

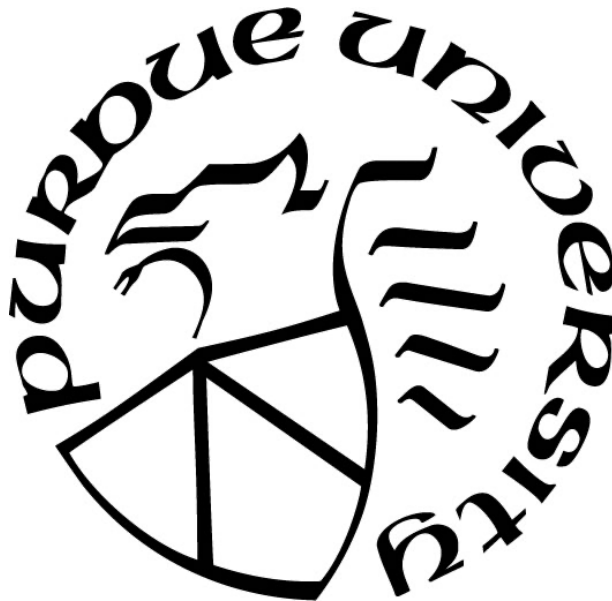
**WRITING WITH LETTERPRESS:
A CASE STUDY FOR RESEARCH ON HUMAN-TECHNOLOGY
INTERACTION**

by
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To my wife Phoebe. We did it.

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ABSTRACT

This research uses the composition practices of three experienced letterpress typesetters as a case study for the development of a methodology for studying human-technology interaction. This methodology tries to take seriously the implications that theories of materiality have for empirical research in writing and technology.

Data was collected from three experienced typesetters, each of whom was observed setting type for two hours, then interviewed for 1 ½ to 2 hours, using observation footage to inform interview questions. Interview transcripts and observation footage were then coded for observable material intra-actions and the influences that characterized those actions and brought them into being.

Data analysis produced six desiderata, or desires for design, that emerged as driving the composition process: 1) a desire to use the technology, 2) a desire for efficiency, 3) a desire to imitate/defer to historical practices, 4) a desire for letter-level correctness, 5) attention to aesthetics, and 6) a desire to communicate.

CHAPTER 1

This dissertation is driven by a desire for a robust method for studying human-technology relationships in the context of writing. I combine empirical methods from the social sciences with historical research and hands-on experience to provide a thick description of letterpress composition which serves as a case study for writing technology research as a whole. The study draws from core concepts such as 1) a definition of writing as “language made material” (Haas 3), a definition that places emphasis on the act of encoding as the central act of writing; and 2) *distributed agency*, the posthuman/new materialist concept that the ability to act only appears as the result of intra-actions within assemblages and never belongs solely to a single object or entity (Gries 72). By taking seriously the ideas that writing is a design activity which organizes physical material into written artifacts and that the concept of human agency often elides non-human agencies present in writing activity, this project seeks to open new doors for research on writing.

The letterpress has played such an important role in the history of writing technology up to this point that it deserves (and has received) critical attention on this ground alone. The Gutenberg Press came about in 1440 and introduced movable type to the western world. And it was like the invention of the internet. It immediately started to spread and take over Europe. Elizabeth Eisenstein emphasizes in *The Printing Press as an Agent of Change* changes effected by the advent of print technology, including the easy duplication of documents, the proliferation of mercantile and scientific records, and the mass production of images. She argues that the printing press made the Renaissance possible, and makes modern science possible: “One cannot treat printing as just one among many elements in a complex causal nexus for the communications shift transformed the nature of the causal nexus itself” (703). In other words, the introduction of the printing press changed the context of what was possible and expedient western life. We can see the same thing happening in the 21st century with the digital revolution.

As printing press technology spread throughout Europe, you had all these print houses popping up, and it was a multi person affair, usually with a head printer that was in charge of everything. But then you had many people working in the shop as typesetters, as well as apprentices who had to do the terrible grunt work. Then other industries began to pop up around printing, like type foundries that gathered metals and melted them and formed them into

typefaces and other printing tools. Paper manufacture and typography design developed along with these other industries. Printers all over Europe developed their own typefaces, and that's when our modern theory of typefaces and typography came into being, along with our modern understanding of what a letter is, and what writing should look like on a page—it all comes with the letterpress.

Print technology stayed similar for hundreds of years, up until around the 1800s when Europe experienced another technological transformation during the Industrial Revolution. People started to apply Industrial Revolution technologies to letterpress printing, like they were trying to do every industry. And you had some really interesting sort of hybrid technologies developed, like the linotype. With the linotype, you'd type using a keyboard and the machine had hot metal in it, ready to go, and it would cast that line of type for you. The line was then dispensed as a slug, or a single piece of type that comprised an entire line of text. So instead of having to set individual letters, you could now set an entire line at once, and that made things a lot faster. Gradually over time, a mix between letterpress and photo printing technologies emerged in the early 20th century, continuing up to the 1970s or 1980s.

Then, right around the 1980s or 1990s, computers entered the printing industry en force. Printers were able to start setting type using a computer. Dot matrix printers were also invented around this time and digital printing only got more advanced from there. Now, in our current technological moment, nearly all professional printing is done with digital tools, from typesetting to printing. Most people who use letterpress today are either hobbyists who do it for fun or artists who are much less focused on efficiently printing a document and more focused on creating something with aesthetic worth. There are still some people who use letterpress as a technology for making money, but these are primarily specialty printers. They print things like embossed wedding invitations or large, wood-type posters, where the letterpress gives a certain feel and a material richness that you can't get with a digital printer. Some customers put a premium on these unique material qualities and they will pay extra to have something printed on a letterpress.

Letterpress technology has clearly shaped current writing realities through a history of technological change, but there are other compelling reasons to study letterpress composition within the context of contemporary writing and rhetoric studies. One of the central ideas that drives this research is that letterpress serves as a natural foil to emerging digital and networked technologies. In terms of the technologies we use to write, letterpress is now antiquated and

inefficient, but it was also the desktop computer of its day. In terms of material structure, letterpress and digital technologies both feature modularity as an affordance to users, but letterpress' modularity is analog and the modularity of computers is not. In the classroom, digital technologies provide unprecedented and often overwhelming options for composition and document design, while letterpress forces students to reconsider the basics of producing printed documents; yet, both these technologies share a history of use, innovation, and design. Letterpress and digital technologies mutually inform and complement each other, and this project will show the in-depth study of one will inform our understanding of the other.

There are methodological implications for this study as well. I've chosen to use a mixture of empirical and historical research, along with pedagogical applications and personal hands-on experience to attempt a description of a specific kind of human-technology interaction. The rich description of letterpress composition that emerges from this wide-angle approach serves as a valuable model for understanding, evaluating, and conducting research focused on human-technology relationships in writing.

The main goal of the methodology is to focus on observable material interactions. As a researcher, I am looking for recurring patterns, and then disruptions to those patterns. And I try to do this in a natural context of use. Hopefully, these literal points of physical contact between typesetter's hand and type and press all become clearer as we keep going. Primarily, this research found in the data, after I had observed hundreds, maybe even thousands, of small material interactions, little things here and there that were observable--movements, patterns of engagement with the tools, and disruptions to those patterns. Just so many observations coming one after another and trying to make sense of all of these very quickly. It became apparent that, with letterpress printing in particular, nothing happens until the human agent acts. Nothing happens until the human does *something*. And because of that, the whole composition process is shaped by the motivations, the unexpressed but palpable desires, the human agent is bringing into the composition space. I asked, over and again, what is the impetus for action? What is causing them to interact with these materials, to want to change these materials in specific ways, and what goals are they hoping to realize? Where do they want this literacy machine to bring them and their eventual reader?

Through repeated data analysis over the course of a couple years, I identified six main desires that emerged as having material entanglements in my participants' composition

processes: 1) a desire to use the technology, 2) desire for efficiency, 3) deference to/imitation of history, 4) desire for letter level correctness, 5) aesthetics, and 6) a desire to communicate. I've been calling them desiderata, drawing from Nelson & Stolterman, which I cover in more depth in Chapter 4. I'd like to talk briefly about each of these individually, with the extended analysis being presented in Chapter 4. The first one is the desire to use the technology. I just stated that nothing happens until the human agent decides to use the technology. And there were a variety of reasons why my participants picked up letterpress printing, and they had a variety of motivations for participating in my study. Whatever those reasons were, they eventually coalesced into a desire to use the technology, and they committed to using the technology for two hours for this study. During data analysis, there were some small interactions that were created or characterized by simply needing to use the technology. For instance, when it came to handling small pieces of printer's type participants often had to develop strategies or make decisions based on the difficulty of manipulating small pieces of type with human fingers and hands.

The second desire was a desire for efficiency. Many times during the research, participants stated that they did something because it was "easier," or because it was faster, or required less effort. As I describe later in Chapter Four, one participant was setting type and accidentally skipped a word. This unintended action meant there were pieces of type in the stick that weren't supposed to be in there yet. So he took those pieces out of the stick and put them between his thumb and his finger, and held them there while he put in the missing word. Then, after the missing word had been set, he took the type pieces out from between his thumb and forefinger and placed them in the stick. When I asked him why he did this, he stated that he did it because it was faster and easier than putting the type pieces back in the case. There were many small intra-actions that were characterized by this motivation or desire for efficiency.

The third desire was a desire to imitate or defer to historical type-setting practices. As will be discussed further in chapter 4, my participants often described their actions in terms of their understanding of how typesetting was done in the past. For instance, all three participants used historical typesetting manuals at some point to inform their printing practices.

The fourth desire was a desire for letter level correctness. At many points during the research, participants characterized their actions using a desire for both correct English grammar,

spelling, and punctuation, and a general desire for the correct type pieces to be in the correct place.

The fifth desire was a desire for aesthetic appeal. One of my participants told a story about a particular typeface that, because of the design of the lowercase G, would create a noticeably dark area on the page whenever two G's were next to each other (as in the word "juggling," for instance). In the interview with this participant, he stated that the dark area created by these double G's bothered him, and sometimes he tried to find a different word that didn't have two G's in it, so that it didn't create this unsightly, dark spot on the page.

The sixth desire was the desire to communicate. Though this desire was not as prevalent in the research as I expected, it was still present. An example of this desire comes from a description one of my participants gave about printing out a birthday card or a birthday poster on the letterpress being more meaningful than just buying a greeting card from the store. Here we see technological decisions being made on the basis of how the final printed product will be received by an intended audience. This was one of several different interactions that were characterized by my participants with this desire to communicate.

What Does Critical Engagement with Writing Technology Look Like?

It's near the end of the semester and I'm having a discussion with my technical writing students about the format of their final project: a professionally formatted proposal. The class is comprised of mostly engineering students with others in aviation, pharmaceutical science, computer science, and construction management. One of the students asks if they can format the report with multiple columns per page, and if so, how large the margins should be between and around columns. Having just finished our unit printing business cards on a letterpress, I turn the question back on the class. Based on your experience with the letterpress, what do you think?

What followed was a discussion of document design considerations that could not have happened at the beginning of the semester. We discussed the relationship between font size and line length, the pros and cons of double justification, usability considerations for the amount and placement of text on a page, and digital versus print presentation. Perhaps the most satisfying part of our conversation was a discussion of justification algorithms and how these differ in complexity and effectiveness between word processing programs and what that difference means practically for my students in formatting their reports. I'm convinced that this teaching moment

would not have been effective or even possible without our experience in the letterpress lab. The students recognized the granular decisions involved in line justification because they had experience justifying lines manually in the lab. They understood ratios of font size to line length because they had experience trying to fit physical pieces of type into the restricted space available in a composition stick.

This is the kind of critical engagement with writing technology I'm looking for as a writing teacher. It's the kind of engagement that can only come with hands-on experience, the practical knowledge (*phronesis*) that comes from learning through use. I use the letterpress in my teaching because it asks my students to develop new kinds of practical knowledge that enrich their digital writing practices. I will talk more about the pedagogical applications of this technology in the last chapter.

This pedagogical approach is easy to explain as a teaching case, but a closer look at the assumptions behind such an approach raises important questions about influence, agency, and practice. To begin with, this approach is similar to early calls for the use of computers in writing classrooms (see "Desktop Publishing") in that it highlights the effect technology use will have on writers, arguing that engagement with the technology will help students improve certain skills or enhance their perception of writing. As evidenced by some of the early pushback against computers by some writing teachers (see Ohmann), the influence that a writing technology *itself* has on individual writers is extremely difficult to measure, let alone prove. Usually the case is made that a particular technology is in use in the professional workplace, or that the competencies needed to use one technology effectively represent core competencies for a variety of writing technologies students will use later on ("Desktop Publishing" 346). These arguments don't work as well for the letterpress, however, because the technical skills students need to produce a printed product are either highly unlikely to be of use at work, or just simply obsolete. My assertion that students "gain a greater understanding" of document design, typography, and paragraphing through their interactions with the letterpress relies on a cause-and-effect argument that is not often used in tech comm classrooms focused on practicality.

Highlighting the challenges with these pedagogical claims draws attention to how challenging it can be to trace the influences present in a human-technology interaction like writing. Although any empirical study of writing necessarily involves technology, few empirical studies have been able to identify the influences of a specific technology on writers with a

sufficient level of confidence. As a field, writing studies has struggled to get empirical studies of technology's influence on writing to "stick," with very little empirical research being used to justify technology choices, in or out of the classroom. One reason for this is that not only is the tracing of technological influence difficult (as discussed above), but the current dominant writing technologies have been in a constant state of refinement and disruption ever since word processing emerged in the 1970s. It's very difficult to study a moving target. The combination of large-scale disruption of writing technology use and the difficulty of studying technological influence has hampered the empirical study of technology-specific concerns in writing.

This dissertation project presents a methodological approach that would mix social science methods with historical research and hands-on experience to better articulate the technological influences present in a particular human-technology relationship centered around writing. The approach is descriptive and exploratory, seeking to provide a rich description of both technology use and the user's perception of that use, in order to better trace technological influence in the moment of composition. Using the letterpress as a focus for this study works well because while it was at one time part of western culture's dominant writing technology use, it's now almost completely obsolete in practical writing situations, meaning it is no longer under large-scale development. In other words, if it is a moving target at all, it's not moving very fast. Though research on letterpress composition is unlikely to fill the technology gap in writing studies directly, it will provide insight into future empirical inquiry on writing technology by showcasing the possibilities offered by such an approach.

Emotion and Technology

Alongside the difficulties mentioned above, there are emotional valences to technology use that appear in this research and have important bearings on our understanding of human-technology relationships. Although this study was not designed to interrogate the ways my participants engaged emotionally with letterpress technology, these engagements nonetheless showed up in this study. What can we learn about the relationships that people have with technology? People are emotional beings, we develop relationships, and we also seem to develop some kind of relationship with the technologies we use. For instance, historically, a print shop was a big bustling place with lots of people and when they did typesetting, especially for newspapers and other large publications, the typesetting environment was more of an impersonal

workplace environment. The New York Times at one point had a multi-story building, with makeshift elevators that allowed editors to send news stories to the typesetting floor quickly and efficiently and receive a proof of the story in a similarly rapid manner. In this study, however, my participants worked in their personal space, or at least a space where they're very comfortable, making the context of technology use very personal. As will be discussed in Chapter 3, two of my participants set type and printed in their own homes, meaning they literally lived with the technology. I address the emotional facets of my participants' engagement with technology more directly in Chapter Five, but the reader will see evidence of emotional entanglements with technology throughout the entire study.

Technology Research in Writing Studies

Christina Haas' definition of writing as "language made material" places writing squarely within a technological context (3). If the goal of writing is to materialize language--to pull it out of the air and turn it into something more permanent--than writing technologies become the tools used to build and design written artifacts. In a context of use, writing is easiest when the tool draws as little attention from the user as possible (touch typing on a QWERTY keyboard could be one example). Writing, however, is a complex design activity and sometimes requires that attention be paid to its tools. From the writer's perspective, technology becomes one of the many factors that influence a successful writing process.

Particularly salient for the dissertation project contained here is the importance of writing technology influence *in the moment of encoding*. If a writing technology is a tool for materializing language, then that tool (or system of tools) must be used at some point to organize physical matter into a written artifact. The contact and cooperation between human and machine required for this materialization is one of several different phenomena that impacts and defines writing activity. My research with the letterpress focuses on the moment of encoding as a crucial moment for considerations of writing and technology.

So how does one trace influence in writing technology use?

Early scholarly interest in writing technology seems to coincide with the introduction of word processors onto college campuses in the late 1970s and early 1980s. Most of this early research focused on computers' effects on processes and outcomes already associated with writing (see Bangert-Drowns, "Studies in Word Processing," "Research Update"). Haas' 1989

studies look at how writing with computers influences planning and how composing on a computer effects writers' "sense of the text," which are both practices/phenomena associated with pre-digital writing that were influenced by the advent of word processing ("Effects of Word Processing on Planning," "Computer Writers' Reading Problems").

This approach to writing technology is useful for understanding how ideas and habits from one technological context get translated/transferred into a new context, but it elides any aspects of the new technology-human relationship that might be fundamentally different from those of the previous context. Just as an example, writing scholars and teachers may generally agree about the necessity and recognizable features of "planning" in the context of paper-based writing, and may even be able to find evidences of planning practices in the context of computer-based writing, but that does not mean that the concept of planning (rooted in a paper-based context) is even relevant in the new context. Practices that may look like planning may actually be serving another purpose, or users may be importing planning practices from their paper-based writing experience that are actually ill-suited for writing with digital tools. If we are going to study technological influence on writing practices, we need to accept that such a study may change what we thought we knew about writing to begin with. Empirical studies of writing technology use should approach the human-technology relationship on its own terms, seeking to understand that relationship holistically in context.

Empirical research that focuses on the moment of encoding has fizzled out considerably since the mid-1990s. Takayoshi's review of articles published in *College Composition and Communication* (CCC) and *Research in the Teaching of English* (RTE) shows that in the twenty-year period from 1995 to 2015, a total of seven articles on composing process research were published in RTE and zero were published in CCC. In contrast, in the period from 1976 to 1995 CCC and RTE published a combined total of 106 articles on composing process research. Takayoshi defines "composing process research" as research that provides "data-based answers the research question, 'What do writers do when they compose?'," with a focus on "what writers actually do in the moment of composing" (554). Writing technology research that highlights the moment of encoding certainly fits within the scope of Takayoshi's review, and much of the pre-1995 research she refers to focused on computers as writing technology. While CCC and RTE do not represent the sum total of empirical research on writing processes (*Written Communication*, for instance, might have a thing or two to say about this issue), I think it's safe to say the lack of

this kind of research in these flagship journals is a symptom of a much wider trend. Such empirical articles are few and far between, suggesting that at some point, research on the moment of encoding--research that's vital to understanding technological influence in writing--got moved to the fringes of writing studies scholarship.

I can see several plausible reasons for this move to the fringe. First, computers ended up becoming far more than just digital typewriters. With processing, dissemination, and desktop publishing capabilities that allow individuals to easily go beyond the 12pt font, double-spaced school essay of the past, personal computers have asked writing teachers to fundamentally reassess what we mean by the term "writing." Mainstream word processors like Microsoft Word have become more powerful every year, and students' access professional-grade document design software like Adobe InDesign continues to increase; most students write their lives everyday on the internet. When Kathleen Yancey gave her 2004 keynote address at the Conference for College Composition and Communication, she began by stating "Never before has the proliferation of writings outside the academy so counterpointed the compositions inside. Never before have the technologies of writing contributed so quickly to the creation of new genres." These two propositions then led her to ask "What *is* writing, really? It includes print: that seems obvious. But: does it include writing for the screen? How visual is it?" (298-299). When these are the kinds of questions at the forefront of the field, research on writing processes quickly falls by the wayside. Such research can't be done without a clear idea of what "writing" means.

The second reason for the move away from writing process research is related to the first: even now, in 2021, computer technology of 3-5 years ago feels old, let alone the word processors of 20-30 years ago. It's hard to build a base for empirical research when the technology is changing so rapidly. If the past is any indicator of the future, methods for digital composition will eventually stabilize and become more codified (the Microsoft Word interface is already pretty stable), it doesn't feel like we're there yet. A third reason for a lack of writing process research in the last 20 years is that through widespread adoption the technology is beginning to become critically invisible.

While this dissertation project does not overcome the challenges writing process research has faced over the last 20 years, it picks up this research in earnest, with a wider scope. Recent scholarship that ties theories of materiality and posthumanism to rhetoric and composition opens

the door for a reexamination of writing technology as one of the critical actors in any writing practice. These theories offer fundamental theoretical adjustments to concepts at the heart of written communication, like agency, intention, influence, and individual identity; mostly, new materialist theorists seek to widen the scope of what might be relevant in understanding any given action, while at the same time challenging the traditional placement of human agency at the center of said action. In order to work out some of the implications of a new materialist/posthuman approach to writing process research, I've chosen letterpress composition (or maybe it chose me?) as the writing activity at the center of this study. The letterpress is a writing technology that makes letter-by-letter encoding visible. It's the technology on which digital writing is based, but presents some sharp contrasts to digital writing as well. Most importantly, letterpress technology stands (mostly) outside the vortex of electronic/digital innovation that keeps digital writing constantly in flux. It is both the mother of and the foil for contemporary word processing.

New Materialism and Writing Process Research

In 1996, Haas described writing studies' conception of the human-technology relationship as "the murky, always-assumed, but never specified relationship between writing as cognitive process and writing as cultural practice, and the relation of both to the material world" (37). Theories in the vein of new materialism acknowledge this relationship and the often-assumed nature of it, but they question the separateness of the categories Haas mentions. One of the central assumptions of new materialist thought is that being in the world means being part of a nearly infinitely complex network of relations in which influence and agency are inherently distributed across space and time. Thomas Rickert's concept of rhetorical "ambience" seeks to point us toward this complexity: "no element can be singled out as decisive, for they are all integral to its singular emergence, although obviously at different levels of scale. Individuation, singularity, objectness--all these are ongoing achievements for a multiplicity of beings at any given moment" (106). While cognitive science, cultural critique, and technology studies each provide insight from a particular perspective, each perspective is actually an achievement of all that lies outside its purview. Technology--writing technology included--can only be said to exist in its relation to other beings (human and non-human).

One key issue front and center in my research: agency. As mentioned above, one of the main aims of new materialist thinking is to move the autonomous human agent out of the center of scientific and philosophical thinking. In the context of rhetoric and composition, the individual writer has historically been privileged as the driving force behind the production and dissemination of written artifacts. New materialism takes seriously what postmodernism had already suggested--that human agency is actually a product of its non-human environment--and considers what worlds might emerge if the attribute of agency were centered in any number of non-human objects, spaces, networks, machines, etc. The importance of this approach for my research is that previous empirical research on writing technology has attempted to study the influence of technology on writing practices while maintaining human agency as the central, driving force of the writing act. When we ask the question, "How does computer technology impact revision?" we implicitly place humans at the center of our study, assuming that the human writer needs to revise and will therefore use the technology for that purpose. A new materialist approach de-centers that agency, looking instead for the recognizable influences that emerge in the human-technology interaction.

My approach to agency in my research is described well by Laurie Gries in "Agential Matters," where she describes rhetorical agency as "a distributed process that emerges out of fluctuating intra-actions between human and material agents. In this intra-action, neither agent has fixed agential roles; instead, as agents interact in material engagement in various collectives with time, a dialectical tension occurs from which agency emerges and, because of which, the division between agents is blurred" (80). When I observe my participants compose with letterpress type, they see themselves as agents in the traditional sense who use the technology for a particular kind of writing. By asking them questions about the empirical realities of their composition process, I ask them to articulate their experience of butting up against the material agency of the type, and even though they see themselves as autonomous agents, they are also comfortable articulating how the letterpress type acts against or with their desires. What emerges is very much a "dialectical tension" in which agency emerges, sometimes in the human typesetter, sometimes in the type, and sometimes in neither or both.

Chapter Outline

My original plan for a chapter outline was to structure the chapters around my different methods of inquiry (empirical, historical, personal/pedagogical) with a chapter focused on each. As I started in that direction, however, I quickly realized that individually, the chapters would be incomplete representations of their respective methodological traditions. In other words, social scientists would be unhappy with my empirical chapter, historians with my historical chapter, and teaching researchers with my third chapter. I also realized that the main point of my project is not to do three different studies on a single phenomenon, but to do one holistic study that uses methods to trace influence/agency in a specific instance of technology use. In other words, the results of this study (will) make the most sense and carry the most weight when the links between them are emphasized. In short, a holistic approach calls for a holistic presentation.

In Chapter 2: A Posthuman (New Materialist) Approach to Studying Writing Technology, I explain my methodological approach which is informed by a history of technology/material theory (McLuhan, Ong, Barad, Coole & Frost, Robert Johnson, Sullivan & Porter, Gries, etc.) Explain how studying letterpress composition in this way contributes to writing & rhetoric writ large. I also provide background on key literature that informs my methods.

In Chapter 3: What is typesetting?, I provide a thick description of what the composition process on a letterpress looks like, including general practices that are/have been shared by compositors and affordances/demands that the technology presents/has presented to users. A holistic description of the human-technology relationship surrounding the moment of encoding that draws from all aspects of my research is included based on videos of the process.

Chapter 4: Why is typesetting that way? provides an in-depth look at the entanglement of human *desiderata* [vision/desire for design] and the material actualization of technology. Both historical and granular moment-by-moment examples are provided based on in-depth interviews with compositors. Attempts to trace influences that might explain the typesetting phenomena described in the previous chapter are presented.

In Chapter 5: Teaching with Letterpress, I provide examples of how letterpress can be used in undergraduate classrooms as a form of technology as pedagogy where the letterpress offers a different material experience for my student writers, which enriches their learning. I re-

emphasize the methodological importance of this work and reinforce the need for more holistic research on writing technology use.

CHAPTER 2

Introduction

The summer after finishing my masters degree, I couldn't find a job. I had already been accepted into the PhD program at Purdue, so I only needed work for a few months, and potential employers were not exactly rushing to offer me the temporary work I was looking for. After exhausting other options, my wife and I moved in with her parents for the summer and I took a job earning not-far-above minimum wage at a nearby historical state park. For the first month or so, I worked at various park sites, helping kids pan for gold or trying their hand at basic leatherworking. Eventually, however, I learned that the park had a print shop: an approximation of an 1850's frontier printing operation, complete with a replica antique printing press. Being the word-nerd that I am, I did everything I could to get assigned to work there and the rest is history (no pun intended).

My co-worker at the print shop suggested we use the rudimentary press and the donated printer's type to print a newsletter for the park. We both worked full time and it still took us six weeks to set a 4-page newsletter and print it. As I worked on the newsletter day after day and shared my work with park visitors, I couldn't help but feel that my experience with the type was changing me as a writer. In particular, I started developing an interest in typography and page design that I had not had before. As I picked up pieces of type and arranged them in rows and columns, as I rolled ink over the type, as I pulled the lever to press paper onto the type, I felt my perception of writing change, and when I left the park for my PhD studies, I felt different as a writer.

The version of this story I have just shared with you has been refined over many tellings, yet I'm still a little frustrated with the touchy-feely nature of it. It might sound poetically true that working with a letterpress changed me as a writer, but the actual evidence to support the claim is missing. My frustration has led me into this dissertation project: an attempt to develop methodology--with aid from ideas found in theories of materiality--that might help me study how technology changes writers. Thus the question "How do we study how technology matters?" lies at the center of this work.

Empirical research on how technology influences writing and writers is research that's needed in the world today. The digital turn is still ongoing, and it is still young. Scholars and researchers in rhetoric & composition, writing studies, and technical & professional communication have continually grappled with the material consequences of digital communication technologies, trying to understand how the fundamental material characteristics of these technologies change what it means to write and what it means to be a writer. For example, Swarts refers to technical communication as a "tool-centered field," because tools are both the subject of the field and the means used to do its work (148). Melancon & St. Amant found that practitioners in their field want to know "how individuals [use] technology to achieve communication-based tasks and how technology design affects communication behavior" (351). In short, technical communication as a field cares about how technology acts back on those who use it, but more could be done to understand the influence of technology on those who use it, in addition to concerns about usability and the role communication technology plays in socio-economic systems. In the most recent issue of *Computers and Composition*, at least two different articles pick up this work, using empirical research to study how material characteristics like size, shape, haptics, and the presence of other humans impact writers and writing (Gallagher et al., 2021; Lee & Khateeb, 2021).

One of the key arguments of this dissertation is that although there is great interest in understanding how changes in technology impact writing processes, the methodological needs of research in this area have not been adequately considered. How do we identify and describe the influence technology has on writing and writers? Writing is an incredibly complex intellectual, rhetorical, and material activity, and it can be difficult to trace material influence among all these other factors.

New materialist theories have become a central part of this research because of the ways new materialism and posthumanism seek to de-center human agency, giving us ways of articulating the agency of nonhuman artifacts. Material influence is fundamentally about agency and action, and theories of materiality can help researchers focus on the composition process as an emergent phenomenon, resulting from the intra-actions of material agencies, instead of seeing it as the result of human action alone. As McNely, et al. state in their 2015 introduction to *Technical Communication Quarterly*, "New materialisms ask us to reconsider kinds of methodological commitments and values we should deploy when attempting to capture the

complexity of objects and their role in everyday ontologies” (6). In short, if we are to try to understand non-human, material influence in writing acts, we need methodology that can facilitate the identification of that influence.

As I see it, new materialism challenges traditional empirical research on technology use in two main ways: First, it challenges traditional experimental setups by arguing that the world is in a constant state of becoming and that positioning ourselves as researchers/observers alters what the world becomes in that moment, making the idea of a stable, observable reality a myth. Second, it challenges the centrality of human agency in human-technology interactions. As the world emerges at the moment of contact between human and machine, a host of influences--a distributed web of agency--makes that moment possible. In this model, conscious human action is only one of an infinite number of ways to describe cause and effect, rendering suspect traditional studies that focus solely on intentional human action. New materialism embraces empirical research by acknowledging the existence of a real material world with real, material effects, but asks that we approach that research without the assumptions about stability and anthropocentrism that have accompanied empirical research in the past.

Literature Review

Bruno Latour tackles the issues surrounding anthropocentrism in science by characterizing 20th century scientific practice as devoted to a modernist ideal. In *We Have Never Been Modern*, Latour theorizes the modern ideal as resulting from a commitment to two different dichotomies: 1) the split between human and non-human (nature and culture), and 2) the division of work between those who cross or blur the human/non-human boundary and those who work to maintain that boundary (10-11). In this portrayal of modernism--and by extension modern science--Latour argues that the constant efforts made to separate human activity and intention from the supposedly passive, malleable elements of nature constitute the major aim of the modernist ideal, but he quickly adds that these efforts must be ongoing because this boundary is constantly crossed by human and non-human alike. In other words, modernism only exists through maintenance. Latour then goes on to argue that as our world becomes more increasingly networked--particularly through advancements in technology--the modernist project of maintaining boundaries will eventually crumble under the sheer number of boundary crossers, “hybrids,” that challenge the nature and validity of these boundaries (131).

Latour offers his own examples of boundary crossing, but we can find ready examples closer to the objects of this study. Take the example shared at the beginning of this chapter. The modernist, subject-object perspective Latour describes would characterize my interactions with the letterpress as the actions of me, an autonomous, free agent, moving and manipulating inert, passive materials to achieve an end I decided on ahead of time. But this arrangement of subject and object does not reflect my experience, nor do I believe it reflects the reality of cause and effect in that situation. I did not feel in control of the situation; instead, I felt that I was being molded and shaped through my interactions with the technology. It seemed clear to me that the moment I began handling the printer's type, and arranging it, and printing a newsletter with it, I entered a new paradigm for action. And although the final printed artifact might be similar to other artifacts I had created previously, the habituated strategies I had developed during those previous projects required drastic alteration in this new context. In other words, as much as I was using the press to create a newsletter, the press was using my body--hands, feet, five senses, linguistic and meaning-making capabilities, etc.-- to create a letterpress printer. Here the traditional boundary between human and machine, user and technology, was clearly being crossed.

In a similar vein, traditional approaches to empirical research on human-technology interaction tend to reinforce Latour's modernist boundaries. Most studies of writing technology focus on measuring some sort of outcome typically associated with good writing practices, like word recall (Mangen et al., 2015), or they treat composition practices as evidence of higher order social or administrative activity (Sterponi et al., 2017). The problem with these approaches is that they assume ahead of time that writing is a certain way or that it has certain steps or qualities, and similar assumptions are made about writers, that they use writing technologies in a certain way or that writing fulfills certain functions for them. These are the kind of assumptions we make when a technology has been successfully integrated into human life and expertise in the use of that technology is a given in most circumstances. But these assumptions are not as helpful when studying writing activity in a context where the technology is new, or the writer is new, or the writer's experience with the technology is limited, or where the writer cannot use the technology the way most people do. As Latour warns, where there is a reliance on top-down theories and taxonomies, hybrids proliferate. And we see this proliferation accelerating during the digital turn, where writing technology associated with the era of print is swiftly being made

obsolete. If Latour is correct and the boundary-making practices of modernism need to be abandoned or revised, then we cannot expect the research methods developed under modernist assumptions to carry forward without revision into whatever paradigm comes next.

It is in searching for a methodological path forward that I arrived at new materialism as a theoretical backdrop for this study. Coole & Frost describe “new materialisms” as “returning to the most fundamental questions about the nature of matter and the place of embodied humans within a material world” (3). They state that “Matter is no longer imagined here as a massive, opaque plentitude but is recognized instead as indeterminate, constantly forming and reforming in unexpected ways” (10). This renewed interest in “fundamental questions” about the material nature of the world, leads new materialists to see matter as something that carries its own influence and agency as a basic characteristic of the universe. Matter becomes something that exists on its own, but also presents itself to humans in unique forms, based on how it comes to our attention. In short, humans become part of a network of material influences that make up the world, instead of the owners and shapers of that world. While new materialism casts a wide net, with many important terms and concepts, I want to focus on a few key terms that are of particular importance to this study: Deleuze & Guattari’s concept of “assemblage,” Laurie Gries’ articulation of “agency,” and Karen Barad’s concepts of “intra-action,” “apparatus,” and “phenomena.”

While their work predates anything we would now label as new materialism, Deleuze & Guattari’s concept of “assemblage” is scattered throughout new materialist thinking. In *A Thousand Plateaus*, they put forward a theory of influence and existence that organizes the all materiality and activity into phenomenological orders, arguing that the true essence of matter is unknowable; instead, they attempt to describe levels or forms of organization that coalesce into the world we humans experience. In their taxonomy an “assemblage” is a socio-material-discursive phenomenon that is marked by having a “territory” that gives it its purpose and form (23, 503). Assemblages are formed out of “rhizomes” which in turn grow out of the “plane of consistency,” a “body without organs,” the fundamental level of existence where only the coalescence of possible meaning and order makes a world possible (507). We can recognize assemblages--birds, people, groups, ecosystems, spaces--but they do not exist on their own. They are part of a continual process of ordering and meaning-making that constitutes reality as we know it. In this sense, assemblages appear as objects, spaces, “things,” but we can only recognize

them in a phenomenological sense; they are both real in that they exist without observation and ephemeral in that their existence is dependent on the network of influences that makes them recognizable. As we will see below, this concept of matter as a vibrant, shifting network of movement and influence, out of which the objects and characteristics of the physical world emerge, is a key foundational assumption of new materialist theory. This assumption decenters human subjectivity and activity, giving powers of action and influence to the entire material world.

In *Still Life with Rhetoric*, Laurie Gries claims that agency “is not some capacity that any single person has” (57), neither is it a property of “humans or things; it is not something, in other words that humans or nonhumans have or even acquire. Agency is an act of change that arises from an entanglement of human and nonhuman entities and other environmental factors, each of which is but a phenomenon of ongoing historicity” (68). Here we see Gries describe agency--what we would typically think of as intentional action--as something that flows through a material entanglement of humans and nonhumans, belonging to no single object or individual (assemblage), but instead arising from the ability for influence to cascade through said entanglement. My study takes a similar approach to agency, influence, and intention. Instead of treating participants as autonomous agents who act on the inert objects of letterpress technology, the event of composition is treated as the locus of agency and influence, and agential flows are traced using material action as the basis for inquiry.

Karen Barad pulls together concepts of a non-essentialist material world and nonhuman agency into a new paradigm for research. Barad argues that “the primary ontological units are not ‘things’ but phenomena--dynamic topological reconfigurings/entanglements/relationalities/(re)articulations of the world” (141). In language similar to that used by Deleuze and Guattari to describe assemblages, Barad describes “phenomena” as the source for meaning making and knowledge in empirical research. Although research may involve an object--like a printing press--the object needs to be viewed as a material phenomenon, as an emergent reconfiguring of the material world, only recognizable because of the agential flows which have brought it into being in a particular moment.

These agential flows are maintained and shaped by “intra-actions.” Barad states that “iterative intra-actions are the dynamics through which temporality and spatiality are produced and iteratively reconfigured in the materialization of phenomena” (Barad 179). In other words,

the fundamental, always on-going interplay between material agencies is what creates the observable material world, including what is observable in a research setting. Barad characterizes both material influence and the phenomenon of physical reality itself as the result of “intra-actions”: small but significant movements/actions/relationships that occur within the entanglement of matter that makes up the world. Here is her description:

matter plays an agential role in its iterative materialization. . . . the agential realist notion of causality does not take sides in the traditional debates between determinism and free will but rather poses an altogether different way of thinking about temporality, spaciality, and possibility. . . . intra-actions iteratively reconfigure what is possible and what is impossible--possibilities do not sit still. . . . The world's effervescence, its exuberant creativeness, can never be contained or suspended. Agency never ends; it can never 'run out.' The notion of intra-actions reformulates the traditional notions of causality and agency in an ongoing reconfiguring of both the real and the possible” (177).

For Barad, intra-actions are the fundamental units of causality and agency in a research setting. This is in stark contrast to many traditional (modern) empirical approaches to human-technology research which treat the human agent as the source of causality and agency.

Alongside a reconfiguring of agency and causality, Barad also calls into question the modernist ideal of the “lab” or the sanitary experimental space where conditions are controlled to in turn control research outcomes. For her the lab is an “apparatus,” and “apparatuses are specific material reconfigurings of the world that do not merely emerge in time but iteratively reconfigure spacetime-matter as part of the ongoing dynamism of becoming” (142). Following logically from the theory of intra-action (and the theories of materiality and agency discussed above), if the lab is an emergent material phenomenon, connected to and brought into being by a network of material influence, then it is hardly a controlled neutral space, but rather a product of its material entanglements. Barad goes on to say that “Apparatuses are the conditions of possibility for determinate boundaries and properties of objects and meanings of embodied concepts within the phenomenon” (143). Thus the apparatus of any research project sets up the possibilities for its results; but instead of circumscribing those results ahead of time, it provides a launch point for what can/will be found through the research process.

Rationale for Research Design

A new materialist empirical methodology would treat writing acts at face value initially, seeing them as material human bodies engaging with non-human materials; then it would seek to trace, as much as is possible, the network of influences (material and material-related) that come together to make these actions visible.

My research puts material action at center stage, treating the observable movements of letterpress composition as the initial and most fundamental data points. This approach decenters human agency, starting from observable intra-actions and building into larger concepts of agency and intention. It moves away from typical conceptions of technology as having “affordances,” and instead looks for intra-actions as forces that shape the phenomenon of a particular participant’s composition practice. Empirical research on writing (and technology use in general) has often worked forward from human intentions toward material action; this study works backward from material action and does not necessarily end up at human intention.

Some might look at this research design and say it is not really that different from other designs already in use. But again, I would argue that the *focus* of this research is what makes it different. Treating micro-level intra-actions as the primary unit of research leads to very different results than what would be obtained by applying a pre-existing theory.

This research also seeks to be as open as possible about the nature of the apparatus. Outside influences that might jeopardize the integrity of a traditional experiment are recorded and treated as valuable connections. Any and all detectable or recognizable material influence becomes part of the results.

Methods

The research design for this study involved four main stages: observations of letterpress composition, open coding of the observation footage, interviews with experienced compositors, and data analysis of the interviews. Observations and interviews were conducted within a 24-hour period, while data analysis stretched over the following 3 years. Participants were recruited using a mixture of convenience and snowball sampling (Biernacki & Waldorf, 1981) via email, and were chosen for their experience with letterpress typesetting over any other demographic considerations.

The first potential participant was contacted via phone call, using the number publicly available on the website for his letterpress shop. This participant declined to participate in the study, but referred me to another person who might be interested. This person agreed to participate and I visited his print shop (located in his home) in the summer of 2016. At the end of our visit, I asked this participant (Participant 1) for referrals and he put me in contact with my second participant (Participant 2), who I visited in the fall of 2016. My third participant (Participant 3) was a former coworker who also had experience working on the letterpress at my aforementioned place of employment. I visited with this participant near the end of 2016. Participants were offered a \$20 gift card as a token of gratitude for the time they spent on this study.

Each participant was observed setting type and afterwards interviewed about their typesetting process. The observations and interviews took place on site, either in the participant's home, if that is where they composed, or in the print shop itself. Since the focus of the research was to search for evidence of material influence on the daily writing practices of participants, it was critical that the research be conducted using the specific machine already used by participants, in the same space in which they were already using it.

In order to preserve the anonymity of the participants, I have kept potentially identifying details at a minimum in the dissertation document itself. The letterpress community is not very large. They have gatherings and they have a vibrant online community as well. But it's not a very large community. I have been careful to exclude identifying information, however, it is important to note that all three of my participants were white males, with two of them being around retirement age (Participants 1 & 2), and one in his mid-twenties (Participant 3), and although all three participants had far more letterpress experience than the average person, Participants 1 & 2 did demonstrate a higher level of experience and expertise than Participant 3.

Participant 1 didn't get into letterpress printing until the middle of his career. He had a normal day job, but somehow developed an interest in the letterpress. He didn't give details on how he developed an interest, but at some point he started acquiring letterpress technologies. He obtained most of his equipment for free as other people and companies were getting rid of it and switching over to digital technologies.

For Participant 2, letterpress typesetting was his career. He started letterpress printing as a young boy. His parents gave him a little tiny rubber stamp press and he printed little cards and

things and passed them around the neighborhood and just did it for fun. And that interest in typesetting turned into a career. At the time I did the study, he was getting towards the end of his career, but he was still working in the industry. He did everything in InDesign at that point, but during the course of his career, as the company he worked for got rid of letterpress equipment, and as people in the area were getting rid of letterpress equipment, he was able to get it for free, like Participant 1. He obtained dozens of machines, both letterpress machines, linotype machines and casters (machines you can use to cast type). He had books about letterpress all over the house. There were cases of type in the living room, and in the kitchen.

The third participant was much younger than the other two. He encountered the letterpress at work like I did. He was working at the same historical park as I was (though we were not coworkers at the time of this study) and was introduced to the letterpress there and became interested in it. At the time this study was conducted, he was still running the print shop at the historical park.

In the spring of 2019, I renewed the study's IRB application and made efforts to recruit female participants, reaching out to several potential participants with publicly available contact information. These efforts were eventually abandoned as I did not receive a single response from those contacted. It seemed clear that successful recruitment with this new demographic would require an overhaul of my recruitment methods and I did not have time to make such a change. I will now describe in detail the procedure followed in each stage of the research.

Observation

Participants were observed setting type in the environment in which they typically conducted this activity. Participants 1 & 2 had print shop set-ups in their own homes, while Participant 3 used the letterpress available at the historical park where he worked. Each participant was given a printed copy of a college student essay and asked to set type for the essay for 1 hour. All three participants set type for the whole first hour, but, as expected, none of them finished setting the first page. Participants were then asked to set type for a composition of their choice for an additional 1 hour, with no restrictions made by the researcher on their choice of composition. Participant 1 chose to set type for an original composition, Participant 2 set a Shakespearean sonnet, and Participant 3 set an exercise from a typesetting manual. During

observation, Participants 1 & 2 listened to music on a stereo system, while Participant 3 did not and did not have such a system available.

In each case, the researcher brought a tripod and a video camera, setting up the tripod to the side of the participant as they set type. Sound was recorded with the video camera, and the camera was angled downward to focus on the participants' hands as they picked type out of the type case and positioned it in the composition stick. The researcher sat near the video camera, occasionally swapping out memory cards and taking notes. These notes were relied on for capturing moments when participants stepped away from the type case for whatever reason. If the participant moved away from the typecase for more than a few seconds, the researcher would reposition the camera and tripod to again focus on the participant's actions. Some conversation did occur during observation between the participant and researcher, and relevant information from these conversations was recorded in the researcher's notes. The researcher did not initiate conversation, but did not avoid conversation initiated by the participant.

Coding of Observation Footage

At the end of the 2-hour observation period, the researcher removed all camera equipment from the shop and traveled to a nearby hotel where he spent the night. At the hotel, the researcher reviewed the observation footage in its entirety, coding for evidence of emergent material intra-action. Typically, the codes fell into one of two categories: pattern-following action, and pattern-breaking action. As discussed in Chapter 3, all three participants eventually fell into a recognizable composing rhythm that included repetition of a small number of observable actions. At times, however, these recognizable patterns were disrupted and material action which did not follow the typical pattern could be identified by the researcher. After he finished coding, the researcher added timestamps from the footage to the interview protocol, along with specific descriptions and questions about the actions observed.

In preparation for each interview, video footage from the observation was reviewed and coded within an 18-hour period. The interview was then conducted at the participant's home/shop using observation data to prompt interview questions. Each interview followed a semi-structured protocol which was adjusted based on observation data (Wengraf, 2001). A copy of the interview protocol can be found in Appendix B.

Interview

Interviews were conducted in the morning the day after the observations, and were audio recorded using the researcher's smartphone. In each case, the researcher met with the participant in the same location in which the observation had been conducted the previous day. Interview length ranged from 2hr7m to 1hr35 minutes with each interview being shorter than the last. With the exploratory, experimental nature of this study the focus of the interviews also changed over time, with the first interview rambling through many different lines of inquiry, while subsequent interviews were more focused on the question and topics that most successfully accomplished the goals of the study. A specific example of this shifting focus is the questions asked about participant's past composition practices. In the first interview, a significant portion of time was spent inquiring about how Participant 1's composition practices had changed since he first began setting type, including what mistakes he made as a novice typesetter and equipment he modified or acquired as he became more experienced. It quickly became clear, however, that this kind of information was difficult for Participant 1 to recall in an interview setting, so the questions were shortened or dropped in subsequent interviews.

By the time Participant 3 was interviewed, most of the time was spent on questions about specific actions from the observation footage. The researcher would display the observation video on a laptop, navigate to a specific timestamp, and show the participant a short clip of a particular moment of material action. After viewing the clip, the interviewer would ask a version of one of two types of questions: 1) "Why did you take this action?" or 2) "Can you explain what is happening in this clip?" These questions were then answered by the participant with an explanation or description of the action and the reasons for its occurrence. The researcher would then use follow up questions to solicit more details from the participant or to pursue descriptions of material influence emergent in the participant's answer. This approach to interview questions produced much better results than the aforementioned efforts to have a participant recall how their composition practices had changed over time, as they were shown the empirical realities of those practices instead of being asked to remember them.

Data Analysis

The conclusion of the interview marked the end of each participants' formal involvement in the study, leaving the researcher to begin the data analysis portion of the research. Interview transcripts, observation footage, and written artifacts created by participants were all used by the researcher during data analysis. In a process similar to the coding approach used in grounded theory research (Creswell 89), the researcher reviewed collected data looking for evidence of material influence, and organized this evidence into working theories about the how and why the phenomenon of letterpress composition emerged as it did during the study. More details on data analysis can be found in Chapter 4.

Participants were asked to set type for 2 hours, with 1 hour spent on a composition of my choosing and 1 hour spent on a composition of their choice. For the first hour, I gave each participant the same document to set and print: an assignment I wrote for my introductory Biology class as a college freshman. For the second hour, the participant set type for a composition of their choosing. As the participants set type, they were video recorded. Their actions were also observed and recorded in a notebook, along with comments they sometimes made about the composition process.

Pairing observations with interviews in this way makes for a strong qualitative methodology in several ways. First, it foregrounds an emic perspective on the composition process by emphasizing the participant's experience and perspective over my own observations (Creswell, 2013, p. 96). Second, it allows for effective triangulation of data as the observation and interview yield different kinds of valuable data (what the participants did and what they think about it), while the interview also serves as a kind of built-in member check (pp. 251, 252). When identifying influence, material or otherwise, the participant's experience becomes the focus of the research; and yet, as already discussed above, new materialism posits that many aspects of that experience may be invisible to the participant. Thus, both the outside observer and the participant's emic perspective are vital to the success of this study.

Proposed Analysis of Typesetting Manuals

In terms of describing the methodology for my study, I have mostly focused on the empirical study conducted with expert letterpress typesetters. While this empirical research has

already yielded productive results, it was informed heavily by my own hands-on experience and by some knowledge of historical letterpress use. When interviewing my participants, I leaned heavily on terminology specific to letterpress typesetting and used my working knowledge of the technology to both interpret answers and ask follow up questions. I pulled from a similar knowledge base in coding the observation video data in preparation for each interview. My participants also frequently drew from their knowledge of typesetting's history as they answered my questions and explained their own decisions during the composing process. In short, I don't think it would have been possible to conduct the empirical study in the way I did without both practical and historical knowledge coming to bear.

Not only do I think it's important to acknowledge the influence of this historical and practical knowledge on the study as part of acknowledging my positionality as a researcher, but doing so is very much in keeping with the new materialist assertion that agency is distributed across space *and* time. When Gries' states that "agents interact in material engagement in various collectives with time," she is pointing to how agents and agencies influence each other over time, with the implication that at any given moment, the relationship of those agents to each other is both a function of the material exigencies of the moment and a function of the history of similar moments.

In my interviews I discovered that both I and my participants drew heavily from typesetting manuals to learn how to use the obsolete letterpress technology. (Other knowledge also came into play, such as terminology, lore, and best practices that were passed down through the letterpress printing community.) In light of this, I wanted to make an analysis of typesetting manuals part of my study. I collected 3 manuals, one from the first century of printing, another from the second century, and one from the early 1900s (Polk). In many ways, the history of composition practice recorded in these manuals is already part of my study, as any engagement with letterpress technology is an engagement with the history of its use. I have no doubt that a closer analysis will enrich the results of my research in vital ways, but I was unable to include an analysis for this project due to time constraints.

In the next chapter, I will provide a thick description of what I observed in the three cases of letterpress typesetting.

CHAPTER 3

Drawing from Niels Bohr, Barad argues that in order to give an unambiguous account of a phenomenon, “all relevant features of the experimental arrangement” need to be described, including the position and actions of the researcher and all relevant nonhuman actants (197). The real question here, of course is “what/who is relevant?” Once you begin to chart the intra-actions present in a given phenomenon, the list of relevant features grows quickly.

In my research with the letterpress, I confronted these challenges by trying to give nonhuman actants space and opportunity to influence the research and to contribute data. I also tried to provide a description of my research apparatus that cast as wide a net as possible in describing the intra-actions and actants that seemed relevant to the study.

The purpose of this chapter is to provide a thick description of letterpress typesetting as observed in the three cases conducted for this study. Building upon Barad’s conceptualization of the experimental apparatus, this thick description will be centered around the physical spaces, objects, and movements that emerged as most relevant to the composition process, while at the same time pointing to entanglements these material phenomena share with the world at large. The goal here is not to be exhaustive or provide a complete description, as doing so would be impossible. Instead, the goal is to identify phenomena that emerge as important/relevant through empirical observation. These phenomena can then be located within a web of material arrangements and agential flows that both call the apparatus into being and make it different from other moments/places in the world.

Thus far, the dissertation has been introductory and summary, as well as contextualizing the contribution I intend to make to computers and writing and technical communication scholarship. The previous chapter describes and articulates methods for revealing—bringing to light—different aspects of the inquiry. This chapter, chapter 3, locates the study in a place—home print shops, in their various locative placement within research participants’ domestic abodes. Like early hobbyist computer setups, there is an intimacy and domestication of these technologies: they are no longer in workplaces but hobby spaces, from garages to basements to spare rooms. Anywhere a large offset or typeset printer can reside without being too much in the way of homelife. The following section focuses on the apparatuses of printing: location, bodies-in-space, and the tools present and near-to the printer’s hand. This is followed by a detailed

description of the processes the printer follows to create pages of print. The following chapter, chapter 4, offers a detailed analysis of the transcripts contained in the appendices that include narrative of the printers' internal monologues as they offer the researcher speak-aloud descriptions of their work.

Apparatus

Location

A space that is large enough. The spaces were similar overall. You have a space where you have room to walk between the type cases and large enough to hold all of the cabinets of type. The spaces were also inside, climate controlled. The letterpress itself doesn't need the climate controlled space, but the human bodies that use the letterpress need the climate controlled space. Two of my participants, the more senior and expert typesetters had a sound system set up in their spaces so that they could listen to music in pretty good quality as they set type. My other participant may have mentioned listening to music. My third participant is often working on the job at the historical site, so you have park guests coming in and out. There are constraints placed on the space because of that situation that prohibit the use of a sound system.

Lighting

Lighting ends up being really important. Both of my more experienced typesetters actually had lightbulbs over the workspace that had been hung over the workspace to have direct strong light in order to be able to see those small pieces of type. Even though both of those participants were older, having that kind of light source seemed to be a common thing for a print shop to have. Having that strong light source was a requirement for the ability of their bodies was not uncommon. They made it seem like a common thing. One of them had a big magnifying glass and pointed to it and said that sometimes when working with really small stuff they'd use that. Both of my older participants had their own personal eyeglasses that they were using. They negotiated natural lighting according to the space they were in. Both of the more expert printers had their own personal shop and those were both in the basement of their home, so natural lighting was affected by that. That is a negotiation with their living situation. There is nothing inherent about the letterpress technology that says that it needs to be in a basement, but, it ended

up in a basement in both of these cases because of the other living considerations of these individuals because they wanted their upstairs living space for other purposes. Both of those participants had that space in the basement where they could set type. One of the participants had everything but the press itself in the basement, but his letterpress was actually in a small garage behind his home. So he would get everything ready to print and then he'd walk out the back door to a separated garage to go print it. Compared to the other printer who had the whole apparatus in his basement.

One of my participants told me during the interview. I was asking about their lighting (not sure) I asked is this how you usually do things here? He casually mentioned that he usually sets the type in his kitchen. This participant has huge collections of type all through his house. It's like walking into a museum. His house was more or less the print shop. He would take a stack of those books that he'd been collecting and he'd place them on the kitchen counter and he'd put a case of type on that stack of books, turn on some music and begin typesetting in the kitchen. The reason he gave for that was a lighting thing. In the kitchen there was a lot more natural light and it provided a lot more visibility than the single lightbulb. He lived alone. You start to see how the material realities of how this work gets done. You start to see those tethers to other spaces, other things, other forces that are creating that apparatus while this is happening.

He told me during the research. We did all the research in his basement on top of these type cabinets, type banks, the way it was done back in the day industrially, you would pull the type tray out of the cabinet and put it on the slanted top of the type bank and you would work from there. He told me that he changed his regular routine because he felt that if we did it in the kitchen it wouldn't be showing the way that this gets done.

He said that wouldn't have given you a very good idea of what typesetting is. You are trying to learn how things are done and he is trying to telling you what is supposed to be done. This sense of history and tradition and all of this knowledge they have acquired deliberately and by using the technology and what is what and what each part is used for. Things that they don't even think about because it's just their environment. They start to acquire historical knowledge just by using it. The technology forces and encourages this deference to history and to historical practices.

Printing Press

Participant 1 and 2 both used Vandercook proof presses during observation. In both cases, this was the press they used regularly. Vandercook presses are highly sought after in the letterpress printing community and typically sell for over \$10,000 USD. Both participants acquired their presses long before demand increased dramatically (around 2010) and paid a much lower price. Participant 3 did not own his own letterpress and used the letterpress available at the historical park where he worked. All three letterpresses print using type that has been placed in the bed of the press with the letterforms facing upwards. The form (body of arranged type) is held in place by furniture (wood blocks) and quoins (adjustable metal wedges) so that the type shifts as little as possible during the printing process. Participant 1 explains how this printing arrangement affects composition:

for my type of press, it's not quite as important that the lines are perfect [i.e., tightly held in place]. For a platen press, where you're going to lock the type into a chase, and then carry it around, that's important to really get it tight and perfect. Because otherwise, you're going to have stuff [type] falling out, which is a disaster. . . . But with a flatbed press [i.e., a Vandercook proof press], I don't need to worry about that. The only problem that you can get into if [the type is] too loose-or too tight for that matter--is that you can get workups if there's a line that's too loose or too tight. What happens is, as the cylinder goes across the type, what's happening is it's going to push it back and forth, back and forth like this, and as it does that the space in between the words is gonna slowly go [inching-up sound] and the next thing you know, it's printing. You'll have this little black line between the words. So, you still have to have it pretty uniform, or else you'll get workups and workups are terrible.

With all three participants working with flatbed presses, setting the type in a way that reduced the probability of workups and of type movement in general was a key consideration across the study. The material impact this consideration has on the composition process is discussed below.

Each Vandercook press weighs around 1000 lbs. and occupies a floor space of 2'2" x 6'6". These presses are difficult to disassemble, making it difficult to fit them through narrow doorways or move them down/up stairs. For Participant 1, the size and weight of the press prohibited him from moving the press into his basement with all his other letterpress equipment, even though he claimed that arrangement would have been more desirable. Instead, he housed the press in a small garage in his backyard, requiring that he transport his compositions to the garage from the basement where he set the type. Participant 2 did have his Vandercook in the basement of his home, in the same space as all his other typesetting equipment.

Participant 3 also set type and printed in one large space: the print shop of the historical park where he was employed. Unlike the Vandercook presses used by the other participants, he used a rough replica of a historical 1850's Ramage press, a bare bones letterpress that printed at a significantly lower quality. This press occupied a floor space of approximately 2' x 5' and weighed about 450 lbs.

Type - type cabinets, type drawers, furniture, furniture cabinets, leading, dingbats, spacing

The use of printer's type is a core feature of letterpress printing, and all three participants used printer's type as a regular part of their printing practices. Printer's type is typically made from a metal alloy of lead, tin, and antimony that is cast into small, rectangular blocks with raised letterforms on top, much like very small stamps. As mentioned above, these blocks can be arranged in rows so that the face-up letterforms form words and sentences which can be covered with ink and pressed to paper to create a printed document. Type is typically arranged by hand in a composition stick as part of the typesetting process (explained further below).

Type is sold in "fonts"--packaged sets of type that contain a predetermined quantity of each letter, number, and special character available in a given typeface--by a type foundry, a business that casts the type and ships it to customers. Even with the existence of vintage type, modern-day foundries are a necessity because the alloy used to make type is purposefully soft so that it does not damage the press during printing. The letterforms made out of this softer metal wear down over time, eventually causing a notable decrease in print quality. Thus, printer's type is always being recycled, with old, "worn out" type being melted down and recast into new fonts.

All three participants used type cabinets and type cases to store the printer's type they used for letterpress composition. Type cabinets are roughly 3' tall, 2' wide, and 2' deep and typically hold between 10-15 type cases (or drawers), with each case fitting snugly into its own slot, one above another. Most of the printer's type in each shop was stored in type cases which were then stored in type cabinets. Type cases typically contained type for a single typeface in a single size, meaning 14pt Times New Roman would be stored in a separate case from 18pt Times New Roman. The amount of type in each type case varied depending on how much of that particular typeface the participant had purchased/acquired.

Each of the three participants had at least one type cabinet with a sloped top designed specifically to hold a type case at a desirable angle for typesetting and all three participants used the sloped-top cabinet in this way during observation. [insert image for reference]

In addition to the printer's type, each participant's workspace contained some amount of spacing material (furniture, leading), and material for printing non-text graphics (dingbats, ornaments, engravings, polymer plates). Used to create areas of blank space on the final printed page, spacing material typically comes in the form of leading and furniture. Leading is stored in long, thin metal strips and is mainly used for creating horizontal space between lines of type. All three of my participants stored their leading in a leading drawer that looked similar to a type drawer, and all three stored their leading drawer in a type cabinet along with other type drawers. The furniture is typically made of precisely-sized strips of wood that allow the printer to create larger areas of blank space like margins and space between columns. These wood strips are stored in furniture cabinets where they are organized according to width and length. [see image]

Although all three participants had access to a furniture cabinet in their shop, Participant 2 used furniture only minimally during the observation session. Instead of setting the form for a whole page, Participant 2 secured his composition in the press bed with magnets, repositioning as needed for the words to appear in the correct position on the page. When asked, he stated that this was a common practice for him as it was much easier for the kinds of compositions he typically printed which were less text-heavy and more focused on images and graphics. Participants 1 and 3 both used furniture during observation.

Each participant also had access to some amount of non-text type objects, referred to as dingbats, ornaments, or engravings, which are used for printing graphics and images. Even though my participants used these objects frequently in their own printing practices, they did not use any during observation, as they were explicitly asked to typeset text-heavy compositions for this study. Although some information was gathered about how these objects participated in my participants' general printing practices, I am not including it here, as the information is incomplete and more likely to be inaccurate, being beyond the scope of this study.

Tools - pica pole, composition stick, galley, string, tweezers, hacksaw & file

As they worked with the printer's type, each participant used tools to assist in the arrangement and placement of said type. These tools usually included a composition stick, a pica pole, a galley, some string, tweezers, and a hacksaw and file.

All three participants used a composition stick (sometimes referred to as a "composing stick") during the composition process. A composition stick is an adjustable hand-held metal tray specifically designed for holding type while it is being arranged during typesetting. [image] Each composition stick consists of a solid "stick" portion--a long, skinny two-sided metal tray--and an adjustment mechanism that clamps onto the stick, forming a third side to the metal tray at the position the compositor desires. Composition stick length can vary widely, but most are around 1' long, allowing for a maximum line length of ~60 picas. On the other hand, stick width is much more standardized, with each stick right around 3" wide. Once the adjustment mechanism has been secured, pieces of type can be placed in the tray and held upright by the tray sides. These sides are intentionally shorter than the height of the type pieces so that the type protrudes above them when placed upright in the composition stick. Further details about how the composition stick participated in this study's composing processes can be found below.

My participants used pica poles occasionally during printing to check and make measurements. A pica pole is a metal ruler with tick marks for measurement units of one kind on the left side and units of another kind on the right. American-made pica poles often measure picas on the left side and inches on the right side, but many other combinations are available, including picas and centimeters, and picas and points. One of the defining features of a pica pole is the mushroom-top shape on one end that allows it to grip the square corners of various type forms.

Galleys are large metal trays typically used for holding partially finished forms during typesetting or completed forms before they are moved to the press for printing. Galleys are rectangular in shape and exist in various sizes, ranging from only a few inches long/wide to a couple feet long/wide. A standard galley has raised tray edges along three sides with one open side that has no tray edge. Similar to a composition stick, the tray edges on a galley are slightly shorter than the height of type, so that completed type forms protrude above the edges of the tray when placed in the galley. Although all three participants had access to galleys in their print

shop, only Participants 1 and 3 used them during observation. More about how galleys participated in composition will be discussed below.

Participants 1 & 3 both used string to secure type forms in between typesetting and printing. In both cases the string was white and made of natural fibers. Participant 1 hung pieces of string on a hook on the wall next to the type cabinets. Participant 3 cut pieces of string from a spool. In place of string, Participant 2 used magnets to secure type forms.

Although all three participants kept a pair of tweezers somewhere in their work space, only Participant 3 used tweezers during observation. The tweezers were used to remove and replace individual pieces of type after the form had already been set and secured in the press bed. Participant 1 mentioned using tweezers in a similar way to correct mistakes discovered during printing.

Only Participant 1 used a hacksaw and file during observation. These tools were used to “miter” two pieces of type, reducing the space between letters. Participant 1 explained that he often mitered pieces of type to make the kerning (or space between individual letters) more consistent in the final printed product. The example he gave was the space between a capital “T” and a capital “A”, which can appear large on paper when printed using traditional rectangular printer’s type. These pieces of type can be mitered by shaving off the bottom right corner of the “T” type piece and the top left corner of the “A” type piece using a hacksaw. After filing the shaved area smooth, the two pieces can be fit together in this manner: T/A, reducing the kerning between them so that the space is visually consistent with the kerning between other letters. It should be noted that some type fonts come with pre-mitered type, though no pre-mitered type was used during this study. Participants 2 & 3 used only non-mitered printer’s type during observation.

Human Body - fingers, hands(2), eyesight, ability to stand, ability to move about the shop.

Alongside the non-human objects, tools, technologies, and spaces described above, the following human materialities emerged as relevant during interviews and observations: digital manipulation, eyesight, ability to stand, and ability to move about the shop. There are other human abilities or skills that participated in typesetting processes (such as the ability to read), and I acknowledge that the complexity of the human body and its ways of acting make it difficult--if not impossible--to cover the total material participation of participant’s bodies in the

composition process (even human thought manifests materially through neurons firing). The focus of this study, however, is on empirically observable intra-actions, or in other words, the movement of physical material that can be observed and recorded. The parts or features of the human body mentioned above all emerged as observable actants in typesetting activity, as they participated with the other materialities involved.

Digital manipulation played a major role in the composition processes observed during this study. In fact, observation and interview evidence suggest that the entire letterpress composition event is warped around the material qualities of fingers and hands, including the design of the technology and its tools. At nearly every stage of composition, fingers and hands were observed gripping, moving, holding, rotating, and otherwise manipulating non-human parts of the technology, including everything in the “Printing Press,” “Type,” and “Tools” sections above. Throughout the description of the typesetting process provided below, fingers and hands are the primary movers and manipulators of all non-human materialities mentioned.

Eyesight also emerged as an important manifestation of human materiality during both observation and interviews. In particular, eyesight was used to identify parts of individual pieces of type, to read finished lines and check for errors, and to read paper copies of the composition both before and after the typesetting/printing process. It can be reasonably assumed that eyesight assisted in other actions (such as moving about the shop), but those intra-actions did not emerge as focal points during this study.

The ability to stand and move about the shop also emerged as a critical actant in all three typesetting processes observed. All three participants stood for the duration of the observation period, occasionally walking to other parts of the shop and squatting or bending down to access type drawers. When Participant 1 was asked during the interview if he ever sat down while typesetting, he gave the following response:

No. I've always stood. For many years at work I would stand. I had a standing desk. I never sat down. I would type standing up. It just gives you more flexibility. You sit down and you're sort of anchored and I don't like to be anchored when I'm doing stuff. People do sit. I'm always astonished to see people sit and set type. I can't imagine. I think they're mostly people who don't do a lot of typesetting. People who set like I do--big books and stuff--they almost always stand. I don't think they ever sit. But people who are just doing little bitsy pieces, they'll sit down in front of a case and they'll pull it out and they'll sit right there and not even take the case out of the cabinet.

In this statement the participant acknowledges that standing for the duration of a typesetting session is not a universal practice, though he does suggest that people who set type for longer compositions tend to stand more because it reduces the effort and time required to stand up and sit down when they need to retrieve something from another part of the shop. This statement also reinforces observation data which shows participant bodies frequently moving about the workspace--walking, bending over, squatting--in order to retrieve and transport materials.

Process

As we move into a description of the typesetting process, it is important to note that such a description will never be able to completely cover all the minute physical intra-actions present in such a process, even with a focus on what can be observed empirically. In order to make this process comprehensible, a higher level of abstraction is necessary so that the broader movements and actions involved in typesetting can be envisioned as a complete process. Thus, this section uses language more typical of a human-centric point of view, where the typesetter is positioned as the major actor, acting on the non-human materialities present. Or, in other words, this is a section written to be efficiently understood by humans, who typically experience these kinds of interactions with technology from a subject/object perspective.

Printing Cycles

All three participants began the typesetting session by preparing their workspace. This preparation involved arranging the material accoutrements of typesetting in several key ways:

1. turning on lights
2. selecting and turning on music, played over a speaker system (Participants 1 & 2)
3. placing printed paper copies of the composition (referred to as “the copy”) upright on a metal shelf above the top of the sloped-top cabinet
4. selecting a typeface and font size for the composition, pulling the corresponding type drawer out of its cabinet, and placing the drawer on the top of the sloped-top cabinet

5. placing a stack of leading (for spacing between lines) near or on the sloped-top cabinet
6. putting on clothing to protect against ink stains (Participant 3 only).

After readying the workspace, each participant began typesetting by placing pieces of type into the composition stick in the same manner illustrated in Figure 1. They did this standing in front of the sloped-top cabinet on which the type case had been placed. As they placed letters in the stick, they looked back and forth between the manuscript and the type drawer, glancing at pieces of type before placing them in the stick.

As each line of type came close to filling the available space in the stick, participants would stop placing new letters and lift up the stick to read the line, checking for errors and judging the spacing between words. They then grabbed spacing material from the type case and add it to the end of the line until all the available space was filled and the type was adequately snug. They then placed a pre-measured piece of leading alongside the recently completed line of type. This would allow them to start over setting a new line of type on the other side of the piece of leading (again, see Figure 1).

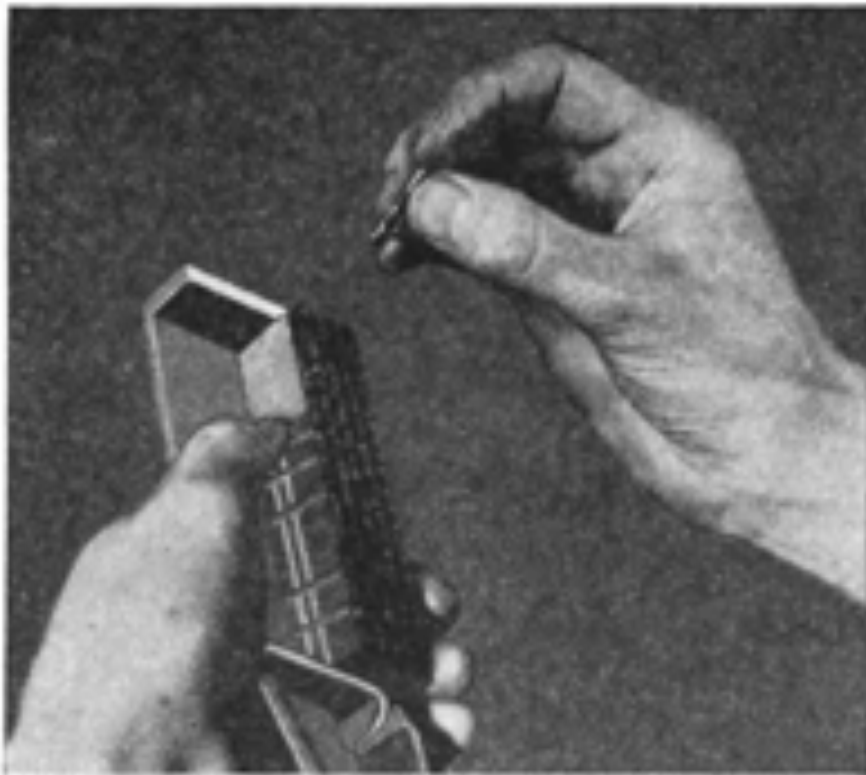


Figure 1: placing type in a composition stick

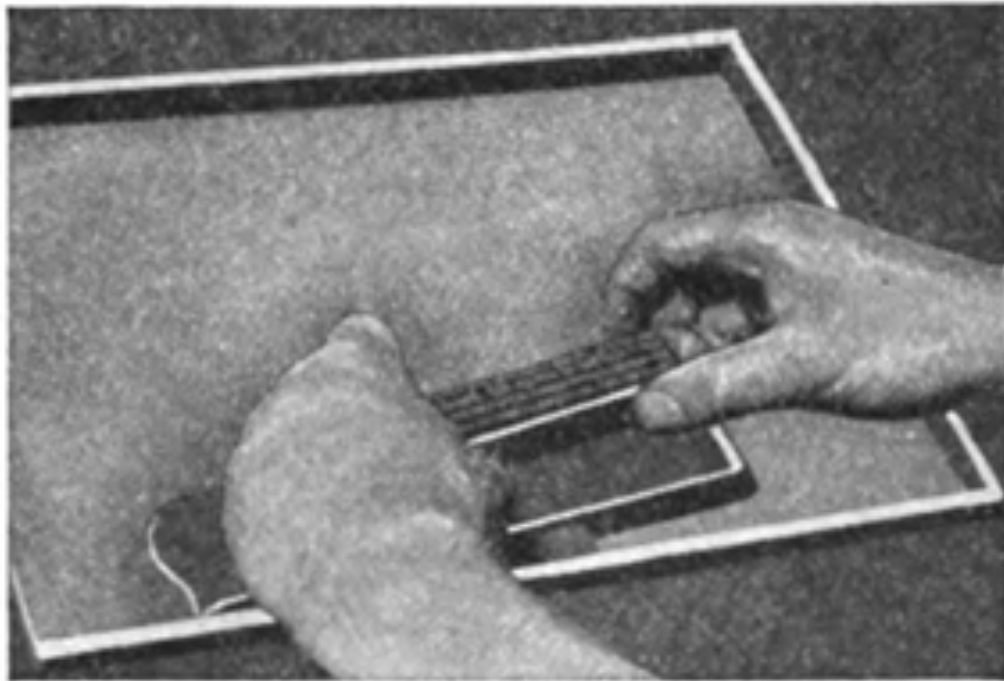


Figure 2: moving type from a composition stick to a galley

Once enough lines had been set that the available space in the stick was halfway full, my participants would “dump” the lines of type into a galley. They did this very slowly because the type is easily knocked over once it’s removed from the stick. They gripped the pieces of leading on the very outside of the lines of type and applied pressure to keep the type pieces in place while sliding the block of type--or “form”--into the galley as shown in Figure 2. Participants then secured the form either by tying a string around it (Participants 1 and 3), or by clamping the form on all sides using magnets (Participant 2). After moving the type to a desired position in the galley, participants returned to the slanted desk and began setting type in the stick again.

After each participant had enough type in the galley to print a whole page, they carried the galley to the press and transferred the form from the galley to the press bed by sliding it off the galley. Participants then continued with the process of printing the composition onto paper, a process which I will not cover in detail here, as it was not included in the observation portion of the study. The after-printing process was also not covered during the observation period, but each participant acknowledged they would move the type back onto a galley, clean the ink off the type, and distribute the type--put each piece of type back in the proper compartment in the

type case--after they finished printing. After distributing the type, participants would begin the whole process over again with setting type in the stick, if the composition covered multiple pages/printings.

From this description, I propose that the composition process can be conceptualized as three different cycles that are repeated often enough to be classified as part of the normal rhythm of letterpress composing: the stick cycle, the dump cycle, and the print/distribute cycle. In characterizing letterpress typesetting in the way, I am making what Barad would call a “cut.”

The stick cycle (Figure 3). In this cycle, the compositor places letters and spacing material into the stick until the line is filled, at which point they place a new piece of leading alongside the set type. The participant then begins again with setting a new line.

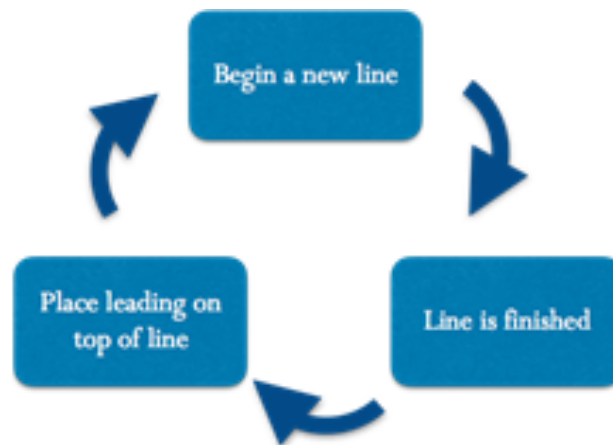


Figure 3: the stick cycle

The dump cycle (Figure 4). After the stick has been filled halfway with lines of type, the compositor “dumps” the form into the galley and begins filling the stick again.

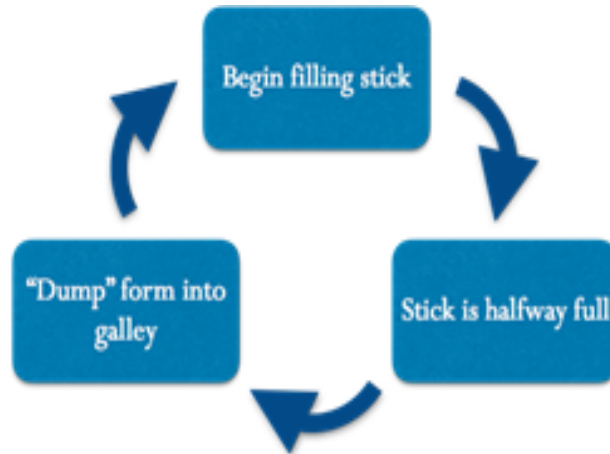


Figure 4: the dump cycle

The print/distribute cycle (Figure 5). When enough type has been set for a whole page, the compositor transfers the form to the press, prints, then cleans and distributes the type before starting the entire process over again.

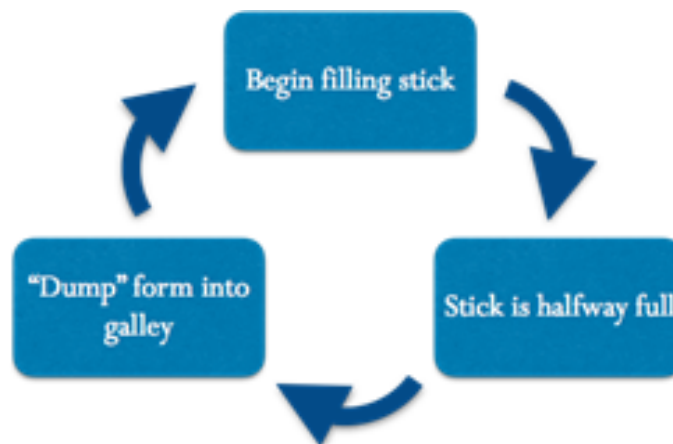


Figure 5: the print/distribute cycle

All the evidence obtained in this study (observation, interviews, historical practices described in typesetting manuals) pointed to this cyclical process as normal, meaning that given the traditional forms of typesetting technology and the typical material functions of human bodies, and given the broader agential flows that typically create the impetus for writing, the patterns described above become a baseline for action. Then, if this set of embedded cycles represents the normal typesetting process, anything that disrupts or changes this process can be described as abnormal. As discussed in Chapter 4, the regular rhythm described here suggests a

kind of human attunement to the material exigencies of the technology (Rickert, 2013, p. 8-9). Yet the technology itself is also designed and manufactured by humans who also have the cognitive capability to anticipate (never perfectly) how these designs will better fulfil their own desiderata concerning letterpress typesetting processes. In this set of cycles we see a deep groove of patterned action that results from centuries of intentional design and refinement, and that history becomes so embedded in the material forms of the technology that even humans who meet this technology after its obsolescence find their actions gravitating toward patterns of past use.

While this core pattern of action remained consistent for all three participants, there were many other moments during observations and interviews where emerging evidence of material agency and action was much less monolithic. Chapter 4 will discuss the places within participants' typesetting practices where the negotiation between material agencies remained ongoing, and where more specific, individual adaptations were observed.

Conclusion

This chapter describes the places where hobbyist printers ply their craft including detailed descriptions of their print shops, the abodes of the printing presses themselves, as well as the tools, procedures, and activities that these places support. Attention is given to preparation as well as habitues of individuals with an eye towards revealing what these activities reveal about the relationships between the printers as people and the printers as machines, understanding the human-machine hybrid, the printing press and printer-operator, as both greater than the sum of its parts as well as an extension of the human body as a literate body, a print-artifact making body. Chapter 4 articulates this materialist rhetoric for the printer as press as well as the press as collaborating artifact for literate co-creation.

CHAPTER 4

In *Meeting the Universe Halfway*, Karen Barad argues that “*Reality is an ongoing dynamic of intra-activity*” and that “what is being described by our epistemic practices is not nature itself but *our intra-activity as part of nature*” (206-07). In other words, observable objects, agents, and actions, like those discussed in the previous chapter, are not the core reality of the phenomenon of letterpress composition. These things become observable because of the deeper material intra-actions that make them appear as important parts of that phenomenon. The printer’s type becomes an important component of letterpress composition because of the agential influences that come into being around its material form. Where the piece of type is placed, its orientation, how it is handled by human fingers, and the ways it exists in the world over time are all determined by the negotiation of agential flows, which result from the amalgamation of a host of material influences. These influences might include anything from the hardness of the metal, to the size of the type, to how well the type can be identified by human eyes under certain lighting, to the current market value of the typeface in a human economy. Macro and micro, human and non-human material influences all play some role in creating the observable reality of letterpress composition.

The previous chapter described the material surroundings as well as some parts of the context of printing that drew the researcher’s eye as well as to details the participating printers accentuated and pointed the research towards. While the printers are making autonomous choices and decisions, the press, the type, even their surroundings are made part of the decision-making process, the co-creation of the printing word, artifacts that contribute to the ability to see possible avenues for action and realization of the printer’s desires. Those desires, named *desiderata* later, are opportunities for the printer as autonomous human to encourage direction and expression, which the previous chapter described the tools and contexts for use.

Yet, as I analyzed the results of this study, it eventually became clear that one of the most important takeaways from this materialist approach to studying the human-technology phenomenon is that material realities are fundamentally entangled with and constituted by influences usually thought of as immaterial. Another way to say this is that empirically observable realities can not exist without the non-empirical forces that shape material interactions. During interviews and in other conversations during observation, my participants

consistently characterized their material interactions with the letterpress as motivated by some kind of abstract, immaterial desire. When confronted with the empirical realities of their movements during composition, they would explain these movements in terms of a want, or a vision of how things should be. Here is an example of this attribution of desire from Participant 1, as we discussed the difficulty of using his flatbed press to print on small sheets of paper:

Interviewer: Did you purchase the press knowing this?

P1: Oh yeah.

Interviewer. And knowing that you were mostly going to want to print larger stuff?

P1: Yeah, yeah.

Interviewer: And the reason you don't have a small press to accompany the large one is because you don't print a lot of envelopes.

P1: I don't care about that. It's not what I'm interested in.

Here is clear evidence of this participant's immaterial desires having an impact on the way he physically orders the material environment in which he sets type. He understands that his large, flatbed press is not designed for printing on small pieces of paper, like envelopes, but he "do[esn't] care about that." This articulation of desire is a critical component of the particular phenomenon of letterpress composition which involves Participant 1, because it represents the result of a negotiation between material agencies. Participant 1 recognizes the larger press as exerting some amount of influence on the printing process, particularly in the way it handles smaller sheets of paper, and although he made an effort to acquire the larger press and could have made a similar effort to acquire an additional smaller press, he did not. Thus, his desire (or lack thereof) shaped his response to material agency, which shaped the tools available in his printing space, which in turn shaped the unique phenomenon of his composition practice. This dialectic of influence exemplifies Barad's concept of intra-action perfectly, showing how a particular human-technology relationship is brought into being Through the interplay of material agencies, but, critically, it also shows how the coalescence of human desire acts a force which shapes the outcome of these intra-actions in the context of technology use.

This manifestation of human desire is described by Nelson & Stolterman using the term *desiderata*. Writing from the perspective of design theory, they describe *desiderata* as "what we

intend the world to be,” or “the imperative voice of design” (107). In other words, *desiderata* is a vision of how the world should be or how the world can be from the perspective of a human who is arranging materialities into some kind of purposeful design. For Nelson & Stolterman, *desiderata* provide both a motivation and the end goals for a given design and can be influenced by many different human concerns such as aesthetics, ethics, and reason (107). In this chapter, I use this concept to describe the motivations or desires pointed to by my participants when describing the observable actions of their composition practices. These desires are co-constitutive with the intra-actions that make up these practices; the intra-actions bring *desiderata* into being through their indeterminate, lively nature, and *desiderata* make intra-actions recognizable turning them into negotiation moments where possible futures are translated into empirical realities.

Desire to Use the Technology

This first *desiderata*, The desire to use the technology, is so basic to my participants’ technology use that I almost decided not to include it in this analysis section. Nothing happens in letterpress composition unless my human participants decide to use the technology. Tracing the influences that might result in my participants choosing to use the technology in the first place, goes beyond the scope of this study, but clearly with each of my participants a desire to use the technology eventually coalesced in a strong enough form to lead to engagement with the technology and eventual letterpress composition action. It is likely that this desire is somewhat unique in comparison to many other writing technologies currently available, as letterpress technology is no longer used for mainstream writing purposes. Regardless of how this desire materialized, it seems impossible for letterpress composition to exist as a phenomenon without some form of desire or motivation to use the technology.

I mentioned that I almost did not include this desire in The list of *desiderata* pointed to in the study because nearly every intro-action observed could be traced back to this basic motivation. However, during data analysis identified certain intra-actions that were best explained—or perhaps only explained—as resulting from this *desiderata*. Simply put, this category of intra-action involved agential negotiations surrounding the basic functions of the technology. Technology use always requires some amount of effort from the human body

involved, and that effort creates intra-active moments where material agencies engage in the creation of possible futures.

A particularly salient example of this negotiation is an action I that occurred in the composition processes of both Participant 2 and Participant 3. During observation, I noticed these participants using a trick I had developed in my own typesetting of removing thin spacing material from a line of type using another piece of spacing material. The spaces are smaller and thinner than typical type pieces and it is difficult to grab them with human fingers, especially when a space has already been placed in a line between the larger pieces of type. In both cases, the participant would grip a thin piece spacing material between two fingers and use it to prod a different piece of spacing material already nestled between words in the composition stick. The participant would prod the second piece of spacing material until it fell down and out off the line of type. The piece of fallen spacing material could then be replaced with the peace used to do the aforementioned prodding. Here are selections from the interview transcripts where I discuss this interaction with participants:

From Participant 3:

Interviewer: So you can see you're kind of poking the line with some spaces.

P3: I was poking the line with some spaces. And here I'm justifying. So the type right here wasn't on its foot. It was at an angle and I was trying to line it up, trying to get it so that I could put it in so that I could put a space at the end.

From Participant 2:

P2: But when you're doing a composition, it's easier to set it down, then take the space you're going to put in--now you've got the line there--and you find the space you want to replace and you catch it and flick it down and then you can put your new space in and pull your other space out.[...]

Interviewer: It's interesting that you would mention the flicking technique where you use the new space you want to try to flick out the other one and put it in...

P2: Yeah.

Interviewer: Because that's a trick I developed having never talked to you, so it's interesting...

P2: Well it's difficult to do it any other way. I mean, what are the options?

Interviewer: Trying to grab it with your fingers [laughs]

P2: Which is not going to work. Yeah.

By all accounts, the similar end result of this negotiation was arrived at independently by both participants and myself. The intra-action that brought this negotiation into being was the smallness of the spacing material and the ability of human fingers to grip the spacing material, especially when it is already placed in a line of type. The desiderata that brought this negotiation into being was the desire to use the technology.

Desire for Efficiency

Aside from the basic, fundamental desire to use the technology, the most common and even overarching desiderata identified in the study was the desire for efficiency. In this case, I define efficiency as the optimum intersection of minimum effort and minimum amount of time as experienced/perceived by my participants. Efficiency in this study is really about effort. It's a combination between the amount of time being spent, and the amount of physical exertion or even mental exertion that's being applied. Time and effort intersect at some optimal point. Though efficiency and effort aren't often discussed this way in the field of Technical Writing, effort was the key resource for my participants. They asked themselves, "How much effort can I apply? How much effort am I willing to apply in a given situation?" And in a lot of the negotiation moments--Barad's intra-actions, the moments where material agencies collide or bump into each other--the outcome of that collision was determined by my participants' budgeting effort or determining how much effort they were willing to expend. For example, I will discuss below, an instance when Participant 1 dropped a piece of type on the floor and he had to ask himself, "Am I going to bend down to pick up that piece of type? Or am I just going to leave it on the floor?" These questions are all about effort. Oftentimes, the technology acted against this desire for efficiency, prompting the development of habits and patterns that sought to minimize any disruption the technology might cause during the composition process.

For instance, one of Participant 1's common responses to accidentally skipping a letter was to take letters back out of the stick until he arrived at the spot where the missing letter should have been placed. But instead of placing these letters back into the type case, he would stick them in between the second and third fingers of his left hand, the same hand which was holding the stick. He would then find the letter he had missed in the typecase, place it in the

stick, retrieve the letters he had been holding in his left hand, and place those directly back into the stick. In explaining why he did this, Participant 1 stated,

P1: it's just economy. And I didn't think about doing that. That's not something that I ever thought about doing. It's something that just, slowly over a period of years I started doing, just sort of automatically.

Clearly, the material nature of the type, along with the technology used to store and set it, has played a role in the development of this habit. But the explicit reason Participant 1 gives is that it's more efficient, and this desire for efficiency is much less material in its manifestation than the pieces of metal type he holds between his fingers. This desire for efficiency was by far the most cited motivation participants pointed to as the driving force behind the observable realities of various minute intra-actions.

It is important to note here that participant one is describing a habituated action in terms of this desire for efficiency. The implication here is that over time, Participant 1 subconsciously acquired the habit of temporarily holding type pieces in his left hand (the hand which also holds the composition stick) because taking this action brought his composition process closer to an ideal intersection of minimum effort and minimum time. This suggests that at some point in the past Participant 1 attempted this action for the first time and the resulting reduction of time/effort encouraged him to repeat the action until it became habituated.

Alongside habituated action that increases efficiency, another manifestation of the desire for efficiency occurred when participants described an interaction in terms of assigning effort. A common response from participants when asked about a particular intra-action was to talk about the amount of effort (mental or physical) that the situation required of them. For example, here Participant 2 answers a question about a moment during observation when he dropped a piece of type on the floor and instead of picking it up, left it on the floor for the duration of the observation period (the "casting" he mentions refers to the use of a casting machine to create printer's type):

P2: It happens more because I have carpal tunnel syndrome. My hand is not as agile and good as it used to be so I'm more likely to drop stuff now than when I was 18 years old. So it does happen. In the case of the 18 point type, the Kennerly, I cast that and I can cast more of that. So if I drop a piece there's almost certainly some damage to the piece. So I'm not going to pick it up and put it back into the case. I'm going to melt it down. So I just said, "Well I'll clean it up later." [...] Now I think I dropped one piece of the medieval type and I can't cast that again and it may never be cast again so that type I don't want to throw it back into

a melting pot. So I think that piece I did pick up and used it. But that's the difference. [...] But as I say with this 18 point type, I cast it; I can cast more. There's no point in messing with it. If it hits the floor it's done.

As Participant 2 describes his differing reactions to dropping a piece of type depending on which type he is using, we see him considering the effort required to reach down and pick up a piece of type off the floor. In one case, he is using a type font he cast himself, for which he has the molds and casting equipment to cast more. This type he leaves on the floor ("it's done"). The other type font however, is a vintage font which he cannot reproduce himself, so he did make the effort to pick the piece up off the floor, even considering the piece may have been damaged from the fall. Obviously there are other desires at play here beyond the desire for efficiency, but we can see how the desire for efficiency has an overarching effect on any action that requires effort from the human body.

This negotiation moment also highlights the liveliness and indeterminacy of material intra-actions. In both cases described by the participant, the fundamental intra-action is similar: the participant's fingers attempt to grip and lift a piece of type and it slips out of those fingers and falls to the floor. But the observable action that follows is different depending on which piece of type has been dropped. Intra-activity, as Barad suggests, is not a deterministic playing-out of predictable cause and effect, but an ongoing, active becoming.

Deference to/Imitation of History

The most surprising, and not the least frequent desiderata pointed to in my participants' composition processes was the desire to defer to or imitate letterpress printing's history. A common response to inquiries about particular intra-actions was that this was the way things were supposed to be done, or that the action was an imitation of similar actions which had been taken historically. In response to a question about lighting in his basement, Participant 2 revealed that he usually sets type in his kitchen where the lighting is better, but that he set type in the basement using his sloped-top cabinet because he wanted to present the proper way of typesetting:

Interviewer: You had the two lights hanging there.

P2: Yeah that was bad. [both laugh] I would say that we were there for your benefit, that I wanted to put the case on a type stand like it ought to be...

Interviewer: Ok interesting, go on.

P2: But if I--like you looked at that full page of type--so when I set that, I set it up on the kitchen counter with some books underneath it and at an angle so I could be up here where there was more light and the music was better[...]

Interviewer: Yeah, ok that makes sense.

P2: So I was actually just trying to be more proper by having it on a type case the way it's supposed to be, the actual type case. As opposed to doing something that looks kind of foolish like setting type in your kitchen. [both laugh] Though where I would really set type in this house is I would set it in the kitchen.

We can see here that my presence as observer/researcher changed the material way Participant 2 presented his composition process to me during observation. His desire to present the proper historical method of typesetting superseded other desiderata that would normally move him to set type in his kitchen. This difference to the history of letterpress printing affected the outcome of many different negotiation moments observed in this study.

Another manifestation of this desiderata involved participants pointing to historical practices as being more effective, efficient, and refined than their own. On several occasions, Participants 1 & 3 described a particular action as something they learned from books on typesetting. Both participants stated that they learned how to typeset from a mixture of trial and error and reliance on said books. In both cases, the participants treat the information in these books as something desirable, because it has the potential to increase the effectiveness or efficiency of their own composition practices.

From Participant 3:

P3: [...]really the tricks that I learned have been from the book, *The Practice of Printing* by Robert Polk. That's what gives me the tricks, or the anomalies you saw. I mean most of those anomalies I don't know the right procedure. [...] Those are kind of shortcuts that I've created to make the process easier. But to be honest, I'm very slow in the process and the more I learn from the book, the faster I become. So those people of olden times, like I said they were more resourceful than us. They really streamlined the process for us. We don't need to make it any faster.

From Participant 1:

P1: [...] I've often wondered whether I'm doing some things completely wrong and if, you know, it would be so much easier if I just knew how it's supposed to be done, but who knows. [...]

Of course I studied some books. It's like I was just completely blind. So I studied some old printing manuals and stuff.

Not only are these participants drawing on their own experience trying to imitate historical practice, but they are also suggesting that human-technology intra-actions can be influenced by discursive knowledge-making and knowledge-sharing. They imply that the most effective and efficient solutions to various negotiation moments may have been discovered and shared discursively between typesetters in the past during a time when the technology was mainstream and the number of expert users was much larger. In this instance, my participants' desiderata to imitate historical composition practices grows out of a belief that past practitioners had access to action-knowledge that made their practices more effective and efficient.

Desire for Letter-Level Correctness

The fourth desiderata that emerged from this study is the desire for letter-level correctness. One way in which this desire manifested itself was in participants' efforts to ensure their compositions met an ideal of correct grammar and punctuation. Here Participant 2 answers a question about what efforts he makes to use correct spelling/grammar during typesetting:

P2: [...] But after a while your mindset, if you start out wanting to be accurate, after a while your mindset is that's the way it should be even though you can't say why it should be. You may communicate just [as] well with three different spellings but after a while your mindset is it ought to be right.

Interviewer: Interesting. So we talked about how working with the letterpress takes longer. It takes longer. It takes more effort. So with that in mind, if you set something and then you proof it and you find an error. How likely are you going to go through the work you don't want to go through to fix that error.?

P2: Oh you definitely go back and fix the error. You're not going to let any error go.

This desire for correct grammar and punctuation was very pronounced for all three participants. Multiple intra-actions were negotiated with this desire as a key motivating factor, including proofreading of lines in the composition stick and additional proofreading during the printing process itself.

Another way this desire for letter level correctness emerged was in other instances where participants negotiated intra-actions based on an ideal of correct type piece arrangement not

directly related to English grammar concerns. Participant 3 was observed counting letters on the copy given to him for the first hour of observation. He placed the printed copy on a desk and used a pencil to tally different letter counts in the copy. He was asked why he was counting letters and whether or not this was a common part of his composition practice:

Interviewer: [...] do you always count letters?

P3: It depends on the size of my copy. Here at the park, we don't have a lot of type so if I am worried about not having enough type, I will always count letters. The more common ones. The vowels and the common ones like the 't's and the 'h's and the 'r's. To make sure that before I start I don't need to change anything. Like I said before, it's kind of a changing process, so if I know that I don't have enough letters then I'm going to reword my copy as to make it so that I can have enough letters to use. Or sometimes, like they did in the times of old, I might have to misspell things on purpose.

Although it may seem like Participant 3 is worried about misspelling words, I would argue that the motivation described here is more focused on having the right type pieces in the right places than grammar per se (he even states he will purposefully misspell words if needed). The material reality of Participant 3's printing apparatus is such that compositions are often significantly altered by the amount of available type. This has led to the habituation of an action that is not present in the composition processes of Participant 1 & 2: counting letters before beginning to set type. The desiderata that brings this action into existence is the desire for letter-level correctness.

As a final note to this desiderata, two of my participants talked at length about their perception of the effect engagement with letterpress technology has had on their general attitudes toward correctness in writing. Participants 2 & 3 both offered explanations for why they thought using the letterpress influenced their desire for letter-level correctness when they wrote with other, non-letterpress technologies. While these explanations cannot be verified with the current study design, they do align with common assertions made by theorists about how non-human material agencies participate in the shaping of human consciousness and action. They also show how this research design can reveal new avenues for inquiry by drawing on the deep experience of expert technology users.

From Participant 3:

Interviewer: You've been sort of alluding to a difference between your writing accuracy or however you want to look at that before you started typesetting and after you started typesetting.

P3: Yes.

Interviewer: Could you describe that difference, like what you see that as being?

P3: Before I started typesetting, I still had trouble with people's spelling--they didn't care. And if the computer didn't correct them, so what. But I was also guilty of it.

Interviewer: So this was something that still kind of bothered you even before you . . .

P3: Yes. And when I started typesetting I realized even more why so. But for example before typesetting, one of the most common things I would do is I wouldn't capitalize 'i's because when you do it on the computer it would capitalize it for you without even having to click anything, [snaps finger], it just does it for you. I started typesetting and I realized, okay, I don't need to grab this normal 'i', I need to grab the capital 'I'. It started to make me realize what I was doing with typing, especially on my phone because my phone doesn't automatically capitalize it, whereas my computer does. So occasionally I'll catch myself on the phone and go, "Wait." And I'll have to go back and re-capitalize an 'i'. But, I believe that's really because I'm more concerned about my accuracy since I started typesetting.

From Participant 2:

P2: [...] So because you're doing that, because your eye is looking into the type to pick out the direction of the nicks and what piece of type you're going to grab next, because you're doing that, when you look at the copy you have to memorize two or three words. You know "phytoplankton" [...] I did look at it twice [laughs] to make sure. I set the 'phyto' part [...] But if you do that, if you start doing that and you're successful at it, then you're becoming a good speller because it now matters to you whether you're spelling the words right because you're gonna have to spend a lot more time afterwards if you spell them wrong. Or you're going to have to set type a lot slower. So the incentive is to be a good speller so you can look at the words, know what you're setting and now set it without having to look back to see how the word is spelled.

Here, Participant 3 claims letterpress technology's lack of an autocorrect function has moved him to be more intentional about his letter choices with other technologies, suggesting that habits of thought or even deeper structures of ontology and identity can be created or molded through engagement with technology. Participant 2, on the other hand, describes the influence of letterpress technology in terms of a detailed sequence of repeated material intra-actions that

incentivizes spelling memorization over time. As mentioned above, the research design for this study is not built to attempt to verify the influence of technology use on general writing practices, but these comments do line up with new materialist thinking and point to avenues for further research.

Aesthetics

The fifth desiderata emergent in this study is the desire to compose type in a manner that will produce an aesthetically pleasing printed artifact. This desire goes beyond wanting letter-level correctness and adds a yearning for beauty in material form. In many cases, this aesthetic ideal involved “clean” printing, where ink is transferred to the page only from the intended surfaces of the raised letterforms (or the surfaces of other, non-letter elements). If ink is shown on the page in a place outside these intended contact surfaces, the aesthetic value of the printed artifact is typically negatively affected. In the following excerpt Participant 2 describes the phenomenon of “workups”: pieces of spacing material that rise out of their intended position during printing, eventually reaching the same height as the surrounding type pieces, causing a small line to print between words.

P1: The only problem that you can get into if it's too loose--or too tight for that matter--is that you can get workups if there's a line that's too loose or too tight. What happens is, as the cylinder goes across the type, what's happening is it's going to push it back and forth, back and forth like this, and as it does that the space in between the words is gonna slowly go [inching-up sound] and the next thing you know, it's printing. You have this little black line between the words. So, you still have to have it pretty uniform, or else you'll get workups and workups are terrible.

Participant 2's assertion that “workups are terrible” evidences a motivating desiderata that seeks an aesthetic ideal. This desire influences the outcome of intra-actions with type pieces which, if not snugly secured before printing, will move during printing, causing spacing material to work its way up to printing height, which then causes a thin line to appear on the page between words. Over time Participant 2 has learned to anticipate the material agency of the type, predicting how it will act under certain conditions.

Desire to Communicate

The final desiderata evident in this study was the desire to communicate. As a writing teacher, this is the desiderata I most commonly address with my students, but this was not the most common desire articulated by my participants. To me this suggests that letterpress composition, in the context in which it is practiced by my participants, is less rhetorically focused than the writing produced by more mainstream writing technologies. Or, perhaps the letterpress is by nature more a translation technology than a true writing technology, since typesetters usually work from a pre-typed or pre-written copy. Regardless of how the letterpress compares to other technology, the desire to communicate did manifest itself through a few of the intra-actions identified in this study. After being asked about typical disruptions to his observed typesetting pattern, Participant 2 describes how typesetting his own work involves more disruption as he thinks about the rhetorical characteristics of the composition.

Interviewer: So we have a couple of instances here of things that might disrupt the rhythm of setting that type. One is if what you need is not in the case in front of you. So, italics, sometimes numerals, depending on if you're using the same typeface or not. Going to another case might be a reason to disrupt that rhythm. Making a mistake, obviously. Are there any other instances you can think of, things that tend to interrupt the...?

P1: Those would be the main ones if I'm setting something that I didn't write. But when I'm setting what I've written, my mind is constantly thinking about, "Does that sound right? Am I saying this right? Did I lose something?" That is very disruptive, because I'm thinking "Eh, I didn't mean that" and I have to stop and think what I want to do differently than what's on the paper.

Here Participant 1 describes actions of revision that we typically associate with the juggling of rhetorical concerns that usually accompanies writing processes. In a similar vein, Participant 2 discusses in the following excerpt how the artifacts produced by different writing technologies carry differing levels of meaningfulness based on how they are composed.

P2: Probably the computer is the one that I use the most often.

Interviewer: And why is that?

P2: Because it's easy and it's quick and you can send it to other people without going to the post office or anything like that. It's just so quick and easy.

Interviewer: Absolutely.

P2: And letterpress is of course the most difficult and the most time consuming. If I want to--and it depends on the impact you want to make and what you want to say. If somebody sends you something nice, you have the choice of sending them an email saying "Thank you that was really nice," or you can take a card and write a message and mail it to them. Well that's a lot more--to me that's a lot more personal and more meaningful. And then if it's something even more special--a friend of mine's having an 80th birthday--I could get a Hallmark card and say "Happy 80th Birthday" and tell them that I love them, or I can go down to the basement and make a big poster that says happy 80th birthday and that takes a lot more time and everything but, I think, shows that you care a lot more as opposed to going to the Hallmark store.

Although Participant 2's considerations of technology and medium are different from Participant 1's concern with word choice, the motivating desire for communication is very similar between the two examples.

Chapter four has presented the five desires, the *desiderata*, that distinguish the printer's tools and context of printing--the print shop--from the inner desires of the printer. By analyzing the transcripts of numerous interviews, the chapter articulates the moments where the desires and impulses to make better texts on the part of the printers come through. These expressive wants, the inner craving to accomplish something, does not take away the partnership between printer-machine and printer-human, but accentuates the important place of each expression of desire. These desiderata--the desire to use the letterpress technology, to use the technology effectively and efficiently, to continue and participate in a long typesetting and printing history, a desire to realize accuracy and correctness, to reflect aesthetic preferences, and overall, a desire to communicate at many levels using type all represent cravings the printers, the humans, convey during extended interviews. On no occasion did a type box, font, or counterweight express concerns, ideas, or express even the simplest of messages, let alone articulate any desires.

In the final chapter, the conclusion, the argument is summarized. I also include examples of print projects undertaken with students I have worked with and practical outcomes developed in working through these co-creative processes with students and obsolete print technologies with implications for future research.

CHAPTER 5

In this chapter I would like to provide some concluding thoughts about the implications of this study and the connections with other materialist concerns it encourages. If the reader recalls the discussion of the double consonant, the double-g, that upset our exemplar typesetter in the opening of the dissertation, the visual block and break the gg in words like juggler and mugger and logger made on the page in his particular typeface made the printer pause, made him see a large area of black ink, a black hole on the page, that he found displeasing, discomfiting even. He revealed an intimacy and engagement with his technologies, his processes, as well as his printed product, and he simply demanded something beyond accuracy or correctness. His was an aesthetic reach: he wanted his printed page to be *beautiful* as well as accurate: correctness was a necessary but insufficient goal, and he was driven by this demand for accuracy and for aesthetic pleasure derived from the finished printed product. As a human being, he *wanted*, and was *driven*, to beauty with palpable *pride*. It is this desire, far beyond letter-level correctness, but deriving visual ecstasy from the printed page that machine learning and AI has a long road to travel and calls attention to the purpose for this study: the attention paid to the human agent in the process of setting type for printing physical pages. Compare this aesthetic engagement with the economics of working with obsolete printing technology.

In 1995 when Sattler and his partners decided to purchase a five color offset Komori press, Sattler describes the purchase as “a huge deal.” Not only did it cost \$660,000--much more than any of the Heidelbergs--but it could print five color jobs in a single run, in perfect register. In owning this press, LPC became, according to Sattler, the only printing operation between Indianapolis and Chicago with a full color press. Because of this, they were able to solicit print jobs from all of central Indiana and even had other printing businesses outsourcing work to them. Although the LPC pressmen were initially skeptical about the prospect of abandoning the Heidelberg brand, after using the Komori for a little while, “[t]hey loved it. They really did. It didn’t take them long to say, ‘You know, this was the right thing to do’” (Sattler). At this point, the kind of print work done by LPC was much different from the forms and ledgers that had been the staple of their early business model. Although they still printed letterheads and custom envelopes, they worked more and more in display printing: posters, brochures, banners, programs. Up until the economic recession of 2008, the Komori press era marked the height of

quality and geographic reach in LPC's history. That investment decision, whether it worked economically or not, was based on their desire, and they acted as autonomous agents in acquiring the expensive press.

He describes the end of major offset printing at LPC in 2011 --a process which involved selling the Komori press--Sattler makes a comment about how he felt on the day a truck showed up to take the press away.

One of the most depressing days of my life was the day--it had been sold, we had sold it . . . these guys coming in and disconnecting the whole thing. Very sad, you know? I was gone, I came back, and I went around the corner and here's this flatbed truck out in the middle of the street there. They have to take it out in pieces because it's so big, and there's the Komori press with a tarp pulled over it. . . . We bought that brand new. I remember being *scared to death* buying something that expensive. In small business--I assume you know this--you personally guarantee these loans. Personally. If you go down the tube, they're coming after your house. That doesn't happen in big business. Nobody personally guarantees anything, but in small business you do if you want to do it. At least, we had to.

Struck by this somewhat heartfelt description of loss, I asked him why he felt these feelings "about a machine." His response was

Because, it's like buying a house. It's like birthing a child or having a dog. You have a relationship with them. That Komori press--all the equipment here, but mostly that one--was high risk. It's like, 'We're going to get a dog,' and then the dog dies. You know what I mean? That press was a good friend to me and everybody else here. It made us a lot of money It allowed us to do things nobody else could do. It always did its 'best.' It never failed us. We've had pieces of equipment here where it's like, 'Get that piece of crap out of here. Kick it out the door.' But not that press, because it was not black [like the Heidelberg], it was white or cream colored, and it symbolized what we as owners--I had two other owners at the time--we gambled. We sat right here and said, 'Let's do it. *Six hundred thousand dollars*. Let's just do it.' I was younger then and more risky and we did it, and it worked and it ran well and we made money. There were years where we made, individually, pretty good money. So it was good to us. And the day that we had to send it off to the dog pound--which is in a sense what happened--was very sad. It was the end of the good times with that heckuva press, the Komori.

Here Sattler claims that his emotional reaction to watching the press go grew out of the capital invested and the risk assumed in acquiring it. He and his partners had "gambled" on it, assuming full responsibility for its cost and future productivity.

While the material and emotional investment in the Komori press is certainly an important factor--and probably the most important factor--in Sattler's nostalgia, there are other "lines of flight" present in his response (Deleuze & Guattari 4). First, it's notable that Sattler consistently compares the press to a beloved pet dog, or, in another part of the interview, to an "old truck." For him, the press, like a dog, required a certain amount of commitment and care, and he seems to suggest that it provided a certain kind of companionship. When he mentions that the Komori was a different color from the Heidelberg presses, he does so in a way that highlights the press's physical presence in the everyday operations of LPC. The fact that it was a different color signified a shift in both Sattler's personal identity and the identity of the company as a whole.

While not all of these terms carry over to Sattler's dog metaphor, many do, and the Komori press in particular fits the description of a loyal, disciplined old servant in this context. If LPC is a close-knit system or actor network made up of owners, secretaries, foremen, press operators, janitors, bindery workers, typesetters, printing presses, paper cutters, binding machines, paper, ink, staples, computers, and a host of valent economic, political, and cultural forces, then the Komori press can certainly be seen as part of the family.

While I was conducting the research, I was paying attention to the processes of printing, the aspects that are the hallmarks of obsolete printing processes. But in many ways the technology was acting as a partner in the process--something that the human worked with, a partner, developing a relationship, and the human agent experiences an extension of their own limbs through this partnership, developing attachments and feelings with the machine partner.

The stories I include here are, like the stories I tell my students, about what happens when one engages deeply with these technological artifacts and become immersed in becoming a journeyman printer, a capable printer. The feelings one experiences--the feeling of loss when giving up a machine, the feeling of safety and joy when you are using (part of) a human-machine hybrid, the feeling of giving of oneself when one prints a poster or card for a loved one or colleague--are real feelings, even if the machine doesn't exactly reciprocate. Not exactly, but it does give back in its own way. This is what I want to bring into the classroom, and to help students explore their own affections (and affectations) in working with their handheld computers, laptops, and other digital devices: these responses are human responses to human-machine co-creation and not limited to the digital.

The methods employed are not designed to follow the emotional dimensions, but these are rich opportunities for future research in literacy studies.

Pedagogical Implications/Applications

There are strong pedagogical implications for this research. When my participants describe the technology acting back on their desires, or when they describe desires being created or amplified through material engagement, they point to ways in which their engagement with letterpress technology modifies and recreates their writerly identity. This is an important idea for teaching, because if the technology acts in ways that are even moderately predictable, then we can get a general sense of how a certain kind of technology would shape and inspire the writers who use it, and technology could be used as pedagogy to teach or encourage particular ways of being a writer.

I have explored this idea of technology-as-pedagogy by using letterpress printing in my own teaching. Drawing from the nascent results of my research (and from my own experience with letterpress), I hoped that writing with the letterpress would encourage my students to pay more attention to letter-level detail, spend more care/effort on page design and aesthetic concerns, and develop a kind of hands-on knowledge of a crucial part of the history of writing technology. While it would be difficult to prove that these outcomes were realized for students, I and my students found a great deal of anecdotal value from the experience.

My first attempt at using letterpress in the classroom involved technical writing students printing business cards. Each student set their own business card, and Figure 6 is an image of them in the process of setting those business cards:



Figure 6: students setting type for business cards

Figure 7 shows some of the type we used to set the business cards:



Figure 7: printer's type

Figure 8 is a picture of the students using the printing press:



Figure 8: students using a letterpress to print

The most time consuming part of this business card assignment was cutting the paper.
Figure 9 is an image of students cutting out the cards:



Figure 9: students cutting paper for business cards

After the printing process was finished, students had to distribute the type, meaning they had to return the type pieces to their proper locations in different type drawers and cabinets throughout the shop. Figure 10 is an image of that undistributed type at the end of the process:



Figure 10: pied type ready for distributing

My second attempt to use letterpress in the classroom was to have students create, collaboratively as a whole class, a technical description poster. They were tasked with creating a technical description of the press itself, then setting and printing that description using the letterpress. Figure 11 shows the final product they produced:

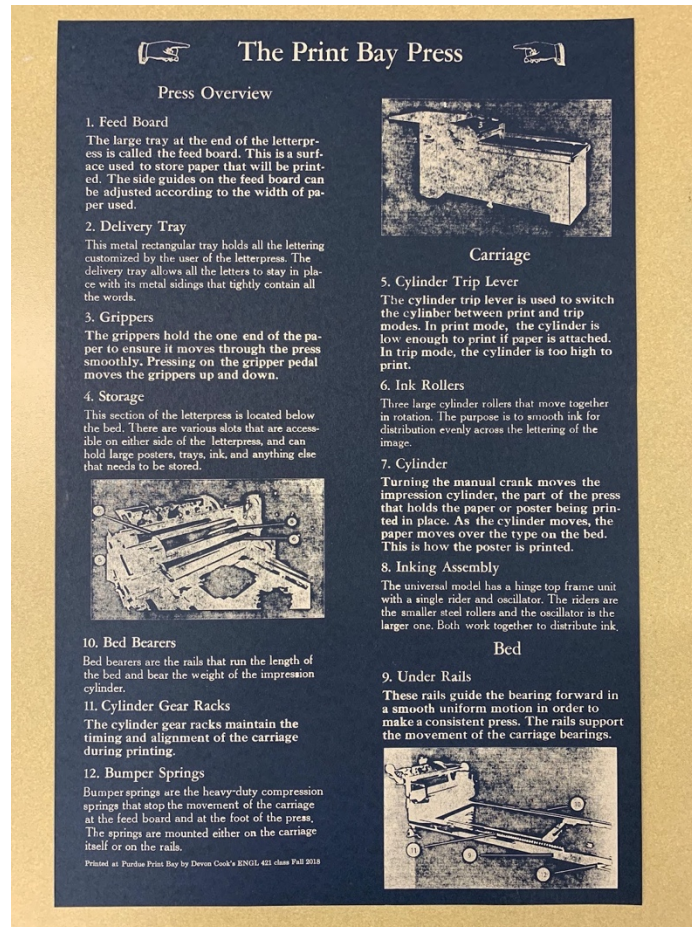


Figure 11: technical description poster created by technical writing students

The second part of this assignment required students to produce their own technical description (individually) using contemporary digital tools like Adobe InDesign. Through the juxtaposition of these two technologies, I hoped students would gain a greater awareness of how their writing experience can change dramatically in productive ways depending on the technology they are engaged with. Overall these experiments with technology-as-pedagogy serve as examples of how this kind of approach could be used in unexpected places and contexts to broaden the educational experience and help students and teachers work toward learning outcomes that might be difficult to achieve otherwise.

Study Boundaries/Limitations

This research is driven by a desire to build knowledge about writing and technology through empirical research. And while the research methods presented here are replicable, this research cannot be used to generalize about letterpress composition for two reasons: 1) the vast number of factors that cannot be controlled for, including educational background, race, socio-economic status, age, and (dis)ability make generalization in the traditional scientific sense impossible, and 2) with only three participants in this study--all three of whom are white males--the study population cannot adequately represent any real-world population.

Even with these limitations in mind, however, it is important to note that the goal of this research is to *point to* and *suggest* ways in which the letterpress might exercise material agency during letterpress composition. Even with a much larger and more diverse participant population, the methodology used in this study will never produce consistent, generalizable results, but it will produce *useful* results. Useful for the design and redesign of writing technologies, and useful for understanding how material influence manifests itself in a given human-technology interaction.

Future Studies

One thing that has become clear over the course of this study is that the material realities of letterpress composition are observable in the traditional sense (the 5 human senses), while many if not most of the material realities of digital composition are not. Material action tracking in a digital context would need to find ways of observing material intra-actions that go beyond what can be observed with human senses alone.

Reflections on Technology

Although decentering human agency is an important step, the empirical evidence in this study points to a significant imbalance between human agencies (those associated with and enacted by human bodies) and those of non-human materialities. If non-human agency is butterfly wings shifting air currents in minute but significant ways, then human agency is the detonation of an atomic bomb, or the erasure of another species. [The agential flows that pass through human bodies are powerful because . . .]

Human agency is particularly powerful in the context of technology, where non-human material agencies are modified, co-opted, and adopted to fit the *desiderata* of human bodies. These same bodies can continue to exert agential force on non-human materials over time, reshaping those materials to better fit the materialities of the bodies themselves. This reflective and recursive shaping creates a powerful cycle where the changing material conditions of technology use feed back into the material form of that technology. In other words, powerful human agencies rapidly change the physical form and organization of the tools they interact with, thus modifying the non-human agencies manifest in those tools, which prompts another shaping action from powerful human agencies, etc.

When we acknowledge the empirically verifiable force of human agency in a material sense, the subject/object divide that dominates human thinking becomes less about a metaphysical separation between the human and non-human and more about an imbalance of power.

Conclusions

Material agencies can be identified, but in this case they only emerged in relation to human desires as manifested through the bodies of my participants. As mentioned previously, with letterpress technology, no observable material action takes place without the intervention of a human agent. Because of this, my participants' *desiderata* emerged as the driving force behind the composition process. However, in digital contexts, writing technologies already exist which are much more materially proactive than letterpress technology. Thus, although distributed agencies *can* be observed empirically, the manifestation of those agencies in empirical studies like this one may produce differently structured conceptual results from this study. At the dawn of artificial intelligence, it already seems clear that the writing practices of the future will be driven by very different flows of influence and desire and that those forces will be increasingly less driven by the individual writing subject.

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APPENDIX A. INTERVIEW TRANSCRIPTS

Interview 1

Devon Cook: So, as we've already discussed, one of the reasons why I came today is because I'm really interested to learn about the technologies people use to write, and how those technologies effect their writing process or make writing different. So, the way I'm thinking about technologies is I'm thinking--I'm kind of making an arbitrary distinction--anything that is not part of your biological body. So, we could get into semantics and say that your eyeglasses are part of the technology, but I'm trying to keep it simple, and hopefully that can work as a good definition for what we're doing with technology. So my first question is, I'm assuming that typesetting is one of several methods you would use to write. What different technologies or implements do you use to write?

Participant 1: Well I don't write long hand. I just, my handwriting's always been terrible and all through school I would print because you can't read my long hand writing. So I don't do that. But I'm a really good typist and, of course, word processing. So, word processing, typing, and typesetting would be what I use.

Devon Cook: Do you ever use a pen or a pencil for anything like, say, a journal or anything like that?

Participant 1: I don't. Now, I will make corrections--editing and those kinds of things with a pencil or pen sometimes, but that's only on the manuscript that's already typed or word-processed.

Devon Cook: Do you ever . . . So, mostly word processing with, say, a computer . . .

Participant 1: At this point, yes.

Devon Cook: And the typesetting. So if you were, when you write letters and things like that you would type them up.

Participant 1: I'll type them, yeah. For that sort of thing I usually do a typewriter instead of word processing.

Devon Cook: Even now? You use a typewriter.

Participant 1: Oh yeah. Yeah. It's not that I'm a Luddite, but I do like, you know I'm very used to using typewriters. I will do that.

Devon Cook: Which of these writing technologies do you think you're the most familiar with?

Participant 1: Well probably using the typewriter, but the word processing, now, is what I would usually write, if I'm going to write a story or write a foreword or afterword for one of my books or one of those things. Normally I'm going to do that on a computer.

Devon Cook: And I noticed that--we might talk about this a little more in a sec, but--the rough draft, the "something" copy--I forget what it's called--the rough draft you use for setting the type, you type that first on the computer and then print that off.

Participant 1: Yes.

Devon Cook: But you might make notes on it with a pencil.

Participant 1: Yeah. And one of the things I do, which makes it a little weird is, I'll often don't write down the changes I'm making on that piece of paper. I'm just doing that in the stick. So, there's no record, other than that, of the changes that I've made. So, if you look at one of my printed-out manuscripts and compare it to the printed page, there's numerous changes that will not be reflected on that manuscript. I just don't bother to take out a word or change--I'll just make that up as I'm going while I'm setting.

Devon Cook: Yeah, we're going to get a little bit more into that because that's one of the things that I think is really important about this whole process. So, one more question just about your general writing use. How often do you--how do I say this--what percentage of your writing is solely digital at this point, meaning you never print it off? So, I'm assuming it's quite a bit with emails and all of these things.

Participant 1: And my catalogues. My booksellers catalogues that I send out, which I often--for many years I've been writing a little sketch at the beginning of these things. I don't know if I've done any since you got any of my catalogues.

Devon Cook: Yeah, I saw one.

Participant 1: And those never get printed out. There's a publisher in Boston, David Goding who's wanting me to do a collection of those things. I'm probably not going to bother to do it. It's just more trouble--I just don't feel like doing it. He wants to publish this book of these things, and I'm like, if somebody else wants to collect them that's fine, but I don't feel like doing it.

Devon Cook: So would you say most of your writing is in a digital form at this point as far as pure words?

Participant 1: Yeah, most of it.

Devon Cook: When you do use--so I've seen the equipment you have for typesetting and things. When you use a computer, do you just have the one computer with the keyboard and a mouse?

Participant 1: Yep.

Devon Cook: Any tablets that you'd use to write?

Participant 1: No.

Devon Cook: None of that fancy shmancy . . .

Participant 1: No, I need a full-size keyboard to work, and I'm a very fast typist. But I just can't deal with these little squeezed-in keyboards and certainly not on a tablet, and certainly not on a phone. I'm never in a million years--I'm too clumsy. But I showed you that laundry book, that great big thing--I had to type that entire thing out on a laptop and it nearly drove me crazy because the keyboard a little smaller. And I just [mimics sound of frustration]--it took me a year to type that thing out.

Devon Cook: I'm assuming because you had to visit a special collections.

Participant 1: Yeah, I had to go down there and do it on sight, which was [whew] handwritten and very difficult to decipher.

Devon Cook: That's quite the project. All right, so assuming that typesetting is something that you're fairly familiar with by now, let's talk about some of the specifics in how you use that technology. So, the first thing that I wanted to discuss is just some of the things that I observed on the recording. The very first thing that I noticed is that it was surprisingly uneventful. I could use the word boring, but this kind of thing doesn't bore me so that might not be right.

Participant 1: Doesn't bore me!

Devon Cook: So, I think a good example is this very last section of the video. At this point, it seemed like you were in the zone, so to speak. Things were going very smoothly. [Pauses while video plays] So for those last four minutes, that's pretty much how it goes. Now, I noticed, as you went along that there was a very noticeable rhythm to the way that you were setting the type. So let me see if I can describe quickly what I observed. The way I saw it, it went something like this. Your eyes would be the whole time going back and forth to the proof, or the rough draft, copy--they'd be going back and forth to that intermittently and you'd reach down for a piece of type, lift that type up, and I noticed most of the time, you'd very briefly for maybe half a second just glance at it. Can you tell me what's . . . before you put it in the stick . . .

Participant 1: I'm looking for the nick. At the bottom edge, a piece of type, the part that prints is called the face. The sides then are the shoulder, the lower, you know, and then on the shaft of it, on the bottom edge of the shaft there's a nick and that tells you whether it's upside down, which orientation it needs to be. So, you're constantly watching the nicks to make sure that the nicks are all--you're seeing the nicks. Because if you don't see the nick then you need to turn it over.

Devon Cook: So--and I know because I've done it before--all those nicks line up, so it's very easy in that way for you to tell if your letter's oriented correctly.

Participant 1: Yes, and also whether you have a wrong font in there and something's mixed in, because the nick will often be in a different place. If you see a nick in a different place, that means that it's probably from a different font of type and you need to replace it. In my case, that doesn't happen very often because I'm pretty careful about keeping my cases clean, but in a lot of places they don't keep their cases very clean and you need to really watch that.

Devon Cook: So you would just glance really quickly, so that would be for seeing the nick on the bottom of the piece of type. And then you would place that in the composition stick--you'd kind of drop it in. And then there would be a little bit of shuffling with the left hand. Can you explain

to me what's going on there? And also, while we're at it, now would be the time to have the conversation about what the left hand does in general throughout this process.

Participant 1: Well, you're holding your thumb on the edge of the type as you work your way up, so you constantly sort of moving your hand up on the stick to keep your thumb on the same place on each piece of type. And that's to keep it from falling around. You have to have a particular amount of pressure so that the type--you're not knocking it out.

Devon Cook: You don't want it to buckle and pop out.

Participant 1: Yes, but you do want it to be firmly held in place. The other thing that the left hand's constantly doing--you may not have picked this up--but sometimes, let's say I'm setting the word "that" and I pick up the "t" and I drop in the "t" and my mind is jumping ahead and instead of the "h" I'll pick up the "a." Well I don't want to--this is just sort of for economy's sake--I've already got it here about to drop it into the stick, but I know it's in the wrong place. So I'll set it in such a way that I'll hold it--leave a space there and hold it with that thumb so that I can drop the "h" in before the "a." Sometimes, I'll pick up a thing and it's too far, like three or four, in which case I'll stick it between these two fingers on the stick and hold it while I'm setting and then grab it. So, it's just an economy. And I didn't think about doing that. That's not something that I ever thought about doing. It something that just, slowly over a period of years I started doing, just sort of automatically. The other thing that the left hand does is, when you're done, you have to get the type on it's feet--it's called getting the type on it's feet--because it will have a tendency to be slightly leaning by the time you have one line full. And so you lift this whole line with your thumb and . . .

Devon Cook: And I saw that motion several times.

Participant 1: Yeah, drop it back down. Then as I'm fitting it tight, this thumb is constantly pushing back and forth to see how much space I need. And after many years, I can tell I need to add a 1-point brass, thin space, or maybe just a 1/2-point copper thin space. So the left hand is sort of monitoring, so to speak, the tightness, how the line is fitting into the stick.

Devon Cook: I noticed that oftentimes right after you finished a line, I'd see that left thumb slide up and down.

Participant 1: Part of that, again, is making sure the type's on its feet, because sometimes it'll feel tight, but it's not tight, because the type's still not quite on its feet. So I'll do that, I'll push up on the ends several times to make sure, and I may have to add more space.

Devon Cook: This brings me to another question: So knowing if the type is fitting--you know if the line is the correct width--that's sort of a matter of feel with that left hand. And you'll use that thumb to kind of feel how tightly packed in the pieces are . . .

Participant 1: Right, if there's any give to it. Once it's done, I'm pushing back and forth on the top to see if there's any give.

Devon Cook: Now, I've done this before so I know that there's a difference between having it nice, snug and tight, and having it packed where it's too tight. And I assume that sort of thing is done--determining that is kind of done by feel as well.

Participant 1: Yeah. And it's just, over a period of time you gain a sense of how it's supposed to feel.

Devon Cook: So it's very intuitive.

Participant 1: Yeah. And I'm assuming that it's individual too, that there may be people--first off, for my type of press, it's not quite as important that the lines are perfect. For a platen press, where you're going to lock the type into a chase, and then carry it around, that's important to really get it tight and perfect. Because otherwise, you're going to have stuff falling out, which is a disaster. Now, the way a lot of people accommodate for that, is they use what's called reglet, which are thin strips of wood that sit at the end of each line of type, and then when you tighten it with a quoin, the wood will adjust a little bit. I don't use any wood. I use only steel furniture. But with a flatbed press, I don't need to worry about that. The only problem that you can get into if it's too loose-or too tight for that matter--is that you can get workups if there's a line that's too loose or too tight. What happens is, as the cylinder goes across the type, what's happening is it's going to push it back and forth, back and forth like this, and as it does that the space in between the words is gonna slowly go [inching-up sound] and the next thing you know, it's printing. You have this little black line between the words. So, you still have to have it pretty uniform, or else you'll get workups and workups are terrible. I don't get workups, basically. Of course, it also has to do with how the type is laid out on the press. If the lines of type are perpendicular to the cylinder, you're more likely to get workups than if the lines of type are parallel to the cylinder. Because, if it's parallel to the cylinder, you're not going to have that movement, whereas if it's perpendicular to the cylinder, you're more likely to get . . .

Devon Cook: A lot of like this. That makes sense. So a lot of what you do in setting the type is you set it, hopefully, in a way where it's going to be ready for the press. You're not going to have workups, you're not going to have problems securing it with the furniture or anything like that.

Participant 1: Right.

Devon Cook: So, one more question while we're talking about the way that left hand has been adjusting that line. In the experience I had in setting type, one of the hardest things at the start was justifying type, say in columns or whatever, where you want, more or less, an equal space between each word. I found myself spending a lot of time doing calculations in my head of, "Oh, I have this much space at the end of the line. How much do I need to add, and how can I lengthen that out." Can you describe for me the process that you go through to evenly space those words for a justified line?

Participant 1: It really depends. First off, you'll notice in the book that I'm doing now, I'm not justifying lines. I have a ragged right. The reason is because I have a fairly narrow measure, and on a 14-point type to have a measure that narrow which is only 24 picas, if I try to justify that I'm going to have all kinds of problems with. . .

Devon Cook: . . . Hyphenation . . .

Participant 1: Too much hyphenation, too many lines where I have to have the words too close together or too far apart. On a lot of the book, of course, where I have a better relationship between the size of the type and the length of the line, I do justify. I just happened to not be justifying in this book. It depends. You get a sense after a while of how much space you have. If it's really close, let's say you have six or eight points left there. You can pretty easily say, "Well I know there are fifteen words on the line, I have six, eight points, I'm going to use half-point coppers." If it's a little bit longer and I'm not absolutely sure, I'll simply count how many word spaces I have, then sort of eyeball that much space and say, "Ok, well that's going to take a point at . . . " Sometimes it's like, "Oh, I have a lot of space, I'm going to have to put a nut in there." A nut is an n-quad, which is half of an m-quad. Printers use the words "nut" and "mutton" for that to distinguish, because it's "n" and "m". When you're talking, it's too hard to distinguish: "Did he say 'n' or did he say 'm'?"

Devon Cook: Interesting, yeah.

Participant 1: So they use the words "nut" and "mutton." Sometimes I use nuts if it's obvious that there's a lot of space I'm going to have to add. And I never--if there's more than a nut and maybe a point, then I'm going to have to scratch my head over what I'm going to do. I've been known to go back and reset several lines to avoid a problem where there's no way around having a huge space between the words, and I just don't want to do that. It doesn't happen very often.

Devon Cook: But every once in a while it's worth it in terms of how it's going to read and the design and how the line's going to look. It's worth it to go back and reset a few lines.

Participant 1: Yeah, yeah. Because really widely spaced--like if you have a whole mutton, that really messes things up. It jumps at you. What you don't want is things jumping at you from the page. So on the one hand, you look at a page, you want it to be uniform. and anytime there's anything that isn't uniform, that's bad, because it's sort of like spots. The first type I ever bought was a type called Deep Dean. This was back in 1979. Deep Dean was a typeface that was designed by Fred Goudy, and for some reason--I don't know why--the "g", the lowercase "g", was a little heavy. And anytime that you had two "g"s in a row . . .

Devon Cook: Like "juggling" . . .

Participant 1: Yeah, you'd have this dark spot show up on the page that would just jump out at me because there was too much black there. So you would have a page that would have these things that would draw your attention. You don't want anything to draw your attention away from your reading of the text. If something like that distracts you--a river--do you know what a river is?

Devon Cook: I do, yep.

Participant 1: If you get a river, that's very distracting and a very bad thing to have. You get rivers if you have too wide word spacing. If you can stay within three-to-the-em spaces or less, you basically don't get rivers. You just don't get them. It's when you find yourself putting a lot of space between words, line after line, that's when you get rivers.

Devon Cook: Very, very interesting. So, in other words, that spacing, over time, even though it is kind of like a math problem to justify a line, even that kind of becomes a little more intuitive over time. You can kind of eyeball it and say, "Well I'll need about these spaces."

Participant 1: Yep. I'll get half to two-thirds of the way through each line and I'm already saying, "Ok, am I going to have a problem here." I'm looking ahead and I'm saying, "Ok, well . . ." You hate these long words that are just one syllable. There the ones that kill you, because you can't hyphenate them. So, you're always watching for that sort of thing ahead.

Devon Cook: Absolutely. So, for instance, we have right here in the part of the story you were setting, you have a hyphenated "believe me." So you would have been sort of eyeing that, preparing . . . Do you remember the decision to hyphenate this?

Participant 1: Not really, but what I would have been doing is I would see that I'm coming up on a word that, if I try to fit that onto that line, I'm going to have almost no spacing between those words for that to fit on the line. So, I knew head of time I was going to have to hyphenate it. I hate to hyphenate a word with only two letters on one line, but there was just way around it because that syllable has so many letters in it. You like long words that have two-letter syllables. "Re-cip-ro-cate." That's easy, something like that.

Devon Cook: But dropping the whole "believe" down to the next line just makes that worse.

Participant 1: Then this line would have been so short that it would catch your attention. This line is probably a little too short, but I couldn't get "stringing" onto there. I couldn't get "string" in there without . . .

Devon Cook: And you have to get "string" and a dash--that's the problem.

Participant 1: Mmhm. String and a hyphen. Actually, technically, that is a dash. [pointing] That is a hyphen. That is a dash.

Devon Cook: There you go.

Participant 1: So, returning to the rhythm that I noticed, you've just finished a line, you smooth it out with your hand, and then I noticed you'll usually turn that toward the light so that it's really illuminated--and in your case you'd drop your glasses. You'd just take a really close look at it and as far as I can tell, you'd read the whole line.

Participant 1: Yeah.

Devon Cook: What's the purpose behind that? What's going on there?

Participant 1: It's just proofreading, just to identify any errors, typographical errors, that have gotten in there and then you correct the typographical errors. And you do that before you justify the line. A lot of people think that's really difficult to read a line of type that way because it's upside down and backwards, but actually you do it for a little while and you'll discover how easy it is, actually.

Devon Cook: I certainly found that to be the case. So then you'd take that and then I noticed you'd usually take a piece of leading, or however much leading you needed, and you'd put that on top to secure that line and you'd take it over to galley, and then quickly slide it out and into place. And then I noticed that you usually had an extra piece of leading from the previous switch and you'd pull that out real quick and then slide it all together. What's going on with that extra piece of leading?

Participant 1: Well, when you set you start out with a slug. Well, I usually start out with a 6-point slug. Then each line is separated--in this particular case, for instance--with a 2-point lead between each line. Well, there's a 2-point lead at the bottom of the final line in the stick. So when I slide that out, let's say the first at the top of the page, I'll dump the stick and what I'll have is a 6-point slug and a 2-point lead at the bottom of the lines I just did. Now I'm going to put another slug in the stick, I'm going to set another four lines, and ones again I'm going to have the 2-point lead there at the bottom. But I already have a 2-point lead here at the bottom of this next one. So when I slide it out, I want to take that 6-point slug out--I don't need to add anything else because I already have a 2-point in there. So I take the 6-point slug and I just use that slug to push it down quickly, and that way you have the 2-point leads between each line.

Devon Cook: Perfect. And then that 6-point slug--I mean it's nice and big and thick, so it's easy to grip and handle and helps keep that . . .

Participant 1: It doesn't give you any wiggle.

Devon Cook: Yeah, it helps keep that type in place.

Participant 1: That's asking for trouble--wiggle. I remember [another letterpress printer] saying, "You know, there's something funny about type. It finds ways to move around that you can't figure out. It does mysterious things."

Devon Cook: A couple of other things I noticed. One is that you seemed--like we discussed before, you'd take that composition stick and you'd just rest it against your stomach. And really, I was watching closely and it never really leaves. It very well stays kind of connected.

Participant 1: Right. And I sway . . .

Devon Cook: Yeah, I noticed kind of a swaying motion.

Participant 1: Yeah, but I don't lift it out.

Devon Cook: A couple of other things . . .

Participant 1: Now, a lot of people don't. A lot of people stand perfectly still and move both arms around as they're setting, but I just don't do it that way.

Devon Cook: Yeah. And because of that, your right arm was very active. So, you were very often reaching near and far with that right hand. It was kind of all over the place while that left hand tended to stay closer to home. The standing. Do you usually stand when you set type?

Participant 1: Oh yeah.

Devon Cook: Have you tried sitting versus standing?

Participant 1: No. I've always stood. For many years at work I would stand. I had a standing desk. I never sat down. I would type standing up. It just gives you more flexibility. You sit down and you're sort of anchored and I don't like to be anchored when I'm doing stuff. People do sit. I'm always astonished to see people sit and set type. I can't imagine. I think they're mostly people who don't do a lot of typesetting. People who set like I do--big books and stuff--they almost always stand. I don't think they ever sit. But people who are just doing little bitsy pieces, they'll sit down in front of a case and they'll pull it out and they'll sit right there and not even take the case out of the cabinet.

Devon Cook: Do you have, just thinking reflective on your own experience, why do you think it's worked out so well for you to stand and why do you think people who do a lot of typesetting tend to stand? Because historically, they did stand. Especially those who set type by hand. Later on you get technology like the linotype where people are sitting. What do you think about the standing?

Participant 1: You just need the mobility to be able to move around and reach. And the other thing is, when you're setting, I may, right in the middle of a line--you saw me have to go to the italic case. Well, sometimes I have to go across the room because my small cap case is somewhere else and I'm going to have a small cap in there. For some reason in this book--I don't know why I decided to do this and I think it was a mistake [laughs]--I decided to use small caps for "ok." In retrospect, I don't like the way it looks very well, but, anyway, the small caps for this typeface is on the other side of the room, so every time I do "ok" I have to walk over there and I don't want to have to get up and get down, get up and get down. So, I think just the mobility, the flexibility that you have standing makes a big difference. And in the olden days, in job printing and stuff, they'd be all over the room. Particularly in the 19th century when they were mixing types on . . .

Devon Cook: Advertisements . . .

Participant 1: Yeah all that stuff. They couldn't possibly sit down and do that.

Devon Cook: Yeah, that makes sense to me. So, the next question I wanted to ask was--so we have this very consistent rhythm that I saw going, and there would be times where that would just go on for ten, fifteen minutes at a time you'd have this very solid rhythm. Every once in a while, there might be something that disrupted that rhythm just a little bit, and I wanted to look at a particular instance, then ask you about that more generally.

Devon Cook: Let's try here. So, we have you setting . . . So if I remember correctly, there should be something here that kind of . . . ok.

Participant 1: I made a mistake.

Devon Cook: Yeah, so we can see some disruption here where you're switching some things. So you think this looks like you made a mistake?

Participant 1: Yeah, I looked back at the thing and I realized I'd skipped a word. I'd started to set a word, and when I looked up, I realized I had skipped a word. So I had to put the word that I had started back and continue on.

Devon Cook: So in that case maybe that was a little bit more disruptive because it was too big of a space to hold with your thumb, maybe too many pieces to try and keep track of in the fingers of your left hand. So you thought, "I'll just put them back real fast."

Participant 1: Yeah. If it's just one or two letters and I need to add a whole word or two.

Devon Cook: So we have a couple of instances here of things that might disrupt the rhythm of setting that type. One is if what you need is not in the case in front of you. So, italics, sometimes numerals, depending on if you're using the same typeface or not. Going to another case might be a reason to disrupt that rhythm. Making a mistake, obviously. Are there any other instances you can think of, things that tend to interrupt the . . . ?

Participant 1: Those would be the main ones if I'm setting something that I didn't write. But when I'm setting what I've written, my mind is constantly thinking about, "Does that sound right? Am I saying this right? Did I lose something?" That is very disruptive, because I'm thinking "Eh, I didn't mean that" and I have to stop and think what I want to do differently than what's on the paper.

Devon Cook: Yeah, and we talked about you removing the word "that" from your dialogue quite a bit because you felt like there was too much of it

Participant 1: Yeah. And then sometimes there'll be a word that I repeat and it's like no, I don't want to use that word twice, that particular word. Sometimes I do want to use it. Like I noticed in this . . . I don't know whether this is me or whether it is common in everyday language, I find myself using the word "just" in this story, constantly people saying, "Why don't you just do this?" You just think, now maybe I use that language so that's why it's finding its way in here. But normally I don't like that word--just--but for some reason it's appearing there all the time. So every time it comes up, I'm thinking, "Now, should I be using that word or not." But it's more typical that it'll be a more unusual word that I suddenly realize, "Jeez, I just used that in the last paragraph. I don't want to use that again." So I have to stop and think, "ok, well what would I rather use." Whereas if I'm just reading it on the computer, I'm an obsessive reviser. When I write something like this, I'll write a few pages, then I'll go do something else. I may come back later that day or the next day. And I'll start at the beginning and read through and revise before I start writing any more. And I'll do that over, and over, and over. Every time I go back, I start reading at the beginning and make revisions. I miss those kinds of things when I do that, that I pick up when I'm setting them in type. Because when I'm setting them in type, it's slowing me down so much and I'm repeating in my head the words over and over and I'm listening to them in a way. It's a more intense way of reading than just reading the words that are on the screen. It's really the most intense kind of reading you can do, I think, is setting something in type and reading along as you're doing that. You're just slowed way, way, way down. And I think that's why I find even though I've revised this twenty or thirty times at least, I'm still finding stuff as I'm setting it that I missed over, and over, and over--I missed it. And yet, there it is. It's weird.

Devon Cook: Yeah, that's a very interesting observation. I know you had mentioned before in one of our previous conversations--I think this was via email--that you'll also notice repeated words suddenly jump out much more because, well, this is reflective of this kind of intense reading that you're talking about. You also mentioned you even noticed the frequency of letters? Maybe--you mentioned an author--you said that this author tended to use a lot of "i"'s or something.

Participant 1: In my opinion, there are certain types of writing that tend to lend themselves to using words that have particular letters. Maybe I'm imagining this, but humorous writing seems to use a lot of words with "k." I don't know why that is, but it's been my observation. Of course, there's other writing--there are certain things that are very predictable. Obviously, if I'm writing a memoir about myself, I'm going to have a lot of uppercase "I"'s in it. And "m". "Me, me, I." When your writing--this story that I've written here was difficult in some ways because, number one, it's written in the present tense, which is hard to hold on to, and you find yourself slipping on that. Secondly, it's written by one of the characters, so it's first person, present tense and she isn't omniscient. It's also a woman, which is--men writing in a woman's voice is probably a risky thing to do, but I did it. She's not omniscient. So I'm finding myself--and that's another thing that happens is I'm setting this, I'm realizing, "Whoops, she can't know that." Where I've suddenly said, "he thinks"--no, she can't know that he thinks that. She has to say, I have to change that to "it seems to me," or "he looks like he's thinking" or something like that to modify that so that she's not saying things that would require omniscience. That's another thing that I'll miss in revising on the computer but I'll pick up on the typesetting. So, anyway, "you." Because there's a lot of dialogue between people, people are saying "you" to each other a lot. And that's one of the things I mentioned while I was working yesterday; if a sentence starts with "you," well the first capital letter is a capital "Y" and the next letter is an "o" and I'm going to have to miter those. And that's where I'm using all my--I'm quickly using up all my mitered "y"'s and I have to miter some more. It drives me crazy. Another thing I think people say, is they'll start sentences a lot with "well"--"well you know"--well there's a "w" and an "e". Once again, gotta miter those. So I notice that in a writing a lot of dialogue, I use a lot of words that I have to miter--the first word, the first letters.

Devon Cook: So just a quick follow up question to this . . .

Participant 1: And by the way, sometimes, I will actually modify a sentence while I'm setting it so that I can avoid that. I just get to the point where it's like, "I can't do this again. How can I change this sentence a little bit so that it doesn't start with 'you' or 'yeah' or 'well' or 'we'."

Devon Cook: So that's another follow up question. So I have two quick follow up questions to this conversation. And that is--the first is--does this sort of intense reading and the things that you notice about--letter frequency, or repeated words, or anything else that might really be brought to your mind by this close reading--does this experience have any effect on your writing more generally, if you're writing an email, or you're writing another creative piece, or you're . . .

Participant 1: Probably not. Maybe. It's hard to know. I have become more cognizant of certain words that I tend to use a lot. . . .

Devon Cook: And if it does it does, if it doesn't . . .

Participant 1: I don't think it does.

Devon Cook: Let's see if this thing's still working [checks phone]. Yep, it says it's recording so . . .

Participant 1: I hate those smartphones by the way [laughs].

Devon Cook: [laughs] Sometimes I hate it too. I've several times, seriously, just considered going back. So my second follow question is, how often--so it's a two part question--how often do you change the words of what your writing in order to make it, you know, fit better, or . . .

Participant 1: I don't have to do that very often, but I do it. I definitely do it. And that's another thing. We talked about that whole thing about being able to fit the line in. Sometimes there's just no way to do anything to avoid either too widely spaced--and in those cases I will try to think of a way to change the sentence so that it fits better.

Devon Cook: So, we've already mentioned a couple of reasons why you might do that. One might be you just have maybe several long words that are hard to break up and you're dealing with hyphenation and awkward spacing, so that might be a reason to change things around. You might also have an inordinate amount of certain--how do I say this--your type might be limited, so maybe you only have so many mitered "w"'s or maybe you only have so many capital "Y"'s period of this particular face and you might end up running out of those. So that might be another reason. Are there any other reasons why you might consider changing a word, or rewording a sentence?

Participant 1: Based on the typesetting, probably not. That would probably be it.

Devon Cook: Those would be the two main reasons.

Participant 1: And I mean, I have had the case where I completely run out of a particular character and will have to print part of the page, go back in, distribute the type, set the rest of the page, go back and print the rest of the page [laughs], which doesn't happen very often but I have had occasion to have to do that. So I mean, there's a way to solve almost any problem. It's a little easier when it's something you've written and you can modify what you've written a little bit. I try to avoid that as much as possible, but sometimes I just--and sometimes it doesn't matter, I mean, sometimes it's not a big deal. Then there's sometimes it's like, "Oh, I gotta hold onto that. I can't lose that."

Devon Cook: So there's almost this kind of give and take, or kind of tug sometimes between the design of the page and wanting to not distract your reader and also just make the page look good.

Participant 1: Mmhmm.

Devon Cook: So there's that sort of tension, and then on the other side, the phrasing of the words. And sometimes you really want to preserve that, so there's kind of this tension that goes back and forth there.

Participant 1: Yes. And most of the time, you can change the phraseology a little bit and it doesn't really matter.

Devon Cook: Switch out a preposition, or . . .

Participant 1: Or add an adjective, or something simple. But sometimes you've--and I can get stubborn and it's just like, "I'm not going to lose that expression right there. I just want to hold on to that." And then you kind of scratch your head trying to figure out some way of doing it. Sometimes I'll change paragraphing too. That's another way of doing it. And just say, "Well, this doesn't have to be all one paragraph. I could be starting a second paragraph and that would make sense." So I can modify it that way. There's a lot of things you can do. [Another letterpress printer]--the first book he ever did, the first hardbound book he ever printed at his private press, which was I think in 1971, was a book called *Old Drum* and it was a famous argument that a lawyer had made in court, arguing against the destruction of this dog named *Old Drum*, because the dog had done something, or he bit somebody, something. And Kay had this notion in mind that he was going to set the actual excerpt that he was printing in a different typeface than the introduction which his ex-wife, Daisy, had written. And he wanted the excerpt to fit onto two pages. I've done this also--so what you do is you set that type in the typeface and in the size, and then you base your page size on that type. You don't--you pick the page size after you have that set. And I've done that before. I can show you. I've done an edition of Mark Twain's "The War Prayer." I don't know if you're familiar with that. And I wanted the actual prayer to fit exactly on one page. So that was the first thing. Even though it's near the end of the story, I set that in type and then I made the page size fit that page, and set the rest of it to that page size. Well Kay not only wanted to do that, he wanted the introduction to end at the bottom of the previous page at the end of the line. [laughing] Ok? He was so meticulous about this, after the excerpt had already set the page size, so he couldn't change the page size to accomplish that, so he had his wife rewrite and rewrite and rewrite until he worked it out so that it ended right at the bottom of the page. I thought that was hilarious.

Devon Cook: But it does seem like those sorts of things happen, you know, that the attention to detail kind of tends to spread sometimes . . .

Participant 1: Yes. Another thing he did--I'll just mention this--he did a book of poems written about the concentration camps and he wanted a decoration at the top of barbed wire. So what he did was [laughs], he researched barbed wire to try and determine what the barbed wire that would have been used in the concentration camps would have looked like. He then went out--he drove around in the country in Missouri finding barbed wire fences and snipping pieces off of them [laughs] until he found the one he wanted that a fit and then he kind of flattened it out, and photographed it and had a line blocks made of this image of the barbed wire that he then could print. Now that's being meticulous. [laughs]

Devon Cook: That's crazy. Well, let's see how we're doing time-wise. So it looks like we're coming up right on an hour, so what I want to do is, I want to go through some of the other questions. I have some questions that might not reference the video specifically that I want to ask you about, and then with whatever time we've got left, we'll go back and I've got some other things we can look at in the video. So, let's see. I want to ask a few questions about the

relationship between you and your equipment. You had told me that you're kind of self-taught, that much of what you've done comes out of just your own personal practice and just doing it.

Participant 1: Right. And I've often wondered whether I'm doing some things completely wrong and if, you know, it would be so much easier if I just knew how it's supposed to be done, but who knows.

Devon Cook: So, um . . .

Participant 1: Of course I studied some books. It's like I was just completely blind. So I studied some old printing manuals and stuff.

Devon Cook: Yeah, that's what I used as well, so I know what that would kind of be like. So you studied some old printing manuals and kind of went from there. [pause] Let's see, how do I phrase this question. Let's start with this. Can you describe for me, just in general, the equipment that you do have? So, maybe you can just walk through in your mind, you know, go out to the garage and what's there, and the basement what's there. Can you just describe for me real quick the equipment that you do have? Then maybe answer the question, has this equipment because of it's advantages or disadvantages affected your sort of process? Has the equipment itself had an effect on how you go about your work?

Participant 1: Well, the first piece of equipment and the first tool and the fundamental tool is the composing stick, which I have a particular interest in. I've made a study of and collected [composing sticks]. I've got several hundred composing sticks. It's quite astonishing how varied they are, how many different kinds of sticks have been made over the years. It's pretty amazing. And the various mechanisms for how they work, how they're adjusted. And the feel of that is really important. Some sticks feel terrible. There are some sticks that are made of aluminum--cheap, cheap, cheap, just sheet metal aluminum that's been bent and they're just horrible. Then there are wonderful ones that just have this fantastic feel and balance to them. So the stick is the number one tool, I mean that's what's in my hand more than anything else is the stick. And I--even though I have hundreds of sticks--I pretty much use one. It's the same stick that I've been using for years, and I know how it feels and I know how to handle it. So there's the stick, there's, of course, the slug cutter. A lot of printers, by the way, are what I call gear heads. They're people whose real interest is in fiddling with the equipment. These are the guys who when they were teenagers, had a hot rod out in the garage that they played with all the time. It didn't matter if it ever ran, it didn't matter if they ever actually drove it, but what they wanted to do was fiddle around with it, modify, you know, do stuff with it mechanically. There are people who want to practice the mechanics--I'm not that. The mechanics--I don't have a separate interest in the mechanics beyond the fact that I want the mechanics to work, whereas a lot of printers do. Consequently, I don't have a lot of equipment. A lot of printers will have multiple presses. You know, all kinds of presses. I've never had more than one press at a time. I just don't have any interest in that. I want to have a press that I can produce a good product on and that I can make work, that I'm comfortable working with. I did have at one time a Pilot. I don't know if you're familiar with what a Pilot press is. This is a tabletop press--they're very popular, and the price has skyrocketed on these things. They're getting to be like two or three-thousand dollars for these, which is crazy. It sits on the tabletop, it's a platen press, so you know, it opens and closes. You pull a handle and it closes. I found it impossible to work with. [laughs] It doesn't open wide

enough. I couldn't--it just doesn't couldn't deal with it. My first press was a platen press. There's an interesting story about that by the way, if you have the time. I was in St. Louis at the time and I knew nothing. I knew absolutely nothing about printing--nothing whatsoever. And I just decided that I wanted to try it, and so I looked in the newspaper in the classified ads and found a printing press for sale and I called up the guy (I can't remember what he was asking, maybe three hundred dollars for it or something like that.) and bought it. And then he said, "Well where do I deliver it," and I said, "Well, we have to put it in my basement." And he was--I could hear this guy groan. He says, "Well, I'm going to have to charge you an extra hundred dollars for that." What I didn't realize was that he was going to take it apart and reassemble it in my basement. So he pull in. I did have outside steps leading into the basement. We carried all the pieces in. Then this guy, who must have been in his seventies, put this thing together. It was a big floor model platen press that had been completely dismantled. It was astonishing to watch him fit this thing all back together. One of the more interesting things was, he had a series of hammers that the heads were made out of type metal. He had melted the type metal and made hammer heads out of them that he could bang on this press . . .

Devon Cook: Wouldn't hurt it . . .

Participant 1: It wouldn't dent it. Of course, it beat the hammers all to pieces. When it was beaten and completely out of shape, he would just take the next one and continue. At one point, he's hammering on this press and the thing slipped and banged on his hand. I looked down there and there's blood spurting [boom, boom] he'd opened up an artery in his hand [boom, boom] and I was like, God! He just grabbed an oily rag and wrapped it around the hand and just kept right on working. Didn't even stop. It was really an amazing performance. It took me a long time to figure out, then, obviously how to actually make this thing work, but anyway, that's off the subject. You've got the hand tools of the hand miterer, like when you're mitering rule to make boxes and stuff like that, which I'm not good at. I avoid that because I'm usually not very successful at that. It requires a skill that I'm not very good at. But you do have the lead slug cutter which you do have to use a lot, and of course, the type. No one ever has enough type. And then the press, I've had this press for twenty-three years maybe, and it's a very, very good one. I bought it before the prices skyrocketed. Now, just replacing the rollers, costs more than I paid for the press. It's crazy. This press, nowadays, sells for between ten and fifteen thousand dollars, which is about what it sold for new. I think it was about sixteen thousand dollars new when it was built in the early 60s. I only paid \$500 for it, because when I bought it at that time, nobody wanted them. It was kind of amazing. So the equipment is, for me, just a tool to accomplish what I want to accomplish. I don't have that sense--you know, a lot of printers, they're really into the equipment. That's what they're most interested in, is the equipment. That's not the case with me. The equipment is merely a tool for me accomplishing what I want to accomplish. The press causes limitations.

Devon Cook: Tell me about some of those limitations.

Participant 1: The main problem with this press is you can't do small stuff. I could never print envelopes for instance, you know, just letter [size]. Because it's so--you put the thing on the grippers and then you crank the press. The grippers hold the envelope, but they don't let go of the envelope until the cylinder arrives at the end of the press. At that point when it lets go of the envelope, you can't reach it. You can't get your hand down in there to get it, because the grippers are way on the bottom end of the press. So, it'll just fall out, and it'll fall against the rollers, and

when you try and roll it back, it'll wrap around the roller--the envelope. You just can't do it. That's why a lot of people with these kind of presses will have a little small press to print little stuff. I've had lot's of problems when I've tried to print smaller books. Again, you can't--you gotta reach down in there to get ahold of the paper when the grippers let go. You can obviate that by printing two up, or printing work in turn, which is what I have done. Instead of page like this, where I'm just printing one page, the paper will be twice as long, and I'll print this way and then I'll turn it and print the other side and cut it in half. That I have done. But that is one of the main limitations of that kind of a press. It doesn't like small pieces of paper, it likes big pieces of paper.

Devon Cook: Did you purchase that press knowing this?

Participant 1: Oh yeah.

Devon Cook: And knowing that you were mostly going to want to print larger stuff?

Participant 1: Yeah, yeah.

Devon Cook: And the reason you don't have a small press to accompany the large one is because you don't print a lot of envelopes.

Participant 1: I don't care about that. It's not what I'm interested in.

Devon Cook: Very interesting. Has there been anything about the press or any of your other equipment that has kind of surprised you. In other words, has there ever been a situation where--and it's ok if there hasn't--but has there ever been a situation where you had a "Oh, that can do that?" kind of a moment? Kind of a--it had capabilities or possibilities with the equipment that you hadn't planned on, but that you ended up taking advantage of.

Participant 1: I can't really think of anything. I know there are things I read about that the press has the capability of, but it would cause me to have to modify it in a way that I wouldn't want to do. For instance, you can take the roller and cut out the middle part of it, or cut it down, so that you can have two colors of ink at the same time. I don't want to do that. It's just--first off, it would wreck the roller. Secondly, that's really a time-saving thing. When you're printing as few copies as I print of stuff--and I mean, thirty-five copies is a big edition for me--it's not that important to try to save time. I print one page at a time. Could I print two pages at a time mostly? Yeah, I could. But the time it takes me to set that up on the bed of the press and fiddle with it until the margins are right and everything--it's just not worth it. I'm only pulling fifteen copies [laughs]. I can print the pages one at a time. So, no, I can't think of anything.

Devon Cook: Was there anything at the beginning, like with your first press, when you were first getting into it. Did you have any experiences with saying, "Aha, that can do that." Or maybe the technology or the equipment was more capable than you had . . .

Participant 1: I think the whole thing was aha at that point because I had no idea what I was doing, and I had no idea what it was going to look like or how it was going to work. So, I mean, on one hand, yeah it was all aha. But it took me--I only had that first press for about six years maybe, and I only did one hard-bound book on that press. Mostly I was doing ephemeral stuff

that was not very good. Some of it was really bad, really awful stuff that I did early on. I guess some of the stuff I do now is kind of awful too depending on your taste, but no, just the whole discovery of everything. It's like the first type you get a package, a font of type and you've never handled type before. It's--I tell you, I couldn't stop laughing because every time I'd try and touch it, it would all fall down. I just thought that was hilarious for some reason. [Another letterpress printer] one time told me a story about when he was in--he started printing in junior high school and he said he had a friend who was in the class with him who just would cry--he would burst into tears because that would happen. He said, "Every time I touch this, it all falls over!" [laughs]. I certainly had that experience.

Devon Cook: Yeah. Ok, well awesome. So this is another question related to your shop and things: What have you done to make the process either easier for yourself, or make things do what you want them to do. This is kind of a long-term thing over the years. So one of the things that you did is you got a new press. And I'm assuming that--well you mentioned that one of the reasons was because it the did the type of thing you wanted it to do.

Participant 1: Right.

Devon Cook: So, over time, are there some specific things that you've done, even to your workspace or equipment that you've bought, or just things that you've done to try to make this process easier.

Participant 1: I think just routinizing everything. Just to have a particular way that you go about doing it. You kind of fall into a pattern so there's a lot of sort of automatic stuff going on. Certainly, when I'm setting type, my hands are doing all kinds of things that I'm not thinking about anymore. You don't--you know, it's just automatic. But other than that, not particularly. I do things like I stopped using galvanized steel galleys and started using only brass galleys because it's a lot harder to move a form of type around on a galvanized steel than it is on brass. It slides much easier on brass. It's hard to find brass galleys, but I've managed to . . .

Devon Cook: I saw you had a quite a collection there.

Participant 1: get a bunch of them. So that makes things easier. You know, little things like you noticed that little hook that I had all that string hanging on for tying up the forms. I bought a small shop from a woman down in Bargetown Kentucky and she apparently could never figure out how to tie up a form, because after she had printed stuff, she would just set the form untied on a galley and slip it into a galley case and it would just [phhhhhk] there'd be all this pied type. So when I bought her shop, just galley after galley after galley filled with forms that had fallen apart. That was fun distributing that. I guess that's one way to really save time; just don't bother to distribute the type. That's one of the things that a lot of people in printing don't--a lot of people think that printing is something they want to do, and they get into it without realizing how much is involved that they don't really want to do. If you don't enjoy, and I mean enjoy, distributing type, then you're in trouble. I enjoy distributing type. Don't ask me why--it's my personality or something. I like it. I get a kick out of putting it all back in the case. It doesn't get in the case by magic. A lot of people think, "Oh, it's just there." No, no, you're putting it back one piece at a time. But if you don't enjoy those kinds of things, you shouldn't be getting into this. The other

thing is people just don't realize how difficult it is, and it becomes tedious for a lot of people very quickly and it just doesn't for me.

Devon Cook: I noticed that--I noticed a couple of things. The press is in a separate place from the rest. I'm assuming that was just you decided you didn't want to go through the hassle of getting the press in the basement.

Participant 1: There was just no way to do it. It's impossible to get it in this basement. I'd have to tear out the wall or something.

Devon Cook: Or take the press apart. Can you even . . .

Participant 1: You can't really get that press into small enough pieces to get it down there.

Devon Cook: I noticed that down there you had--there was quite a bit of stuff down there, but I noticed that all of the walkways were clear. There were no chairs.

Participant 1: Right.

Devon Cook: It was very clear, and we talked about that a little bit. It sounds like you like to move around a lot. Another thing I--you have the music set up down there to help you . . .

Participant 1: Yep, I have a similar outfit out in the garage.

Devon Cook: Can you tell me just briefly why you went through the trouble to set up some music?

Participant 1: You gotta have music. [laughs] You know, I'm a musician; I like music. I've always liked music. When I was a kid, I thought making music was probably the most important thing in the world. I'm from a very musical family.

Devon Cook: So the music doesn't distract you from your work?

Participant 1: No, it doesn't distract me at all. I can be singing along with stuff at the same time that I'm . . .

Devon Cook: Left brain, right brain . . .

Participant 1: Well, music is odd. People who stutter, don't stutter when they sing. Did you know that?

Devon Cook: Yeah.

Participant 1: They don't. I don't think anybody understands why that is. But something different is going on in your brain when you're singing as opposed to talking.

Devon Cook: I also noticed that you have some--not very many--but some kind of decorations, maybe. You have a couple of prints on the wall and I noticed maybe some memorabilia, you

know. Did those things end up there on purpose? Do they have anything to do with your composing process?

Participant 1: No, I just ran across them and stuck them in there. That's another unfortunate thing that I do, is buying and selling prints. I have a big frame shop down there that you didn't see, an enormous number of prints and stuff.

Devon Cook: Alright, so, a couple more questions and then we might have some time for some more particulars. How have your--let me see. We've already talked about this a little bit, but I'll ask the question again. How has your typesetting process, the way you go about, how has it changed over time. Can you give me a . . . I mean if you can, I don't know. But just thinking back to when you first started, what are some of the things that have sort of changed over time as you've gone about this?

Participant 1: Hmm.

Devon Cook: And maybe it's too many and we don't have time . . .

Participant 1: Uh, I mean, you know the basics of it haven't changed. I think I enjoy it more. I always have enjoyed it, but I think I like it more now.

Devon Cook: When did you start doing the thing with the composition stick? You know, where it stays in one hand and you kind of rest it . . .

Participant 1: You know, I have no idea. I don't know. It just evolved. The whole process is--you know I can't really think of what happened, how it happened. I've been doing it for a long time.

Devon Cook: In other words, you're saying it's kind of difficult to pinpoint when these habits developed, or when the system that you have now came into place.

Participant 1: Right. Because I've been doing it so long . . . I don't know.

Devon Cook: Now some of it, you said, did come from these handbooks.

Participant 1: Yeah.

Devon Cook: So you did pick up some handbooks. Do you remember some of the things that were in those handbooks that were kind of . . .

Participant 1: They're really basic. The one's that everybody learned on were Ralph Polk's books. Elementary Platen Press Book, Presswork, and The Practice of Printing. That's the book. Polk, Practice of Printing.

Devon Cook: I think that's the one I used.

Participant 1: It went through many editions and it was used in schools back in the day when they had printing programs in schools. They taught printing. And it just gives you the nuts and bolts of the basics. Some of the things in the books, while it describes them, it's not that easy to--

like make-ready is one of the things that--he describes it, but actually doing it [laughs] is a whole different thing.

Devon Cook: Can you describe real fast what make-ready is?

Participant 1: What you do is--you have to do a lot more make-ready with platen presses than with cylinder presses. I don't do much--the make ready I do on a cylinder press is usually with engravings, and that's apt, that's necessary. On the platen press, what you do is you put a form into the chase and lock it in. Then you would take an impression and then you would turn the paper over and you hold it up to a breaking light and you look to see the impression on the back. And on a platen press, typically what you're going to see is impression out here and as it goes to the middle, less impression. So what you do is, you take a pencil and you draw around where there's lighter impression, and then you take a piece of tissue paper. (Although I use tracing paper. Tissue paper is too thin. I use tracing paper.) And you cut that with a razor blade or an Exact-o knife or whatever to fit that line, that line that you've drawn. Then you paste it onto the platen, right, on the packing. Then you pull another one, another proof, and you do it again. You keep doing that until when you've printed it and you hold it up, it's even--the impression that you see is even. Now, depending on your press, that can be fairly simple, not much to it, or it can be extremely complicated. I had a--the first wood engravings I ever commissioned were by an artist, Michael McCurdy, up in Massachusetts. He was very famous--I've worked with some of the really famous wood engravers in this country. He sent me this one block that took twenty-seven layers of tissue to get that thing to print right. When I wrote to him and I said, "You know that one block?" and he said--he writes me back--he says, "Oh yeah, I forgot to tell you, that was low on one side." [laughs] I was like, "Thanks, thanks so much." [laughs]. Oh my God. So, you can imagine, describing that in the book doesn't really get at that process. I'm not very good--I was never very good at it. I've never regarded myself as being very good at make-ready. Some people are really, really good and can see--I just don't see the differences well enough. It's the same way with ink. I'm not good with ink. I really struggle with keeping color even. When printers use the word "color," what they mean is the tone of the black--how black it is. For some reason, maintaining even color through a book has always been my *bête noir*. I've just never been very good at it. It drives me crazy to see the unevenness from one page to the next. I tend to get darker as I get further into the book for some reason. So, what I have to do is take a proof of a page that's the color I want, and then keep that by the press. And for every page, then, I compare it to that page to try to keep as close to that color that's on that sample page as I can. But you know, the things people do with ink--I have watch some people ink their presses and they'll put these microscopic amounts of different colors of ink on stuff and mix stuff together--I can't do any of that. I'm no good with colors at all. I mean, I'm really not good with color. It's like, you know it's red and that's good enough for me. Blue, fine. But people who are artists--and I'm not an artist--people who are artists, they have a greater--it's sort of like being a gourmet. People can taste distinctions that the rest of us can't, and artists see colors in a way that the rest of us don't. I just don't. If the color is not quite right, it's lost on me, unfortunately.

Devon Cook: This is fascinating stuff. So, another question that I have is--we've talked a lot about your best practices and things you've done to make the process easier for yourself: the routine and rhythm that you get into, your sort of expert wisdom--at least for you--how this has worked really well. So, what are some common mistakes that novices make with this printing

technology? There are probably an infinite number, right, but maybe a few prominent ones come to mind.

Participant 1: The biggest mistake is in design. That's where the mistakes come in. Although nowadays, what I would regard as a mistake a lot of people don't regard as a mistake and that is impression that's too heavy. That's very popular now and you'll see these things where they've just hammered that type into the paper. It's embossed. It's embossing rather than printing. And that--the old time printers would just be horrified at that. When I started printing, the ideal was what they called a "kiss" impression. Finding a way to get really sharp impression of the type, very clear, sharp lines without any impression, which I could never do. You tend to end up over-inking when you try to do that--or at least I did. Whereas nowadays, they pound it in there. It's as easy as pie to get it to look--you get some--you get it sharp when you do that as long as you don't over-ink. But it will also tear your press to pieces. Kiss your bearings goodbye on your presses because it's just too hard on them. I would call that a mistake. But the big mistake is in design and over-design. Too much decoration. It's very tempting. Again, I'm not very good with decoration; I never have been. I keep going back to [another letterpress printer]. He is a master of decoration. Unbelievable. Of course, now he's really an artist too. But my own decoration when I've tried to use decoration usually looks pretty ham-handed looking. I'm just not that good at it. It has to be used very judiciously. I think the mistake a lot of beginners make is by not using it judiciously. Too much decoration. Too many colors on one page. Usually one extra color--black and red, or black and blue, or black and brown--as an initial or some sort of accent. I've seen people who will do these elaborate things with decorations printed in multiple colors and it's just like--it looks like a carnival. Looks ridiculous. So that's a mistake. A lot of people want to fill up all the space on a page. Blank space is a good thing. Look at the title page of that little continuity of parks that I gave you. See how much blank space is on there? A lot of printers and beginners are uncomfortable with that. They don't want this big empty place there.

Devon Cook: But it ends up looking very nice.

Participant 1: Yeah. In a way I probably could have got away without using those rules, those decorated--we call those dashes. Printers call those dashes, decorative dashes. And again for some reason I decided not to use a second color on the initial there. Initials are very, very tricky. I've had some initials come out great and I've had some that look just absolutely terrible. I think the initial on that poem there is terrible. I really screwed that up. I should have just put it higher and just had it on the one line rather than two lines. And if it was on two lines, the second line should have been indented more. And then I totally screwed up because look at the next one. Look at the bigger broadside. I was going to use the same initial, but after I had printed the black and I had started to put in the initial, I'd already put in the "I". [laughs] I'm like awww! So I used that fist--printers call that a fist--so I used the fist instead. [laughs]. Thirty-five years I've been doing this and I still make these stupid mistakes, but I guess everybody does.

Devon Cook: It seems to me that all along the way for the whole printing process there are things that you do all the way along the way to, number one make the next step easier, and number 2 prepare for this final copy. So all along the way there are things that you do to prepare for that final copy and that you can't just do steps one through six and then prepare what you've done in step six for the final copy. You have to be kind of preparing for that the whole way along. And

also the things you do in certain steps make it easier for yourself in the next step. Was that harder for you to handle as a novice?

Participant 1: I had no idea what I was doing as a novice. [laughs] I had absolutely no idea what I was doing and I made so many mistakes it's kind of ridiculous, which is why a lot of people give up. If you don't enjoy the process to begin with, the mistakes will cause you to quit very soon. I enjoyed the process from the beginning. I always enjoyed doing it. I used to print all night long because you know I worked full time. I had a job and I was raising two kids and I was rehabing a house, so I would be down there two, three, four o'clock in the morning printing in my basement. I just, love doing it. Who is it--oh, Ray Bradbury in that book about Ray Bradbury. He talks about, for him, the reason he wrote was because he loved the process of writing. That's what he loved to do. And it's like the reason I print is because I love the process of doing it. That's why I do it. Really it's not any other reason. It's the doing of it that's the fun--that's fun. A lot of people think that it's wonderful and they want to do it and everything, but it's not fun for them, and that's deadly. That's when--they give up fairly quickly if it's not fun. A lot of these commercial guys--you know there's a lot of cities now have people who are doing letterpress, who have small letterpress shops. They're job printing, they're doing mostly invitations and posters and that sort of thing. It's amazing to see how quickly they're trying to get other people to come in and actually do it. [laughs] They get very tired of it very quickly. It seems so romantic at first and then it's like, "Aw man, this is tedious." [laughs]

Devon Cook: Really hard work, really hard work. So it strikes me that this--it just very tedious and time intensive like you're talking. It just seems to me that typing on a keyboard into a word processor is significantly less tedious. So my question, especially in terms of mistakes and--so I want to hear your thoughts on, you know in your experience typing on a computer, you can hit the delete key immediately, change a word, if you make a mistake you can immediately change it. Sometimes these days your word processor automatically fixes probably at least 20% of your mistakes will just automatically fix themselves.

Participant 1: I turn that off.

Devon Cook: Really?

Participant 1: I don't like that.

Devon Cook: You turn it off? Why do you turn it off?

Participant 1: Because it makes me go back and redo stuff that I purposefully made--purposefully spelled something or did something that the computer thinks is wrong but isn't. It's what I intended and I don't want to have to go back and change that. Don't want to have to go back and fix it all the time.

Devon Cook: Do you ever miss the--for instance "their," the word "their." You know, I'll mix the "e" and the "i." So I'll spell it "thier" just as I'm typing quickly and the computer will just automatically fix that and I'll just keep going. Do you miss that function? Or . . .

Participant 1: No. No, I proofread everything I write, even emails. A three-sentence email, after I write it, I will carefully proofread it before I hit send because I have just gotten to the point

where I know that I want to make sure that it's right myself. I don't want the computer double guessing me.

Devon Cook: So how much of that--how much of you attention to detail there--how much of that is your personality and how much of that is your experience with typesetting?

Participant 1: I think a huge part of it is from the printing. From my experience setting type and needing to go back and revise and fix and correct that it's just--it's become automatic now that I always double and triple check everything. And I still end up making mistakes every once in a while which makes me tear my hair out. Like this book that I'm working on now. I'll forget--I'll leave out close quotes, for instance. And no matter how many times I go back and proof it, I'll miss one. And so I've done it once on this book already. It drives me crazy.

Devon Cook: So does that ever get exhausting? Like when you're writing an email, to double check it before you send it?

Participant 1: No. Oh no. The other thing is, when you reread these things--and I'm, as a reader, I do what people say you're not supposed to do which is I subvocalize everything I read. That's what I--it's like, "Oh, that slows you down," WHAT'S THE HURRY? I'M READING BECAUSE I ENJOY IT. WHY DO I WANT TO RUSH THROUGH IT. It makes no sense. I want it to be slow. But the thing is, when you subvocalize as you read, there's a rhythm. You're picking up the rhythm of the language, and that's very important to me is the rhythm, the way it sounds. Not the way it looks, the way it sounds. And so, yes, when I'm proofreading, I'm not just proofreading for typographical errors, I'm proofreading for the way it sounds to me as I'm reading it. And I will change it to make the rhythm of the sentence a bit better. And that's what I do in revising something I've written like a story or something. I do that constantly. It needs to sound the way it's supposed to sound. I think there was a poet, Zukofsky--Zukofsky, is that his name?--who said, "Every poet only writes one poem." All of their work is actually one poem, and that poem is a reflection of their voice. The rhythm of their voice. That's what it is. And to a certain extent, I believe that.

Devon Cook: K, very interesting.

Participant 1: What I write reflects the rhythm of my voice. It's interesting: there's a writer by the name of Bob--now I can't think of his name--who's about my age and he grew up in Ohio, and I grew up in Ohio. And when I read him, I hear my own voice. We've got exactly the same rhythm. It's kind of amazing. It sounds like something I wrote. Just the pattern. It's kind of remarkable.

Devon Cook: Yeah, um.

Participant 1: Bob Green was his name.

Devon Cook: Bob Green. This is uh . . .

Participant 1: That's what's so nice about typesetting. When you're doing it that slowly, what you're doing is--what I'm doing--I'm looking up at the page. And what I'm doing is I'm repeating in my mind the phrase, a few words, the sentence over and over and over again. That's just kind

of repeating in my mind what the rhythm of the language is. And that's why I end up making so many changes as I'm doing that, because I'm picking up breaks in the rhythm that I don't like and I want to change it. I want it in my rhythm.

Devon Cook: Very, very interesting. So . . .

Participant 1: And it's much easier to do setting the type than it is on the computer. I don't pick it up as well typing because I'm so facile, you know, at typing. I can just prrrrr [whirring sound]. I can just churn it out. But it's not as careful. It's more careless when I do that.

Devon Cook: Yeah. So thinking back to before. For some people like maybe [another letterpress printer], they basically learned to write and typeset almost--almost--at the same time. But it sounds like you--it was a little bit later when you started really typesetting. So thinking . . .

Participant 1: I was 32 when I bought my first press.

Devon Cook: There you go. So thinking back to before you started typesetting and now, after having done it for quite a few years, can you think of any other ways in which interacting with the typesetting technology and writing with it and composing with it, has affected the ways you write and compose with other things?

Participant 1: It's hard to know because I don't know whether I would have come to the methods and styles that I write anyway.

Devon Cook: Because part of it is your personality.

Participant 1: Yeah. What I always say is that the problem is real life has no control group. You can't ever know what would have happened if what did happen hadn't have happened. So who knows.

Devon Cook: But it does seem like you're experience with typesetting has made you not only more attentive to detail and more likely to proofread, but it's also made that process not a burden but something that you almost enjoy doing.

Participant 1: I do enjoy doing it. Yeah. The other nice thing about is I can be a little looser as I'm writing on the computer because I know I'm going to be going through it later very slowly and very detailed. And if I have something that isn't quite right, I'm going to be able to fix it. I'm going to come across it, hopefully. I'm sure I miss stuff anyway, but . . .

Devon Cook: But with the typesetting it's different, because there's this sort of pressure or need or impetus to get it right the first time. [Pause] K, cool. Has your experience--and again, maybe it has, maybe it hasn't--but has your experience with using a typewriter, using a computer, using a pencil or pen every once in a while, have these ever had an effect on the way you set type or how you set type?

Participant 1: No, I don't think so. I think they're entirely separate.

Devon Cook: K, has you're experience reading had an effect on how you set type?

Participant 1: I'm sure it has, but I wouldn't know what it is. I've really read an astonishing number of books. [laughs]

Devon Cook: Has it affected how you design your books, your reading experience?

Participant 1: Oh yeah, oh yeah. Certainly comparing what I see as I'm reading, from a design standpoint. I'm always looking at how the book's designed and thinking, "That's an interesting idea," or, "That's horrible." Much more often "That's horrible." I mean Trade Books, they just cannot get the margins right, they absolutely cannot get the margins right. And mass market paper backs of course have no margins. I don't read those ever. I won't touch those. So certainly from a design standpoint, yes; I'm frequently seeing thing that I either like or don't like or make me think about design decisions.

Devon Cook: Has there ever been anything that you have done, in terms of design, that you felt like you were doing purposefully different from most of the books you've read, or all of them?

Participant 1: Occasionally, occasionally. Not very often. I'm pretty traditional in my typography, and the reason I am is because I'm not good enough to be otherwise. [laughs] I don't care for abstract expressionism in art for instance. I don't like it at all. I think it's a hoax. I think in future centuries, they're going to look back and say, "Why did they--a bunch of suckers!" You know, people shooting ink with a cannon on a canvas and saying, "That's art!" But, I had a friend who is from an artistic family and she told me one time, she said, "You know, I one time pointed to expressionist--when I was a little girl--and I pointed at this painting and I said, 'Mom, I could have done that!'" And her mother said, "Yeah, but you didn't." [laughs] And what she meant was, a lot of these people who did this stuff, they knew how to do art, and they probably couldn't have done what they did if they hadn't known the basics. You have to know the basics before you go into the different stuff. I'm very suspicious of people who are innovative without understanding what it is that they're innovating. And that's the thing with typography. I'm not an expert designer by any means. The idea of me, then, trying to do something innovative, when I'm not that good at the basics, that would be foolish.

Devon Cook: So the idea that I'm getting here--and tell me if this is right--the idea that I'm getting here is that there are some basic sort of methods and best practices with typesetting that really help you produce a good product, a product your satisfied with.

Participant 1: Yep

Devon Cook: You know, things like being able to double justify a line of type . . .

Participant 1: Right.

Devon Cook: and get that kind of crisp line. And you feel like trying to move--trying to break those rules at this point . . . You don't know if your skills are really . . .

Participant 1: Right. I don't understand--I don't follow the rules well enough to know how to break them.

Devon Cook: Fair enough, fair enough. Well, we have just a couple minutes left, so let me look at my notes for just a second and I want to make sure that we have . . . [long pause while researcher reviews notes] I think this will be a good way for us to finish off. We've got an example in the video of you mitering some letters by hand. [searches for video clip] There we go. So we have some video here of you using the file and the hacksaw to miter that letter. You told me as you were doing this that this was not by any means the official or proper way to do this. Can you comment on that?

Participant 1: Well, you're supposed to use a saw. I don't have the equipment to do it the way you're supposed to do it. And if you don't have a saw, you're supposed to use a vice to put the type in. Because, you know, while I'm sawing this hand is just [gestures and laughs]. It's a very sloppy way to do it the way I do. But when I try to use a vice I just crush the type. [laughs] I couldn't seem to get it to just the right tightness to hold it without smashing it. But yeah, a printer's saw is the preferable way to do this. I did at one time own a saw, but I never figured out how to use it.

Devon Cook: Ok. So that might be one of those things where you have this sense that there's a proper way to do it, but it's never really panned out, or it never really came together.

Participant 1: Right. I just improvise.

Devon Cook: Improvise? Can you think of any other examples of things that you have kind of jerry-rigged or improvised?

Participant 1: See the problem is I don't know how other people do things. So I don't know. I do them the way I figured out how to make them work. I have no idea whether there's a better way, whether there's a more standard way. I just do it the way I do it.

Devon Cook: Yeah. I've had a little experience, so I've tried to pay attention to see if I can see any of that stuff. And in my opinion, from where I'm coming from, having now seen your process in your shop, I feel like we jerry-rigged way more than you do, that we were missing even more equipment that was necessary. [pause] I think--ok how do I say this. Was there anything that you kind of jerry-rigged in the past, or improvised in the past, and then since then, you've now bought a piece of equipment or made sure that you had something maybe a little bit more standard to make your life easier.

Participant 1: [pause] Um, it's related to making the books, but it's not related to printing,

Devon Cook: Ok

Participant 1: and that is the process for tipping illustrations in. The first time I ever did that--it was actually the first hardbound book I ever did where I had this set of my great-grandfather's photographs that I wanted to tip in. And I had to pay to have these photographs reproduced by a big printing company, which now I do on--I bought a fancy digital printer to do that kind of thing now myself. But anyway, [laughs] I didn't know what sort of adhesive to use that wouldn't wrinkle the paper. There's paste and glue and stuff. So what I did was, I went out and I bought this spray stuff that photographers use, spray adhesive, and I made this little cardboard thing with a slot cut out, and I would hold the picture up against this and spray so that I would have a line of this adhesive on it and then put it in there. And it worked, sort of. It was a huge mess.

Subsequently, I discovered that you can get this double-sided tape on a roll and you just [mimics unrolling the tape]. Now that's what I do. That's something where what I improvised was horrible, but it did work, sort of, but it was not a good process.

Devon Cook: Was there any point where you didn't have as much--like say you have this quite impressive collection of brass and copper spacings and things--was there any point where your collection of type was limited in such a way that you had to kind of improvise?

Participant 1: Oh yeah. Like printing half a page at a time. But usually it's just a matter of using a different typeface. I have an awful lot of types, unfortunately, that I have in fairly small quantities because I bought them used and I just got what I could get. I'll do a broadside and I'll set everything and I'll run out of a character on the last line. I just have to distribute the type and start over with a different typeface. It's very frustrating. I've had that problem.

Devon Cook: So it's been worth it to you to have this guy in Massachusetts or whoever cast some type for you

Participant 1: Oh yeah

Devon Cook: just to make sure that you have enough.

Participant 1: Yeah, but some of this stuff you can't get. I have type down there that is unobtainable. It was cast in Europe 50 years ago and it hasn't been made in years. There's just no way to get it. Nobody has the mats for it--the matrices--to cast it now.

Devon Cook: Ok well wonderful. On last question I have for you--and this is something that I only noticed because I've had a little bit of experience in a print shop--and that is I noticed your type actually laid so that it is all facing the same direction and stacked in the type boxes. Whereas, what I've seen usually is just chucked

Participant 1: Chucked

Devon Cook: chucked in there--a jumble. Can you tell me about why . . .

Participant 1: Well, there's controversy about that. Some people argue that the jumble is better because it's easier to get ahold of the type as you pick it up. For me, here's the problem with using the jumble technique. What happens when you just have a jumble is, when you're picking up the type from the top, and then you're distributing back on the top, the type that's underneath never gets used and you wear out the type that's on the top. And now you have type with different amounts of wear on it. What I do is, I'm constantly rotating. So I set the type from the row on the right and I distribute to the row on the left. When I use up the row on the right, I slide row on the left over and start using that. That way it's constantly--and on the ones where there's only one row, I slide it to the top and distribute from the bottom and set from the top. So what I'm trying to do--and it may be silly, it may be a waste of time, I don't know--it just seems to me that that's a likely way to keep the type worn evenly. Because type is going to wear. I mean some type is so hard it won't for the little that I use it, but particularly in these composition sizes that's monotype cast, it's not as hard as foundry cast metal and it is going to wear over a period of time. That's why I do it that way, is to keep the wear even.

Devon Cook: K [indistinguishable] again . . .

Participant 1: And as far as I know, I have know idea whether anyone else does that. Or whether it makes any sense. I decided to do it just on my own. But I've never seen anyone else who does it.

Devon Cook: But you have talked with somebody--at least one person about . . . Because you mentioned . . . [gestures to something]

Participant 1: About that?

Devon Cook: Yeah, has it . . .

Participant 1: No, I've never talked with anyone about it.

Devon Cook: Ok

Participant 1: It's just that I decided to do it. Now Kay--I keep going back to [another letterpress printer]--not only does he arrange it like that, he lines them up like brick walls so it's a solid perfect . . . Now that I don't think is a good idea because you really can't get ahold of it when you want to pick it up. But he does that. He loves to do that. He has the sort of personality, the very meticulous, detailed . . . The really great printers that I've known--and I've known a number of them--they follow . . . Fred Goudy, who I mentioned before, the most famous American type designer, one time said, "Fine printing is the art of taking great pains." [laughs] And that's true. It's meticulous. It's perfectionism. It's taking as much time as you had to to get it just right. Now I'm not terribly good at that. I get it as good as I--you know, for me it's usually, "Well that's good enough," but it wouldn't meet the level of sort of perfection that a really fine printer does. They will spend an inordinate amount of effort and time to get it just right.

Devon Cook: Fascinating. I think that's about all the time we have and I think we got through everything we needed to, so . . .

Interview 2

Devon Cook: Ok so, as I've already mentioned a little bit yesterday, one of the reasons I'm interested in what I'm calling 'writing technologies' is that I'm interested in the impact that technology has on how people write. And as I'm learning more, I'm becoming more interested also in the impact that writers, or people who use the technology, the impact that they have on the technology. I have a particular theoretical standpoint that I'm coming at this from, but I'm mostly interested today in just getting into the details of what it's like to typeset, what it's been like for you to typeset now that you've been doing it for a few years [laughs]. And just really get into the details of that. So yeah. So my first question goes something like this: When I'm talking about writing technologies, what I mean by that is something besides your physical body--like apart from your physical body--that you would use to record language. That's sort of the definition that I'm working with right now. Now you could get really technical and say well then your eyeglasses, aren't those technically involved? But I think we can work with . . .

Participant 2: But you can't produce writing without your eyeglasses.

Devon Cook: But you can't produce writing without them either [interviewer and participant both laugh]. Anyway . . .

Participant 2: I don't know, I think you could produce writing, you just couldn't produce reading [laughs]

Devon Cook: That's true [laughs]. You can certainly put the letters in there and see what happens. Yeah, so that's the definition we're working with. So my first question is: I'm assuming that letterpress is one among several or maybe many writing technologies that you use.

Participant 2: Yeah, absolutely. Obviously using a typewriter is a writing technology. What I do at work is a writing technology. I work on Macintosh computers and in the job I have I don't generally create writing for the jobs that get printed. Somebody else creates the writing. But I could be creating writing. So if one of our employees says, "Hey I want signs for my daughter's birthday party. Can you make me up some signs?" well I just sit down and type out 'happy birthday Jill' then arrange it and add some decoration and make a sign. So that's a writing technology. Gosh, if you really think about it there may be a lot more. But those are the obvious ones. When letterpress printing came along, that was an obvious one. And lithography came along with stone lithography. Well that really doesn't count, does it. With stone lithography where you write on a stone and make prints, you're just reproducing it. But the technology doesn't facilitate the writing. Whereas in letterpress, you have to have the technology to get the writing.

Devon Cook: Yeah [laughs]

Participant 2: With the typewriter you have to have the technology to get the writing. So the typewriter came along. Italio[?], Italio would count where you engrave into a plate. I mean these other printing processes would count as writing technologies. Even a computer.

Devon Cook: Yeah. And it's very interesting. All those things you're mentioning are very relevant. In your own life, thinking about the different things you use. How often do you use like say, a pen or a pencil?

Participant 2: I use them a lot.

Devon Cook: What do you usually use a pen or a pencil for?

Participant 2: Filling out forms. We have forms where we call them hang sheets. We have sheets that remind you of all the different things you're supposed to have checked on a job. So we make check marks and write notes about that job. And I keep a time sheet so I write down every job I worked on and when I started. So I write down all of that stuff. Making lists--I'm getting older and I can't remember everything so I'm often making lists. I've got a list of things I want to try to get accomplished today, you know. I'm gonna mow the grass after you leave. [interviewer and participant both laugh] If I have time I'll do the laundry but maybe not. So making up lists is a big thing. I used to write a lot of letters but now we've got emails so I email more or phone more than I do with actual writing of letters anymore. That's kind of becoming a lost art.

Devon Cook: Yeah. How much would you say you use--what things do you use to do personal writing. What sort of personal writing--you mentioned keeping lists . . .

Participant 2: Uh huh.

Devon Cook: That would be something that you kind of do for yourself outside of work.

Participant 2: Right.

Devon Cook: You mentioned writing letters. Any other writing that you do outside of work on a regular basis?

Participant 2: Writing checks, writing thank you notes and things like that. That's probably it though.

Devon Cook: That and emails and . . .

Participant 2: Mmhmm.

Devon Cook: Do you write much with your phone? Do you text message . . .

Participant 2: No I don't have that advanced of a phone. Actually I think I can actually send a text message with--I have a flip phone, it's a older phone. So I think you can actually send a text message and I might have sent one or two in my life but I don't normally.

Devon Cook: Not much.

Participant 2: Uh uh.

Devon Cook: So describe for me real fast the kinds of things that you use your letterpress equipment for. You mentioned posters . . .

Participant 2: Yeah, I like to print posters now and then. I usually print a Christmas card every year. And as I say I'm in this Amalgamated Printers Association group which requires you to print four things a year. So I'll come up with things I want to print for that. Maybe a little broadside or a little card or whatever, but I'll print those things. I'm very much into typography and typefaces and type design and all that stuff. So another thing I like to print a lot is type specimens. Well, I shouldn't say a lot, but--cause I don't print a lot of anything. I don't print all that much. But I do like to print type specimens. But that's basically showing of A B C D E F G and 1 2 3 4 5. Showing of that and just a title of what it is. So that's not really writing in the sense of delivering a message of any kind. I've done wedding invitations and save the date things for family and friends and those kind of things.

Devon Cook: Cool. So now that we've talked just a little about the different things you do when you write or the different things you use to write, which of these writing technologies as we call them do you think you are them most familiar with?

Participant 2: I think I'm familiar with all of them.

Devon Cook: Is there one that you would prefer to use? We could break it up by situation. You could say when you're at work or when you're at home or when you're doing just personal writing for yourself. Is there one technology that you like to use more than the others?

Participant 2: Probably the computer is the one that I use the most often.

Devon Cook: And why is that?

Participant 2: Because it's easy and it's quick and you can send it to other people without going to the post office or anything like that. It's just so quick and easy.

Devon Cook: Absolutely.

Participant 2: And letterpress is of course the most difficult and the most time consuming. If I want to--and it depends on the impact you want to make and what you want to say. If somebody sends you something nice, you have the choice of sending them an email saying "Thank you that was really nice," or you can take a card and write a message and mail it to them. Well that's a lot more--to me that's a lot more personal and more meaningful. And then if it's something even more special--a friend of mine's having an 80th birthday--I could get a Hallmark card and say "Happy 80th Birthday" and tell them that I love them, or I can go down to the basement and make a big poster that says happy 80th birthday and that takes a lot more time and everything but, I think, shows that you care a lot more as opposed to going to the Hallmark store. So it depends on what effect you're after--what you want to say with it.

Devon Cook: So just maybe the fact that they know that one takes longer than the other impacts their perception of how congratulatory you are or how thankful you are or what you feel about them.

Participant 2: Yeah.

Devon Cook: Interesting. One last question along these lines on this same topic we've been talking about. Percentage wise, in terms of like if you take 100% of the time that you write in a week. What percentage are you using the computer? What percentage are you using your letterpress equipment or a pen and paper? Just kind of off the top of your head?

Participant 2: I would say letterpress quotient 1% or something like that . . .

Devon Cook: Yeah [laughs]

Participant 2: And the others maybe half and half of the remaining time. Forty nine and 1/2 percent each one. It would be hard to come up and say there's a preponderance of either one. But like I say, I am writing lists and documenting things but then oftentimes if I've done something and documented it, I'll then type it into the computer to have a permanent record of it that I can send to somebody else. So a fair amount of stuff gets done both ways. But at work I do a lot of hand writing and at home I do more typing and saving stuff onto the computer. I would say fifty-fifty on those two. You can only guess.

Devon Cook: K awesome. So we talked a little bit about that . . . So one thing that I noticed through our observations . . . Let me find the note I made here . . . You made the comment--and this was while you were setting the Shakespeare poem--you made the comment that . . . I'm just checking the battery life [on recording device] to make sure. I think we'll be fine.

Participant 2: [laughs] Battery problems. That's why pen and paper . . .

Devon Cook: Exactly [laughs]

Participant 2: Then you run out of ink [laughs]

Devon Cook: Yeah when the apocalypse comes it'll be pencils. Yeah so you made the comment while you were setting the sonnet that you really really want your first proof to be error free. That you check and double check your lines for spelling and things to make sure that first proof comes out well because you don't want to have to mess with the form after proofing it the first time. So this brings up questions about, or one of the things I wanted to ask about with typesetting in particular. Do you think when you typeset, you are more concerned with accuracy? Is that true or not true? What do you think about that.

Participant 2: Well I think you have to be very concerned with it. Unless you just don't care. I'm concerned with about it. Maybe some people wouldn't be concerned about it but then . . . I don't know if you ever read the comment sections of things you see on the internet. There are a lot of people who are not at all concerned about capitalization and spelling of words and grammar and any of that. [laughs] Which leads me to think they're complete imbeciles and I don't want people to think that I'm and imbecile. So that's why I like to have good grammar, good capitalization, good spelling in my writing whether it's by typing it or whether it's by handwriting it, or whether it's by setting it in type. No matter how I do it I still want it to be right and correct. Because that reflects on me and then after a while it becomes because that's the way it ought to be. Although you can't justify quite why it should be that way. Shakespeare himself, you know, would spell a word three different ways in one poem, but that doesn't make him an imbecile. So why should that make me an imbecile if I spell a word three different ways in one paragraph. But after while

your mindset, if you start out wanting to be accurate, after a while your mindset is that's the way it should be even though you can't say why it should be. You may communicate just [as] well with three different spellings but after a while your mindset is it ought to be right.

Devon Cook: Interesting. So we talked about how working with the letterpress takes longer. It takes longer. It takes more effort. So with that in mind, if you set something and then you proof it and you find an error. How likely are you to go through the work you don't want to go through to fix that error?

Participant 2: Oh you definitely go back and fix the error. You're not going to let any error go.

Devon Cook: Interesting.

Participant 2: And it can be painfully frustrating because if you set a long paragraph and then the first sentence you said a word twice and don't realize it, that changes the flow of the whole paragraph. And when you take that word out, you're going to have either huge word spaces in the first line, or you're going to have to refill the whole paragraph. And the right thing to do is to refill the whole paragraph. Even though it's painful, the idea is that if you're going to produce work, you should produce the best work you can produce.

Devon Cook: Interesting. So do you--one question I have is does this have something to do with the letterpress technology itself. Does something--and this might sound kind of cooky but--does it in some way the technology itself encourage you to be more accurate. So one question I would have is, when you write in other ways like by hand or on the computer or through email or things like that, do you find yourself any less concerned when you use those technologies about accuracy?

Participant 2: In my case, no. If I'm just typing something up, some random note, and I make a misspelling on the computer I will go back and change it and make it right. I'm just not going to knowingly have it be wrong. It's just the way it is. Regardless of the technology.

Devon Cook: Do you do anything, say when you write on the computer or write by hand to make sure that it doesn't have any errors in it? Do you double check or anything like that?

Participant 2: Well on the computer I'll read it over. With handwriting my assumption is that wrote what I intended to write. So I don't know that I read that over very much. But on the computer I'll always read it through a second time, you know proof read it.

Devon Cook: Yeah. I think part of this does have to deal with--part of the concern for accuracy is other people seeing what you've produced . . .

Participant 2: Mmhmm.

Devon Cook: And you wanting them to see that you produced it accurately. When you produce something just for yourself on the letterpress and you're not really intending to send it out to anyone or maybe it's just something you did for fun, are you still concerned about the accuracy of it?

Participant 2: Absolutely. If I was only making one I would want it to be right. No I may, and I'm thinking back--in fact we looked at that one sheet downstairs of that full page of type. This is in that little book I was working somewhere. When I was a little kid I got a little rubber stamp press. I don't know if you've ever seen one of those. They have rubber type. It's a little thing made out of sheet metal and it's got a little drum on it and it comes with rubber type and you put the rubber type in this stick and then you put the sticks around the drum and it's got a little inker on it and you can print a little 5 1/2, 8 1/2 sheet. You could actually print stuff with it. Of course it's real amateurish but it's something kids can do. So I got one of those for Christmas and then I would start making little newspapers. I can't remember what I call the thing. The Corner Times or something like that. The Neighborhood News. Maybe that was it. "Mrs. Painter got sick last week but she's feeling better now." You know those kind of things. And I would pass them off to people in the neighborhood. I had an aunt and uncle--they didn't have any children but they were both in the army and I would send a copy to them. And my Uncle would always write back and point out all the misspellings. Very gently of course. He didn't say "Hey dumbass you spelled that wrong." He'd say "Oh I see we've got a new spelling for nicotine. I wonder how that happened." [laughs] He was the only one really that would point out my mistakes, but he would always point out the mistakes. He was a very intelligent person and a good writer and everything. So he would know whether something was misspelled or not. And I wasn't a very good speller early on. My penmanship is really terrible. But as far as spelling and English I wasn't very good at it. But the fact that I became aware that everybody in the world could see my misspellings if I was going to mail out this little neighborhood news and that he would point them out--although he was gentle about it, I didn't really like him pointing them out [laughs]. I would rather not him finding mistakes. So that was kind of an inspiration to be more careful. And now I'm a very good speller and I'm very good at English and I think there's two reasons why my English and spelling got good. One reason is because I was setting stuff on my letterpress. After I had that for like a year or so, my parents saw I really like the thing and I got a real printing press with real type and stuff like that. So I've been setting real type ever since like the sixth grade. But as you set type . . . when you type . . . I've done a lot of typesetting on the computer and on computer typesetters, photo typesetting systems stuff like that that's now obsolete, over the years I've done that. So you're working on a book where you've got the copy right here and you're just typing--basically you look at the copy and every now and then you'll go to the screen. Basically you're looking at the copy and typing and at the end of a paragraph you read through the paragraph to make sure it's all ok. But most of the time you're looking at the copy. Well if you're looking at the copy, you don't have to know how to spell a word. "Altruistic." Well you don't have to know how to spell altruistic because it's spelled out right there on the copy. You just a l t r . . . But if you're doing letterpress, I don't know if you noticed this or not, but I was mostly looking at the case and not looking at the copy. I spend most of my time looking at the case. And that's because I enjoy doing it, but on the other hand I have just so many minutes left in life and there's other things I'd like to do, so I don't want to spend any more time than necessary to set something. The goal is to get it set. So you want to set it reasonably quickly if you can. And to set reasonably quickly you look at the type and as your hand goes for the letter 'a', you look into the 'a' case and you look at the type, you find a piece of type and notice where the notch is--the little nick on the type--and you grab that letter 'a' and now you know whether the nick is towards you or behind you and you can put it in the stick knowing where the nick is. You can also feel the nick with your fingers and rotate the type to get it in the right position but that takes longer. If you know visually where the nick is as you pick the piece up, you can just stick it in the stick and get it in the right direction.

The biggest mistake I was making yesterday was getting letters in upside down with the 18 point type because the nick is pretty close to the center, so sometimes I would put the letter in upside down. But I would almost always get the nick the right direction. So because you're doing that, because your eye is looking into the type to pick out the direction of the nicks and what piece of type you're going to grab next, because you're doing that, when you look at the copy you have to memorize two or three words, or one word if it's a long word. But then you have to know how to spell all those words. You know "phytoplankton" [from the sample I provided] I did look at it twice [laughs] to make sure. I set the 'phyto' part and then I looked back to see the plankton part, okay 'p' 'l' 'a' 'n' I think it was 'k' 't' 'o' 'n' rather than 'c' 'k' 't' 'o' 'n'. I don't use that word often enough to be instantly sure that it's 'k' rather than 'ck'. I'm still not sure. But if you do that, if you start doing that and you're successful at it, then you're becoming a good speller because it now matters to you whether you're spelling the words right because you're gonna have to spend a lot more time afterwards if you spell them wrong. Or you're going to have to set type a lot slower. So the incentive is to be a good speller so you can look at the words, know what you're setting and now set it without having to look back to see how the word is spelled. So anyway all of that was to say I think that's one thing that improved my spelling and grammar and everything. And the other thing was that I took Latin in high school and I think that made a big difference too because a lot of English is based on Latin.

Devon Cook: Yeah that makes sense. So just the--what you're saying is--just the necessity of sort of holding the word in your mind while you grab those letters makes it so that if you can spell the word correctly, if you already know how to spell the word correctly, it's much faster.

Participant 2: Yeah.

Devon Cook: You can just say, "Oh that's the word 'the' or whatever." Hold that in your head, and then you can put in the type. And you know how to spell 'the' so you don't have to look back at the copy.

Participant 2: Right. And the longer the words get, the harder it is. But obviously if you can remember 'rhododendron', you can set the whole word. You don't have to look back three or four times. Every time you break your concentration looking back, you're risking getting something long. You know "rhodo" [mimics looking back] "dendron" and you might just do the "dron". Every time you break your concentration you're risking getting something wrong. Every time you look back at the copy you're risking you know the "phytoplankton" that I'm setting on the second line, I may have just jumped to the "phytoplankton" on the fourth line.

Devon Cook: There's a lot to keep track of as you go through that. Okay, so what I'd like to do now before we get any further is I want to go through our observation that we did yesterday. And I want to show you what I saw of the process of setting the type that you went through. Now the way I'm kind of framing this is that I noticed a very cyclical pattern which pretty much coincided with setting a line of type in the composition stick. So for every line of type in that composition stick there was this cyclical pattern that you were going through setting the type. Most of this will probably be pretty obvious to you. But I wanted to go through it because I want to ask some pretty detailed questions about that pattern. So let me find . . . so we're in the fourth one already so let's do . . . So we've got here is we're going to watch one cycle. And I picked this one because it was toward the end of the observation and this to me represented a pretty typical cycle. And

I'm going to make some comments as we watch this about some typical things that I notice as you went through these. [plays clip] So you just finished the last line and now you're starting the new line. One thing I noticed is that you'd always hold the stick in pretty much exactly the same position. In fact, it was remarkable how much I could count on your left hand being in that particular angle and even in the same place in relation to the rest of your body. Just very much always in that area and in that position. I also noticed that your thumb is down kind of touching the type as you go along but it doesn't touch it immediately. The first few letters you just kind of set in there and then as that line starts getting longer, it would reach your thumb and then you would start to kind of press on those with your thumb. Then as the line gets longer and longer, you'd scoot up your left hand so that your thumb would stay on the end of the line there. Some other things I noticed. Like you said, I noticed that you didn't look at the copy much. You'd look at the copy, then you'd be looking down at the case to look at the letters and now I know to look for nicks. As you did that, I noticed that sometimes you would pull up the piece of type before placing it and just give it a quick glance before placing it in and sometimes you wouldn't. Sometimes you would just pick up the type and put it in without looking at it. And then every once in a while you'd pick up a piece, glance at it, and then look at it for longer, and then put it in. Sometimes you'd put it back. But yeah, once you finished the line--again, this was very consistent--you would turn toward that light that was behind you.

Participant 2: Yeah that's because I had very poor light there.

Devon Cook: So yeah, you'd do that and again this was pretty typical, as soon as you had proofread it in the light, you'd turn back, set it down on the case, and then you'd start to work with that spacing. So as you worked with the spacing, I noticed something else that was pretty typical . . . [clip ends]

Participant 2: So that was the complete cycle.

Devon Cook: Yeah so that was our complete cycle. As you were were putting that spacing in, you tended to--at the very end you'd grab it with both hands in sort of this motion and sometimes press it with your thumbs. So kind of a this sort of a thing [demonstrating with hands] and go for the leading and put that in. So those were some of the typical things that I was seeing as we went through that process. So I wanted to ask you a couple of questions about that now that we've got that in mind. Can you talk to me about your left hand, the work that your left hand is doing with the thumb and holding the composition stick?

Participant 2: So it's holding the stick and generally--I don't know how other people do it--but generally I hold it in the same place pretty much all the time in relation to by body. If I turn the stick turns you know. I don't know if I were to set a bunch of capitals would I--I would probably just lean over there and keep the stick in the same place. I wouldn't normally move my stick and my arms like this and do this [gestures]. I think I would still do this [gestures] is what feels right. Other people might do this [gestures]. I don't know. But your thumb is on the type to keep it tight against the end of the stick so that it doesn't move because it can move around pretty easily and get messed up. Occasionally a piece would turn sideways when I didn't want it to and I'd need to go back and turn it up straight and make sure they were all in the right order before continuing. So yeah, so basically that thumb is holding the type back against the edge keeping it all packed

in and all straight so it doesn't get loose. When you stick the piece of type in you kind of raise your thumb a little bit and hold it down so it keeps the type into place.

Devon Cook: K awesome. So let's talk just for a second about the spacing. It seemed to me that probably about 50% of this cycle was spent on getting the spacing right, usually after the letters were in the line. Getting that spacing right and getting the line nice and snug. Can you just walk me through--now that we've watched this--just walk me through what is kind of going through your mind while--both while you're putting the letters in and while you're actually justifying that line. In regards to the spacing and working that out.

Participant 2: Well when you're doing the actual setting, the word space is going to be a word space, whatever you're using for your word space. You're just going to put those in automatically. Then when you get towards the end of the line, now you've got to break it somewhere. So I think I only had one case--maybe two, maybe one or two lines where I tried to fit in a letter. So you get down to the end and your last word is "the" but the 'e' is just a little too wide to fit in. It won't fit. But it's just a little bit. So since it's just a little bit, the best choice is to take out a little bit of word space as opposed to put the whole word down to the next line and now have to add word space. Because the optimum is just a word space. When I did the poetry, everything is word spaces. I've got a word space that's the optimum word space for that type size. . . .

Devon Cook: Were you using the 1/3 em . . .

Participant 2: In both cases it was narrower because the 1/3 em is the traditional word space but in the computer age we have tighter tracking and stuff and people are used to seeing it a little bit tighter than that.

Devon Cook: Ok.

Participant 2: In both cases, both those fonts that we were setting from have relatively small x height for the lower case. The lower case x height that's always called the x height. The cap height would be the cap height. The x height is small for the body. So different typefaces have different x heights. So the body is yea big and the x height is the height of the lower case letter x or the lower case letters. Now some typefaces, you got real tall ascenders and real tall descenders. The g hangs way down, the l goes way up high. And those faces have a small x height because fair amount of the body is taken up by ascenders and descenders. Other type faces--and a lot of the modern computer typefaces--are designed with large x height because for the same point size you get a larger looking letter. So if you have a large x height, the tail of the g hangs down a little tiny bit below the baseline and the l and the t and the tall letters don't go up very much. So you can have a piece of type this big and you can have an x height this big or this big [gestures]. The x height on both those typefaces was rather small and of course the standard go-to thing is to say well, the word space should be 1/3 of the body. But really the word space is almost always separating lower case letters so it really needs to relate to the lower case letter. So if these types would have had the larger x height, I would have used the wider word space, but in this case, both of them had fairly small x heights in relation to the body, so I was using a narrower than normal word space. For the 18-point type it was 4 3/4 points wide--I just happen to know because I cast the type--where a normal word space would be 6 points. So it was a 1 /14

narrower. And the medieval typeface that [unintelligible (rheo had cast, the dale guild?)] those spaces were space that he supplied with the type and I don't know if I figured out if they were-- we were checking and they were somewhere between 4 to em and 5 to em. So again, it's a narrower word space but it works well with that particular x height. So what was the question?

Devon Cook: Sorry I got you distracted. [both laugh] We were talking about what was going through your mind as you were doing the spaces.

Participant 2: This is like a presidential debate.

Devon Cook: Yeah [laughs]

Participant 2: We had a long answer there but no one remembers what the question was and they probably don't relate.

Devon Cook: Yeah [laughs]

Participant 2: So go ahead what was the question?

Devon Cook: So you were just talking about how the ideal spacing is your standard word space that you're using for that typeface.

Participant 2: Ok right.

Devon Cook: And what happens from there.

Participant 2: Yeah what happens at the end of a line. So with the poetry, it's just all word spaces and justification just involves filling out to the end of the line and making the line snug. So with the other text, we're actually justifying the text, not just the line. So now, like I say, there were only a couple of cases where I wanted to squeeze an extra letter in. So I've got "th" and the "e" won't fit. So now I take out one of the word spaces and I got thin spaces up here so I go and put a thin space in. Or maybe I put a bunch of coppers or whatever so that I've got less space between maybe one or two or three words, just a little tiny bit less space between those words, and now I can squeeze that "e" in. The most common thing of course is you come pretty close to the end of a line--you may have a pica or so left, you know three or four letters worth of space--now you've got to add wider spaces between the lines. So the traditional case is set up with the 3 to em as the word space and the next largest space is the quad the nut quad which is 1/2 of an em. Which in the 18 point would be 6 point and 9 point. But I was already using 4 3/4 point instead of 6 point and the others were still the same. So now I was putting in almost double the word space when I did that which is too much. And that's why I mentioned that I had cast special little trays of extra spaces that were 1 point wider and 2 points wider which are around here somewhere I don't know where. I didn't have those handy but the idea is if I were doing really good composition, I would have those handy and then when I've got a little bit of space left I would look "Ok, I've got the line" and you want to put the space in where you've got tall letters next to each other as opposed to rounded letters next to each other. So you've got a word that ends in an "o" and another word that begins with an "o", you've got a lot of white space because those letters are rounded. Or if you had a "v" and a "w" or an "o" and a "w" again the "w" is at a slant so there's a lot of extra white space. But if it ends with like a "d" and starts with an "l", now you've got two

tall letters and visually there's less space between them because those letters are so tall. Whereas with the round letters and the "v"s and "w"s, there's more white space there because of the shape of the letter. So when you go to add the extra space, you want to look at the line and look at the letter combinations around each word space and you look for the ones with the tall letters and you put the space in there first. And when you've added space to all those, then you gotta go back to the rest of them--the short letters--and put in extra space there.

Devon Cook: So you were thinking about these kinds of considerations. You were taking these things into account as you went through setting that type.

Participant 2: Um no, not as you're setting. As you're setting you're just . . .

Devon Cook: Sorry as you're adjusting the line.

Participant 2: As you're adjusting. Right. As you're doing the justification, that's when you do all that. When you're doing the setting, you just put in the standard word space because you have no idea how you're going to come out at the end of the line. So all you can do is put in the standard words space. But then the end of the line, when you've got to put in extra space, now you look and see where you can put the space optically that's the best. That's the fin printing way of doing it, the high quality way of doing it. The easier way is to start at the beginning of the line and put in fat spaces until it fits and not worry about it.

Devon Cook: Do you worry about it?

Participant 2: I worry about it, yeah. It's again that whole if you're going to do it, you might as well do it right. You might as well do the best job you can.

Devon Cook: K interesting. I had one more question . . . maybe I didn't have it. Ok so there are a couple of things that I noticed that stood out to me because they sort of differed from this cyclical pattern. And one of them that I noticed was having to go to another--having to leave your station for some reason to go find things that you were missing. You mentioned possibly having to do that for the italics. I noticed that you had to go get more copper or brass spaces at one point. There were also maybe some odd sizes of maybe slugs or leading that you had go retrieve at another place. And then as you were setting the sonnet I think there were--I think it was spaces. You didn't have all the spaces you wanted so you went to another type drawer to fish out some more spaces to work with. What can you tell me about needing to leave the station to go get things? How often does that happen? Is it a pretty regular thing when you set? Or do you have everything laid out in front of you?

Participant 2: I try to have everything handy. You're setting to a certain measure so you've got leads and slugs so it's good to have them right there. But you don't know how many lines you're going to get so you may not have enough and you may have to get more. The spacing material is probably the biggest thing that I would say most hand compositors have to deal with--not having enough of. The reason is you've got one California job case and it's got various spacing material in it. Well if you're poetry for instance you're using a lot of quads to fill out the line. And you'll very quickly go through whatever's in there before you use up all the type. All the quads will be gone so you'll have to go to another case and get more quads. That's what I had to do of course. The big typographers--like in New York City and Chicago--the big typographers would have

thousands and thousands of California job cases with different kinds of type. So they could set about anything anybody wanted. They didn't really worry about keeping spacing in the job case. They had a whole area full of spacing. They had boxes. So they had a box of 13.3 to em, 14.4 to em, a box of 14.5 to em. Boxes of quads. Boxes of 2 em quads. Boxes of 3 em quads and probably several different boxes of every different size they had. And they'd keep that all in one area so that when someone needed to set something, you'd grab the type and set it on a stand, then you'd go grab the spacing material and that way you wouldn't run out. They may have kept the thin spaces with the type and just the quads, because the quads are the real problem. The quads are what you run out of fastest. But if you just go to set a poster or something with centered lines and stuff, you're going to use a lot of quads and you're going to run out of them. If you just pull out a California job case, you're going to get two lines, three lines set and you're going to be out of quads. Now you're going to find another type case the same size and pick out all the quads and you go find another case and pick all the quads out of that one. So the big typographers just figured out it was easier to keep all--to have a big box full of quads. You'll never run out and when you set the type you put the quads back in the quad box and do that.

Devon Cook: Ok very interesting.

Participant 2: When I was doing your work, the first three lines were real short at the top. And as soon as I saw you wanted me to set that I was like "Aww Christ I'm going to run out of quads." [both laugh] Because I knew right away it was going to use them all up and I didn't have many quads in that case. So I don't know if you noticed, but what I did was I used the leads and slugs. I grabbed the leads and slugs and I used those to take up the space. Just to avoid having to use up all my quads.

Devon Cook: That makes complete sense. Ok let me look at this real fast. So another thing I noticed is that every once in a while you drop a piece of type for some reason. We had several hit the floor and I think there was one I saw you drop in the case. I think out of maybe 5 pieces that you dropped, all the ones you dropped on the floor, you didn't pick them up. You just kept going. You dropped a couple in the case and I think one of them you tried to pick it out but realized you hadn't seen exactly where it had fallen . . .

Participant 2: Yeah one of them I couldn't find.

Devon Cook: And you just kind of gave up and just went on. So if you could talk about that. Is this something that happens fairly often? And why drop it and just leave it? Any thoughts on that?

Participant 2: It happens more because I have carpal tunnel syndrome. My hand is not as agile and good as it used to be so I'm more likely to drop stuff now than when I was 18 years old. So it does happen. In the case of the 18 point type, the Kennerly, I cast that and I can cast more of that. So if I drop a piece there's almost certainly some damage to the piece. So I'm not going to pick it up and put it back into the case. I'm going to melt it down. So I just said, "Well I'll clean it up later." And I still haven't cleaned it up. I will clean it up and those are going to get melted down. I'm not even going to look to see if they're good enough to put back into the case. They hit the floor; they should not go back in the case. Now I think I dropped one piece of the medieval type and I can't cast that again and it may never be cast again so that type I don't want to throw it

back in a melting pot. So I think that piece I did pick up and used it. But that's the difference. Some smart printers would have a carpet there so that when a type falls it hits the carpet and you don't damage the type. Now I was setting on a concrete floor and I can absolutely guarantee it will have a dent or a ding on it. It might not be the printing face and if it's not the printing face and it hits a corner now it's flared out that corner and you can put it on a file and file it down and still use it. But as I say with this 18 point type, I cast it; I can cast more. There's no point in messing with it. If it hits the floor it's done.

Devon Cook: K interesting. That's not the answer I would have expected so I'm really glad that I asked.

Participant 2: What did you think it was?

Devon Cook: Well I just thought that you didn't want to slow down. That you were in the rhythm and you didn't want to slow down. But I didn't event think about the type getting damaged.

Participant 2: Yeah if it was the medieval type--and I think I did pick up one piece of the medieval type . . .

Devon Cook: You did. I noticed that.

Participant 2: And that's why. Because I wanted to keep using it. Whereas the other one is dirt. It might as well be dirt on the floor. I mean I could pick it up and if I picked it up, I would have to go somewhere to put it in a bucket of type I'm going to melt down. So it would be better to do that at the end. It would be more efficient to do that at the end: pick them all up at once and throw them in the bucket to melt down. As opposed to every time I drop a piece of type, stopping and walking off somewhere to get rid of it.

Devon Cook: That makes absolute sense. So the other thing that I wanted to ask about real fast was we're going to look at something real quick here. . . .

Participant 2: Now another thing you could mention when you were talking about picking up a type and looking at it and putting it back. Generally the reason is if it doesn't quite feel right I think maybe I've got a wrong font. If I'm picking up an "h" I expect it to be a certain size and weight and I picked up an "h" and it was a lot bigger. And I thought [unintelligible]. That's when I realized that I had put the capital "h"s in the lower case "h"s. Mixed in with the "l"s on the medieval font there were a bunch of ligatured "l"s--which look almost identical--that have two "l"s. It's two "l"s which are actually connected. But I just had all of them in one case. So occasionally I would reach in for an "l" and I would get something that was wider. I would look at it because we also had this new type in there which was sticking together. So if I picked up something that was wider it could either be two "l"s stuck together or it could be one ligatured "l". So then you look at it, see which one it is, and if it's the two pieces you rub them together, break them apart and put one of them back and put one of them in the stick. But if it's the double "l", you throw it back and go get a single "l".

Devon Cook: So a follow up question to that really quickly. You work with different fonts and different size fonts. So how quickly do you develop a feel for how big those letters should be so that you get a warning flag in your head when it's not right?

Participant 2: I don't know but I would say after 3 or 4 lines you would start to feel what it ought to be.

Devon Cook: Interesting. And I guess regardless of what the letter is, they're all the same height. So you start to get a feel for that very quickly.

Participant 2: Yeah that's a standard so that doesn't change.

Devon Cook: Ok, so I'm going to show something here. This was another thing that kind of stood out to me. The interesting thing about this for me was just that you didn't do this with the first one. This was something that you did 2, 3, maybe 4 times but it was only towards the end, towards the latter half, and I'm just interested in what was going on. I've been calling it in my notes like a little "flick." Like a little flick of the wrist. So we'll take a look at that here. See right there. So let's look at that one more time. Oh that's too far back. Is that too far forward? This is hard to navigate. K so it will be in about 5 seconds here.

Participant 2: So I'm just fine ok.

Devon Cook: So this kind of flick of the wrist. Let me show you another instance of that. So just a few minutes later we get the same thing . . . [pause while both watch clip]. That was probably one of those ligatures stuck together that time.

Participant 2: Yeah, stuck together.

Devon Cook: K so I must have gotten that wrong, because that was the part I had marked. Ok so let's just go back to the first instance just one more time. Maybe I can pause it right when it happens. So right there we've got this kind of . . .

Participant 2: Can you back it up another 30 seconds?

Devon Cook: So this is by frame. So yeah this kind of flicking motion. So let's go maybe back to here.

Participant 2: K so I'm setting.

Devon Cook: So we've got about a minute before it'll show up.

Participant 2: Mm K.

Devon Cook: So you proof read it . . .

Participant 2: This is towards the end. This is the medieval type?

Devon Cook: Yeah you're working with the medieval right now.

Participant 2: So I put in a quad . . . now I'm putting in a word space . . . we've gone back a ways huh.

Devon Cook: So this is it right here.

Participant 2: Ok I thought I had justified the line . . .

Devon Cook: Yeah I don't know . . .

Participant 2: Go back a minute if you can.

Devon Cook: K so this is just about 30 seconds--20 seconds before you do it.

Participant 2: Ok. Ok now I'm putting in thin spaces. . . . Ok I see what I'm doing. I saw the hand go up the second time and at first I assumed that I had grab the lead and I was done justifying. So I was trying to justify and I put in a thin space but it wasn't working right. Or I may have the first time gone with some spaces from another case that 2, 3 to em spaces. So I grabbed those but then would have grabbed like three or four coppers and had them in my hand and I was just shaking them up to grab one to stick in the stick and holding the rest in your palm.

Devon Cook: So that's an instance where maybe you had several of those really thin spaces . . .

Participant 2: Right.

Devon Cook: And you're kind of shaking your hand so one would come free . . .

Participant 2: Right. Yeah to grab one of them.

Devon Cook: K. Again I wouldn't have guessed that, so that's good to know. So going back to the cyclical process we were talking about, one thing that I noticed was as you went along, it kind of shifted a little bit. So it wasn't exactly the same at the beginning as it was toward the end. Now I've been showing you clips mostly from the end of the observation. I kind of assumed that the differences were because--you know you've mentioned that you don't do a ton of typesetting; it's not something you do all the time at least--and so I kind of assumed that it was you sort of getting back into it maybe, or getting into groove or working off some rust or something like that. But I wanted to show you an example from . . . So let's compare . . .

Participant 2: I'm going to run to the bathroom while you're looking it up.

Devon Cook: Yes, yes please do.

Participant 2: Because I'm an old man I've got to go every hour . . .

Devon Cook: So this is more towards the beginning. You're about 3, 4, 5 minutes into actually setting the type. So I thought we'd watch a cycle from that. [plays clip] I'm going to speed it up to 2x speed just so that we can . . . hopefully this won't be too fast. It might be too fast to speed that up. I'm going to speed this up a little bit because I want us to get to the end when you go to justify the line. [long pause] I assume this is for a piece of leading.

Participant 2: This is I think when I was looking to see if--I have another case of stuff that's related to this and I was looking to see if I had those other word spaces that I had been looking for up here, if any of them were in the case. Because I didn't want to go to those en spaces but I had to go to the en spaces.

Devon Cook: So now you're proofreading it.

Participant 2: And now I'm looking at the line trying to decide where to put those fat spaces.

Devon Cook: Almost there. Alright and then you're on to the next one. So before I give my observation, anything that you noticed different from this sort of early cycle as compared to the later ones, or the later one we watched? [pause] And you may not have noticed much, which is totally fine. K [laughs]. A couple of things I noticed: for one it took quite a bit longer to go through those cycles at the beginning . . .

Participant 2: Yes, at the beginning I was not looking for the nicks. Basically I would go get a character then you had to rotate the character, find where the nick is, and then put it the stick, which takes longer to do that. So the deal of looking for nicks is a trick that the speed setters of the 1880s--you know they used to have contests to see who could set the most type in an hour. That was one of their big things was to always be looking for the nick. So I learned to do that, but as I say, I don't do this very often so it was 5 or 10 or 15 minutes to kind of get into the groove. And then your up to everything feels good now we can start looking for the nicks.

Devon Cook: Absolutely. A couple things I noticed in this one that I wasn't noticing later: there was a lot more stopping to sort of look at and proofread the line in the middle of the line rather than finishing the whole line before proofreading. I saw that quite a bit in these earlier ones.

Participant 2: And I would say that that's--again being a little rusty and wanting to make sure that you're doing it right. Again we talked about the feel of the type, feeling whether it's too skinny or too fat. The first 4 or 5 lines you're not going to be able to tell what you're picking up. After you've been in it a while, now you can pick up a piece of type and instantly tell that I went for an "s" but this feels like an "i". Yep it's an "i". Whereas at this point you can't tell that. So there's that fear that, "Am I getting this right?" [unintelligible]

Devon Cook: Let me know if it comes back. One of the things--and I don't know why this fascinated me, but I just really fixated on it--was in this first little while, like the very first line you set, when it came time to justify the line, you turned back towards the case, you had the line there and you were picking up spaces and you were putting them in and testing them to try and get that line right. And then it was really interesting to watch as you went along you would do the same thing and then it was almost like you were in sort of an awkward position or something so you would set the composition stick down on the case and then work with the spaces there. And it seemed like over time, the amount of time that you had it in your hand while doing that justification dropped and it got to the point where as soon as it was time to justify the line, you would just immediately take the composition stick, set it down on the job case, and start doing those lines.

Participant 2: Hmm.

Devon Cook: And my thought was, maybe it's easier to justify that line when it's set down rather than trying to hold it in your hand. But there was, toward the very end--it was one of the last few lines that you set--there you were, you were justifying the line with the composition stick in your hand and you justified the line that way. Your thoughts on that detail?

Participant 2: With the poetry it's a lot easier to justify it with the stick in your hand because you're not taking out word spaces and putting in other spaces. So basically you're only working at the very end of the line and sticking in just enough space to make the line tight. So you can just hold on to that line and just say "Ok how much space do I need to add at the end of the line?" and add the space in. Whereas when you're doing the text, when you're justifying the text, the text has got a line up on both ends. Now you've got to take your spaces out and put other spaces in. So the first few lines I did, I didn't have to do that, because those were those short lines. With those I was putting in the leads and slugs. But when you're doing a composition, it's easier to set it down, then take the space you're going to put in--now you've got the line there--and you find the space you want to replace and you catch it and flick it down and then you can put your new space in and pull your other space out. You can also do it in the stick to a point. You gotta kind of hold onto the stick and move those characters over and somehow get that type down and get it out. It's easier when you lay it down to do it that way.

Devon Cook: It's interesting that you would mention the flicking technique where you use the new space you want to try to flick out the other one and put it in . . .

Participant 2: Yeah.

Devon Cook: Because that's a trick that I developed having never talked to you, so it's interesting . . .

Participant 2: Well it's difficult to do it any other way. I mean, what are the options?

Devon Cook: Trying to grab it with your fingers [laughs]

Participant 2: Which is not going to work. Yeah. So your option is to, if you have a whole bunch of room at the end, you could take the words and shove those over and reach in and grab that space but as you get less and less extra space you're not going to be able to do that. So yeah, they pretty much have to use something to flick that space down so you can get it out of there. The handiest thing of course is the other space you're going to put in.

Devon Cook: Yeah, that definitely makes sense. K so we've talked quite a bit . . . about sort of this cyclical process. So I want to start moving--I want to kind of zoom out for a little while now and start looking at this typesetting process as part of your whole system. Before we do that, yeah okay. So one question that's particularly important for my research as we look at this whole system is one of the things I'm looking at is this idea that the physical nature of our writing technologies matters in how we write. Now that's kind of a hypothesis that I'm forwarding. So one of the things that I wanted to ask you is, do you think that the physical nature of the type--you know the fact that you're picking up each piece, that you can hold them with your fingers, and that there's this physical nature to it--does that make a difference in how you experience typesetting versus typing on a computer or writing with a pencil or pen? And if that's a hard question to answer, just let me know.

Participant 2: Let me think about it a minute. Does it make a difference?

Devon Cook: So one thing that comes to my mind is--and maybe this will help--you mentioned that the type, the face of the piece of type, it's small. The letter's small. It's hard to see. You

mentioned that sometimes it was a challenge to get it in the right spot with your bifocals and get it under the light so you can actually see it. I know even me, with my young robust eyes there are times when I struggle to be able to see what was going on there. And that's part of this physical nature. Because when you're dealing with a digital environment, you can always just blow it up. You can always zoom in and make it bigger. You also talked about having to pick up the type and how sometimes you'd drop it maybe because of that carpal tunnel. I've also had it mentioned to me that it matters how grippy your fingers are that day. Sometimes it will just be slipperier for some reason. So just talking about that physical nature, does anything come to mind to you about how that might affect the way you write or anything like that?

Participant 2: When you say "affect the way I write," what do we mean by writing in that sentence? [laughs]

Devon Cook: That's a great question. Yeah, I'm going to have to get more specific. So let's change it from writing to producing text. So when you produce text on a computer or with a pencil or pen, does the physical nature of typesetting make producing text that way different?

Participant 2: I don't know it's a difficult question to grapple with. One thing that's different is that most of the time when I'm writing or typing, most of the time I'm creating language and most of the time when I'm setting type I'm not creating language. The language has already been created. That's almost always the case. There have been times when I actually create language-- I'm using that instead of the word writing because writing can mean so many different things. Or create text. I have created at the case. You have an idea. You want to set a paragraph about something and I'll just start setting.

Devon Cook: You compose as you're typesetting.

Participant 2: Yeah I compose at the case. And I have done that. Of course when you do that, it's a lot different because you have to think of the words enough in advance that you know where you're going with it. Because it's a lot harder to go back. Whereas when you type on the keyboard you can write and then you can decide that the verb should have been at the beginning of the sentence [laughs] and you can change it all around real easily. But when you're doing it at the case, it's a lot more work to change it around, so you kind of formulate a sentence as you go. You kind of formulate the sentence in your mind and the sentence you end up with may not be quite the exact same sentence you started out with because as you go you may like to do it a little differently. You may change a word or two or change the grammar a little bit or something as you go. So it's a lot more fluid in that way. As opposed to--I'm setting from an existing text--but most of the work I do at the case, if I'm writing a card or something, I've already written out the text and I've already taken a piece of paper and drawn a rectangle and said I want this to be here, this to be here, and this to be here. I now what I want to set and then I just set it. So it's kind of a mechanical operation. Whereas the other two are a creative operation. I'm actually thinking of the words as I'm typing. And you know when you type you're basically typing as you go. It's almost a stream of consciousness thing, and the same with writing. So I don't know it's difficult to equate the two because they're kind of like two different animals.

Devon Cook: So does that creative aspect ever bleed over into the mechanical aspect as you're describing? In other words, when you're working from copy, do you ever end up deviating from

what's written on the copy? If it's my choice, that is if I'm setting something for myself, yeah that happens often. You can sketch something out and as you're going you think, "Eh, it would be better this way," and you just do it differently. Now if my sister wants a wedding invitation and she said what she wants, then I give her what she wants. But if it's something for me, or if I have the authority to change that, I don't have any problem at all with in the middle of things changing something.

Devon Cook: That brings up a quick question for me. Have you ever changed a word or changed the grammar of a sentence or something like that, when you had the authority to, so that it would fit better on the line or something like that?

Participant 2: Yes. Oh yeah, oh yeah. Yep. Absolutely.

Devon Cook: Alright.

Participant 2: I've had copy dictated by how many letters were left. It doesn't happen so much in text, but . . . the red poster. [goes and grabs red poster] So this is really big type and I don't have very many letters of it. So I start out "America needs Trump like something need something." So this was already written and this was written but these two words weren't written. And I was trying to come up with something clever. But you notice those two words don't have the most common letter in the language.

Devon Cook: Which is "e".

Participant 2: Which is "e". Because there were no "e"s left.

Devon Cook: [laughs] You had used all your "e"s.

Participant 2: So the copy was dictated by the fact that I didn't have any "e"s left.

Devon Cook: Do you have any--and this is just total speculation--but do you see that sort of thing, that being something that could have happened fairly often in the history of printing. You know back when . . .

Participant 2: I would say yeah.

Devon Cook: You had maybe these small printers who had to print a poster for something and . . .

Participant 2: Yeah. In large work like that, poster type work, or job type work, I would say that would be definitely a possibility. That probably happened many times.

Devon Cook: Interesting.

Participant 2: Something would get changed just because we didn't have enough letters.

Devon Cook: Yeah, very interesting. One thing I noticed as we were printing this facsimile of the first newspaper in Utah like I told you--it was interesting because as you looked on the--so it was

an eight page newspaper but it was printed on the front and back of one . . . is that a folio? . . . what size of paper about that big? Yeah about right there. Do you know what size of paper that would be?

Participant 2: Folio is a term that defines how the paper is folded.

Devon Cook: Never mind then [laughs]. So it was a paper about this big, but you would have four pages on the front and four pages on the back of the same paper. Because their big problem was shortage of paper, being on the frontier and everything. So they would print front and back and then you would fold it over and you'd get this little eight page . . .

Participant 2: You'd fold it again and you have eight pages with the fold still at the top.

Devon Cook: Yeah and then you'd actually leave it to the customers to cut that top fold so that they could read the eight pages kind of like a book.

Participant 2: So in folding terms that's a quarto.

Devon Cook: Ok I obviously . . .

Participant 2: If you take sheet of paper and fold it in half, that's a folio.

Devon Cook: Ok, ok.

Participant 2: If you fold it again, now it's a quarto. If you fold it again, now it's an octavo. If you fold it again, it's a sixteenmo or septadecimo or something like that.

Devon Cook: Whatever that is [laughs]

Participant 2: Yeah, I'm down to sixty-fourmo just how many times you fold it. But that's what those terms actually mean. But they've also come to relate to book sizes.

Devon Cook: Ok, ok.

Participant 2: So this is considered an octavo book. And this is considered a quarto sized book. Now working from a theoretically large sized sheet and folding it down to those sizes. But in fact, all that is based on the assumption of a certain standard sized sheet, that that's an octavo and that's a folio. The terms truly mean, like I say, how it's folded. And it really doesn't relate to size at all but it's just come to be related to sizes.

Devon Cook: Ok that makes more sense to me now. So the interesting thing to notice was that on the fourth page of each side, you'd start to see letter substitutions.

Participant 2: Ah, they ran out?

Devon Cook: You would see, especially with vowels. You would see "i"s instead of "e"s . . .

Participant 2: Wow

Devon Cook: And you could tell that words where they did the substitutions, they picked them very carefully so that you could still tell what word it was even though they were substituting a vowel.

Participant 2: [laughs]

Devon Cook: But yeah, you'd have "hits" instead of "hats"

Participant 2: Uh huh

Devon Cook: And it was very clear that they meant "hats" but all of--you know they'd say "hats" three times in this very last paragraph and it would all be "hits". Anyway . . .

Participant 2: That's really neat. So you can tell where they ran out of letters [laughs]

Devon Cook: Yep, exactly. Alright, well, so continuing to zoom out on this process, one question I wanted to ask you was, and let me check my notes real fast, is there anything that you've done to your shop to make--particularly the typesetting part of it--easier. Compared to maybe when you first started or when you first got this particular equipment. Is there anything that you've done to make it easier for yourself? One thing I noticed was having one light in front and one light behind. You had the two lights hanging there.

Participant 2: Yeah that was bad. [both laugh] I would say that we were there for your benefit, that I wanted to put the case on a type stand like it ought to be . . .

Devon Cook: Ok interesting, go on.

Participant 2: But if I--like you looked at that full page of type--so when I set that, I set it up on the kitchen counter with some books underneath it and at an angle so I could be up here where there was more light and the music was better. And I actually set the book there. I didn't set it down where it should have been set, which is--because the lighting's so bad.

Devon Cook: Yeah, ok that makes sense.

Participant 2: So I was actually just trying to be more proper by having it on a type case the way it's supposed to be, the actual type case. As opposed to doing something that looks kind of foolish like setting type in your kitchen. [both laugh] Though where I would really set type in this house is I would set it in the kitchen.

Devon Cook: [laughs] There you go. So is there anything else that you've done to make the process easier. Is there any further equipment that you brought in to try to make it easier on yourself or improve that process?

Participant 2: What I have the option to do because I can cast type is that I can do things that anybody who's just a printer can't do. For instance, kerning is something that is being involved with typography and stuff, I'm a little more concerned with. And with metal type it's not like on a computer, you just can't move a letter over.

Devon Cook: You can't adjust it.

Participant 2: But I have the option, because I cast the type, to do kerning. So that other case I was talking about where I was looking for spacing material, I have a whole bunch of alternate letters. So I have "t"s where the "t" hangs off the body of the type so I can kern out--actually I don't know if I should go into this or not--I'll go into it. Typefounders in the past have done some of this. So I have some German types where I have regular "t"s and then I have "t"s where the top of the "t" hangs off the body. So if you put an "o" underneath it, they kern together. So you can do it with or without. And the German typesetters would often have "v"s and "w"s, they would have a regular one and then they would have one that was cast on a narrow body so that it hung off on both ends. So if you were setting all caps, and you had--I don't know if you'd have a word with two "v"s, but--if it had two "v"s you could stick a space in there so that they would be normally spaced. But if it was "av", then you wouldn't stick the space in and the "a" and the "v" would kern together. So I have the option to do that kind of thing, except that on the monotype machine, when you kern the "t", it kerns the front of the "t", not the back of the "t". So that doesn't work. If you want to put "to", it doesn't help that you've kerned the left side because you need to kern the right side. So that means what you have to kern is the "o". You cast the "o" so that it overhangs, then you put the "o" and the "t" together and you get the kern. So I had to cast "a" "o" "i", you know cast a bunch of different letters hanging off the body so that when I set this text I set I could do the kerning that I wanted to do. But you had to be the typesetter to have that option.

Devon Cook: So you might be interested to know this but Tim, that's the main thing he uses his hacksaw for.

Participant 2: Oh really.

Devon Cook: He'll take the piece of type and he'll shave off that area of the body that's underneath the . . .

Participant 2: Wow

Devon Cook: So then he'll end up with piece of type that's shaped like this, which I think is done sometimes on, you know, they'll cast it that way. The "t" will have this kind of v shape. Then he'll do the same thing with the "o" or the "a" that's going to fit under there.

Participant 2: Boy that's a lot of work.

Devon Cook: [laughs]

Participant 2: They made a machine called a mortiser(?), I don't know if you know that. They made a machine, a notcher, or a mortiser. Mortiser is the proper term. Notcher is what everybody called it. But they made a type notcher that would basically cut a groove. You could say where you wanted to cut out of it. You could cut it nice and parallel on square and fit the two together perfectly.

Devon Cook: And I saw some of those. They would just kind of fit together perfect.

Participant 2: Mmhmm.

Devon Cook: Ok so we've talked about that. What am I looking for . . . We're on the downhill time wise.

Participant 2: But as far as other things to make it easier, no I mean . . .

Devon Cook: Just pretty much . . .

Participant 2: To me it's just common sense stuff. I mean you have a supply of leads and slugs handy. You have enough spacing material handy and you have the type and you go at it.

Devon Cook: So there haven't been many situations where you've thought, "Oh man, this part of the process is not going well. I'm going to do this or this to try to fix it."

Participant 2: Nah.

Devon Cook: Ok. And you might not have any response to this question either. But is there anything that you--if you were to set type more often--maybe if you were to try to do a fine print of a couple books or something and you had this goal. Is there anything that you would do to your shop or your system of doing it?

Participant 2: Any changes?

Devon Cook: Yeah, and changes you would make?

Participant 2: No.

Devon Cook: You'd just go for it?

Participant 2: Yeah.

Devon Cook: K interesting. Ok this next question may be kind of difficult for you to answer simply because--this might be a little hard to answer because you have been doing this for so long. How have your typesetting practices changed over time? Can you remember back to when you were first starting and maybe some of the things you did that were maybe novice moves or .

.

Participant 2: Well yeah, you cut up a sheet of paper into little tiny pieces and you wrote the letter on it and put it over the edge of the box so that you know what letter was in each box until you learned the California job case. You kind of had to do that. But once it was learned, and I can say once--I think it was pretty early on and reading books about how you were supposed to set type. And so pretty early on I knew that you didn't look at the copy, you looked at the type case and you looked . . . The idea that if you wanted to be fast, you had to find the piece of type before your hand got there, find it with your eyes and grab it and know where the nick was. And that you could go a lot faster. I knew that fairly early on. So I would say, no, aside from the first year or two, I think it's always been the same.

Devon Cook: How did you learn how to set type?

Participant 2: So I had this rubber stamp press, and of course that hardly counts. But then in the sixth grade we got a Kelsey press which is still downstairs and like 3 or 4 cases of type. I put the little labels on so I knew where each letter was. The first thing I said, I remember I was taking Latin class and we had to write a report on something. And I said I was going to set it so I worked over the weekend setting the type until I ran out of type. So I got like one whole paragraph set [laughs] and the rest of the report I typed on typewriter. But I wanted to do it any way so . . . But I went ahead and set that. That was the first thing I ever set or printed was that report for Latin class. And then going to the library and taking out books on printing and reading about how it worked and how it was all supposed to be done. Which I'm sure I would have done before I set the first bit of type because I wouldn't have known what to do otherwise. But yeah, General Printing and some of those basic books about how to print. I went to the library and they had some books along that line and I read the from cover to cover and basically followed what they said.

Devon Cook: So what was your strategy when you ran into something that maybe you didn't know how to do or that seemed to kind of stump you as you went along. Or can you maybe think of examples of things where at first you didn't know anything about it. You didn't know how to fix this certain problem or do this certain thing and . . .

Participant 2: I'm sure I didn't even know about kerning at that point.

Devon Cook: Yeah.

Participant 2: But I didn't need to.

Devon Cook: Do you remember where you learned about kerning or how to do it?

Participant 2: No. Probably at college.

Devon Cook: Did you take any composition classes at college?

Participant 2: Yes, yeah. I have a four year bachelor in printing management and when I started the program it was only a two year program and you got an associates degree in printing and it was just the printing arts. Just the mechanics of it. While I was there they added the next two years to have the printing management. So I was in the first class that went through the printing management program. But the first two years, the first class is hand composition and I think platen press work. Then machine composition and cylinder press work. We had three quarters each year and I can't remember what the next one was. Then you got into camera work and offset press work and bindery work and stripping. So it was a two year program but the first thing you took was hand composition. And I was the fastest on in the class.

Devon Cook: [laughs]

Participant 2: Course it was a totally useless skill, but nevertheless I was good at it [laughs].

Devon Cook: What was the justification they gave for why you should learn hand composition even though you would never do it for your job?

Participant 2: I still think it's a good idea. It's the basics. It's the fundamentals. When you sit down at a computer and you try to explain kerning to somebody they kind of understand, but if you've actually worked with kerned metal type it's really easy to understand. It makes a lot of sense to you. The term leading, you can talk about leading but if you actually held a lead in your hand it all makes sense. Everything in the computer world is based on that physical, metal letterpress world. So if you know about it--and of course now it's just gone--at the time phototypesetting was just starting. Before I graduated they got their first phototypesetter so I learned a little bit about that before I left. The world was changing rapidly; the printing world was changing overnight. But I think it's good to have a grounding in the basics. Even today if you're going to be in graphic arts, I think it would be a good idea if you knew about all this stuff. Even if you didn't use it.

Devon Cook: Are there any other ways that you see--you talk about kerning and leading and things. Are there any other ways that you see the history of printing showing up in digital technologies in this sort of modern . . .

Participant 2: Point size. All that stuff. With printing you had bodies. Now we don't have bodies anymore but you still have point sizes. And it's all still based on that original metal type, even though people are doing crazy things with it now, it's all still based on that. The whole typography, kerning, you don't realize it when you're working with typesetting or a program. It's not even typesetting anymore in a Mac program, but everything is based on units--I think an em now has 1000 units and all that kerning and tracking is based on this numerical system. But that's all based on the old Monotype 18 unit system. Monotype came up with it first in the 1890s and we've refined it and made it finer increments but it's all still the same system that we had back then.

Devon Cook: Do you see any examples of where the digital technology has broken from that history? Can you think of any examples of where the digital technology is doing something that doesn't come from that history? That's very . . .

Participant 2: Well yeah, there are typefaces that can be randomized. And you never had anything like that in metal type.

Devon Cook: What do you mean by randomized? Sorry . . .

Participant 2: Let's say that it's a grunge kind of type face with dirt and stuff on it. So there are typefaces that you can type, and you can type a word out, okay. And now you can type the same word out again and the second time it looks different than the first time.

Devon Cook: Ok yeah.

Participant 2: Because it's throwing different dirt--to make the grunge it's throwing different dirt or maybe it's putting different chips on the edge of the letter or something. It's doing things to the letter so that when you hit the "a" you may get a different "a" than you got the last time. You hit ten "a"s in a row, you get 10 different characters. If you were in metal type, it would be 10

physically different characters. So there are faces that can do stuff like that. Of course there are colored types now, things like that. But so much of it really still is built on the foundation of metal type. We've got kerning now where there's a kerned pair for every single letter to give perfect letter spacing. But that's no different from what you had before. It's just a refinement of it. If you can kern the "t" and the "o" on a monotype system, which you can do, than kerning every single letter is really no different, it's just an expansion of the idea. But it's the same idea. We have tracking. So you can remove units between letters so the whole thing gets tighter or wider in digital type. Well monotype had that. You have a machine and you're setting 9 point type and the em is 9 points, so the machine is running with a 9 point wedge in it. Well you can take the 9 point wedge out and put an 8 3/4 wedge in, an 8 1/2 point wedge in. That causes every letter to be set close together. So that's tracking. Monotype invented it but we have it now days. It's the same thing. What's different is in monotype and in all of the metal types, you could not physically have one letter printing on top of another letter. Now in digital you can. That's one limitation that we've gone past. The "th" has become a common thing now where they've made the bar of the "t" lay right on top of the "h" so it looks like a ligature basically. So you'll see that on a lot of digital stuff. You can't do that in metal. You'd have to butt them up or something, but you couldn't actually have the "t" laying on top of that "h".

Devon Cook: Or you could do a ligature . . .

Participant 2: You could and they did do ligatures. The medieval has a "th" ligature. I didn't even think to see if there was a "th" in the poem that I could use it on.

Devon Cook: [laughs] Cool. Let's see how we're doing time wise. Ok so we're almost to the end of the time. I think think that's most of the questions that I had. Yeah. Any other comments or thoughts that came to mind as we were talking about this idea of a writing technology and letterpress printing being that way.

Participant 2: Well only that--course in letterpress printing there are a number of writing technologies. There's not just hand composition: there's linotype composition, there's ludlow composition.

Devon Cook: And there aren't clear dividing lines. How am I trying to say this. It's not like they did hand composition up to one point and now they were doing monotype or whatever, now they were doing ludlow. It's not this clear division.

Participant 2: Yeah they all coexisted. And of course hand composition was the first and it will also probably be the last. There's not many monotypes running today. There's not many linotypes running today and they were commercially running 50 years ago. You could still find them all over the place. But there's not many left and the ones that are left are in the hands of hobbyists and most of those hobbyists are old guys like me. In another 50 years there's going to be a lot less left. In another 200 years there might not be a single hot metal machine running anywhere.

Devon Cook: Your hot metal machines will be in a museum. Or preserved or . . .

Participant 2: They probably won't be operating and yet people will still be setting type by hand.

Devon Cook: And that's been something that's been really interesting to me is that we sort of blossomed into this digital age where now you have so many possibilities for, like you said, how to set type and how to refine it or make it crazy or do whatever. But it's really interesting that there's been this really strong resurgence of interest in--especially in hand composition with letterpress. I'm an example of that. The popularity of letterpress wedding invitations and things like this is also a testament to that I think.

Participant 2: But a lot of the wedding invitations I think are done with plastic.

Devon Cook: Yeah.

Participant 2: Which I don't like. Because you're doing it all on a computer. To me, letterpress is about real type as opposed to plastic. Plastic is like a plate. It's not the real thing.

Devon Cook: Well, I think we'll call it good. Thank you very much.

Participant 2: Did you get something out of the whole thing?

Devon Cook: I think so [laughs]

Interview 3

Devon Cook: Let me tell you something about what my study is about. I am interested in how different technologies used to compose texts might impact what is composed because they make certain moves easier and other moves harder. I'm also interested in how interactions with the letterpress change over time. I'm pursuing this by talking with experts, such as yourself, in the use of particular writing technologies and I am grateful to you for sharing. One of the reasons I'm visiting is that I'm interested in you as a writer and the technologies that you use to write. When I say writing technology, I'm talking about anything you would use to put words on paper or make them show up on a screen or something. Anything that you would use to do that is not part of your physical body. So, that's the definition that I'm working with. Any questions about that?

Participant 3: Nope. Sounds good.

Devon Cook: My first question is: what sorts of technologies do you use to write?

Participant 3: Well, living in the modern age, I absolutely use phones and laptops and, well, I haven't used any tablets, but, computers and all that. But then, I also, since working here at This is the Place, I use typesetting and somewhat recently, technically, 3D printing.

Devon Cook: Out of all of those things that you've listed, what are you the most familiar with? What do you use the most often?

Participant 3: The most often would probably be a laptop.

Devon Cook: Let me check my questions real fast. What do you usually write on your laptop? What sorts of writing do you do?

Participant 3: I have a very creative imagination, so I have a lot of different ideas I work on. Recently, I've been working on making board games with my brother, so a lot of the writing I actually do on my laptop is rules and stuff for the board games--jotting down notes and whatnot. And then there is the little bit of social media that I do, that's what I use it for.

Devon Cook: Do you store these notes in a word document?

Participant 3: So, if I use my phone as a medium, there's a google docs. I'm not sure exactly what I use. That goes online. And so I can also access it from my laptop, so that's what I do is I access it from my laptop, this online cloud is where it's stored at.

Devon Cook: Do you often write something on your laptop and then continue editing the same document on your phone and back and forth?

Participant 3: Yes, I switch back and forth since I am often out of the house. A laptop is what I say I use the most because I do most of the writing when I'm home. But say I'm on the bus or I'm here and there's nobody here, I'll pull out my phone and I'll jot down notes as well using the same document.

Devon Cook: So you've mentioned your laptop, your phone, the letterpress, do you ever use pen or pencil?

Participant 3: Yeah, I kind of put that one over because it's just basic to me. Pen and pencil I actually use very much. Again, talking about those notes, I have tons and tons of notes that I jot down first onto paper and then I store them in a cohesive form, I should say, where my thoughts are collected, on the documents online using the laptop or whatever. I use pencil a lot for just jotting notes down, letting my mind work. When I'm working in the letterpress, the off-set letterpress, I will often compose my words first using paper and pencil and then count the letters and see how much I have to work with and all that.

Devon Cook: Would you say that you use. . .

Participant 3: Pen? Very little.

Devon Cook: Very little pen, okay. Would you say that you'd still use the laptop more than the pencil?

Participant 3: I feel like I do. I don't know.

Devon Cook: Sometimes it's hard to.

Participant 3: It's hard to remember what I do with what.

Devon Cook: That makes sense. Assuming that typesetting is one of the writing technologies that you are familiar with, let's talk about a couple of the approaches that you use. How would you describe the difference between your process of writing with typesetting versus writing with these other things that we've been talking about?

Participant 3: Well, it kind of has to go back with what I was talking about with using a pencil to jot any notes down and then using the online document to keep it collected. . . work. With the letterpress, once it goes in the press it's done, it's ready to go. So, you have to first make sure you know what you're actually writing and that's why I said I like to use pencil, in that time. I'll write things down and I will then start typesetting after what I've written down. And many times, I will change what I've doing the typesetting what I've written down. Just because of the length of my line, for example. I go, okay, I have too many dashes in a row. Remember in the Polk, Practice of Printing book, there is like sixteen different rules on how to break up words properly. If I'm having too many of these, I just simply, okay I'll use this word instead--a slightly different connotation, same meaning. Or if I'm running out of letters, okay, I need to use less "e", so I'll change these couple words that don't use an "e", so I can use these "e"s down here. So, the composition is very different because its more fluid, until it goes in the press. So you go with the rough draft, you say, I'm trying to go for this, but I know it's going to change. It's not even, well, I think this'll work, and then if it changes later, so what. No, you know it's going to change. It's not going to be exactly how you put it down. You have to be fluid when you compose like that.

Devon Cook: Do you think that you end up writing things into the cloud or putting things into the cloud that you spend less time prepping them before you--

Participant 3: Yes. Because I know in the cloud I can always delete it. I can edit it, I can change it, whenever. The backspace is great for that. You can just say, "[oop!] Nevermind, I'll change this wording here. I'll just fix it." And that's very interesting because when I'm working in the cloud I'll write something down that seems perfect when I write it down. I'll go back later and say, "Well, that sounds stupid." And I'll change it and I'll go back later and I'll say, "That kind of sounds stupid still" so I'll change it. But you can't do that in typesetting, in compositing. You have to say, "Okay, I write it down on paper, I know it's going to change. I put it in the thing and okay, this is going to be it. This is the final draft. I had better be satisfied with it. When you jot down notes, whether it be pencil, where you can erase it, or on the computer, in the cloud, you know that you don't have to be satisfied with it because you can always change it later.

[00:10:47]

Devon Cook: Does typesetting take longer to do than other ways you write?

Participant 3: Very much so. Partially because of what we were talking about with making sure it's firm before you go into it, but just the simple act of taking one letter at a time and placing it together, you know, and you have to put it in the right orientation--upside-down and backwards--but, it falls to the side and you put it upside-down, you have to flip back over. So that simple process takes longer as well. I find that it has changed the way I do the other things though, slightly. I now take more time to think about what I'm saying when I'm writing down the other mediums. People these days, using their computers often, don't. They just go, "There it is, whatever. I don't care if it's spelled right, I just throw it out there." But since I've typeset, you have to think about what you're putting in there. You've got to make sure it's right. You've got to make sure it's going to sound right as well as look right. When I'm composing now, on say, an email, I will type something down and then I'll sit there and think and I'll reread it and go, "Okay, is that what I want to say?" And then I'll write a whole paragraph and reread it etc. etc.

Devon Cook: So that brings me to another question that I wanted to ask, which has to do with accuracy. Now accuracy in writing is kind of a slippery term, but, how would you define accuracy in writing and does using the letterpress make any difference when it comes to being more or less accurate and how has that affected your writing?

Participant 3: I have often had a dislike for technology. It makes our lives easier, which makes our lives worse. Working here in a pioneer park, you learn how resourceful the pioneers were. They had to use what they had. And it's because of the ease that technology gives us, we have become lackadaisical in everything, including our writing. If you go into your word processing document, and you type a word and you misspell it, you have this little funny red line or sometimes it just [snaps fingers] automatically changes it for you. So, now you are no longer accountable for what you write. The computer is accountable for what you write and you then, don't care about it. When you typeset, you spell a word wrong, it's going to come out wrong. I have a dictionary that I have over there that I will sometimes use if I go, "I'm not sure the spelling of this word, let me check it." So I'll use the dictionary to check it. Sometimes, if I am sure and I do it wrong, well then, it comes out wrong. And so you hold yourself to a higher quality of writing because of the typesetting. Because you start to realize what you've been just letting pass over doing it on a computer or your phone or whatever.

Devon Cook: You've been sort of alluding to a difference between your writing accuracy or however you want to look at that before you started typesetting and after you started typesetting.

Participant 3: Yes.

Devon Cook: Could you describe that differ-- like-- what you see that as being?

Participant 3: Before I started typesetting, I still had trouble with people's spelling--they didn't care. And if the computer didn't correct them, so what. But I was also guilty of it.

Devon Cook: So, this was something that still kind of bothered you even before you--

Participant 3: Yes. And when I started typesetting I realized even more why so. But for example before typesetting, one of the most common things I would do is I wouldn't capitalize "i"s because when you do it on the computer it would capitalize it for you without even having to click anything, [snaps finger] it just does it for you. I started typesetting and I realized, okay, I don't need to grab this normal "i", I need to grab the capital "I". It started to make me realize what I was doing with typing, especially on my phone because my phone doesn't automatically capitalize it, whereas my computer does. So occasionally I'll catch myself on the phone and go, "Wait." And I'll have to go back and re-capitalize an "i." But, I believe that's really because I'm more concerned about my accuracy since I started typesetting. Before typesetting, when I used a phone, I probably didn't care. I'm sure there's a lot of messages that went out that were just lacking proper capitalization or perhaps punctuation. I don't know.

Devon Cook: Interesting

Participant 3: Another thing with the accuracy though, is that. . . I just mentioned punctuation and it got me to thinking, before I would try to use punctuation to determine my meaning. If I kind of was hedging at something, I would put the. . . uh. . . can't remember the name of the symbol, but the three periods? The three dots?

Devon Cook: Ellipses.

Participant 3: Yes! The ellipses. Thank you. And that's--I'd do that all the time in my texts. But, when I started to typeset, I realized regardless of what I was trying to get my meaning, there is--there are rules. There are standards and I can't do that. There is a specific use for the ellipses. There is a specific use for the dash. There is a specific use for the double dash, the "E" "N" dash (the en dash), that people don't think about. There's--I don't know whether this goes in with accuracy, but I mention this all the time to the guests who come here. There's seven different kinds of spaces when you typeset. You don't think about that when you press your spacebar. It does it for you. Justifying the font, you remember when I was teaching you that. The hardest part about typesetting is having to redo the dang spaces! You have to go in and you have to combine the seven different kinds to make the exactly kind you want. And that's not something you think about when you compose today. About what looks correct, what's the right type of spacing, what's the right use of that space, or of punctuation or of right use of letters even.

Devon Cook: So, is there--you've kind of been moving over into like, the spaces between words and where they're placed in relation to each other on the page.

Participant 3: Right.

Devon Cook: Do you see that as being part of accuracy? Or not? Or. . .

Participant 3: No, it just--I started thinking about that because of, I was talking about the proper use of things. So I really feel that accuracy goes into the proper use of things. Now with people--Technology today--doesn't have to worry about spacing and accuracy because it does it for them. But if you were to write down something using your pencil or pen, you do have to think about that don't you. You have to say, "Okay, is this letter too far away from this one? Is this word too far away from this one?" And I think that people suffer nowadays because of the computer when they're trying to compose using a pencil or pen. So yeah, I would say it kind of goes in with accuracy as well, but--

Devon Cook: Okay

Participant 3: It's low on the totem pole.

Devon Cook: Okay. Awesome. Alright, so, I wanted to--what I wanted to do is--we're going to do a couple of things where I want to jump into some specifics of your actual typesetting process. So this is going to come from the video that I recorded yesterday.

Participant 3: Okay.

Devon Cook: I've taken some notes and I want to point out some things. So, what I'd like to start with, are kind of what I see as your kind of standard process, based on what I was able to see yesterday. And then I also want to talk about some anomalies or things that stood out that seemed to break out from that standard process.

Participant 3: Okay.

Devon Cook: So, here's what I observed, and maybe I'll describe what I saw and then we'll watch an example of it.

Participant 3: Okay.

Devon Cook: So, what I saw in your process was some--it was kind of cyclical, but there like a bigger cycle and a smaller cycle. So--

Participant 3: You have to go further into depth.

Devon Cook: Yeah.

Participant 3: What do you mean with that?

Devon Cook: So the first thing I noticed was that you counted letters. You would take you copy and you would start counting letters. You started with "A", and then I don't know if you actually counted the "T"s but you--it seemed like that that might be what you would count next, are the "T"s.

Participant 3: I was going to do all the vowels, and then I would've looked at my box and seen what looked low. And I probably would have gone with the "T"s next. I just stopped doing that because of the time constraints we had.

Devon Cook: Okay. After that, you--in this particular case, you had a bunch of type that hadn't been distributed from the previous project and so, if--it seemed like if we'd had time you would have liked to distribute that and then get to work on the projects we were working on.

Participant 3: Right.

Devon Cook: After that, you placed the case on your typesetting. . .

Participant 3: The work bank.

Devon Cook: You placed it on the work bank. You took the composition stick in your left hand and then you placed the copy that you were setting from up on the little shelf thing.

Participant 3: Above the work bank.

Devon Cook: Above the work bank. Then what you would do is you would take your right hand, your right hand would go search for type, select type out of the various boxes of type in the job case and your eyes would go up and down between the copy and the case. So, now, getting a little bit more specific, you'd be holding that composition stick in your left hand, you'd pick up a piece of type, you'd look at it, and then you would place it in the stick, and that sort of, repeated, you'd look at the copy, look at the case, find the letter, look at the little piece of type and then put it in the stick. Then once the line began to get full, it seemed like you would fill up the line until it was pretty full. And then, the best way I could describe this is "poking." You would get--you would grab what seemed to me to be one of the space--one of the spaces and then you would start poking in the line, in several different spots with that space until finally, you would either choose a new space or you would push that space into the line. There was also a lot of, maybe you would take a space, push it into the line somewhere. And then later on, you would actually switch that space out, so, there was a lot of like, pulling spaces out, putting new ones in, sort of this switching back and forth that way. After the piece--after then line was to your satisfaction, at least that's what I saw, you would put the--you would grab another piece of leading, put it on top and then that process would repeat itself. So, that was kind of the cycle that I saw going.

Participant 3: mhmm

Devon Cook: And then of course, in the larger cycle, once you had filled the composition stick or finished what you were doing, you would slide the type out of the stick onto a galley. You would tie up that form, I guess, is what you call it.

Participant 3: Right.

Devon Cook: Tie up the form with some string and then you'd bring that over to your

Participant 3: Stone.

Devon Cook: Proofing stone. You would proof it to look for errors and then if that checked out, you'd place it in the bed of the press and lock it into place and print it. And then afterwards, you'd take that form back to the galley, you'd clean it off with, like a wet wipe or something, clean the ink off, and then distribute that type. And then start over. So that's kind of the larger cycle. So, before I get any comments from you, I want to show an example of this cycle and then I want to get your comments on, and we'll go into depth. I'll ask you about each step, and yeah, what's going through your mind with that. So, this would be in 955, okay. Okay so this should hopefully give us a full cycle. Well, not the big cycle, but the small one.

Participant 3: Okay.

[recording of typesetting begins.][00:26:30]

Devon Cook: So you can see here the right hand hunting for letters. One thing I forgot to mention is that the left hand, as you said, it did actually move with your right hand.

Participant 3: Yeah, It's something I should (?) learn. It's nice to move the case along with your right hand a little bit faster.

Devon Cook: So, and that was true. It did. It followed your right hand around. Now here you can see, you're getting to the end of the line. . . So, you're trying out different spaces. . .

Participant 3: And here you can see, I'm frustrated with it. [laughs]

Devon Cook: [laughs] This was also common to stick a space kind of halfway in and just kind of have it hang there halfway into the line before you pushed it down all the way.

Participant 3: The proper use of the line--er, the tightness of its--if you tilt the composition stick, if it's too loose, it's all gonna fall down. If it's too tight, you can't even move it with your fingers, uh, so, I'm just trying to look for the right tightness in that line and that's why I'm hunting for the different kinds of spacing 'cause at first, I pulled out, which was a two em quad and I thought that was going to fit, but it was just a hair too big and so it wasn't going to fit. So then I grabbed a, uh, an en quad, an em quad and a three em space, but after I put the en quad and the em quad in, the three em space was too big. It was going to make it too tight. So I threw that down for a four em space and that's what you--we just watched there. So, it was to make the line tight, proper.

Devon Cook: Okay. So, let's--while we're talking about it, let's focus in on, on, you know, spacing the line.

Participant 3: mhm.

Devon Cook: And sort of finishing the line in the composition stick.

Participant 3: The justification.

Devon Cook: Yeah. What goes through your mind when you are--when you're figuring out those spaces, when you're you know, placing them in.

[00:28:56]

Participant 3: There's, well, there's two types of justification: there's the justification at the end of lines and there's the justification to space out the type among the entire line. One of the standard things for a compositor or typesetter is to use a three-em space, the standard space, and just throw those in the line. Now, if I am doing. . . when I get to the end of the line, if I'm doing a. . . a end of line justification, then I'm just trying to find out what the right spacing needs to go at the end of the line. It's a lot simpler. That depends if I'm ending my line sometimes I have to see if the word would fit in the end of the line and if not, then I have to either break it up or put in spacing later. You know, through that line somewhere. Or, like I said before, reword it. If I'm doing a. . . justifying the entire line using the type, then I again start with a three-em space, but then I get to the end of a line and I want that end of the line to be the end of a word or a dash (so I break up the word(?)). And so then I need to see if what goes in to the--then I have to see how much I have left, then I need to distribute my spaces accordingly. For example if I got to the end of the line and I had enough room for another word but there was an em-quad space, then I would look to see how many spaces I have in that line already and if I have four spaces in that line already, then I will take a four-em space which is, as you know, one-fourth of the em-quad and I will fill in those four spaces using that and it should come out to be right. If it's-- the fraction is off, then it becomes more complicated, but, so--what's going through my mind at the end of the line is how much can fit to be proper in the spacing. For example end of line justification or if I'm justifying the whole font. To be proper in wordage, do I need to break up the word or not. and to be proper in um. . . lost my train of thought. . .uh. . . yeah. Those two are fine. [Devon laughs] I can't remember what I was trying to say so.

Devon Cook: That's totally fine. Okay, so, Let's talk about some of these other parts of this process that I was pointing out. So maybe let's just work kind of backwards. So, um, what's going on with what I've called "poking." "Poking" the line with spaces.

Participant 3: That was probably when you were watching me justify the entire line throughout the thing. So what I was doing is, it was a more complicated math problem. I could fit, let's say, a two-em quad--er sorry, an en quad and a three-em space in but I had four different spaces previously, well then I need to try and find out what the right combination of spacing would work. I could have looked at The Practice of Printing to find out exactly the five with this and that, but I don't have a lot of fives. So, what I was doing is, I was popping out, I was grabbing a space. I was popping out a different space and putting that space in and then grabbing the space I popped out and then putting it aside and grabbing another space. I was changing them out and as you said, sometimes it didn't work right and I had to change that again.

Devon Cook: Okay

Participant 3: So the poking of the line was me trying to again, re-space everything to be proper, um, I was just doing it by feel rather than actual process.

Devon Cook: So it seems like, if the math is simple,

Participant 3: Right

Devon Cook: you'll go with the math.

Participant 3: with the process, yeah.

Devon Cook: But if the math is complicated, you're more likely to start doing it trial and error or by feel.

Participant 3: Exactly.

Devon Cook: Okay. Very interesting--

Participant 3: --If I were more advanced, if I had, If I had learned from a master instead of being self-taught, I probably would have learned the better processes. But it's because I'm self-taught, I haven't quite trained myself to do a process there. That's why I kind of do it by feel. I'm sure there is a process somewhere in that.

Devon Cook: Okay. Very interesting. So, um, as you are, so continuing to move backwards through that process, um, when you, so you'll pick up the type, look at it, place it in the stick. Now, I want to ask you what's going on with both of your hands when you're doing that process.

Participant 3: Well, first of all, I'm going to talk about the eyes real quick. So, I don't think that I'm truly looking at them. I'm trying to use my peripheral vision. But yeah, I mean, there is obviously somewhat looking at them but it's not a long process when I look here, I look at here, I look at--it's kind of peripheral. So what's going on with my hands is that my left hand is holding the line in place, so it won't fall apart as I'm putting more into the line. And that's holding the composition stick above the case. My right hand is grabbing the piece and checking the niches on the side. I look, I glance, again, peripheral vision kind of thing, I look at it to see A) is it the right type? As you know the phrase mind your p's and q's came because apprentices who used to put the type away would stick them away wrong. So you'd have to kind of glance at it as you put it in to see, am I grabbing the right thing? And occasionally, my box was messed up. I'd grab something and it wasn't right, I'd put it down. Sometimes it was the wrong size even. I'd realize that by the looking at it and kind of just throw it away. But my right hand was checking those niches. The font, a . . . well a . . . a case of type. If it's the same font and the same size, the niches are exactly the same, and depending on the font and size, there are either one, two, three, even five niches in that piece of type to tell you what it is, and the spacing between those niches is different. The other thing that's important with the niches that my right hand is doing, is the right orientation to place it upside down. The niches are on top. So as I'm grabbing it, I am feeling the niches to see where I need to put it on top, and I'm also trying to feel the ends to see where the foot and where the head of the type is, so that I don't have to look at it to orient it to stick it in. So that I can just grab it, glance to make sure it's *right*, as I've oriented it with my right hand, and sticking it into the case [sic]. And my left hand will go over what I just put in to hold it in place in that line. The left hand is very important to have at just the right angle so that the type won't fall over. It's got to be slightly *back* and slightly angled towards the front, er, towards your body so that the type, the line your setting, stays in there and doesn't fall out.

Devon Cook: So moving backwards again, your eyes will go up to the copy and down to the case--you'll kind of go back and forth between the copy and the case with your eyes. Any comments about what's going on there, when you're looking back and forth?

Participant 3: If I'm working from copy, sometimes actually, occasionally I won't. Occasionally I'll know what I'm just going to say. If it's very simple and small, I'll go without the copy. If I'm going from the copy, I'm double checking not only what I'm supposed to be saying--if I look ahead, then I can think in my mind what's coming up, I can grab it out of the case faster. If I know the next word is 'experiences,' then I'm thinking, 'Ok, the e's are over here; the x's are over here.' So I'm getting ready. So I'll glance up at the next word, even though I might know what it is in my mind already because I know what I'm trying to say, I will glance at the word for a visual confirmation of what letters are in there to get my mind moving as to where they are in the case. Then obviously, doing both these processes, I'm looking down *at* the composition stick in my hand, or the composing stick some people call it, to make sure it is right. Often times you will either skip a word or even double a word--put in 'the' twice because you looked up at the copy and you saw the word 'the' and you put it in and you looked down and you go, 'Wait a second, I already did that.' So looking down at the composing stick, or composition stick, it's to double check the a) the orientation's right, b) you have the right letter, c) you're spelling things right, d) that you're not copying or leaving things out.

Devon Cook: So how often, if at all, are you looking at what's already in the composition stick to check and see if you've misspelled a word?

Participant 3: All the time. All the time. So like I said, I try to use my peripheral vision. When I look up at the copy, I try to use my peripheral vision. When I look at the case of type, I'm trying to use my peripheral vision. My eyes are mostly right there on the composition stick to make sure that I'm putting everything in right. Because that's the first layer of proofreading, or proofing, in typesetting is to make sure that you're putting it in the composition stick right.

Devon Cook: Awesome. So we've talked a little bit about your typical process. What I want to talk about now is some of the things that stood out. [pulls up recording on laptop] So let's begin--we'll just begin at the beginning and go through.

Participant 3: K.

Devon Cook: So one thing I noticed is--well, really quick before we move on, do you always count letters?

Participant 3: It depends on the size of my copy. Here at the park, we don't have a lot of type so if I am worried about not having enough type, I will always count letters. The more common ones. The vowels and the common ones like the t's and the h's and the r's. To make sure that before I start I don't need to change anything. Like I said before, it's kind of a changing process, so if I know that I don't have enough letters than I'm going to reword my copy as to make it so that I can have enough letters to use. Or sometimes, like they did in the times of old, I might have to misspell things on purpose.

Devon Cook: Have you ever done that with something you've set here?

Participant 3: Not yet. Not yet.

Devon Cook: So one of the things I noticed was . . . [long pause while interviewer pulls up the next video clip] . . . right here you have a paper towel and you kind of placed it in the composition stick before you even start?

Participant 3: Yes.

Devon Cook: And I was wondering what . . .

Participant 3: That was something . . .

Devon Cook: Yeah can you explain?

Participant 3: That was something I learned recently, actually. Let me grab it out of the book here because there's a word I can't remember how he terms it [retrieves and opens Polk's *Practice of Printing*]. But basically what he's saying [indistinguishable]. So I learned it from the *Practice of Printing* with Polk. And basically what he was saying that, is that when you lock up type in the press using the quoins, the quoins are going to create more pressure than your composition stick is. So he recommended . . . let me see if I can find it here real quick. [long pause while he searches through book]. Here we go. I'm just going to read this for you. A length of heavy rule known to be accurate, along with quads or a piece of iron furniture may be placed in the stick as a gauge for setting the knee to it's desired measure. For short lines, the knee may be set lightly against these gauging materials, but for longer measures, it is well to insert a piece of thin paper (I used a paper towel) also to allow for type squeeze--that's the word I was looking for--which occurs as the lines are given much greater pressure from the quoin to lock up. So long lines of small type require more allowance for type squeeze than short ones, or larger types which assemble into more solid lines. So basically, here, because I was doing a longer line than I usually do, I wanted to allow for that type squeeze. When I've noticed that the last time I printed this summer that I had some type off its feet where it was kind of just angled and I couldn't get a right impression of it. That's because when I set it in the stick, I set it exactly to the measure. But in the quoins, they squeezed easier and so they were off their feet. So what I was doing was putting some paper in along with my gauge, or my leading that I had in there already, so that I could then put in type that was just a hair bigger than the gauge or the leading so that when it goes into the quoins, it will squeeze it together and be exactly where it needs to be.

Devon Cook: I also noticed that you can see it in the same clip that you set type with your printers sleeves on: the ink guards.

Participant 3: That was not important. I just didn't take them off.

Devon Cook: K [laughs]

Participant 3: In fact, sometimes when I'm typesetting they get in the way.

Devon Cook: Will you take them off if they start to bother you?

Participant 3: Yes. I will take them off. They are only for when I'm working with the press. But working here at the park, being different than it was in the olden times where you had different jobs--someone was printing, someone was inking, someone was typesetting--I'm doing it all. So sometimes I forget to take these sleeves off as I'm typesetting.

Devon Cook: K, perfect. Alright what I had here [pulls up another video clip] . . . You were going through your regular process here but then there seemed like there was an extra long pause, watching here. [pause while video plays] You can see you kind of look around the case before . . . and your right hand kind of moves over the case before finally picking something out.

Participant 3: Sometimes I have brain farts. I'm pretty sure that yesterday or a couple times I was just like, "Wait, what am I doing again? What am I looking for?" and there at the end I was like, "Oh"--you can see I grabbed a u out--and I was like, "Oh, I forgot about the u." So it was just one of those where you just go [indistinguishable]

Devon Cook: So it perhaps could have been like, "Where are the u's again?" or perhaps "Wait, what am I looking for again?"

Participant 3: Yeah

Devon Cook: Or some slip of mind.

Participant 3: It was a slip of the mind. It was, "Wait, word am I building again? What's the next letter?" or I look and went to . . . like when you walk into a room and go, "Wait a second, why did I walk in here?" or maybe it was, "Wait, where are the u's again?" It was a slip of the mind. [long pause while interviewer pulls up next video clip] I fear there's going to be way to many anomalies.

Devon Cook: [laughs] No, not too many. So here you are finishing justifying the line. But after or maybe before you get all the pieces in, you sort of reach down to--I think it's the knee in the composition stick and here I have written that you kind of fiddle with it. But let me show you and you can tell me what you think. [pause while clip plays] So you can see you've reached your right hand down to the . . .

Participant 3: Right. It was again trying to go with the squeeze. Basically I had a line that was just a hair, like a *fraction* too big. And I knew the type squeeze would allow for that so I undid the knee so that I could fit it in and then put the knee back tight against what I had. So that's what I was doing.

Devon Cook: So that was allowing a little bit more space.

Participant 3: Right. Allowing for a bit more type squeeze. And I might have been wrong, maybe it was too much. I don't know. But that's what I was doing.

Devon Cook: The here [pulls up another clip] what I noticed here was as you were--I think it--again, I'm pretty sure you're justifying the line again here. But you kind of take a piece of type and you pull it out and then you kind of flick it into your hand and hold it with your other fingers. Let me see if I can show you. [Plays clip] See that little flip?

Participant 3: Oh, that's . . .

Devon Cook: And you weren't justifying it . . .

Participant 3: I was not justifying it. What had happened was a piece of type had fallen over or had gotten out of place. So what I did is I'd grabbed either the wrong letter first, like if I was spelling 'are,' I had grabbed the a and the e and I realized I forgot to put the r in so I pulled the e out, threw the r in, then put the e back in. It was something like that.

Devon Cook: So you were using that right hand to kind of hold that piece of type with your other fingers.

Participant 3: Right. Then I put the right place in. That way I wasn't just putting it back in the box and picking it back up.

Devon Cook: Ok, so something of a shortcut.

Participant 3: It looked fancy, whatever it was.

Devon Cook: [laughs] Ok, so what we have here is a prime example of the sort of poking thing that I've been talking about. But in addition to that, this is the point where you were looking for the tweezers. So I want to kind of watch that and then ask you about it. [plays clip] So you can see you're kind of poking the line with some spaces.

Participant 3: I was poking the line with some spaces. And here I'm justifying. So the type right here wasn't on its foot. It was at an angle and I was trying to line it up, trying to get it so that I could put it in so that I could put a space at the end. Because what was happening was I was allowed to put the space into the end, but it wasn't going all the way down because the type wasn't on its foot. So what I was doing when I was looking for the tweezers, is to pull something out so I could then try and try and align these correctly. Occasionally, when I was trying to justify yesterday, some pieces of type fell out and I wanted to use the tweezers instead of my big fat fingers to try and fix it, rather than make any more of the pieces fall down. It looks like this is here--yeah I pulled a piece of type out so that I could fix things. Now I'm trying to get it back on its foot so that I can put something at the end.

Devon Cook: Ok, it seems like eventually that works.

Participant 3: Yep.

Devon Cook: Very interesting. Do you ever worry about the tweezers damaging the type?

Participant 3: Yes. So there are very specific uses of tweezers. You never use tweezers when it's in the chase, or the bed of the press. You never use tweezers after you've locked things in place. You only use tweezers when it's loose and you have to be careful because it can damage the head. So when I use the tweezers, I'm very careful to grab sides and try and stay as far away from the head as possible if need be. Because it can damage the head.

Devon Cook: [pause while interviewer pulls up next clip] So right about here, you take some pieces out of the stick--and again, I think this is at the end of a line where you're justifying. You take these pieces out of the stick and you actually set them on sort of the center post of the job case and kind of set them there for a few minutes while you finish working on what you're working on.

Participant 3: What was happening was I had a word that wouldn't fit. So I was either breaking the word up, or taking the word out entirely to put it on the next line. Instead of again putting them back in the case, I had them all right there so that I could pick them all up again and put them back in. Trying to shave off a little time. So that's what I was doing there.

Devon Cook: How often to you find yourself setting aside pieces of type without actually putting them back in their places?

Participant 3: You know, I wouldn't say too often. Usually it's--again, I mentioned it before, there's a lot of rules to breaking up words. So if there's a word that can't be broken up properly, that has a lot of type that I need to take out, then I'll do it. If it's just like I start to put the next letter in and I realize that I shouldn't or can't, I'll throw that one back in its box. But when you're trying to take out a big chunk to just move it over somewhere else, then I do that. But it's not very often.

Devon Cook: Alright. [long pause while interviewer pulls up another clip] So I want to look at a couple more things. One is right here [plays clip]. I noticed that as we went along, you started going--this wasn't happening in the earlier cycles, but in the later cycles you started to--here we are. When it was finished, you would open the leading drawer and then go there to get the leading.

Participant 3: What happened was I had grabbed a bunch of leading pieces out and set them on the work bank during the early cycles, so I was just grabbing them from the side there. And then I ran out. And I ran out of the actual size of leading I wanted, so now I was looking for leading--two pieces of leading that would equal the size I wanted. So, in this case, I started with a 40pt, or not a 40pt, a 40 pica leading and I ran out; I had no more. So I opened the case to find the 20 pica leadings and I took two 20 pieces.

Devon Cook: Do you prefer to pull them out of the case, or to kind of have a stack ready.

Participant 3: I prefer to have a stack ready on the side. Especially since the case is right out of the work bank where I'm standing, it's hard to work with the drawer out. I don't want to have to keep pulling it out. It depends on the length of the line, but I much prefer to have it on the side so I can just grab the piece I'm looking for. If I'm making a block of text then I know what size it's supposed to be, so I should just have enough on the side there.

Devon Cook: So the final thing that I wanted to touch on as far as anomalies go is in here. [pulls up clip] Now this was in the second sample that you were setting. So this wasn't the one I gave you. This was the one you were setting from the Polk book.

Participant 3: Correct.

Devon Cook: Now, it seems very clear from the footage here that you are counting words in the line. And that didn't seem to always show up in the video at least. So . . .

Participant 3: What you can see was not the words, it was what I was describing before as the justification. The copy you gave me was end justification. And what I was [unintelligible] out of the Polk book was justifying the entire line. So what I was doing--as I said before--the math, basically. I'd already seen what could fit there and I was counting the spaces. And so--I don't remember how many I saw in that one--but I think I had five spaces so I went to my 5 em space to put them in. So I was counting the spaces there.

Devon Cook: How often do you count the spaces. This was maybe the only time on the video that it was obvious that you were doing that. How often do you actually count those spaces.

Participant 3: It depends on the copy. If I'm doing the justification for the whole line on a large copy, then somewhat often. There's a lot of chance involved because of what words are in what line. As you know, the type is always the same size for each word. The m is huge and the i is tiny. So if my words have a lot of m's in them, if I have a lot more words or little words or bigger words, it just really depends on what's in that line to see how much space I have at the end to fix. If there's just a--most of the time on this one, it was just maybe a hair left. So I'd take a small space and I'd stick it where it looked good, so I didn't have to count spaces. But if I'm running into a lot of lines that require that math, then yeah, I'll be counting a lot. So it just really depends.

Devon Cook: Ok. So it depends on sort of the serendipitous fall of the words.

Participant 3: Yes, exactly. Because there's a lot of variables that go into it. If my line was bigger or smaller, then it might not have happened. If had different letters in the words, if I had different word lengths, if I had a different count of words in that line, then--it's just a bunch of variables as to what makes it, so it is serendipitous in a poor sense.

Devon Cook: Ok so we've talked about some of the things I noticed in your specific typesetting process. So I want to start asking [pause] . . . I want to start asking some more general questions, so kind of zooming out again as it were.

Participant 3: Ok

Devon Cook: We've already discussed some differences between the [interrupted by someone coming in] Ok so does the physical nature of the type matter? And this is zooming out again, so looking at typesetting and also the other technologies that you use to write, does the physical sort of nature of it matter and if so why?

Participant 3: What do you mean by physical nature?

Devon Cook: Um

Participant 3: Because it definitely matters in the sense that it's got to be just right in order to print, but I'm not sure if that's what you meant.

Devon Cook: Well when you set type you physically interact with that in a very different way than you do with like . . .

Participant 3: Ok

Devon Cook: Versus like typing on a keyboard or using a touch screen.

Participant 3: Yes. Let's talk real quickly about the history of the QWERTY keyboard because it's rather interesting to me. Our QWERTY keyboard was designed to slow us down. As I said on the video, the type case is laid out in such a way--at least the lower half of the type case, the lower cases--are laid out in such a way that the most commonly used letters are towards the center and they are arranged in such a way that the most commonly words are right next to each other and you can grab them quickly. When they first started making typewriters, which is earlier than you might think--it was the 1870s--they tried doing the same sort of layout on the keyboards. And it worked because it was a ball-type typewriter. But when they moved to the striker typewriter, suddenly they were jamming keys, so they created the QWERTY keyboard to slow you down. And now that we don't even have to worry about the striking, I'm surprised that we haven't moved back, and yet we're just so used to it. But it does matter in that sense because the layout of what you're using to type, of what you're using to compose, it matters because of the material. Like I said, the typewriter, the layout was changed so that you could strike properly. And with the typecase the layout is different, and with your keyboard the layout is even different than a typewriter because you have so much more functions and things you can do. The feel, for me personally is it also does matter. Being able to touch the type, being able to hear it as it clicks into place. You heard it on video, just 'click, click, click,' makes so much more of a--it connects you with what you're making far more. Like I said before, computers and technology are impersonal. It's not as fast though. And that says yes, it does matter in a negative connotation because it does take longer. But I personally feel closer to what I'm writing when I'm typesetting than if I'm doing it even by pencil or by computer, although right after typesetting I much prefer to use a pencil to write because I feel *closer* to the words when it's coming off of me, rather than just appearing on a screen. I mean this . . . you're not engaged enough.

Devon Cook: Interesting. [pause] Let's talk a little bit about your experience over time composing with letterpress. So, have you done anything over time to make the typesetting process easier? Have you made any tricks or modifications to help you streamline the process?

Participant 3: Yes. I learned [laughs]. So it was, goodness, four years ago now where I was in here during this time of Christmas and I was in here making Christmas cards. And I was bored. Like super bored. And there was one of those cases sitting out, and it was all a jumbled mixture. It was a pied type case. And because I was so dang bored, I started to sort the type and that's what started my love for it. So the next year I went to those in charge of the park and said, 'Hey, can I typeset a newspaper for the park?' because I was interested in learning the process. So I started to do it and really the tricks that I learned have been from the book, *The Practice of Printing* by Robert Polk. That's what gives me the tricks, or the anomalies you saw. I mean most of those anomalies I don't know the right procedure. That was me trying to use a trick--putting the chunk of letters on the side so that I don't have to grab them out later, or flicking one into my fingers. Those are kind of shortcuts that I've created to make the process easier. But to be honest, I'm very slow in the process and the more I learn from the book, the faster I become. So those

people of olden times, like I said they were more resourceful than us. They really streamlined the process for us. We don't need to make it any faster.

Devon Cook: Very interesting. So you had--a follow up question to that: you had use the book kind of from very early on you had been looking at the book. And I think you had mentioned to me in another context that you had actually read through the whole book fairly early on. Is that true?

Participant 3: I had skimmed the book fairly early on. There are parts I'm sure I haven't read entirely.

Devon Cook: K. So the reason why I say this is because you've been using this language of talking about 'the more you learn from the book' . . .

Participant 3: Right.

Devon Cook: Is there anything holding you back, or has there been anything holding you back from just learning it all from the book at once? Why has that sort of been a process?

Participant 3: Two reasons. One, so my background in school was teaching. When you teach someone, you can't give them too much information all at once. You give them a tidbit and then you have them go work on it. And I've taken that to heart with the book. So for example like I was telling you earlier I learned you needed to move this, so I'm going to try and work on that and get that down before I start learning how to figure [stockers?] or anything like that. Because that will be the focus later on. And two, I'm a fast reader in reading words, but I'm not actually that fast when it comes to books such as these because I like to ponder what I read. So I'll read a segment and then I'll think about it, and then I'll ponder it. And like I said, I'll try and apply it. Then I'll go back for later and do more. Oftentimes it's because of my recognition that I'm doing something wrong, or I'm sure there could be a better way, and then I go looking for it in the book. I'm still exploring because I like to explore. It's just to process myself. So I'm going through and I'm exploring and like I said if I decide that well, 'There's got to be a better way,' or 'Is this the right way?' or 'How is the best way to do this?' Then I'll go looking for the answer in the book instead of just trying to absorb the entire knowledge all at once.

Devon Cook: So one more follow up question to that: Is there anything you do where you purposefully set aside or go against advice . . .

Participant 3: From the book?

Devon Cook: That's given in the book.

Participant 3: Not that I can think of. I truly can't. As I said before, what I'm finding is that they knew it all. And I'm going forward with this. There are some things that I discount, not because I go against it, but because it's not applicable to me. In here they talk about some machines that I don't use and I obviously am not going to worry about that at this point in time because I use the Ramage offset hand-crank press. No yesterday, you saw my McGyvering--there's another word for it, but to use a colloquial slang term--for the proofing process because I don't have that tool. So, I mean I tried to apply what I learned in the book, but I was missing a tool so I came up with

something on my own of using the galley and some rags and the mallet. But I can't think of anything where I've gone deliberately gone against what the recommendations of the book.

Devon Cook: K very interesting. So this is similar to the question I already asked, but maybe a little bit more focused on the shop and your equipment and things like that. Have you made any upgrades to your shop, to your equipment, and why make those upgrades?

Participant 3: Well, yes. To put it basically, yes. When I first started here, there were some people that they had--as you know I'm a historical interpreter; the fact that I'm a typesetter is kind of a hobby that I've learned while being a historical interpreter--so the interpreters that they had here before hadn't taken that time to learn or didn't know too much about it. So as I read the book again and discovered some things, such as the proofreading stone was being used as a table. And I didn't know it was wrong until I discovered, 'Oh, here's the stone.' And later on I plan on improving my stone because there are so many nicks and gashes in it and that is *not* right. It has to be smooth clean to be a right stone. So I started to repurpose things to make them more useful. The workbanks were being used as displays, but now I'm actually using it to typeset because, well again, it wasn't being typeset earlier. So there's another way I repurposed something to make it more useful. The only thing that I've done upgrades so far are making dingbats. You've seen modern technology now that the etching of a metal plate. I have 3-D printed some dingbats and they work to print on. It was a test and it seemed to work and that would be an upgrade because it's far easier, cheaper, and faster to make a plastic dingbat than to etch it out of a plate.

Devon Cook: K interesting. But for the most part, you have the same equipment . . .

Participant 3: For the most part I have the same equipment. It's just like I said I repurposed the objects. I've moved things around to make it easier to use so I don't have to walk halfway across the room. But for the most part I have the same equipment. Now we did try some new ink. The ink we are using, the one that's in right now, is a rubber-based ink. But we tried a soy based ink which was amazing because you didn't have to clean it up. It didn't dry. And when you did clean it up, it just wiped up super simple. It was a lot thinner than the ones we are using now. But we discovered that unless you have the right kind of paper, then it doesn't dry on that either. So that is a work in progress as to that upgrade. Now again we don't use the very first type of ink, so it's not like we are trying to go from old to something more modern, it's just we are trying different things to make it a better printing process.

Devon Cook: Is there anything else that you're considering, any other upgrades or modifications that you are considering?

Participant 3: Yes we have a lot of unusable type. So we are considering getting a hand caster made to cast type. So that's something I'm excited for when it comes to pass, and we'll be able to make our own usable type. Because right now, the drawer that I have that's the fullest isn't even a full case. It's maybe three fourths of the way full, if that.

Devon Cook: Alright. So I want to ask you about how--we've talked about upgrades to the shop and ways to improve things that way. And we've also discussed a little bit, kind of as we've gone along, some of the things that have changed in your technique or your process over time.

Participant 3: Right.

Devon Cook: Where originally you did it this way, then it changed. Is there anything you can think of off the top of your head that has changed over time in your process or technique?

Participant 3: Where the cases are. For example, when I first started, I had the case on a flat surface instead of the work bank. And that made it hard to pull things out. Then I started using it on the top of the work bank because you can see over there. But then you can't use the left hand to move along with the right. I was resting the left hand on the work bank and then putting things in so I didn't have to move my left hand so I was doing less work. But Ralph Polk specifically advises against that, so as you saw yesterday, I moved it down and just started moving it around. So there was just one change in my technique to improve it, to make it better with the typesetting process. The printing process, I'm just getting better at it, trying not to turn my wrists so much when I'm inking up the type or anything, etc.

Devon Cook: So a lot of it seems to be . . .

Participant 3: Oh yeah, the other thing I can think of, yeah. This was actually your suggestion if you remember. We were setting type into the galley. We set it into the composition stick, moved it to the galley, and then made a giant form in the galley and tied it up in the galley and just pressed it--I put the galley inside [laughs] the press. When I first started I put the galley inside the press. But that's not the right way to do it. You discovered that you were supposed to move it to the stone. So that's when I realized, "Oh, the stone needs to be different." We moved it to the stone and then tied it up in small forms. Then those forms are moved to the press, then they are arranged and then locked in place. So that was one thing that I started very foolishly and then learned the proper way and it has changed over time.

Devon Cook: So I want to ask one more question about that sort of like--because as I'm talking with you it seems to me that those small improvements or changes in technique over time are probably almost too numerable to even keep track of or count.

Participant 3: Pretty much. I mean yeah it's like any learning process. I am self taught and as I go along I'm learning something new every time and I'm making small tweaks and adjustments and in another four years I'll be much better than I am now. I mean It's just there's too many of them. You just gotta keep adjusting as you go.

Devon Cook: Yeah, so one thing I do want to ask is: You've talked a lot about this idea of a proper way to do it.

Participant 3: Mm hm.

Devon Cook: Which kind of sounds like a best way, or a best practice or a best way to do this. Do you see that sort of proper way as like kind of a--how do I say this--a unified process that is the best way for doing it and you're sort of searching for that unified best process, or do you ever switch from one technique to the other on purpose without it being necessarily an upgraded technique, but instead being a "this technique is better for this situation versus another."

Participant 3: Considering that I don't have many resources in my learning skills, the proper way--I mean two things by that and one is the book, *The Practice of Printing*, because I learned the way they did it and I realize that's better or more efficient and faster and I go, "ok this is the

proper way to do it." They've had hundreds of years. We know that the printing press was invented in 1456 and major newspaper companies were still using offset printing presses in America until 1970. So there are years upon years of experience and trials--not trials, but . . .

Devon Cook: Trial and error.

Participant 3: Yeah trial and errors to find out what works best. And there may be a couple of different practices out there that work best. I only know of this one from Polk. I hope to learn more if they exist. But it's kind of funny because 1456 to 1970s--tons of years, then in the last 50 we've thrown it all away. Now it's an art form and no one knows how to do it. It's you know. The other thing I mean by proper is the rules of the English language. You know all about this. You know, as I am learning--this might get a chuckle out of you--but I've probably said this before. I work as a historical interpreter, not a typesetter at a park, right. My least favorite subjects in school were English and history. So I am still learning all these rules for the proper English language. The usage of the semicolon, or what is the one I discovered I do wrong . . . prepositions at the end of sentences. Like you're not supposed to say, "what is this for" Technically you're supposed to say "for what is this" or something like that. I'm not sure exactly, but I'm still learning. That's another way I'm talking about in the proper way. I'm learning about the English rules as well as the typesetting rules.

Devon Cook: So we only have a couple questions left.

Participant 3: Ok.

Devon Cook: One I wanted to ask you is you have the opportunity here to--at least from my knowledge of the situation--there's a fair amount of turnover here at the park. You'll have employees come and go. You've mentioned that you've had the opportunity to teach at least several different employees how to assist in the typesetting/printing process. Are there any common mistakes that novices make that you could point to or . . .

Participant 3: Well, that's a hard question. As I said before, it's a lost art. It's considered an art form instead of a process. So most of people whom I'm teaching aren't even novices. They are completely new to a foreign concept. So I'm teaching them the concept in and of itself. Fortunately, as I have made my mistakes I've been able to steer them away from those. So I'm not sure exactly what mistakes people make. I haven't really done a lot of typesetting training. I did last year with you. But for everybody else I haven't really done that. One of the mistakes that people make in typesetting is with the spacing. They will just not consider spaces at all. And like I said, it's the hardest part. It's one of the most considerable things that you have to think about. One of the things from the printing process that people don't understand is applying the ink in such a way and like the pressures--it's not a machine like your modern printer where you can just push a button. It does everything for you. It's something you have to adjust. You have to have the pressure to adjust, you have to adjust the orientation of the paper, you have to adjust the padding in the frisket. It's something where you just kind of have to get the feel for. So I wouldn't say mistakes per se, it's just novices have a lot to learn and a lot of what we learn here as typesetting and printing is something you have to get a feel for. So they start out without that feel and I have to nudge them and correct them into the right way

Devon Cook: So one last question that I'll ask is any other thoughts that you have about--we've touched on several different ways that typesetting affects the way that you write with other technologies. Any other thoughts about how or why typesetting has or does affect the way you write or the way you write in other contexts?

Participant 3: Well I mentioned the fact that . . . hmm it slipped my mind.

Devon Cook: So the question was . . .

Participant 3: Yeah please [laugh]

Devon Cook: No it's fine. The question was any other thoughts on how or why your experience with typesetting and the technology here has affected your writing process in general or your use of other writing technologies?

Participant 3: I can't remember what I was going to say but I did mention before that there is more thought put into it. As you work on this medium which is harder to do, that takes more time and has a lot more rules than you might think--like I said the computers, those other technologies, they do it for you. And when you're writing a letter to yourself it doesn't really matter. You're just jotting notes down. It doesn't matter. So you put a lot of thought into it and you think more about what you're saying. And that, hell, that's something the world is missing. If you look at the social media nowadays, people can type whatever they want and they do. They don't consider the impact of what they're saying. They don't consider the impact of what they're not saying or they don't care about the impact they have period. Whether it's what they're saying or not. For example their misspellings. Other people might read that and think that's the proper way to spell it. So the we have an uneducated generation that are going off of composition as a medium. And that is sad. And this, you truly learned how to spell, you truly learned how to craft what you were going to say. It was a lot more dangerous back then. You didn't get a scathing report on Facebook. If someone didn't like what you said, they broke into your press and burned it to the ground. And so the fact that, yeah it makes you think about what you're saying. And when you become considerate, when you consider what you're saying, you become more considerate. That's what I was trying to say. So that you yourself start to say less negative things which impacts your life in a positive way, I feel, because you start to realize what you're saying before you say it. You start thinking about words as an art form, as a use. Technology makes it so impersonal you don't think about it. But typesetting, or even if we were to go back to writing everything out by hand, that makes it so you consider more what you're trying to say. Because it's harder to erase. It's harder to take it back. But with the transition nature of the technology we have, we think "Oh I can take it back any time," but you can't. It's been said and done. Whether or not you change it later, someone's seen it, it's been an impact. That is really the biggest thing that it affects me. And it's just an art form and I like art forms. I like to explore these techniques.

Devon Cook: Very cool. One last question that I would have is you've talked a lot in this interview about--or it seems like a lot of what you do is focused on getting it to come out right . .

.

Participant 3: Right.

Devon Cook: On that final copy when you're printing. There's a visual element to that, right? You've talked about proper spacing and things like that.

Participant 3: Yeah so there's a whole thing that I've been studying myself for a different project--not for typesetting per se but it's connected--and that is visual weight. I've been designing games. I design board games. I was trying to design a box that would appeal to people and I was having such a hard time. Such a hard time. I thought "I can craft words. I can do this." But the problem is that in composition for anything there's visual weight. The bigger something is the more weight it has, the closer it is to the visual center--which is not the exact center--the more weight it has, the colors depend on the weight it has, and all these things. Spacing also affects the weight it has. So if you look at that newspaper there, it looks fine. All the heavy elements are on the outside and it's balanced because of that. There is a big weight at the top, but there are so much little things at the bottom to balance it out. So in composition, if you really think about that word--composing elements--you have to think about that stuff. Where your spacings are. The proper weight for it to come out. Because like I said just now and like I said before, I'm a teacher and whatever you say and do impacts other people. That's where my focus is because I realized that. You have to impact them in a positive way or else the world's going to hell. So that's why I'm worried about the final copy.

Devon Cook: So you see the kind of considerations about weight and how it looks on the page--you see those as being very similar between this and say the game box that you're making.

Participant 3: K, the . . .

Devon Cook: You see the considerations of weight and how it looks on the page here as being similar sort of concerns as the game box that you use.

Participant 3: Yeah, yeah totally. It's not even just on paper. Though it's important on paper but it's not just that either. If you consider feng shui, people believe that--I'm not sure exactly what people believe on that; I think they talk about good energy and things like that--but to me it's the spacing of the room that makes the feel--it looks right, it feels right. So it doesn't feel imbalanced. It's the visual weight of it. And that's why the layouts for things are important no matter what it is, whether it be a paper copy, whether it be a digital copy, or whether it be the layout in your room. [unintelligible]

Devon Cook: Well excellent. We will end on that note. So I'll just read this final script. Thank you very much for taking the time to speak with me. If at any point you have questions or concerns about your participation, or if you want to withdraw at any point--so you could withdraw and you could withdraw the data from this interview at any point. Just contact me through email. Thank you sir.

Participant 3: Not a problem. It was enjoyable.

APPENDIX B. INTERVIEW PROTOCOL

“These questions are based on my assumptions about the way the conversation is likely to go, or what is likely to be significant, but I may ask questions that are not listed here in pursuit of a rich description of the typesetting process. I will only ask questions related to the typesetting process and the subject’s experience with letterpress printing over time. I will not ask unrelated questions about the subject’s personal life. The subject will have the option of declining to answer any question I ask.”

Protocol Script

“Thank you for taking time to talk with me today. As is the case for interviews gathered as part of university research, I am going to ask you to sign a consent form before we hold the interview.” <give out consent form and get it signed.> “As we proceed, keep in mind that you do have the option of declining to answer any question I ask for any reason.”

“Let me tell you something about what my study is about. I am interested in how different technologies used to compose texts might impact what is composed because they make certain moves easier and other moves harder. I’m also interested in how interactions with the letterpress change over time. I am pursuing this by talking with experts such as yourself in the use of particular writing technologies, and am grateful to you for sharing.”

Interview Questions:

- One of the reasons I'm visiting is that I'm interested in the technologies you use to write. By technologies I'm referring to anything that isn't part of your biological body which you might use to record words so that other people can read them. What different tools/technologies do you use to write?
- With which are you most familiar?
- Assuming typesetting is one of the writing technologies that is most familiar to you, let's compare a couple of approaches you use.
 - How does your process (or processes) of typesetting differ from other ways you frequently write?
 - Does one take longer than the other? Why do you think that happens? Are you more or less likely to have errors with typesetting? Why do you think one process generates fewer errors?

- Can we look at a couple examples and use them to think through your processes and approaches? <choose a couple examples from the video and show them to the subject as memory prompts.>
- Do you think the way a technology works makes a difference to your composing? <If so, how? If not, why not?> I'm wondering if there is any way that this difference in thinking could be tied to the physical, hands-on nature of the typesetting process?
- Does the physical nature of the type matter when comparing typesetting to composition with other technology? Why/why not?
- What have you done to make the typesetting process easier for yourself? In other words, what tricks or modifications have you developed to streamline the process? <for more specific follow up: How does that help?>
- Have you made any upgrades to the shop (that relate to typesetting) via the purchasing of new equipment? How does the new equipment compare with the equipment you replaced?
- Let's talk more generally. How has your experience with typesetting changed over time? In what ways do you think your composition practices have changed as you became more familiar with the technology? <may need to prompt him to be more specific with follow ups such as: Why do you think that? Can you tell me more? Can you give an example or two? or How so?>
- What are some common mistakes novices make when it comes to typesetting? What is it about these habits/practices that makes them "mistakes"?
- Does your familiarity with typesetting affect the way you write with other technologies? How so? <or why do you think that happens?>
- Does your experience with other technologies affect your typesetting practices?

“Thank you very much for taking time to speak with me. If at any point you have questions or concerns about your participation in the study or wish to withdraw data collected through the interview, you can contact me through the email provided on the information sheet.”