways. For example, studies describe 'the excitement of finding other enthusiasts' and 'emancipation from struggles of everyday life' (Croidieu & Kim, 2018, p. 16, p. 3) and how 'knowledge…and fun go hand in hand' as opposed to 'scientific perfection' (Kroezen & Heugens, 2019, p. 999-1000).

In summary, this emerging perspective underscores the potential for experts to render craft more accessible to novices in nontraditional pathways. These studies depict relatively brief interactions and challenge the notion of authoritative, serious, and formal relationships that characterize entry via established pathways. Building on this stream of research, we contend that aspiring novices' perceptions of a craft as accessible hinge on how those with greater expertise convey the skills and knowledge of their given domain. This is particularly important given that



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craft approaches often rely on embodied, tacit knowledge and specialized skills, often learned from those with existing expertise. While there is a growing sense that experts can create a more approachable environment for novices by establishing less hierarchical communities (Browder et al., 2019; Croidieu & Kim, 2018; Kaynak, 2024), we still lack theoretical understanding of how experts can enable novices to feel that craft is accessible. Developing this understanding will help us not only understand how novices come to see craft as accessible, but also shed light on how individuals may increase meaning, agency, and expression in a rationalized world.

## Methods

### *Empirical context: Maker Faires*

The maker movement is a DIY craft-oriented movement, with the term 'maker' serving as an umbrella for those who create in many areas, such as metalwork, digital fabrication, robotics, food innovations, quilting, pottery, handmade clothing, art, and the novel applications and intersections therein. It consists of a 'community of hobbyists and professionals with diverse skills and interests who make their own functional devices, from technological gadgets to home decorating' and 'express themselves creatively by designing and building digital or tangible objects' (Papavlasopoulou, Giannakos, & Jacheri, 2017, p. 57-58). According to Browder and colleagues (2019, p. 459-60), the maker movement 'represents a fundamental break from the craft work of the past' because it 'seeks to democratize' the creation process through 'a high level of social exchange and collaboration,' 'enhanced knowledge creation,' and the use of high-tech tools to make material artifacts. Makers embrace all forms and levels of making, and include a diverse set of actors such as hobbyists, artists, hackers, students, educators, engineers, entrepreneurs, and inventors. Makers connect to each other and the public at large through online platforms, makerspaces, and public-facing Maker Faires. Maker Faires are produced by *Make:*



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*Community* (henceforth, *Make*), the parent organization that also publishes *Make Magazine*, which is focused on maker projects. The maker movement has ties to (and arguably roots in) European hackerspaces that arose in the 1990s and the long-standing DIY tradition. The US maker movement has grown rapidly over the last two decades. The Makers have organized 1,497 Faires with 131,775 exhibitors and over 7.6 million attendees between 2006, the date of the Maker Faire, and July 2024 (Make, 2024a).

Because we sought to investigate how novices come to see craft as accessible, we focused on Maker Faires as they are the key interactional space where novices interact with makers. Maker Faires are temporary, interactive events that run for a few days, where expert and hobbyist makers exhibit their projects and assorted forms of making. Events attract practitioners from a wide range of skilled domains, as well as professionals, hobbyists, entrepreneurs, artists, leaders of makerspaces, and novice attendees. The cost of attendance ranges from $0 (approximately 50% of events) to $35, depending on the size and location, and scholarships are available (Make, 2024b).

Booths at Maker Faires are arranged side-by-side in close proximity to each other, creating what the *Make* website described as a ‘maze’ of exhibitors. Figure 1 illustrates a prototypical event layout for a flagship Maker Faire. An image of a Maker Faire booth is depicted in Figure 2. In addition to booths, Maker Faires include multiple stages of demonstrations, musical performances, and spectacles, such that even when attendees were not visiting booths, they were part of a festive and lively atmosphere where making was being celebrated.

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**Figure 1.** Map of a Maker Faire


**Figure 2.** Maker Faire booth


According to *Make*, approximately half of attendees at the largest Maker Faires in New York and the Bay Area are first-time visitors. Scholars have also noted that Maker Faires are a primary way to 'recruit new makers to the movement' (Browder et al., 2019, p. 466). Moreover,



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research has shown Maker Faires elicit shared emotions that help align experts from diverse domains under a collective identity focused on inclusiveness (Gorbatai et al., 2021). Therefore, Maker Faires, with their emphasis on inclusiveness and the engagement of both experts and novices, provide a rich context for studying how experts help novices perceive craft as accessible.

***Data sources***

We collected interview and observational data at seven Maker Faires between 2018 and 2023, coming to focus our data collection efforts on interactions between experts and novices over time. Initially we entered the field interested in theoretical questions of collective identity, planning to focus primarily on exhibitors. As we began to observe and interview exhibitors, we were struck by their intentional efforts to make their booths inviting and exciting for attendees, and our unit of analysis gradually shifted towards exhibitor-attendee interactions at the booths. As we conducted closer observations and began interviewing attendees to understand their experience, new theoretical questions emerged about learning processes and the interactions that underpin them. Yet, we came to see that these interactions were less about transferring core knowledge and skills and more about exposing early-stage novices to different types of making, igniting a spark or interest in a given domain. Over time, we came to understand that the interactions we observed provided a window into understanding the early stages of novices entering skilled domains, particularly whether they perceived craft as accessible.

Throughout data collection we followed a theoretical sampling process, considering additional expert-novice interactions and their respective viewpoints, until we reached theoretical saturation (Strauss & Corbin, 1998). We considered potential conceptual categories after each fair and used these emerging categories to grow the sample. For example, at the initial Maker



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Faire we attended, we observed that experts were focusing on engaging novices. We began considering conceptual categories and collecting more data from additional events to refine our understanding of how they did so. Over time, we reached a level of saturation such that additional data provided little new or surprising information (Small, 2009) about expert-novice dynamics at Maker Faires. We reached saturation on the categories related to experts first, partly because we had more data and exhibitor interviews were especially rich. Thus, later data collection efforts skewed more towards observing and interviewing novices. Our data sources are detailed in Table 1.

When choosing to attend a new Maker Faire to collect additional data, we attempted to balance event size and locations in case these characteristics played a role in the interactions we observed. We thought perhaps exhibitors may structure their booths differently at large fairs (they did not) or that attendees may spend less time interacting with exhibitors at large fairs that drew a big crowd, changing the nature of their experience (this did not occur). Altogether, we collected data at six fairs in the US and one fair in Europe: (a) three large 'flagship' fairs, (b) two 'featured' fairs, and (c) two 'community' fairs. Flagship fairs are large global events with up to 150,000 attendees, featured fairs are mid-size, drawing up to 15,000 attendees from the local region, and community fairs are small, local events typically drawing a few hundred to 1,000 attendees. Fairs lasted from one to three days.

As noted, we did not identify significant variation across event types or locations. However, one of the community fairs (Maker Faire 4) was less successful in generating perceptions of accessibility among novices. Because we are primarily interested in explaining how novices come to see craft as accessible, our analysis is based on data from the successful fairs, as this is the majority experience. We conclude the findings by contrasting interactions at

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the less successful fair with the majority experience, which helps make salient the nature of successful interactions.

**Table 1.** Data sources

| Identifier | Fair type | Location | Year | Days in field | Interviews (n = 151) | |
|---|---|---|---|---|---|---|
| | | | | | Exhibitors | Attendees |
| Maker Faire 1 | Flagship | West Coast | 2018 | 3 | 18 | 5 |
| Maker Faire 2 | Community | West Coast | 2018 | 1 | 4 | 2 |
| Maker Faire 3 | Featured | Rocky Mountain | 2018 | 2 | 9 | 4 |
| Maker Faire 4 | Community | Pacific Northwest | 2022 | 2 | 8 | 6 |
| Maker Faire 5 | Featured | East Coast | 2023 | 2 | 14 | 15 |
| Maker Faire 6 | Flagship | West Coast | 2023 | 3 | 2 | 30 |
| Maker Faire 7 | Flagship | Europe | 2023 | 3 | 14 | 20 |
| Total | | | | 16 | 69 | 82 |

***Interviews.*** We conducted a total of 151 interviews (see Table 1). Typically, we approached exhibitors and attendees directly, though on occasion an introduction was facilitated by an exhibitor whom we had already interviewed. Given the range of informants, interviews were semi-structured to allow for flexibility (Strauss & Corbin, 1998), with questions ranging from how exhibitors planned their booths to first-time attendees' reflections on their experiences. Overtime, we began to focus our questions to exhibitors about their efforts to make their booths inviting and exciting and our questions to attendees about changes in their perceptions about the difficulty of making. We further helped contextualize the exhibitor and attendee experience by interviewing five fair organizers as well as five leaders of *Make* who were not directly responsible for any of the observed Maker Faires but provided overall direction for the organization and fairs. These additional 10 interviews enhanced our understanding of the context and broader fair dynamics, but we do not analyze this data in the paper as we are primarily concerned with expert-novice interactions. Overall, interviews lasted between five and 90 minutes. Given the nature of our field-based data collection, some attendee interviews were



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brief. Many of these shorter interviews followed our observations at the booths, allowing us to capture immediate reactions and experiences.

***Observations.*** The first author attended all seven fairs, spending three days at community fairs, four days at the featured fairs, and nine days at the flagship fairs. The third author also attended two flagship fairs, spending two days at each. Altogether, we spent 16 days in the field, totaling 120 hours of observation. We took detailed field notes about each event space, exhibits, and interactions between attendees and exhibitors. Visiting different booths as attendees enabled us to witness exhibitor-attendee interactions up close and invite people to be interviewed. Typically, exchanges lasted between 2-15 minutes. We deliberately observed booths across a wide range of skilled domains, from blacksmithing and weaving to robotics and fabrication to understand whether there was variance in interactions, though we did not note substantial variation. Because Maker Faires are attended by crowds of strangers and the time we spent at any one booth was brief, we do not believe our presence impacted the behavior of those we observed. We also note that we do not analyze our own experience as attendees.

Our observations also guided our interview questions (Miles & Huberman, 1994). For example, as we observed repeated friendly interactions, we further inquired about the role of social connections in interviews, which eventually led us to conceptualize the importance of relaxing hierarchy.

***Data analysis***

We took an inductive approach to data analysis, following the principles of grounded theory (Charmaz, 2006; Locke, 2001). We first open coded the interviews and observational data (Locke, 2001), bracketing codes into those relevant to exhibitors and attendees (see Table 2). We then began to group open codes into more abstract categories in a process of axial coding

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(Strauss & Corbin, 1998). For example, we grouped two codes about how exhibitors provided tools, templates, and tips to attendees and how exhibitors incorporated attendees' creative ideas into the making process. We labeled this category *scaffolding to facilitate creation*, which draws from how teachers support and segment student learning (Hmelo-Silver, Duncan, & Chinn, 2007; Palincsar, 1998), but builds on this idea by emphasizing how experts provide scaffolds that allow novices to very quickly create something with tools and their own hands.

We also grouped two codes related to the enchanting nature of attendees' early experiences with making. We came to see attendees' experiences as related to enchantment in multiple ways, following Endrissat and colleagues' (2015) polyvalent conceptualization of enchantment. First, the code *feelings of engagement such as expression, agency, and tangible connection to making* recognizes how attendees were immediately *engaged* in craft practices and the meaningful feelings therein. This echoes other research that shows engaging in craft approaches to work is enchanting (Endrissat, Islan, & Noppeney, 2015; see also: Crawford, 2009; Endrissat & Noppeney, 2018; Sennett, 2008). Second, the code about attendees experiencing *a sense of magic, wonder, inspiration, and awe* signals how attendees *are enchanted*, such that they experience 'pleasurable dreams and fantasies' around participating in making that can 'cast a spell' over those being enchanted (Korczynski & Ott, 2004, p. 581; Endrissat et al., 2015, p.1556). Taking these codes together, we use the label *novices experience enchanted engagement in craft.* This captures how novices are simultaneously engaged in craft practices and enchanted by them. See Table 2 for additional information on how we grouped codes.

In the later stages of analysis, we engaged in more abstract theoretical coding to group our axial codes into an overall theoretical model in light of relevant extant literature (Charmaz,



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2006; Locke, 2001). For example, we grouped axial codes pertaining to the unique ways experts interacted with novices under the label *conveying skills and knowledge using a creative craft approach*. This is because we found similarities between our axial codes about experts and 'creative craft' (Kroezen et al., 2021), which involves prioritizing playful exploration, establishing less hierarchical learning communities, and when necessary, using technology to aid human expression. Moreover, the axial codes we grouped under the label *novices perceive craft as accessible* (i.e., that novices perceive reduced barriers to entry and feel membership in craft community) resonated with ideas of access linked to an individual's ability to enter and participate in a given skilled domain (Lave & Wenger, 1991). Notably, this process underscored that enchanted engagement was a distinct construct from perceiving craft as accessible, given that the former encapsulates a fleeting and ephemeral feeling that helps build the perception of accessibility that remains past the brief experience.

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**Table 2.** Coding and analysis table

| Open codes | Axial coding category | Theoretical category |
|---|---|---|
| • Exhibitors provide tools, templates, and tips that make it easier for attendees to engage in creative activities<br>• Exhibitors create opportunities for attendees to contribute their creative ideas to the making process | Scaffolding to facilitate creation | Conveying skills and knowledge using a creative craft approach |
| • Exhibitors purposefully downplay their expert status and emphasize that everyone is a maker<br>• Exhibitors intentionally present a friendly demeanor to encourage attendees to approach and engage with their booths | Relaxing hierarchy | |
| • Exhibitors intentionally design their booths to encourage attendees to play and experience fun around making<br>• Exhibitors model irreverence and rule-breaking<br>• Exhibitors actively create spectacles and excitement | Cultivating fun and whimsy | |
| • Attendees describe feelings of engagement, such as expression, agency, and tangible connection to making<br>• Attendees express a sense of magic, wonder, inspiration, and awe | Novices experience enchanted engagement in craft | Enchanted engagement |



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| | | |
|---|---|---|
| • Attendees' perceive that a high level of skill mastery is not a prerequisite for making<br>• Attendees evolve from an initial sense of unease with a skilled domain into feelings of empowerment | Novices perceive reduced barriers to entry | Novices perceive craft as accessible |
| • Attendees feel welcomed into the larger craft community<br>• Attendees feel they can more easily access mentors and obtain advice from others in their domain of interest | Novices feel membership in craft community | |

Throughout data collection and analysis, we took steps to ensure the accuracy and validity of our interpretations. Triangulating between interviews and observational data helped us validate our findings (Jick, 1979). To reduce bias in coding, we met regularly as an author team to discuss emerging codes and alignment between the codes and categories (Miles & Huberman, 1994). We also conducted member checks with informants, who confirmed that our interpretations accurately reflected their lived experiences (Lincoln & Guba, 1985). Table A1 in the Appendix presents additional evidence for each of our categories.

## Findings

### Conveying Skills and Knowledge Using a Creative Craft Approach

Our findings show that experts conveyed skills and knowledge by (a) scaffolding to facilitate creation, (b) relaxing hierarchy, and (c) cultivating fun and whimsy.

***Scaffolding to facilitate creation.*** Scaffolding at Maker Faire often consisted of curated prosumption activities that blurred craft production and consumption through somewhat formulaic hands-on projects. Exhibitors often did this by *providing tools, templates, and tips that made it easier for attendees to engage in making.* This was visible at a booth dedicated to soldering, a technique used in electronics, jewelry making, roofing, automotive repair, stained glass, and plumbing that involves using a hot iron to melt solder wire to connect pieces of metal (fieldnotes Faire 5). The soldering exhibition area featured six metal workbenches, each equipped with two soldering stations comprising a soldering iron, rolls of silver soldering wire,



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safety goggles, and scissors, as well as a plastic packet that included a small circuit board in the shape of a maker robot (makerbot), a battery holder, a pinning element, a battery, and an LED light. A couple in their 60s sat down at neighboring soldering stations. The closest exhibitor, a young college-aged man, took an active role in guiding them to create a pin, explaining they would be soldering together two metal parts to connect electronic circuits and illuminate a blinking LED light. The woman asked how much wire to cut and if the scissors were strong enough; the exhibitor showed her the length and instructed her to include a little extra just in case. A large waft of smoke then arose from the man's soldering board and the exhibitor intervened, saying, 'It looks like that side of the board is burnt, but actually, you can just turn the board around and do the same thing on the other side with a reverse polarity'. The man began putting the soldering iron down again, but then quickly pulled it back, keeping a distance. The exhibitor offered encouragement: 'Stay with it and lean in closer. Just push a little longer, but once it starts melting, pull it off and tap it back again'. The man correctly soldered, smiled at his partner, and proceeded with the next step. When they completed the task, they attached their pins to their shirts to wear around the fair.

The exhibitor made the technical process of soldering easier by providing all the necessary tools, parts, and templates at individual stations where any attendee could participate. The exhibitor also provided guidance, such as how much wire to cut and how long and hard to push the iron, intervening when boards were inadvertently burned and providing encouragement and assistance when attendees appeared hesitant. At this booth, scaffolding enabled novices to assemble a kit of parts into a pin, providing the feeling of being able to solder by engaging in a simple activity. This soldering activity was available at every flagship Maker Faire, with slight variations in the style of the pin. Hundreds, if not thousands of attendees used the same tools to

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create the same artifact from mass-produced parts. Such moments of novice creation were highly rationalized examples of prosumption activities. At other booths, exhibitors provided relatively formulaic hands-on activities using powerful but easy-to-use tools such as 3D printers and CNC routers. At some booths they used designs and templates created by other members of the maker community. Maria[1], an exhibitor at Maker Faires since 2012, explained that providing access to tools made it easier for attendees to engage in craft techniques: 'all these tools that almost anybody can access …[means] you can become a maker, even if you don't have any particular skills.' These different forms of scaffolding enabled attendees to engage in activities that exceeded their abilities, providing a foothold for future learning by enabling novices to draw on externalized skill and knowledge, making upskilling accessible to any attendee regardless of their age or experience.

Exhibitors also scaffolded to facilitate novice creativity by *providing opportunities for attendees to contribute their creative ideas to the making process*. For example, one exhibitor, Anthony, made custom patches for clothing by drawing with thread using a sewing machine (fieldnotes Faire 1). As attendees approached his booth, he encouraged them to design a patch. Often, he would 'try to get people to think of a scenario and to describe it in five words or less and to make a custom patch for them on the spot'. Anthony encouraged attendees to be creative, and translated that creativity into a physical artifact, 'a tangible piece of their imagination'. In this case, the maker expert became the tool for manifesting the novice's creative idea. Exhibitors like Anthony reinforced the idea that you do not need to have skill to start engaging in craft, just the beginning of an idea, allowing attendees to feel more connected to making by involving them in the process.

[1] All names are pseudonyms.



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***Relaxing hierarchy.*** Exhibitors worked to challenge the perceived hierarchy of expertise by *purposefully downplaying their expert status and emphasizing that everyone is a maker.* Nathan, an annual exhibitor, asserted that 'anyone can be a maker' and tried to reinforce that 'ethos' at his robotics booth. Nathan was neither technically educated nor trained in engineering. He had taught himself robotics and believed that the knowledge required to engage in making should be available to all, as opposed to an 'isolationist elitist mentality.' He said that a person with less skills is not 'less of a maker' than himself and that he 'very strongly pushes for a strict "nice" policy where "Hey, you don't understand robotics or you don't understand advanced coding? No worries."' Nathan expressed a willingness to share knowledge with those who visited his booth and offered practical suggestions for how to learn more by inviting them to visit a related makerspace.

Melissa, who created 15-foot sculptures from repurposed materials, similarly emphasized how she encouraged attendees to see themselves as makers. Drawing a contrast, she described traditional artisan fairs as static and less engaging, and Maker Faires as vibrant 'interactive workshops' where you can connect with anyone. This aspect held particular significance for her, as it helped novices overcome 'barriers' to connecting with makers.

> At art fairs it's like, you know, you're just presenting your work and if people like it, they like and if they don't, they don't. But here we get to interact with people, and if they're like stand-offish to it at first, maybe we'll like break down their barriers a little bit to creativity and to creation and like, 'No, you really can do this'. And then people are really excited.

Melissa actively dismantled barriers and instilled confidence by telling attendees, 'You are good enough … you can create anything'. She encouraged attendees to make 'free-form' additions to the sculptures and provided vocal affirmations like 'You can do this!' when attendees were



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hesitant. She aimed to break down the traditional hierarchy present in highly skilled domains, making craft appear less daunting.

Relatedly, exhibitors *intentionally presented a friendly demeanor to encourage attendees to approach and engage with their booths.* Hoping to prevent metalworking from becoming a 'lost art', Jeffrey strove to 'take the intimidation factor away'. Some attendees revealed to him that they 'were so intimidated' until they realized that metalworking was 'not scary at all'. Jeffrey described how he tried to set a 'welcoming' tone:

> We're not like some super-genius or something like that. We're just ordinary people … so, when I show my machine, I don't just say, 'Here it is, take a look'. I try to communicate and try to be welcoming and friendly with people so they can see there's a lot more human contact to the art.

Jeffrey highlighted the importance of exhibitors being seen as 'ordinary' or on the same level as attendees, as well as friendly. This intentional effort to connect with people on a personal level aims to break down the perceived barriers between beginners and experienced makers by increasing the sense that experts are relatable and approachable.

***Cultivating fun and whimsy.*** Exhibitors *intentionally designed their booths to encourage attendees to play and experience fun.* Indeed, the goal of encouraging play was mentioned frequently by makers, who worked to make their hands-on activities 'really playful,' 'playful and enjoyable,' and 'exciting.' Matt, a clay artisan, emphasized the importance of lightheartedness and play in unlocking creativity for attendees:

> I really want to engage children but I [also] really want to get adults involved in that juvenile creativity … I want them to regress and be able to be youthful, and there's this purity in having this free fun, not having things be perfect and just being able to explore and expand and create.

After having exhibited at one fair, Matt re-designed his booth to better engage attendees. He invited people to draw a monster or creature which he would then sculpt with clay in a matter of



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minutes. Attendees appeared excited by seeing their creations come to life, beaming with smiles and exclaiming that it was 'so cool,' and that Matt had 'wowed them' (fieldnotes Faire 1).

Likewise, exhibitors *modeled irreverence and rule-breaking.* For example, Lisa, a maker who created clothing out of recycled materials, designed hands-on activities that encouraged attendees to let go of preconceived rules for sewing. Her booth was set up like a sewing classroom (fieldnotes Faire 2). Stations with sewing machines or with needle and thread were arranged in three rows. Each station had an assortment of different types of textiles, thread, and sewing tools like scissors and thimbles. Lisa invited anyone with interest to sit down and learn to sew with her. She explained that they were repurposing fabrics and clothing into 'new-fangled creations of any sort', including costumes, purses, banners, or stuffed animals. As people worked, Lisa encouraged: 'Stop the voice on your shoulder that says, "No, don't do that. You can't do that. There's rules."' Although sewing does indeed have some rules, she encouraged attendees to 'get rid of that voice, and play! Just play when you sew'. By exemplifying rule-breaking and actively encouraging attendees to do the same, makers encourage experimentation, challenge preconceived notions, and celebrate the joy of creative play.

Moreover, exhibitors created an atmosphere of fun and whimsy by *creating spectacles and excitement*. While not every booth featured a spectacle, a range of large sculptures, some of which were fire breathing, and performances with actors and musicians were commonplace. For example, in our fieldnotes from Maker Faire 7, we noted attendees gathering around a steampunk robot band consisting of five humanoid robots that played intermittently throughout the fair. At Maker Faire 6, we noted a 25-foot-tall giraffe that combined art, robotics, electronics, and micro-controllers that enabled it to respond to touch and had speakers blasting electronic dance music.

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The exhibitors of these spectacles encouraged novices to interact and ask questions, adding excitement and energy to the events.

**Enchanted Engagement**

***Novices experience enchanted engagement in craft.*** Attendees taking part in the making process at various booths described *feelings of engagement, such as expression, agency, and tangible connection to making*. Tom, who had just left a robotics booth, shared: 'It feels good to do something tangible with your hands where you start with components and you piece them together … it's very satisfying and it's very rewarding … That simple pleasure of being like, "Yes. I made something."' Scarlett, participated in a glassblowing activity, similarly described the importance of being able to create something physical: 'There's something that's really cool about walking away with something you made … There's the pride aspect.' Attendees were able to take part in some of the core craft practices of more experienced makers, like creating electronic objects with robotics and blowing pieces of glass, even though they were very early-stage beginners in these domains. Thus, even as novices, they could experience feelings of enchantment. Even if the creation of the object was heavily supported by the exhibitor, the act of being involved in making provided attendees a sense of agency and pride. As attendee Monica put it, 'even if you don't add anything, just the fact that you assemble it yourself … you feel like it's yours, right? And it's very, very cool.'

Maya, a software engineer in her late 20s was at the Maker Faire with her partner, her first time attending a fair of this nature. She had just participated at a booth wherein she learned how to make her own badge that she could wear around the event. She described the process of making the badge as surprisingly enjoyable, in large part because she was able to express herself through making it.

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> [The exhibitor] walked me through the process of making the badge. And it was – it's just a very simple thing. Like a badge. It's so easy, available, but then just the making behind the badge… it was just so fun – it was a kind of fun that I never thought could be fun.

Afterwards she sported a wide smile, pointing to her badge that she had decorated with a cat and declaring 'everyone knows I'm a cat girl now.' While making a badge may seem simple on the surface, actually getting her hands involved in making allowed Maya to feel 'so creative' and that she 'was in it,' i.e., fully engaged. Being able to express her interests and identity, here through her cat decoration, made the experience more personal. Her sense of immersion and connection to the activity is significant because it illustrates that while brief, her involvement with the creation process generated a sense of what it feels like to create something meaningful to her. Whether describing a tangible connection to creation, feelings of pride around making, or the ability to express an identity, novices felt the enchanting aspects of taking part in making.

At the same time, novices felt enchanted by their interactions with exhibitors, which led many attendees to express a *sense of magic, wonder, inspiration, and awe,* describing the Maker Faire experience as 'exhilarating' and 'extremely stimulating' (Vivek), 'just mesmerizing' (Luca), 'moving' (Natalie), and 'wonderful … like a dream' (Joe). Others said it 'fills my heart with joy' (Roberto) and 'blew my mind—I was like, "Whoa!"' (Bella). Rami likened it to 'experiencing things in a different dimension'; Leo confirmed: 'There is this sparkle that suddenly appears.' These attendees emphasized the enchanting and magical atmosphere of the Maker Faire. As Scarlett put it, 'I think there's this childlike aspect about this place and what's going on here and it brings different energy … a boost of energy that maybe some of us need in our day-to-day.'

**Novices Perceive Craft as Accessible**

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The enchantment felt by novices set the stage for and reinforced the idea that they could engage in craft by lowering perceived barriers to entry and feeling membership in the maker community.

***Novices perceive reduced barriers to entry.*** Initially, many attendees were intimidated; however, many left Maker Faire *feeling that a high level of skill mastery was not a prerequisite for making*. Tom shared that attending a Maker Faire convinced him that he could engage in craftwork at home:

> I think it lowered the bar for me. I think that maybe previously I thought that ... Well, unobtainable is too strong of a word. But, [now I think] that anyone can do it. You can just set aside whatever time you have so that you can do it. You don't necessarily need true expertise. You just need a willingness and enthusiasm. That initial, 'I'm going to go to one of those group's meetings.' Or, 'I'm going to download those specifications on how to do this particular project.' … Now [I think] that basically anyone can do it, so long as you're willing to try and spend some time at it.

Initially, Tom felt that expertise was a 'big hurdle' to making, but seeing other people engage in projects 're-triggered the interest in making in general.' Indeed, he planned to work on building a bicycle from scratch, including the welding of different parts to create a custom bike. Tom's experience indicates a shift from potentially unrealistic or intimidating expectations around the level of skill required to engage in craft towards a more accessible view, where advanced skills are not a barrier if he has 'enthusiasm.'

Likewise, an *initial sense of unease with a skilled domain transformed into feeling empowered.* For example, first-time attendee Addison left a Maker Faire with a newfound belief in her ability to engage in soldering despite her limited skills:

> It was a bit scary because there was smoke all around. But the person helping me directed me through and through, and he told me to hold it in a certain way so I can break the part and that it would melt and seal off some part, which is what soldering is. …We made this badge thing and now I have, like, a glowing light. … It looked difficult, [but] at the end when I actually completed it, it was actually really simple. … It's always, always

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> uplifting when you get through with something, right? You always feel more confident, and you feel like, yes, you can do this too.

Addison's experience illustrates a transformation from initial apprehension to newfound confidence that she could perform such tasks with limited skills. She said she might want to solder again or work with a circuit board, adding that she was 'more willing' to 'plan out something for a few months, have a little project going on.' This echoed the feelings of others, such as Elliott, who shared that he had tried learning from 'YouTube videos and reading stuff online' but it did not feel possible until he had someone physically guide him through the action.

Scarlett left a Maker Faire with a very different idea of what artificial intelligence (AI) technology could mean for her video production work. Although she had expertise in video production, she had not experimented with AI until she attended a booth where knitters were using a pattern created by AI. Interacting with the knitters at this booth and experiencing playfulness shifted her perceptions about AI. Scarlett said, 'I thought that was really fascinating because I would always think about using AI in the opposite way, of "Oh, shoot, it's going to tell us what to do."' However, after the fair, she declared, 'this makes me more excited to try versus being afraid … it makes you feel empowered that you can do things.' Thus, attendees experienced a shift in perceptions around the accessibility of making and related tools and technology.

***Novices feel membership in craft community.*** Attendees also left Maker Faires *feeling welcomed into the larger making community.* For example, Chase worked as a front-end software engineer, but was interested in making physical objects 'like shelves and lighting.' His prior attempts at hardware projects at home were marked by a sense of isolation. This changed at Maker Faire, where he 'felt closer' to and connected with the making community.



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> Sometimes it's so isolating when you're at home, and you're trying to learn something new, and you have to go and you know, like read the manual and figure things out on your own. … [In] environments like this, where somebody's like, 'Oh, I had that same problem. It happened to me. If you try this though, I swear it'll … give you a different experience with it', it makes you feel closer not just to the community that you're trying to work in, but it also makes you feel like you're not alone when you're trying to learn something new, which is really hard to learn, especially as you get older.

Encountering exhibitors who faced similar challenges became a catalyst for connection that not only brought him closer to the making community, but also alleviated the loneliness that can be associated with learning new craft approaches on one's own. Capturing the transformative impact of Maker Faires, Chase declared: 'And now I'm a Maker.'

Amber similarly described feeling welcomed into the maker community through her experiences at multiple fairs: 'Oh my gosh, it blew my mind.' She elaborated:

> Coming to the Maker Faire really opened my eyes to how there is a whole support group and a whole support system in terms of making … having those kinds of interactions where you get to talk to the people who made them, figure out what their inspiration was, trade off ideas, and yeah. It's really just amazing. … It definitely brought me into a whole 'nother level of engagement with other makers. I think it is kind of like finding a new family, you know?

The interactive, enjoyable, and inspirational aspects of Maker Faires made Amber feel more connected to the community of makers.

Attendees also left Maker Faires with a *better understanding of how to access mentors and obtain advice from others in their domain of interest.* For example, Anika described herself as just 'kind of getting into my making journey.' She was captivated by a booth of large interactive art installations with flames, and spent time talking to the artists about their process. Although she did not have a particular project in mind, she wanted to 'get more into propane and poofers and stuff like that' and she left feeling connected to this group of artists. 'I just kind of connected with them and I'm going to learn how to do flame stuff. They were like "Oh, yeah, e-mail us. We'll love that."' Similarly, Rami established connections with exhibitors who were



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knowledgeable about sensors, which he wanted to apply in music and acoustics: 'I found some contacts who can support me, too. I have their contact cards, so I can obviously look at their websites, contact them directly via email. So, I think I'll do that.' These experiences illustrate how easy it was for novices to connect with and seek guidance from experts in their respective areas of interest. Connecting with peers and potential mentors helped novices feel like members of a craft community.

**Counterexample: A Less Successful Maker Faire**

A smaller subset of contrasting data helps confirm the importance of the processes we outline in our findings. We briefly describe this fair and attendee reactions to their interactions with exhibitors to bring the above findings into sharp relief. Due in part to time constraints and adverse weather conditions, the fair drew smaller crowds of both exhibitors and makers than initially hoped for and took place in a disproportionally large space. The less successful fair was held in an arena that could hold 2500 people, but had no more than 20 exhibitor booths and 75 individuals in attendance at any given time, with more exhibitors than attendees present during most periods (see Figure 3). In our fieldnotes (Faire 4), we noted that the fairgrounds felt sparse and empty.

A key difference of this fair was that attendees appeared to lack the feelings of engagement and a sense of inspiration and awe, i.e., the aspects of enchanted engagement that were so core to attendee experiences at the successful fairs. For example, when asked if they learned anything or had any hands-on experiences, attendees of this fair tended to remark, 'Not really, no,' and when asked if they had seen anything inspiring walking around, some simply replied, 'No,' while others said, 'Not yet, at least.' Interviews with attendees thus suggest they were not highly engaged in the interactions and did not appear to change their perceptions

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around entering or accessing the skilled domains. Although exhibitors did attempt practices aligned with scaffolding and relaxing hierarchy, it was notably difficult to cultivate fun and whimsy. Indeed, exhibitors admitted felt a bit deflated themselves. Overall, this counterexample highlights how scaffolding, relaxing hierarchy, and especially cultivating fun and whimsy work together in enabling novices to feel craft is accessible, and their precarity.

**Figure 3.** Image of a less-successful Maker Faire

## Discussion and Conclusion

### Model Discussion

The goal of our inductive study of expert-novice interactions Maker Faires was to build theoretical understanding about how craft is made accessible to novices. Drawing on our findings, we introduce a model that explains how experts convey their skills and knowledge such that novices perceive craft as accessible, depicted in Figure 4.

**Figure 4.** Model



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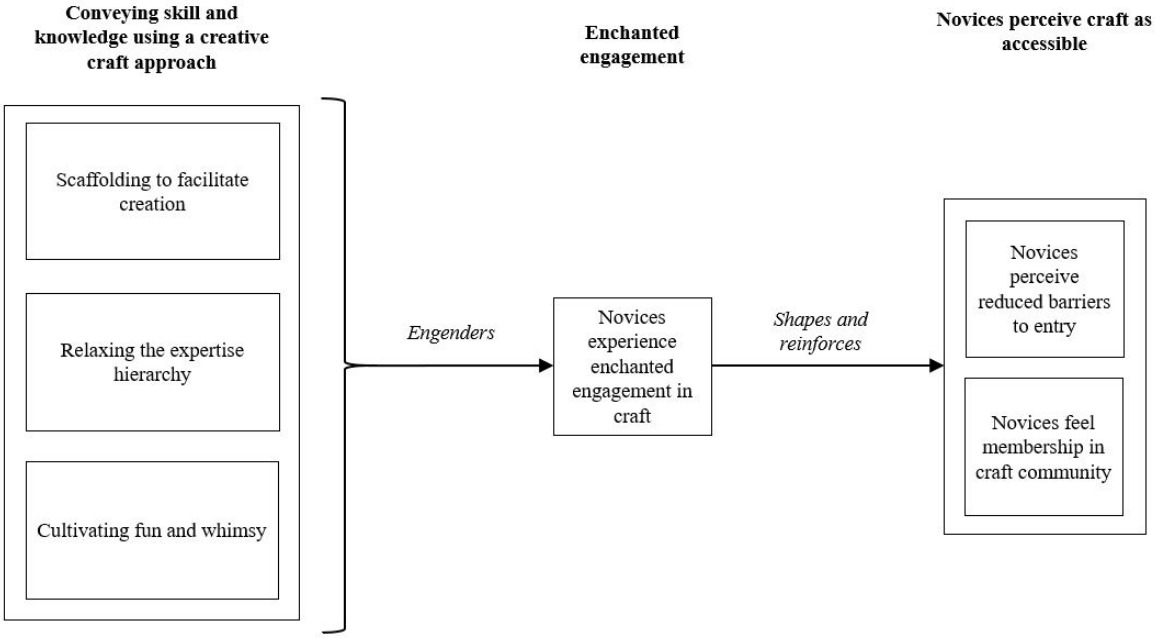


Our model begins with the unique ways that experts employ creative craft approaches when conveying skills and knowledge to novices. First, through the use of *scaffolding to facilitate creation,* we show how experts can provide novices immediate opportunities to engage in craft and create artifacts. Whereas craft skills and accompanying knowledge are generally described as embodied or codified in experienced craftspeople (Bell & Vachhani, 2020; Sennett, 2008), scaffolding externalizes these skills and knowledge through the use of advanced tools, as well as pre-planned templates, and practitioner tips. Second, whereas traditional pathways to novice entry to skilled domains typically reinforce a status and expertise hierarchy (Anteby et al., 2016; Cattani et al., 2013; Hori et al., 2020), *relaxing hierarchy* reflects how experts can reduce distance between themselves and novices to further facilitate their engagement in craft. Notably, our findings suggest that the (near) absence of hierarchy in more egalitarian knowledge-sharing communities (Browder et al., 2019; Croidieu & Kim, 2018; Kuhn & Galloway, 2015) requires active work on the part of those with greater expertise. Finally, *cultivating fun and whimsy*



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promotes affective connections to craft through enjoyment, excitement, and fun (Endrissat et al., 2015), rather than dedication, time, and sacrifice (Ranganathan, 2021).

By scaffolding, relaxing hierarchy, and cultivating fun and whimsy, experts enable novices to experience *enchanted engagement in craft*. Attendees were able to engage in craft practices despite having little to no background because exhibitors provided opportunities that required low or minimal skill. Thus, the outcome of scaffolding is not only learning (Hmelo-Silver et al., 2007), but also of feelings of creative expression and making something tangible. Despite the formulaic and technologically mediated nature of scaffolded activities at Maker Faires, attendees derived a sense of meaning from them, largely because their engagement in craft was accompanied by a feeling of being enchanted. Enchantment can 'cast a spell' on those being enchanted and obscure reality (Endrissat et al., 2015, p. 1556), here momentarily obscuring the reality that novices do not yet have skills. This allows early-stage novices experience how engaging in craft *feels*, accessing what Sennett (2008) called the 'heart' of craftwork. In other words, through enchanted engagement novices feel the emotional rewards of craft without the requisite skill or knowledge. This resonates with the affective dynamics within craft, where emotions can flow between bodies, objects, and places of making (Bell & Vachhani, 2020).

Our model proposes that the experience of enchanted engagement plays a pivotal role in reshaping novices' perceptions, making craft seem more accessible. Enchanted engagement is an ephemeral feeling that helps build the perception of accessibility in part because enchantment can give rise to feelings of ability and autonomy, albeit mythical (Korczynski & Ott, 2004). In the case of heavily scaffolded craft practices, enchantment can lead novices to believe that they can engage in craft prior to developing advanced skills. Indeed, a key aspect to novices perceiving craft as accessible is *perceiving lower barriers to entry*. Our model also proposes that



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enchanting engagement can allow novices to *feel membership in craft community*. This resonates with studies showing affective experiences can encourage deeper feelings of social connection (Endrissat & Islam, 2022) and connection to a broader identity (Gorbatai et al., 2021). Relatedly, relatively brief interactions at temporary events have been noted in studies of alternative pathways (Croidieu & Kim, 2018; Furnari, 2014), and our model suggests that brief interactions, even with strangers, have an emotional richness to them that can encourage novices to further pursue skilled domains.

**Contributions**

The model induced in this paper contributes to the growing scholarship on craft (Bell et al., 2021; Kroezen et al., 2021). First, we uncover the dynamics whereby novices come to perceive craft as accessible outside of traditional pathways. Prior research has suggested that access to learning opportunities and community are essential aspects of novice entry into domains that require skills and embodied knowledge (Bharatan et al., 2022; Kaynak, 2024; Lave &Wenger, 1991). Yet, extant research has largely focused on traditional, well-established pathways of novice entry—i.e., apprenticeship models (Cattani et al., 2013; Kieser, 1989) and occupational socialization (Anteby et al., 2016; Van Maanen & Barley, 1984). Novices outside these established pathways face barriers to entry (Kaynak, 2024). Rigid hierarchical structures and the extensive commitments involved in gaining entry to skilled domains can render craft less accessible to novices, deterring them from incorporating it into both their professional and personal lives.

By contrast, our study shows how experts convey skills and knowledge in a very different manner that enables early-stage novices outside a given domain to perceive craft as accessible. We have shown how experts use a creative craft approach even in domains that are typically



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approached in more serious ways. In doing so, our work surfaces and ties together the threads of these ideas in studies that examine alternate pathways to novice entry (Kaynak, 2024), expertise (Croidieu & Kim, 2018; Eyal, 2013), and studies that document more permeable boundaries around skilled domains (Browder et al., 2019; Kroezen & Heugens, 2019; Kuhn & Galloway, 2015). Specifically, we have revealed how experts can convey or share skills and knowledge to make craft appear more accessible to novices in the early stages of entering skilled domains. In particular, our findings highlight that a creative craft approach can be less about transferring core craft skills and more about drawing out novices' own sense of creative stimulation and expression, enabling novices to experience the enchantment of engaging in craft prior to having developed the skills or knowledge commonly associated with being members of a skilled domain. Importantly, even transient interactions between experts and novices appear to be able to reduce barriers and provide a sense of belonging. We invite scholars interested in dynamics of expertise development to consider how infusing creative craft approaches into serious domains during these proto-socialization stages potentially influence whether novices choose to engage in skilled domains.

We also extend recent theorizing on craft as it relates to rationalization and enchantment. Challenging Weber's argument that the progressive rationalization of modern society inexorably leads to disenchantment (1946), recent scholarship suggests that rationalization and enchantment are not mutually exclusive and indeed that rationality and enchantment co-exist (Suddaby et al., 2017). As historian Michael Saler argues (2006, p.702), 'there are forms of enchantment entirely compatible with, and even dependent upon, those tenets of modernity usually seen as disenchanting the world, such as rationality' (see also: Horkheimer & Adorno, 2002). Building on the idea that enchantment and rationality are in some respects co-constructed in contemporary

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life, recent work has put forward enchantment as a polyvalent concept (Endrissat et al., 2015). That is, enchantment can be seen as both an authentic avenue for autonomy, expression, and fulfillment in work (Bell et al., 2018; Endrissat & Noppeney, 2018; Suddaby et al., 2017), but can also function as an 'ideological cover for rationalization,' concealing power structures that create an illusion of autonomy while disguising control (Endrissat et al., 2015 p. 1566; Landy & Saler, 2009). Our study resonates with the idea that enchantment and rationality co-exist by showing how, even in craft, rationalized technologies and activities (here, the heavily scaffolded activities using mass produced parts to create fairly similar if not identical objects) enable the experience of enchantment. Further, enchantment in our study has elements of fantasy and illusion, as novices do not yet actually possess the skills and knowledge to practice on their own. This reflects how enchantment can effectively mask power differentials (Endrissat et al., 2015), such as those between experts and novices, but in ways that empower the enchanted such that they feel they can access or enter skilled domains. We thus extend recent work that shows how those being enchanted can be aware of these contradictions and still find room to make work more meaningful *despite* rationalization (Endrissat et al., 2015; Frenette & Ocejo, 2019) by demonstrating how those being enchanted can engage in meaningful creation *because of* rationalization. We believe that future scholarship, particularly related to algorithmically and digitally mediated work could build on this insight to examine how the illusion of autonomy may serve to empower or disempower in different contexts (Korczynski & Ott, 2004).

Relatedly, our study provides a better understanding of how individuals attain emotional rewards by engaging in craft. Extant scholarship on craft often portrays emotional rewards as the product of developing advanced skills and embodied technique. For example, Bell and Vacchani (2020, p.698, 690) described 'how affective traces and atmospheres emerge through the



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embodied techniques practised in craft work' which 'requires skill and takes considerable time to acquire'. Similarly, Sennett (2008, p. 20-21) contended:

> All craftsmanship is founded on skill developed to a high degree. By one commonly used measure, about ten thousand hours of experience are required to produce a master carpenter or musician … the emotional rewards craftsmanship holds [require] attaining skill.

This idea is echoed in Ranganathan's (2018, p. 647) interview with an artisan craftsman who declared, 'The more I sweat, the more I love [my product].' Toil and dedication typically are viewed as prerequisites for the emotional rewards of craft. In contrast, our findings suggest that when experts adopt a creative craft approach, novices with limited skills can attain these rewards through brief engagement with craft practices. This challenges the idea that the emotional rewards of craft are limited to those with advanced skills (Ranganathan, 2018; Sennett, 2008) and instead suggests that providing access to emotional rewards offers early-stage novices feelings of accessibility and may even deepen their interest in further developing skills. Indeed, much like how craft can serve as a pathway to enchantment and the associated emotional rewards (Bell et al., 2018; 2021; Suddaby et al., 2017), we encourage scholars to further consider how emotional rewards can serve as a pathway to craft.

Finally, our research offers implications for the growing literature on the maker movement within organizational and management scholarship (Browder et al., 2019; Browder, Seyb, Forgues, & Aldrich, 2023; Fitzmaurice et al., 2020; Gorbatai et al., 2021). Makers have been shown to successfully navigate tensions around legitimacy (Browder et al., 2023; Gorbatai et al., 2021) and here we have shown how they address potential tensions around expertise to successfully enable novices to perceive craft as accessible. Additionally, our work lays the foundation for studying how Makers handle the tensions around the interplay of digital technologies and creative expression, and we believe it would be fruitful to explore human-



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machine tensions in the process of how makers produce creative work. Indeed, digital technologies are a form of rationalization and they are central to the maker movement and, paradoxically, ideas of expression and enchantment are also core to the maker ethos.

**Generalizability, Limitations, and Future Research**

It is important to consider how the model depicted here generalizes to settings beyond the makers. We believe the insights from our model most readily apply to other nontraditional pathways where experts interact with early-stage novices in events and gatherings. For example, we see elements of our model in cases of short-term coding bootcamps that provide scaffolding and relax hierarchy (Kaynak, 2024) as well as in how amateur radio operators developed further interest and access to the domain in part through 'play[ing] with the technology' at exposition events (Croidieu & Kim, 2018, p.16). Our model also resonates with research documenting reoccurring club meetings and gatherings (Funari, 2014; Kroezen & Huegens, 2019). It is also feasible that our findings could apply to occur in domains with more closed or protected boundaries typically pursued via traditional pathways, like medicine. This is evident, for example, when educational institutions host medical or health hackathons open to the public, where software developers, medical practitioners, businesspeople, and members of the general public come together to develop and build health solutions (Yale CBIT, 2023). Novices at these hackathons could experience a sense of enchanted engagement and may even consider further pursuing these skilled careers (business, medicine, software development) as a result of feelings of greater accessibility that can follow from attending these events.

Yet, we hesitate to say that every occupational context has a similar event that builds a sense of accessibility. In fact, many events tied to occupations do the opposite. Oftentimes conferences and periodic events focus on experts (e.g., conferences feature award ceremonies

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and activities where novices are audiences rather than participants), highlight traditional pathways of entry and success, and involve expert-novice interactions that reinforce hierarchy and seriousness. Thus, our model is likely bounded by the extent to which those with greater expertise desire to share with novices (which is very high in the maker setting). Indeed, without experts playing an active role in sharing and flattening hierarchy, our model would collapse. In contexts with more competitive dynamics and tight labor markets, experts may not wish to convey skills and knowledge as openly because inviting others to access their domain may weaken their authority and distinction. While outside the scope of this paper, exploring why experts show up and engage in these interactions is important. While some experts may be motivated by the potential for commercialization, many appear to be motivated by sharing their love of craft (Crawford, 2009). Moreover, we recognize that 'novice' is a term that can refer to a wide variety of individuals, from those outside skilled domains to those already following established pathways who are not yet experts. Our model most readily applies to early-stage novices with some interest in attending gatherings or events.

Additionally, future studies could explore the role of leaders of skilled domains in making craft accessible to novices. Interactional spaces like Maker Faires are organized and curated by leaders who select exhibitors, plan spectacles, and invite attendees. Thus, leaders may be key in enabling the types of interactions documented in this paper and creating an affective atmosphere (Gorbatai et al., 2021; Endrissat & Islam, 2022) of fantasy that enchants novices. Indeed, other research suggests that leaders can catalyze interactions and facilitate community building (Funari, 2014). Scholars could also explore the boundaries of conveying knowledge and skills using a creative craft approach. For example, some research suggests that top-down, organized fun can backfire and evoke cynicism (Fleming, 2005), as mandating activities could



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ring hollow, rather than empower participants to have fun. Furthermore, given the importance of an appropriately dense and energized interactional space, scholars could consider how other social forces, such as crowds or hype, contribute to enchanting atmospheres that enable novices to perceive craft as accessible (Logue & Grimes, 2022).

Finally, it would be fruitful to explore outcomes after these early moments of novice entry into skilled domains. While our context enabled us to study the initial spark or motivation that novices experience when they feel craft is accessible, we were unable to document novices' adoption of craft approaches in their work or hobbies post-fair. We suspect, based on our contextual understanding and exhibitor biographies, that some attendees will continue to develop expertise through the broader maker ecosystem, including makerspaces and online forums. Yet, there may be important variation in expertise development based on whether novices learn in-person or from online communities. Indeed, Maker Faire attendees who had experimented with online tutorials were relieved and excited to finally interact with an expert in-person. This suggests that in-person interactions can bring enchanting effects that online platforms or tutorials may be less likely to trigger. Along these lines, more seasoned Makers described returning to the Faire for creative inspiration that they did not find working alone at home or in an online community. Finally, because our model is about entry and access before developing expertise, novices after Maker Faire may still face prolonged learning processes to master craft skills and may even end up on traditional pathways.

**Conclusion**

As rational control expands into new domains of work and production, it is increasingly important to understand how people can re-engage with expression, autonomy, and meaningful connection to creation (Crawford, 2009; Kroezen et al., 2021; Sennett, 2008). Our study suggests



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that while craft contexts and craft tools will change, the ability to engage meaningfully with matter is still possible and may even be more accessible for those without preexisting skills or access to training and resources. This points to the increasing importance of the 'heart' in craft, as the 'head' and 'hands' become increasingly mediated and augmented by technology. We hope that the model we offer in this paper encourages further study of the dynamics that help individuals find meaning and fulfillment through craft.

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