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Public Libraries as Sites of Collision for Arts Education, the Maker Movement, and Neoliberal Agendas in Education

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Abstract:

In recent years, the concept “making” has been claimed by “The Maker Movement.” While making offers great potential (and resources) for art integration in informal learning sites, maker discourse is often intertwined with a neoliberal mission. For example, movement leaders glorify Steve Jobs and hark on the myth that hobbies can be transformed into wealth-generating endeavors. As art-making activities in informal learning setting across the U.S. intersect with the maker movement, prominent learning theories that contradict this neoliberal philosophy may be repurposed or disremembered. Constructionist learning will require a continued commitment to a notion of learning by doing, “rather than acquiring theoretical precepts for subsequent application” (Ingold, 2013, p. 52). This article examines research from a multi-year empirical study of a Public Library system’s arts-based maker program. It provides a rich example of how discourse around making fits into learning in arts education, showcasing instances when neoliberal ideology collides with contradictory theories regarding how and why people learn and make. First, this paper will introduce the reader to the maker movement in education and review literature on making, learning, and neoliberalism. Secondly, I analyze the discourse of public librarians who implement the arts programming and suggest possible implications for how learning through the arts can be undermined by neoliberalism. And, finally, this article proposes a view of making that does align with arts education that embraces dispositional, constructionist, and post-modern/new materialist approaches to learning: Making as the reciprocal relationship between maker, material, tools, skill, and intention.

This article draws on a three-year empirical study of a Public Library system's arts-based maker program called *Bubbler*. I will introduce the Maker Movement and review literature on making and learning. I will use discourse analysis of interviews and workshops with public librarians to highlight how neoliberal ideology collides with educational theories incongruent with this economic vision for how and why people learn and make. Finally, I will suggest possible implications for how learning through the arts can be undermined by, and move away from, these neoliberal logics. I present a view of making oriented around responsiveness and connection that aligns with learning theories towards an anti-neoliberal arts education. This study contributes to conversations about learning through art making in educational settings across the U.S.

Artists have always considered themselves makers; visual artists are makers of artifacts (paintings, sculptures, etc.), while performing artists are makers of experiences (dances, plays, concerts). Per the National Arts Education standards, a core component of learning is: "Conceiving and developing new artistic ideas and work" (i.e. making; www.nationalartsstandards.org). In recent years, the term *making* has been claimed by what is coming to be known as "The Maker Movement" in education (Halverson & Sheridan, 2014; Martin, 2015). Propagated in part by for-profit companies (i.e., MAKE, ETSY) and mainstream literature such as Hatch's (2014) *The Maker Movement Manifesto*, the movement stresses that access to tools will enable the democratization of production. Many of the movement's most prominent leaders glorify Steve Jobs and seem to assure people that hobbies can be transformed into wealth-generating endeavors (Hatch, 2014); when consumers become producers, they improve the economic lives of their community (Anderson 2012; Dougherty 2012). Furthermore, they often strip the arts and aesthetics from the core of what it means to do "making," focusing instead on the entrepreneurial, production-oriented components of creating things.

These Makers do not come from a tradition of craft and artistry, but rather from a background in computation and engineering. In 1972, Stewart Brand published an article referencing the 1960s videogame "Spacewar," in which he popularized the term "hacker" as disruptive and creative, distinct from unimaginative technocrat planners, the white-collar workers following orders. For Brand, when computers became accessible, hackers could take over: "Ready or not, computers are coming to the people" (Brand, 1972, p. 1). To the Maker Movement leaders, this dream, beginning in Stanford's then remote foothills near Palo Alto, has come: people are becoming "hackers." The Maker Movement has been hailed as a "revolution" where accessible technologies and changes in economic conditions have opened the opportunity for "the largest explosion of creativity and innovation the world has ever seen" (Hatch, 2014, p. 8).

Research on the movement has defined making broadly as participation in the creative production of physical and digital artifacts through a wide array of activities, including engineering, the arts, and entrepreneurship (Halverson & Sheridan, 2014). As practitioners expand and diversify maker activities, the "revolution" has been critiqued as advancing a narrow, corporatized, gendered depiction of what counts, invoking images of young white males and their fathers engaged with 3D printing and robotics (Brahrs & Crowley, 2016; Buechley, 2013). Critics argue that mainstream media has perpetuated a limited view of what kinds of activities are recognized as worthwhile (Ames & Rosner, 2014; Buechley, 2013; Sivek, 2011). Despite the growing sophistication with which researchers understand the culture and culturing of the Maker

Movement, to those looking to frame their educational programs within this trend, “making” has become a catch-all for all types of hands-on activities, including art making.

Maker Education, Arts Education, and Public Libraries as Learning Environments

Educational institutions are at the crossfires of varying ideological agendas carrying significant material consequences (Apple, 2013). Recently, the Maker Movement has begun to permeate the educational enterprise (Halverson & Sheridan, 2014; Peppler, Halverson, & Kafai, 2016). Public and private sectors, from Silicon Valley to The White House, claim making is a vehicle for education reform: a potential to build job skills in the Science, Technology, Engineering, and Math (STEM) workforce (e.g., Kalil, 2010). It is a movement for “enthusiastic tinkerers” to “disrupt business and society” (*Economist*, 2011). The research arm of the Department of Defense has spent upwards of 13 million dollars toward making with high schoolers, establishing TechShops for their agenda to stimulate innovation (Morozov, 2014).

Educational researchers see potential in the movement to offer more expressive tools to children (Blikstein & Worsley, 2016) and suggest that making provides playful and imaginative activities that can foster dispositional and constructionist open-ended learning (DiGiacomo & Gutiérrez, 2016). Vossoughi, Hooper, & Escudé (2016) write that a growing number of people are advancing their own various educational agendas by self-identifying with the movement to attain the resources that have become available. This includes spaces like museums and libraries, which offer opportunities for people to tinker and play (Bevan, Gutwill, Petrich, & Wilkinson, 2015).

Meanwhile, the arts are being systematically excluded from formal education and increasingly offered through alternative organizations (Rabkin Reynolds, Hedberg, & Shelby, 2011). As Art Education Theorist Darras points out, art education is characterized by a constant struggle to convince the educational authorities of its necessity (2015, p. 58). Today, the arts are being incorporated into STEM through initiatives for STEAM (Science, Technology, Engineering, Arts, and Mathematics; Honey & Kanter, 2013). Thus, making, as something that can check off all the STEAM boxes, becomes the nom de jour for all activities, including art.

Policy (IMLS, 2017), research (Rabkin et al., 2011), and professional literature (Slatter & Howard 2013) have begun to communicate the same trope: 21st century learning requires not just the consumption of knowledge, but the production of new ideas and artifacts. This aligns well with the Maker Movement’s position that Makers produce rather than consume (Peppler et al., 2016). Students both acquire and create knowledge using a variety of communicative tools (Lankshear & Knobel, 2011). Concomitantly, both literacy scholars and libraries embrace a broader definition of literacy, including new media (Cope & Kalantzis, 2000). Barniskis notes that librarians now mediate between activities they consider high tech, familiar (i.e. fiber crafts), and novel digital (Barniskis, 2015). In negotiating new tools and activities, many educators are orienting their learning goals around a more active view of learning wherein knowledge production is prioritized over acquisition.

This prioritization on learning by doing has also been prevalent in arts education where many contemporary educators have resisted a “banking” model of education, treating students like empty vessels to whom teachers transfer knowledge (Freire, 1974). Many arts educators are committed to cultivating artistic expression through student-driven “creative imagination” (Goldbard, 2006). Important for this discussion, while art education is entangled in many perspectives and cultures (Rajagopal, 2006), the basic premise remains: “through art we learn” (Heusden & Gielen, 2015, p. 11). From conservatories to studio art classes, many types of arts

education embrace a constructivist perspective that people learn by doing (Dewey, 1938). Learners draw on their own experiences and interact with the social and material world to perform experiments and explore questions (Bruner, 1961). Moreover, literature in the field emphasizes improvisation and reflective “higher-order thinking” (Bresler, 1994). In subsequent sections of this article, I will expand upon the ways in which study participants discuss learning as a process predicated on these notions, namely as Dispositional, Constructionist, and Post-modern/New Materialist, and how discussions of learning juxtapose rationales to promote maker programming.

Maker programs are proliferating in public libraries nationwide (e.g. Willett, 2016). In an effort to stay relevant in the changing education landscape, libraries with maker programs appear “innovative” (Fourie & Meyer, 2015). Field leaders, including Chicago, Houston, and Toronto Public Libraries, have built robust makerspaces, developed maker programming, and shared their successes and challenges (see Bagley 2014). Moreover, libraries are positioning themselves as educational institutions, focusing their programs on learning, partnering with local schools and afterschool programs, and re-framing librarians as educators (Gross, 2013).

This study takes place throughout a vibrant library system. As a publicly-funded site that does not turn a profit, a basic representation of social democracy, the library offers the potential for resources, access, and opportunities to make art. It is a fascinating and contested place where a blurring of frameworks is visible. As librarians seek to more thoroughly integrate theories of learning through making, libraries hold possibilities to provide unique learning opportunities. However, learning theories examined by the library staff in this study seem to have incompatible objectives, leaving the potential for under-examined influences to redirect learning goals in unintended ways.

Bubbler at MPL

The Madison Public Library (MPL) system is in a medium-sized city (population approximately 235,000). Launched in 2013, Bubbler (the arts and maker programming of MPL) serves the system’s nine libraries and various outreach locations. In the system’s largest branch there is a dedicated Bubbler room and media laboratory that house portable equipment such as circuit board kits, a large range of art supplies, and iPads, as well as permanent equipment, including a recording studio and up-to-date, powerful desktop computers. MPL’s vision is a place to “learn, share and create” (<http://www.madisonpubliclibrary.org>), and Bubbler promotes this through arts creation, engagement with digital and analog technologies, and hands-on making. This is achieved through artist-in-residency programs, monthly gallery openings, and workshops in activities ranging from screen-printing to poetry.

Bubbler has received much attention due to a growing national interest in the Maker Movement and its unique arts-based approach. MPL recently won the 2016 Institute of Museum and Library Services (IMLS) national medal, presented by Michelle Obama, and the IMLS Director praised MPL’s ability to “promote creativity, innovation, and collaboration” (IMLS, 2016). Since Bubbler’s inception, it has been featured by well over 100 media outlets, and just in 2017, Bubbler has been celebrated in over 40 press stories (Bubbler, 2017). There have also been accolades in the library world; two team members won the *Library Journal’s* annual “Mover and Shaker” award. Staff frame their work as both arts education and maker education, which has opened multiple collegial and funding communities. Bubbler has created a unique program, defined by one librarian as “the hippie cousin of the Maker Movement,” because, unlike many makerspaces, the program is free, is not set in one specific location, and is focused on the arts,

rather than science and technology.

As part of a multi-year effort by researchers and library staff to understand how a system-wide approach to making might work, this article examines how library staff involved in Bubbler define and discuss making, the arts, and learning. MPL staff use the terms “artist” and “maker” somewhat synonymously and refer to art-making activities as simply “making.” Gaining insight into how learning in and through the arts is perceived at Bubbler provides a rich example of how discourse around making fits into current conceptions of learning through the arts.

Research Methods

This article is part of a collaborative project in which three researchers, along with core Bubbler staff, are investigating this system-wide model to evaluate makerspaces and the learning therein. This line of inquiry began with broad, open-ended questions.

Q1: How do librarians understand learning and making in the Bubbler?

Q2: How do librarians’ understandings of making, the arts, and learning interface with neoliberal agendas for education?

Foregrounding this article, we examined how participants in the program discussed learning alongside 35 observational field notes from maker programs collected across nine library locations. Another member of the research team, (Willett, 2017) analyzed the relation to three theoretical frameworks currently employed in educational makerspace literature: Constructionism (see Papert), Communities of Practice (see Lave & Wenger), and Dispositions (see Tishman & Palmer). This provided a solid foundation from which to extend inquiry.

Data Collection

This study is part of a multi-year ethnography and design-based research project. Design-based research encourages continued investigation of “designed innovations,” which include activities, organizational structures, artifacts, scaffolds and curricula (DBRC, 2003). Unlike Jointly Negotiated Research (see Bevan, 2015), we did not co-create the research questions, nor conduct research with the librarians co-designing the programming. Alongside the librarians, we sought to develop sustainable system-wide programs. In addition, the researchers investigated the social, political, and educational contexts of the program. Throughout the project, to explore our questions and assess designs, we included a variety of data gathering techniques including: participant observation and field notes of Bubbler workshops, team meetings, informal drop-in making sessions (Ingold, 2013); work produced by makers during the range of sessions; documentation from professional development workshops; transcripts from semi-structured interviews; and a social network survey to understand communication and collaboration (Daly, 2010). In contrast to many linear methodologies where projects begin with data collection and end with analysis, this style of research employs collection, analysis, and dissemination throughout. Below I describe in detail the data sources I draw on for this specific inquiry.

Interviews. For this article, I focus on the formal and informal interviews conducted with 24 library staff aimed at understanding how MPL staff was defining “Bubbler,” “making” and “learning” in regards to perceptions about the program, and the Maker Movement more generally. The first round of unstructured interviews began 18 months after Bubbler was officially launched. Then, through an emergent process, the research team collaborated on a semi-structured protocol for a set of scheduled standardized interviews (Denzin, 1978) to better analyze across participant responses. These 20 - 45 minute interviews were conducted, recorded, and transcribed over the next several months.

Professional development workshops. I also collected documentation from two professional development workshops (conceived of collaboratively in accordance with our designs). In all workshops, Bubbler staff have paid-time to participate. In one of the workshops participants were asked to explore their own definitions of making. During the first hour, participants had time to write personal definitions of making before and after reflective group exercises. The workshop design sought thoughtful articulation using prompts based on interviews and popular definitions of making. We used techniques from Process Drama such as Spectrum of Difference (see Dorothy Heathcote), where participants arranged themselves in a spectrum from “agree - “disagree” in response to statements such as “all making is hands-on.” Participants explained where they were on the spectrum, inciting dialogue about their views. These sessions were videotaped, and participant definitions were collected.

In the second workshop, participants mapped out the role of learning in Bubbler. Responses were created via group diagrams on a large white board. This session was audio recorded and photos were taken. Following this, the documents, videos, field notes, and transcriptions were analyzed through the same coding processes. Findings were compared to the interviews, looking for commonalities amongst making and learning, and discussions ensued about the relationship between making and learning.

Table 1	
Overview of Research Design	
Key Questions that animate this study	How do librarians understand learning and making in the Bubbler? How do librarians’ understandings of making, the arts, and learning interface with neoliberal agendas for education?
Data Collection	Interviews + Documentation from two Professional Development workshops
Methods	<ol style="list-style-type: none"> 1) Research Team Collaboratively engages in pre-coding, then applies codes to NVivo 2) Questions require additional analysis. 3) Focused codes applied (see Table 2) using MaxQDA
Analysis	Learning: described in relation to the social world, then more specifically categorized in relation to learning described as dispositional, social, and ongoing.
	Making: defined in relation to learning, then specifically categorized in relation to making described as economically-driven, finite, and premised on newness.
Table 1	

Data Analysis

Before formally coding, the research team reviewed interview notes and transcriptions and read for repetition, similarities and differences, and absences across interviews (Ryan & Bernard, 2003). We developed initial thematic categories, assessed in terms of alignment with relevant literature. We re-read documents to create a preliminary list of codes used to code interview transcripts separately, and then compared, discussed, and revised. This led to a list of codes, applied throughout the transcripts using NVivo software, to identify themes that ran across particular codes.

After the first analysis, I applied focused codes (Miles, Huberman, & Saldana, 2013) to the transcribed interviews using the following four categories: 1) the Bubbler program; 2) public libraries; 3) the Maker Movement; 4) personal history and beliefs. These were all determined by reading transcriptions, but geared toward analyzing specific words (Denzin & Lincoln, 2003, p. 269): *make* and *making*. If a participant said “at Bubbler” or “as a librarian,” the content was coded as #1 or #2, respectively. I used MaxQDA software to determine high frequency terms to examine commonalities and shared culture.

Table 2			
Organizational codes for interviews			
1 Bubbler Program	2 Public Library	3 Maker Movement	4 Personal Belief
I think Bubbler is -- does a good job of addressing that stuff. Its focus is on art, and sort of thing, that's-- you know, we're talking about a learning style, it doesn't end with art.	I look at learning and public libraries and our discussions around that may change, and how we go about addressing it may change, but self-directed learning has long been a part of the mission of public libraries going back to the beginning of the twentieth century.	I would really love for other libraries and other communities to pick up this model and to run with it. I think it is more sustainable than the 3D printer maker space model is. I think that it is more authentic to the concept of the makerspace movement. And the Maker Movement because you're featuring Makers instead of a maker space.	I guess, for me, making is about ... this is really personal ... it's about using your own skills to take an idea that's in your head and turn it into a reality. I wanna be able to say, “I have this thought about how this should be and I want to use the skills I have to turn this thought into a physical thing.”
Table 2			

In addition to emic codes around making and Bubbler, I drew on already existing conceptual models of “making” and “creativity” to identify participants’ understanding of Bubbler.

Table 3	
Conceptual codes around creativity and making	
Dispositions	seeing the world differently, a gateway to further exploration.
Skills	entrepreneurship, job readiness, basic electronics etc.
Knowledge	community resources, process; how participants learn: such as by doing, experiential, through play, through everything.
Table 3	

As I analyzed, I noticed that participants talked about “learning by doing” and co-creating learning dispositions such as “feeling excitement about learning.” Making, on the other hand, was described by participants, not as something you experience, but something you do through methods such as being “taught,” “told,” or “shown” a skill. This contrast in the language around “learning” versus “making” gave warrant to further analysis. Thus, this article takes a closer look at the incongruent relationship between learning and making to provoke “big picture” thinking regarding this discourse and its wider socio-historical context.

Findings

I conducted the analysis in two phases. First, I looked for patterns using sociolinguistic discourse analysis (Kress, 1989) aimed at analyzing the way in which language is carried out in the social world. Secondly, I used a critical lens to examine making in connection to socio-political structures, specifically neoliberalism (Fairclough, 2014). Participants’ choice of words works to fulfill specific collaborative and social goals. To attain the prospect of a better clarity of vision, to borrow from Grice (as cited in Jaworski & Coupland, 2014), requires further examination of the relationships amongst the participants, their context, and the concepts they employ.

How do librarians understand learning and making in the Bubbler? Overall, librarians described making as an avenue toward learning, not synonymous with learning. Learning emphasized process and experience rather than a product created or knowledge gained. When participants discussed making, learning goals seemed to reflect certain aspects of neoliberal ideology, such as creating some new/original and marketable. The table below highlights the differences between how librarians conceptualize learning and making as verbs. It is interesting to note that Bubbler as the library system’s instantiation of making includes these contradicting perspectives side-by-side (i.e. Bubbler includes both making and learning).

Table 4	
Librarians' comparison of learning and making	
Learning	Making
Disposition For well-being, enlightenment	Skill To make money, <i>be</i> a career
Social Process oriented	Individual Product oriented
Ongoing Toward no predetermined end	Finite Intended for a specific outcome
Table 4	

When defining Bubbler, participants frequently referred back to MPL's vision statement: "Bubbler hits all those. It hits learn. It hits share and it hits create." Interviewees qualify making by emphasizing learning. In the transcripts, Bubbler was described as valuable to the community, because it provides learning opportunities. Discussions of learning at Bubbler focus heavily on a) learning dispositions; b) the social aspects; and c) learning as an ongoing experience, not a finite tool kit to complete a task. While making may not meet their standards for good learning, the Bubbler seems to incorporate for them the best of both verbs.

Learning as dispositional. Educational researchers have long embraced dispositional approaches to learning (Baron, 1985; Dewey, 1934; Ryle 1949). As opposed to an ability-centric conception of teaching, dispositions refer to "attributes people are inclined to do within the range of their experiences and capabilities" (Tishman & Palmer, 2006, p. 7). Arts educators similarly embrace dispositional learning goals (Darras, 2015; Tishman & Palmer, 2006). For example both Studio Habits of Mind (Hetland, Winner, Veenema, & Sheridan, 2007) and Project Zero (Tishman & Palmer, 2006) theorize about "artful thinking." Maker educators, for example, point to curiosity and intentionality (Bevan et al., 2015), and Project Zero's maker-centered learning seeks, among else, "exploring complexity" and "finding opportunity" (Agency by Design, 2015).

In discussing learning in Bubbler, dispositional learning goals revolved around play and exposure for patrons to explore, discover, and "think about the world differently." Interviewees articulated learning goals toward "discovering new things" and "getting a different perspective." Bubbler, to them, is a program where art can provide avenues to "a whole ton of learning" exemplified as "exploratory, or discovery, or collaborative learning." In this instantiation, achievement is not as important as trying something new, presumably supporting comfort with risks, attempts, and uncertainty. It is not geared toward mastery or completion. Changing perspective is something that happens via engagement, such as "using the paint and using the art supplies, and touching them, feeling them, and getting messy." Learning, in this depiction, happens through "play," a collaborative experience fueled by different components.

Learning as constructionist. Papert's Constructionism (1980), a theory based on

constructivism, is referred to in academic literature on learning through making. This theory posits that production-based experiences are foundational to how people learn (Papert, 1980). Papert emphasizes the necessity of making artifacts that can be “shown, discussed, examined, probed, and admired” (Papert, 1993, p. 142). Making in constructionism is social, especially with materials. As opposed to social constructivism, which focuses only on socializing with other people, this theory also emphasizes engaging with tools and technology. Furthermore, making as a representational discipline integrates what we already know about learning in artistic practices (Halverson & Sheridan, 2014).

We know from art theory that “expression, like construction, signifies *both* action and its result” (Dewey, 1934, p. 85, emphasis in original). Experiences occur continuously (Dewey, 1934) in a dialectical relationship between past, present, and future, process and product. Learning is conducted via relationships through and within material (Eisner, 2002). In line with this active, improvisatory relationship, educational theorists value play (Papert, 1980; Vygotsky, 1978). Play is elemental to learning through the arts providing “the experimental garden of the social” (Heusden & Gielen, 2015, p. 16). In Maker rhetoric, this play is tinkering. While not taken up this way by participants, tinkering is defined by learning scientists as an iterative way to explore a deep conversation with techniques, tools, and materials (Peppler et al., 2016). Moreover, in academic (Halverson & Sheridan, 2014) and professional writing (Bagley, 2014) about the learning benefits from makerspaces, Lave & Wenger (1991) are regularly cited for their work on communities of practice, shared ways of doing things to foster relationships and identities in connection to shared interests or activities.

In this study, social aspects of learning were important. Interviewees spoke about creating spaces for an “exchange of ideas” and to “bring people together.” What mattered were “experiences” and “participating in something as a group.” Learning was not a solo activity: “making and doing -- it's a social interaction”; “you're learning from everyone in the community.” In the workshop, Bubbler became a verb. To Bubbler meant “to gather” or “to involve people coming together.” These quotes illustrate a commitment to the library as community-oriented, continually connecting beyond the library walls, a place where people gather. The Bubbler staff emphasize artistic endeavors as contingent upon socializing, something we do with each other.

Learning as post-modernist/new materialist. The notion of ongoing or becoming is a central tenant of post-modernism, now interwoven with contemporary arts education. Reacting to the “modernist ethos of the singular, heroic, transgressive male” (Morley, 2000, p. 83), post-modernism embraces plurality within the everyday realm. Modern art sought permanence and purpose beyond decoration, while post-modernism embraces ephemerality (Morley, 2000). While art theory may have shifted toward the postmodern, the Maker Movement exhibits modernism’s influence. For example, Maker discourse tends toward technoliberal ideologies promoting that the widespread individual use of technology will culminate in social gains (Barniskis, 2015; Sivek, 2011).

Art, like learning, is culturally and historically situated in the immediate social and material conditions in which the artist makes. New Materialists encourage the “attentive study of the material world” and aim to “do justice to matter and the contingency of nature” (Dolphijn & van der Tuin, 2012, p. 15) by considering non-human components. Artists do not impose upon the material, rather interact with form and matter (Dolphijn & van der Tuin, 2012; Ingold, 2013).

Similarly, learning is not a unidirectional process, nor does it originate in the mind (Ingold, 2013). Learning and making are ontological, intuitive experiences where “movement is

not separated from perception” (Vygotsky, 1978, p. 34). The world “out there” influences us and we affect it, creating new conditions through relationships between human behavior and materials (Vygotsky, 1978, p. 60). While this is often spoken by arts educators, popular Maker rhetoric, as Chachra argues, advances the notion that “the creator controls and understands the process from start to finish” (Chachra, 2015). These misperceptions regarding how we make often have a “clearly defined starting point, as well as an end point. The maker a plan and a finite set of component operations required to implement it” (Ingold, 2013, p. 24). Yet, having a determinate end conceived in advance undermines the “improvisatory creativity of labor, how form arises through movement, and the dynamic properties of materials” (Ibid.). In arts education, these linear and non-linear concepts operate in tandem.

These notions were evinced in interviews via descriptions of learning as ongoing and ubiquitous. Learning is talked about as an ongoing phenomenon and making a “great way to learn.” Thus, it is no surprise that one participant said: “Of course learning is a core part of the Bubbler.” In these discussions, patrons make in order to learn (although, when talking about making, patrons learn for the purpose of making). Learning quickly became an all-encompassing umbrella for Bubbler: “The whole thing is learning”; “It’s everything”; “Implicit in every activity.” For those who see learning as an ongoing process, it is also fine for it to be unmeasured and ill-defined. One Youth Services librarian said about her CRAFTernoon Series, where patrons are invited to “Join creative Librarians for afterschool craft... Paper, glue, paints, and fun” (<http://www.madisonpubliclibrary.org>): “You’re constantly learning with kids, it’s just every day, it’s every moment, you know, words and activities.” To these interviewees, what patrons are learning does not have to be determined. It is always happening through all kinds of activities including observing, talking, and sharing – and Bubbler supports learning in line with this idea.

Making in Bubbler. After looking at the ways in which learning is discussed, I then analyzed the construct of making to find patterns, high frequency terms, and similarities across data. When talking about making, the activities became “events where participants learn a skill and leave with a final product.” What delineated these activities were the tangible outcomes. Making was defined as “a project that will result in an object” (such as a screen-printed T-Shirt) or “putting elements together to make a finished thing” (this could be sonic or digital as well, such as a musical album). In the workshops, the concept of “make-and-take” was referenced, a program design where people come to participate in activity where “You make something, you take it home, you have it.” This emphasis on the outcome categorized making as “about the end product” and turning “an idea into a format you can consume.”

In this analysis, participants switch from dispositional to skill-based learning with a focus on product: “Working on a skill to have an end product.” In conversations about making, open-ended processes are pushed to the margins and what becomes important is making *something*, a means to an end. The power is given to the object. Moreover, the language of the participants implies that participants see making as an individual and linear process that begins cerebrally and then is imposed by the individual on the material world. It is a personal endeavor “about using your own skills” where patrons take an “idea that’s in your head and turn it into a reality.” This stark contrast from the rhetoric of learning led me to apply a critical lens to investigate their discourse about making and its resonance with the broader sociolinguistic patterns in the Maker Movement.

How do librarians’ understandings of making, the arts, and learning interface with neoliberal agendas for education? The concept of creativity acts as a bridging construct between making, the arts, and neoliberal agendas in education wherein neoliberalism and

dominant educational philosophies reside in our conceptions of creativity. Neoliberalism aims to liberate “entrepreneurial freedoms and skills” (Harvey, 2005, p. 2) through “self-sufficiency” by weakening the power of labor, deregulating industry, and advocating for profit-making through free markets (Harvey, 2005). The 1970s marked a contemporaneous rise of neoliberalism and constructivism in education. As these theories collided, creativity became not only identifiable, but teachable and mediated through socio-cultural factors (Lather, 2010; Mars, 2016). Neoliberal rhetoric *feels* logical, and its hegemony in discourse has widespread effects on the “common-sense way many of us interpret, live in, and understand the world” (Harvey, 2005, p. 5). Moreover, creativity offered a potential attribute to succeed in the market. The decentralized market, prizing individuals who compete, informs notions of innovation and discovery, already incorporated into creativity (Ogata, 2013). While creativity, according to Ogata (2013), rose to high esteem as key tool for the U.S. to beat the Russians in the space race, notions of creativity shifted. Now, creativity can be leveraged discursively as neoliberalism’s golden egg (Heusden & Gielen, 2015) to promote and promise that any entrepreneur, regardless of race, class, gender “might be a black Bill Gates in the making” (Beyoncé, 2016).

In arts education, scholars argue that neoliberalism has “replaced the arts with ‘creativity,’ understood in terms of technological and economic – entrepreneurial creativity” (Heusden & Gielen, 2015, p. 11). Founded in the belief that anyone can, and should, achieve success by competing in the marketplace, arts education can become co-opted to build “industry creatives” rather than provide opportunities for open-ended or reflective experiences (Heusden & Gielen, 2015). In informal educational settings creativity is now categorized as a marketable skill (Ogata, 2013). Yet, as Blikstein and Worsley argue, this economic rhetoric is, “fundamentally incompatible with a culture of democratic, equitable, and deep learning” (2016, p. 65). Learning to attain a career turns computer programming, for example, from an expressive tool to a way to “get kids into computer science” (Blikstein & Worsley, 2016, p. 67). Similarly, many arts education theorists, however unintentionally, promote an implied opinion that arts education’s main objective should be to produce young artists (Vermeersch & Elias, 2015).

The contrast between learning and making found in this analysis illuminates how art education can be discursively placed in relation to a neoliberal ideology, exemplified by a disproportionate orientation toward economic benefits, individuality, and outcomes. When asked about the reason for art in Bubbler, the manager of the program conjectured, “Art has changed my life and how I see things and do things. I think it’s really important for people to kind of slow down and create things just as part of their own kind of mental health and well-being.” Yet, even if art is thought of as exploratory and looking toward well-being, this set of values is not integrated into language about making across the system. When asking about the role of the Maker Movement in public libraries, answers instead exemplified dominant neoliberal discourse, such as: “I think it’s incredibly instrumental for libraries to offer maker based programming just mainly because we are kind of living in an age where people are graduating from school, high school, they’re going to college, they’re learning skills and a lot of people aren’t necessarily knowing how to apply certain skills to a viable work force.”

Making toward career. In the context of making, participants shift from dispositional qualities to developing certain skills, often justified in economic terms. Arts-based learning is for well-being, but making is to enhance marketable skills. In several interviews, maker programs were described as useful, because, as one participant said, a patron may “discover something new” and “make a career out of it.” The narrative of discovering a future career appeared several times. More than one person rationalized access to art making as valuable because a patron might

become a successful artist. One interviewee mentioned an ideal hypothetical patron saying, “I wanna be a filmmaker, I wanna quit my day job and go be a filmmaker” which would “be awesome and great.” Another interviewee shared the following anecdote:

One summer there was free theater in the park. A father, hesitant to take his child, assumed the kid would be bored. Yet, because it was free and convenient, he decided to go. (The interviewee is drawing a parallel to Bubbler, also free and convenient). The child had a wonderful time and it became a regular family activity. Years later the child became an actor.

Following from the logic in this analogy, success from a Bubbler program would be a patron discovering what they want to *be*.

The fact that the achievement in the story is that the child became an actor is telling. Alternatively, the experience may have sparked wonder, provided practice stepping into a hypothetical world of possibility, or even provided space each summer to feel love from his father and appreciate being in the outdoors. Furthermore, this ideal of discovering a career as the best outcome for learning in an arts program undermines the rest of the experiences, for example having an enjoyable time or even discovering a hobby outside the economic realm. In the neoliberal paradigm, future is conflated with an individual’s economic future. This may be well intentioned as educators strive to take the future into account; however, as Dewey warns: “It is a mistake to suppose that the acquisition of skills [for the future] ... will automatically constitute preparation for their right and effective use” (1938, p. 47). In this version of preparation, educators often lose sight of learning through experiences as opposed to acquiring skills for future ones and value individual advancement in lieu of well-being.

Moreover, even if a patron does want to become a professional, career goals direct learning goals toward economic success and solving problems. Prominent artists Visser and Mik problematize how “even the art world” divides people into consumers and producers, which “doesn’t do much justice to the practice of the artist, who is first and foremost a critical observer” (Van der aa et al., 2015, p. 27). To embrace the artistic culture of problem posing, not problem solving, it is irrelevant what you want to *be* if arts education aims to teach *how*.

Making as finite. As I discussed earlier, participants aligned with social constructivism emphasizing learning as “not by yourself,” but about “connecting” and “interacting” through relationships among humans. When speaking about making, however, tools were rarely discussed in the context of learning by making, or from a constructionist perspective. Tools were used in service of a product, potentially to practice a skill, but not as materials with which to play. Making was characterized by “individuals tinkering,” providing people with the opportunity to “figure things out for themselves.” Socializing applied to human processes; tools and materials applied to finished products. Throughout this project, interviewees reiterated that people make on their own yet they learn together.

In a workshop game, participants were encouraged to generate words associatively with learning and making. In this activity learning connoted “moving/ fluid/ experimental/ unexpected/ empowering/ open ended/ fresh/ playing.” In contrast, when participants were prompted by making, words such as “finished/salable/tangible/result/ object/skill/production” arose. This highlights the emphasis on a future product as central to conceptions of making. Furthermore, this relationship to materials undermines the benefits of tinkering-as-playing *with* the materials, which in its ideal form is an ongoing process (DiGiacomo & Gutiérrez, 2016). To many participants, making is contingent on the physical materials, but not the interactions with others, suggesting not only a goal of self-sufficiency, an individualistic notion prized in

neoliberalism, but that interacting is only a human-to-human endeavor.

As opposed to an ongoing process, many participants depict making as something that invites a learning process that is linear, finite, cerebral. Making happens when something “pops into my head” and is carried out. However, researchers warn that creativity may be suppressed if a process is inflexible and made of stages assuming “a linear progression from start to finish” (Martinez & Stager, 2013, p. 46). To participants, this predetermined outcome is cerebrally conceived and then executed. Yet, rushing ahead to solve a predefined problem undermines open-ended exploration (Pepler et al., 2016) and is inattentive to the “conditions that give experience a worthwhile meaning” (Dewey, 1938, p. 49). Furthermore, the ways in which the objects are discussed forgo the dialectical process with the world we inhabit for an unrealistic idea that making is something humans *do to* the world, advancing the modernist ethos of progress by fixing things, imposing our will upon the material world (i.e. the Hoover Dam). This anthropocentric stance is antithetical to the depiction of artistic engagement as a dialectical process of intuitive and ontological responsiveness.

As participants emphasize artifact production, material production is left out entirely. This not only leaves out playful interactions, but also any economic or environmental impact of materials and tools (i.e. no one mentions how paint is sourced). In digital media, this is exemplified through the media lab success stories that revolve around patrons who record their own music. In this case, it is the album or track that is produced. As has been the case for many years, for the art world to function in the economic climate, the artification process itself “remains the art world’s magic wand” (Darras, 2015, p. 63). Indeed, in today’s climate, how people do or make things that come to be seen as works of art has a lot to do with processes of commodification. Yet, now this type of artifact is often shared for free through technology in which someone else other than the artist is making a profit (Mehlan, 2016). The interviewees embrace the do-it-yourself, artist-as-entrepreneur ethos, but never mention thinking critically about how work is shared through digital platforms and the ways in which they participate in that market. Hatch’s *Maker Movement Manifesto* (2014) emphasizes reclaiming to the tools of production invoking a Marxist egalitarianism; yet, here we see people provided with tools to make, but not provided with ownership of what is produced. Neoliberalism claims what is created in common spaces as private enterprise, and in this case, there is no space for critical thinking in regard to this tendency. The artists create the music, but the question of learning about who owns that music is out of scope.

In the interviews, “originality” and uniqueness can be conflated with successful art making. Indeed, researchers at the Exploratorium’s Tinkering Studio observed that to museum facilitators learning was visible when they saw a child create something different than their peers (Bevan et al., 2015). This aligns with ideals in artistic modernity (i.e. the Avant Garde), which have proceeded from Romantic Individualism to embrace originality and critique (Heusden & Gielen, 2015). Yet, these concepts have been appropriated in the dream of individual financial success. In our current economic climate, it is not unreasonable that library staff/interviewees think that original means marketable and that a “free program for the community to help them like with entrepreneur stuff is super awesome.”

Making as something new. Many staff are excited about the program’s newness: “We’re on the cutting edge.” However, newness/excitement implies an oldness/dullness in past programming. This led to tensions among staff who saw their previous programs left behind, for example, the knitting circle. As one participant said: “I’m a little bit miffy about the word Maker because I’ve been doing this when this was something Grandma did.” Most staff describe the

program both as something completely new *and* something done for years referencing craft artistry as “something humans have done forever.” To some, making ideals seem tied to self-sufficiency characterized in doing-it-yourself ways like “fixing your own clothing” or “canning your food.” Bubbler aspects that work with new media are referred to as on the vanguard, but individual craft programs are part of a traditional canon, a nostalgic return to cottage industry.

Participants made few references to external influences leading to this rhetorical paradox. However, unlike the rest of the staff, managers recognized the neoliberal logics as outside their own programmatic goals, but excused the use of neoliberal justifications to get what they need from top-down forms of support (Interview, September 12, 2016). Managers were aware of the juxtaposition between the language used to promote and rationalize the maker programming and the language they use to speak about learning outside of that context, and one even expressed fear that this might slowly undercut the program’s commitment to arts education in the service of STEM or robotics (Interview, October 3, 2016).

In this hierarchical system, the managers interface directly with funding and mediating the pressures of neoliberalism (Barniskis, 2015). When asked why this was called maker education as opposed to arts education, the manager who oversees programs across the system candidly confessed, “I don’t know that it [Bubbler] would have been able to take off in the same way. Because it’s all about framing, and if we were just like, oh, we are a visual art program and we do artist in residence...was that going to get the grants... the smart thing was to align it this way.” In this regard, another manager acknowledged the influence of the Maker Movement in garnering support saying,

We have to focus on what we can win. Maker stuff can be powerful in that landscape. Or if we could talk about Maker as part of job creation, or that you’re learning about skills that are important in a -- you know, skills that are important for entrepreneurs, or for, you know, workforce development, you know...need to be mindful of how, like what opportunities there are, you know, at a national level; with respect to advocacy and also funding.

Like Barniskis’ findings, this study reveals a “struggle between inclusive discourse and what they believe funders want to hear” (2015, p. 1). In this study, managers articulated their choice to take on neoliberal rhetoric as strategic; however, at no point did they mention that it may undermine or contradict other goals. While there are incongruences with artistic, open-ended learning and this version of making, an understanding of Maker discourse as strategic is the first step toward deeper awareness of this language, its impacts and effects, and how to move beyond this towards a consciously anti-neoliberal framework that promotes alternative values.

Discussion: Neoliberalism as embedded in making

Economic Critique

The Maker Movement has been criticized as neoliberal by referencing its corporate agenda (Ames & Rosner, 2014). Make Magazine, for example, is full of advertisements that implicitly suggest that to be a “maker” is to purchase certain products, including the magazine itself. The magazine promotes productivity in leisure time, depicting play as industrious (Sivek, 2011). Critics such as Anrejevic fear this could diminish artistic endeavors in favor of productivity (as cited in Sivek, 2011) and demote certain types of activities deemed economically irrelevant (Barniskis, 2015).

Advocates proclaim that the movement is concerned with democracy and anti-consumerism (Anderson, 2012; Hatch, 2014), and authors champion that greater access to tools may diversify participants (Peppler et al., 2016). However, for those hoping that the movement

will be economically revolutionary, the predominance of this “access-to-tools mentality” without questioning political and social structures is likely ineffective (Morozov, 2014). Furthermore, the iconoclast makers seem to align with a neoliberal agenda of decentralization via privatization. While they fear that the movement’s institutionalization may suppress the emergence of entrepreneurial spirit (Dougherty, 2012), they seem unconcerned about the control of private corporations. While access to tools may provide opportunities for more people to participate in production, that is not the same as sharing the economic benefits. Thus, concerned that the movement may align with corporate over social values, there is a burgeoning counter narrative. Recently, alternatives to what Vossoughi and colleagues (2016) refer to as “neoliberal rationality” have been put forward by calling for sharper focus on equity-oriented pedagogies.

In line with Vossoughi et al. (2016), who assert that prominent voices in the U.S. Maker Movement “describe the artifacts young people make as ‘products’” (p. 224), the participants’ language about making echoed this tendency, an indication that the struggle between the dominant incompatible narratives underscored in this study of how people learn and why they create is indicative of globally powerful structures. Figures like Dale Dougherty promote making as part of an “exceptional element of American identity,” invoking “U.S. power and control... characterized by economic growth” (Vossoughi et al., 2016, p. 208). This confluence of nationalism and the regime of truth brought on by free market economics is inherent in mainstream versions of making. Thus, while it seems unintentional, participants mirrored language of this concept of making, tapping into a broader socio-cultural phenomenon that determines what types of artistic engagements are encouraged and deemed worthwhile.

Furthermore, implicitly economic narratives also became apparent via the value placed on byproducts. For example, when talking about making, creativity became part and parcel with a view that creativity meant entrepreneurial ingenuity, a myth naturalized in the business community (Otaga, 2013). In arts education, learning goals demand complexity. Therefore, if we strive to foster creativity, we need to examine its meaning and purpose to promote making that matters beyond the boundaries of capital.

Feminist Critique

In addition to economic critique, a feminist lens highlights the gendering of activities. Indeed, some authors have been critical of the gendered aspects of Maker culture arguing that an over emphasis on production devalues work with people (Chachra, 2015; Sivek, 2011) and that neoliberalism itself is both modernist and anti-feminist (Brown, 2015). The modernist terrain plays to symbolic battles “between the figures of the housewife and the modernist architect” (Morely, 2000, p. 61), and the Maker Movement is subject to this long-established gendering. In an analysis of makerspace facilitators, interviewees refer to “creative, individualistic, rebellious, and masculine childhood imaginary” (Ames & Rosner, 2014, p. 22-23). Correspondent to that, female domains, “woman’s work” such as crafting and other “low tech” activities, often get overlooked in maker programs (Chachra, 2015). These programs tend to recruit females to participate in historically masculine activities. While some research has sought to change this dynamic, there is still an undervaluation in the movement of crafts seen as feminine, like sewing and textiles (Kafai, Fields, & Searle, 2014).

In the 20th century, modernist art “defined itself in opposition to the values associated with domesticity,” categorizing domesticity as the “antithesis of high art” (Morley, 2000, p. 60). Thus, art objects lived in the realm of intellect, masculinity, and prestige – the ongoing labor of craft distinct from the artists’ objects. Likewise, as Hannah Arendt (1958/1998) argued, if “work”

is guided by a plan and “labor” is continuous, the supremacy of work may cause rampant instrumentalization. In this scenario, making is instrumentalized as a mechanism for further purposes, a terminology of work diminishing the ongoing nature of labor like lifelong learning, teaching, or crafting. Where contemporary art suggests something new, craft suggests a continuation of a tradition (Alfoldy, 2007). As artists Barend van Heusden and Pascal Gielen appositely suggest: “In an economic and political climate in which the conservative and neoliberal have joined forces, the arts are being squeezed between market capitalism (e.g., creativity and 21st century skills) and cultural heritage (e.g., tradition and heritage)” (Heusden & Gielen, 2015, p. 11). During these interviews, programs such as Polish Egg Decoration (traditional), as well as Videogame Design (21st century skills), were pointed to as exemplary for newness or a nostalgia of domestic craft.

Furthermore, as sites of domesticity (lifelong learning, a safe place and so on), corresponding with the historical feminization of librarianship (Garrison, 1972; Radford, 1997), new media’s gendered elements can, as Olwig argues, incite conflict when the “intrusion of make domains” enters domestic spaces, i.e. Maker culture in the library, (Morely, 2000, p. 95). New technologies are often “principally appropriated by ‘technically minded young men’” and then effectively feminized when technology is made consumer friendly, taken beyond the technical specialist (Morley, 2000, p. 95). Cultural studies scholars have noted that while “work increasingly enters the domestic sphere; it is very rare for domestic concerns to find comparable ease of access into the sphere of work” (Morley, 2000, p. 77). Thus, as work and technology enter so-called feminized spaces, questions arise as to whether practices become more feminine (i.e. oriented around peacemaking, nurture, preservation) or more masculine (modern and connected to industry).

Conclusion

Values ingrained in arts education are too often ignored in mainstream learning. Replacing the brand of making put forth could provide fertile ground to connect arts education to the Maker Movement without undermining arts education. A version of making inspired by the arts could re-direct maker activities toward transdisciplinary activities that value artistic endeavors, epistemologies, and processes. This is a conceptualization of making as co-constitutive with learning, predicated on social and material reciprocal relationships, (re)articulated as the reciprocal relationship between maker, material, tools, skill, and intention. In the arts, making is an experience full of imagination and adventure (Dewey, 1934, p. 278) via the opportunity for a conversation to develop between a person and various tools, materials, and skills. It is an artist’s action, care, and dexterity that is responsible for responding to the presence of risk, and this exchange allows a give and take to unfold and shape form (Ingold, 2013). This is not the dream of an individual genius, but of a world wherein people learn and make together.

To embrace uncertainty is a key component of making in the arts; creation is a dance with many moving parts that are not to be controlled, but rather engaged with. In the 1960s David Pye categorized two types of workmanship: *risk* and *certainty*. The “workmanship of risk” involves processes that are open-ended and undetermined (i.e. subject to risk). The “workmanship of certainty” is predetermined to succeed, stressing outcomes (Pye, 1995). Unlike manufacturing or engineering where repeatability and predictability are crucial, art making tends towards the workmanship of risk: an open-ended process responsive to influences of engagement and uncertainty (Ingold, 2013). Skills can be perceived as the management of risk (Adamson, 2007); thus, like risk and certainty, skills are not to be ignored, but balanced with applied imagination, the possible (the uncertain). Put simply, what is at stake is the possibility that new economic

conditions (and ensuing conceptions of learning through making) might encourage arts education to overemphasize the workmanship of certainty rather than the workmanship of risk.

We need a re-arrangement of the dominant codes that organize society (Schechner, 2006, p. 39). A more nuanced understanding of how we interact with neoliberalism may open space to challenge the common-sense nature of it. If the norm is rooted in a dream of capitalist fulfillment, art education can play an important role, providing space for people to feel and act differently. Engagement with artistic activities can release people from their roles as entrepreneurs/workers or consumers/producers, encouraging a wide array of identities towards greater well-being (Roelvink, St. Martin, & Gibson-Graham, 2015).

This study looks to questions of discourse around learning and making in informal arts education, examining educational theories and corresponding conceptions of learning and making. It seeks to understand how those who enact arts education talk about learning and making, and the ways in which neoliberal discourse veils contradictory views from those often engaged in arts education. The way we speak can powerfully form our culture and empirical research and make visible the possibility for cultural shifts. Discourse does not represent the individual, but rather, as Richardson writes, “constructs the individual’s subjectivity in ways that are historically and locally specific” (as cited in Graue & Walsh, 1998, p. 211). Therefore, reflecting on language provides space to engage with the ways ideology inhabits people’s lives (Fairclough, 2014). New conceptions of learning through making, and a continual reflection on why we engage in artistic activity, can strengthen ties to theories like Constructionism or New Materialism alongside a large canon of literature from the arts that those in the Maker Movement seem unfamiliar with.

As the Maker Movement increasingly becomes a conveyor for artistic activities, there is great potential to foster important transferable dispositions, social awareness, an understanding of becoming, and an appreciation of the material world. Yet, as this study suggests, neoliberal doctrine may fragment and distort rhetoric about learning toward economic instrumentalism. This could, in turn, lead arts education to squander its most promising feature: the facilitation of comfortable risk taking, which supports creating personally meaningful and constructive responses to the world. Education is a cultural project; thus, we must work for the culture in which we want to live.

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