

**Redrawing the Maps for the Transfer of Writing Skills and Knowledge**

by

Eunice E. Matthews-Bradshaw

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Approved by

Michelle Sidler, Chair, Associate Professor, Department of English  
Stewart Whittemore, Assistant Professor, Department of English  
Helen Eidson, Assistant Professor, Department of English

## Abstract

This research examines the case studies of two participants, students at a large land-grant university, as they transfer their knowledge of writing skills and practices across contexts as evidence of the shifting nature of writing. This project proposes that, as many have theorized, the study of writing transfer needs to be longitudinal; simultaneously, the project also puts forth the idea that studies of writing transfer also need to demonstrate an understanding of the variety of transformations writing knowledge undergoes when it is put to use.

The findings in this research point to a methodology for analyzing intersections between commonly held concepts about writing transfer and self-efficacy as indicated in interview transcripts; this analysis is then connected to extensive document collection and, when possible, observations, in order to verify patterns of intersection between themes and practices indicated in the transcripts and documents collected. The resulting data suggests that further examinations of intersections reveal the location of transfer, offering frameworks for richer studies of transfer.

Applying the theoretical underpinnings of de Certeau's "Walking in the City", this the author posits that—just as landscapes and travelers interact upon one another—similarly, are writers continually changed by and changing the shape of writing. This examination of transfer offers up one model for studying transfer that allows for this understanding of mutability and flexibility in the nature of writing and informing theories about transfer. This model should account for a new scope and focus in transfer research that extends beyond a traditional writing course and, as well, beyond typically writing-related majors.

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## List of Abbreviations

FYC	First Year Composition
LC	Learning Community
LR	The Learning Record
MOOCs	Massive Open Online Courses
NLS	New Literacy Studies
RS	Rural Studio

## Introduction

For several decades now, researchers in the field of composition studies have been interested in the transfer of writing skills and knowledge. At the 2014 Cs in Indianapolis, a host of panels discussed transfer research in various forms as it applies to what we observe in our students and in the classroom. The reason for this interest: teachers of writing and the departments for which they work need to be able to determine what students are retaining as they are learning about writing and how they are using those skills, that knowledge, in different contexts. The key here is the different contexts.

While we understand the importance of students being able to transfer writing skills from our classes into other contexts, it is also important that they be able to use their writing in different ways, in situations we might not anticipate. And though we are having more success in efforts to teach for transfer, we have yet to develop studies that translate into the necessary proof we need to support our efforts outside of composition studies.

### **Why Transfer Matters**

The struggle for proof seems to result from the fact that our research efforts are entangled in the idea of students being able to reproduce very discrete types of writing skills, writing skills that mimic traditional writing assignments. What our students actually need to be able to do though is to figure out useful ways to adapt those writing skills into situations that more closely resemble what they will encounter in real-world, workplace scenarios. While students need a host of writing skills they can transfer into other activities, those other activities are not what we



tend to study in our research. For the most part, composition studies looks for proof of transfer in academic writing situations wherein writing assignments look a lot like our own: formal reports, specific genres, and written responses to direct questions. What is missing in these scenarios is how rarely those writing assignments mimic what they will use in abstract sorts of problem-solving situations *after* graduation, situations involving higher stakes or greater risks involved. Furthermore, it is only relatively recently that we have begun to make clear connections to the network of literate activity that surrounds writing transfer. While we stress in our programs that we offer “safe places” for writing, the writing students will do in the workplace is anything but safe. That writing is directly connected to success on the job and job security. In order for us to say that composition—particularly what is taught in core composition classes—is relevant to our students, we need to be able to prove that they are using the writing skills we teach in our composition classes *outside* of that safe environment. This relevance extends beyond traditional writing program assessment, which tends to define our primary use of qualitative data. Data about transfer offers rich potential for our field.

Composition classes tend to be the moneymakers in English departments. We bring in numerous non-majors, teach them “how to write”, and then send them on their way. Often, though, when they get into their majors we encounter questions from other teachers: “Why can’t my students write?” and “What did they learn to write?” While institutions that are adopting writing-across- curriculum and writing-in-the-disciplines programs are heavily invested in writing instruction in specific majors, it is important to our survival as writing programs that composition studies maintain a stronghold in the development of that instruction. If our programs are to survive the broad sweeping institutional changes that writing, English, and related

departments are currently experiencing, we must also keep pace with those programs, and proof of transfer plays a major in helping to secure that position.

Consider how many more schools are now adopting more online instruction, MOOCs, and other digital platforms for teaching much larger numbers of students. We need to find ways of maintaining viability in our programs. Transfer is extremely important to this effort because transfer is proof of life for our profession. Further, addressing how we perceive of it now, how it affects our students, will enable us to survive the coming changes.

The acceptance of our limitations in proving transfer is echoed by scholars like David Smit (2004) in his introduction to *The End of Composition Studies*. Smit, presents the viability of composition programs on college campuses as being threatened by our inability to prove instances of transfer: He states, “Indeed, it strikes me that viable alternatives to current concepts, paradigms, and models are inconceivable, that we do not even know how to think about the nature of writing differently than we do now” (3). If you accept the model offered by Smit, you must do so under the conditions that the skills and knowledge “can be transferred from one situation to another, or learned in one context and applied in another” (Smit 119), like a package being moved from Point A to Point B, while at the same time accepting that models for what you seek are unknowable. Though it is true that observable signs of transfer are limited, it is a mistake to place decisions about the future of composition studies on such proof. Toward the end of his discussion of the problematic nature of transfer, Smit explains that proof of transfer is not something we are likely to ever demonstrate; furthermore, the lack of such proof must speak to the fact that we cannot even hope to teach students about writing (or how to write well) so much as we might support their writing goals (134). Smit is only partly right. We do need to support

the writing goals of our students. Supporting those goals, however, is part and parcel of the process of proving that transfer is happening.

Smit's discussion of transfer indicates a commonly held misconception about the nature of transfer, one this discussion will explore. Further, this misconception is indicative of the limitations present in the way that we in composition studies discuss and research transfer. Smit speaks in terms of *limits* and *onlys*. Those limits are what drive him to conclude that other people, other disciplines, will be doing the work that moves our students forward in their majors and, eventually, into the workplace.

The process of transfer and the resulting evidence that it occurs has been and continues to be discussed in a variety of disciplines concerned with learners and the ways they learn. By transfer, I am referring to the process of first acquiring or learning a skill and then putting it to use in a context that is different than the original one in which it was acquired or learned. More specifically, this process is hotly contested in specific circles of writing and compositions studies because transfer, or rather, proof of transfer, is like the golden-ticket for any number of disciplines. It has particular bearing on writing programs and their ability to remain viable. The fact that so few scholars in writing disciplines find it observable in any quantitative way, tends to lead us to believe that it does not occur and may, instead, be some imaginary quality that we hope for but never truly attain. The possibility of demonstrating its existence in quantifiable amounts would provide (seeking) scholars with ideas about how to assess and benefit from that "proof of life" by the means of greater institutional and federal support for those programs. In order to make useful progress in our understanding of the processes involved in the transfer of writing skill and the related implications inherent in its proof, it is necessary to have a clear grasp of new conceptions of transfer, their relation to early, founding models of transfer, and the contemporary theories particular to writing and literacy studies that revolve around gaps existing in those early models.

In this dissertation, I will demonstrate a new theoretical premise for understanding and discussing transfer that takes into account the actual shape of learning and the way that shape might be addressed as

it relates to transfer, especially as it relates to writing and literacy studies. Rather than take on the impossible task of discarding the term “transfer”—a suggestion I will address below—I would like propose that we add to our thinking about transfer in new ways by means of examining two cases studies of learners adapting what they know in order to accomplish particular goals.

Imagine the work of early cartographers. Theirs was a series of studied explorations; certainly, they used the accepted maps of the day, but they expanded those maps, adding detail about the land and sea that they encountered. They shifted boundaries and surveyed how land and sea did not, in fact, slip off into oblivion or populate with strange monsters. They continued to pursue alternate routes to both the known and the unknown.

In comparison, we’ve gotten comfortable with the weathered, flat representation of writing that demarcates experience into conquered areas and monster-inhabited territories, and these representations fail to serve whole writers equipped with cartographies that layer satellite images with topography, weather radar, and updated traffic patterns. We’ve attributed a lot less elasticity to the geographic metaphor of transfer, particularly writing transfer, than it actually possesses.

Rather than be told we *cannot* imagine the territory of transfer, we must instead imagine the truth, that the moment a student is provided with a skill, that skill takes on new meaning for the bearer. Teachers, having little or no idea of where that bearer will travel, have very little knowledge of how the bearer must reappropriate what s/he receives or whether it will be immediately useful. What we—students *and* teachers—need, then, are new ways to consider writing and, consequently, new ways to consider writing transfer.

There is no GPS for this sort of travel. There are no specific routes students may adopt. Each traveler is different: enrolled in different courses, recording different experiences, valuing different concepts. It is not helpful to assume they will always use the tools we provide them in the same ways we introduced them. Understanding that such a restriction on transfer, on learning, is not helpful may begin to point us and our students in a direction that helps them to use their writing skills to their own academic desires. If we consider how the metaphor of a geography for learning might be more appropriate to the

concept of transfer, it should be easier to use such a metaphor to align our purposes for students who are traveling what Jonathan Hall (2006) refers to as the “many roads” to their academic destinations.

### **The Metaphor of the City**

From the window of the office where I used to work in the campus library, I was able to watch a great deal of activity going on. Beyond the great sycamore that shaded the pathway around the library I had a view of the financial aid building just to my left and the student center and administrative buildings just across the street at the head of the campus main street with its central green space. I could catch a glimpse of College Street, which cuts through downtown, and the campus hotel and convention center.

Interestingly enough, no matter how many nicely plotted paths they place around this landscape, I can also spot the indelible path of desire here and there, the place where people have determined their own paths often enough that the trail is worn permanently into the campus’ well-manicured lawns. Those chosen paths illustrate what Michel de Certeau (1984) calls a Concept-City. De Certeau argues that many of the words we use to describe language and literate practices like writing are actually metaphors that originate in physical space: “to turn a phrase”, a “run on sentence”, “to unpack an idea”, the “moves” writers make, “overarching ideas”, “trains of thought.” He also argues that just as walkers change the environment, language users change language. Just like the physical path of desire cutting through a well-manicured lawn, every generation creates its own linguistic short cuts to meaning: good is cool is bad is hip is gnarly is tots awesome. For all of these spatial metaphors that come into our descriptions of writing, the map exists in the predetermined roads and sidewalks, and the paths to various locales are in place, travelers often chose other, more desirable ways to get from one place to another. As de Certeau describes the actual city, he constructs the Concept-City as a means of explaining how we use language to navigate both physical spaces and lived experiences. Significant to this

illustration is the idea that both city-goers and users of language are not limited by the structures that are in place in this landscape. Writers, like walkers, make a range of choices. Some of those choices are not dictated by the landscape or the conventions they have been taught but rather reflect paths of desire, create unique turns of phrase, veering off the prescribed sidewalks, roads, and bridges, instead, using the usual modes of speaking and strategies of writing that are mapped out for them.

I see examples of this other definition of transfer in the research projects I have been involved in, particularly when I consider the ways students use the tools and skills they have been provided to get writing tasks done. Most students enrolled in first-year writing courses are not English majors and will have to take what they learn about academic writing (typically from a humanities/liberal arts/English department perspective) and apply it to the writing required in other areas of study. More often than not, they enter into those other areas of study with little or no knowledge of the kinds of writing they will be required to do within that discipline. I think this is the reason for the overwhelming perception that students “don’t know how to write” when they get into their specific programs of study. Such a perception robs students and faculty of opportunities to collaborate on ways to transform what students *do* know about writing.

When we look at transfer from the perspective of the student, we have to see a landscape that is not just the campus itself. It is a landscape shaped by all the experiences and skills and tools that they bring with them when they enter college. Often, we perceive of students as if they were these blank slates with no prior experiences; however, if we are going to help them complete certain tasks, develop certain skills, we need to see students as travelers moving through the landscape of their academic experiences, helped by their past experiences and carrying with them malleable tools.

## **What Follows**

The first chapter offers a review of literature that examines several points of intersection in developing writing transfer studies. I first look at how transfer has been researched outside the field of composition studies and points to how those investigations have influenced research in composition studies. My focus then shifts to a review of study models that reframe this research, suggesting new metaphorical implications for transfer research.

The second chapter describes my methodology, demonstrating how these methods fit into a particular rhetorical framework, one that allows for a broader scope in mapping the mutable nature of writing. This methodology incorporates a wide variety of data for the purpose of developing a map of intersecting concepts—codes and terms—revealed in interview transcripts and correlated with documents and other networks of activity.

The next section of this dissertation consists of two data chapters. The first data chapter outlines the case study for Nancy—whose extensive notebooking practices in her coursework—illustrate the mapped nature of writing transfer. These mapping and navigating practices enable her to work through to the long-term goal of completing her graduate degree in microbiology. Nancy's is an example of how writing transfer correlates to self-efficacy, grit, and like characteristics. Following Nancy, I present the data chapter for James, an architecture student and participant in the Rural Studio (RS), a highly competitive design program his undergraduate architecture program. The RS is an immersive architectural program that provides students the unique experience of designing structures that serve, beautify, and unite the local community in a small Central Alabama town. James, through use of prior knowledge, and unimpeded by the idea of learning new things, uses what he knows about writing in a variety of media to help himself through other situations. Each of the data chapters draws connections between elements like

motivation and self-efficacy in relation to one's prior knowledge, the qualities creating a matrix that ultimately points to one goal. The map of writing transfer aids our understanding of what students are learning and how.

The final chapter offers conclusions of my findings and discusses the implications of these findings. In particular, this section discusses the pedagogical implications of this study and others to come and addresses the functionality of such pedagogical implications inherent in an academic environment that is currently in the midst of issues like drastic administrative change, technological shifts, and financial and professional constraints in higher education.



## Review of Literature

In this literature review, I address the gap that exists between what transfer research looks like in composition studies and what it looks like from outside, in other disciplines.

Understanding the ways transfer has been studied in the past and in other disciplines—grasping how those past studies influence transfer studies in composition—will help reveal particular practices compositionists can adopt into current and future research of transfer in writing. This examination of the literature will also draw connections between the various methods devised to understand theories that inform writing transfer research and discussions about when and how transfer happens. I have developed my own research project in response to these practices surrounding conceptions of transfer; this project is further shaped by my own understanding of transfer and the metaphors that inform how we go about researching networks of complex phenomena.

Transfer research in composition studies is primarily focused on classroom contexts and writing produced in and for classroom purposes. Initially, this focus seems narrow, but it is understandable in its own right. In composition studies our goal is that students be able to make sound arguments and write successfully, but we have struggled to identify pedagogical models that vary from the models we have used traditionally, models with which we have become comfortable. Using these controlled situations, we have been able to examine limited transfer in-house, though we have constructed somewhat artificial frameworks out of necessity. As a result, though we may locate proof that transfer exists, that proof supports the idea that transfer we

identify is typically considered low-level or less desirable, that it only happens under very restrictive circumstances. Furthermore, the further we move away from those constrained and controlled environments—in-class assignments, standardized tests, traditional writing courses—the more difficult it becomes to offer proof of transfer in a way that is valued by people outside the discipline of composition studies. It may be that we simply desire for students to complete specific, discrete writing tasks in core composition sequences. The need we have to prove transfer, though, is primarily a concern for students once they have moved beyond our courses, into their majors and professions. Ultimately those constrained environments fail to serve us well. The gap between studies of transfer in composition and transfer studies in other disciplines becomes visible if we first look at *how* others study transfer and then examine *how* it has been examined in the field of composition studies; the gap exists as a result of differences in our value for each research approach and its results weighed against the implications of researchers' findings.

### **Looking Outside of Composition Studies**

Within composition studies, perhaps because we have not moved much beyond first coming up with theories about transfer, we tend to be stuck in a rut in terms of how we design our studies. Though most studies of transfer are theoretical in nature, many of those occurring outside of composition studies combine elements of qualitative and quantitative data, offering a calculable impression of *how often* and *how much* to complement the *why*. New studies of transfer in composition are just beginning to do this. Researchers in psychology, learning sciences and workplace studies have conducted extensive research in the study of transfer, so these disciplines offer significant models for researchers who want to reframe discussions of transfer by providing concrete methods for studying writing transfer. Initially, qualitative data

has heavily influenced our frameworks for talking about writing. Traditionally, quantitative analyses of writing fall under the category of assessment, and assessment based on instances of transfer has not been a part of overall structure of writing program administration. Our studies of transfer should serve to help us deepen our understanding of what writing and other literate practices do for writers, much in keeping with Raul Sanchez's (2005) idea that theory in composition studies should help to establish "an agenda for inquiry comprised of theory and empirical research in a mutually informing relationship" (location 21 of 1302, e-book version). New studies could combine aspects of the qualitative studies we value with quantitative data that is likely to be highly valued by our colleagues in other disciplines.

Outside of composition, studies of transfer are already connecting to some specific themes we are just beginning to look at in our discipline. In particular, the field of psychology offers up useful input from the concentrations of learning psychology, cognitive psychology, and social-cognitivism. *Within* composition studies, contemporary interest in transfer is heavily influenced by ideas that originate from *outside* the discipline, primarily from the work of cognitive psychologists Gavriel Salomon and David Perkins.

### **Early Influences on Conceptions of Writing Transfer**

Salomon and Perkins's research on transfer in the eighties presents a specific idea of what transfer is and how we see it in our students' academic progress. They explain high-road transfer as that which requires writers to abstract a skill into a new context; this is the type of transfer they deem most valuable. They point out that this form of transfer is also least likely to be achieved. At the same time, teachers in composition studies have emphasized how they may make attempts to modify their teaching to achieve the high road form. Salomon and Perkins present low-road transfer as the form of transfer that is more likely and, it seems, less valuable.

Low-road transfer, they explain, relies on “superficial stimulus” (Salomon and Perkins “Teaching” 25). This type of transfer equates to a situation wherein someone knows to spread peanut butter on a slice of bread with a knife when the peanut butter, knife, and bread are available. It involves “automatic triggering” actions that have been learned by rote (Salomon and Perkins “Rocky Road” 113). High-road transfer “depends on deliberate mindful abstraction of skill or knowledge from one context for application in another” and can occur as both forward and backward reaching (Salomon and Perkins “Teaching” 25-6). This would be more like thinking of a butter knife when you need of a flathead screwdriver to unscrew the crumb plate on the bottom of a dirty toaster. It may be useful transfer, but it is hard to equate a comparison in terms of how that might look in the context of writing. I rather think in writing, this is a context in which one transfers leads to a change in form, a mutable use of writing moving from the textual into some other shape—visual, aural, digital, or structural, for example. It may equate with someone adapting a genre suited to one purpose (the structure of a five-paragraph essay, typically used in time essays, for example) to a framework for more nuanced writing (a critical analysis, *per se*).

In their discussions of teaching for transfer, Salomon and Perkins refer to the techniques of “hugging” (to teach for low-road transfer) and “bridging” (for high-road transfer) as means of helping our students to achieve particular goals of writing (“Teaching” 28). Hugging involves teaching what you want students to use in context with the situation you want them to use that information. In writing classes, this would mean that if I want students to remember a lesson on citation, I would have them complete their citation pages for a paper just after the lesson. Bridging, on the other hand, would involve “[pointing] out the principles behind particular skills or knowledge or, better, [provoking] students to attempt such generalizations themselves”

(“Teaching” 29). This sort of teaching for transfer involves creating opportunities in which students make connections to something they have learned beyond the context in which they learned it; after a class discussion about description, students might be asked to find examples of description that they want to emulate in their own writing.

Salomon and Perkins explain that challenges to accomplishing transfer stem from the fact that other factors in instruction and learning detract from the instance of transfer occurring: “the occasional bridging question or reading carefully chosen to ‘hug’ a transfer target gets lost amid the overwhelming emphasis on subject matter-specific, topic-specific, fact-based questions and activities” (“Teaching” 29). The privileging that occurs in the model of transfer we often try to teach for is the root of “the problem of transfer”; certain types of learning, labeled as high or low road, begin to shape specific features we look for as proof of transfer. By looking primarily at formal writing like essays and short answers on exams, we foreground specific kinds of writing situations in a way that limits what we can observe in studies of transfer. The idea that these limitations accurately define where we might observe writing transfer hinders a broader examination of transfer in general. Though the low-road transfer is most likely to occur, it is not considered the ideal sort of transfer worth exploring. The “problem” inherent in this conception of transfer has led some researchers to refer instead to the “place” of transfer, where we believe we might see transfer happen. How do you prove an individual has learned something if the shape of that learning is subject to change as a result of its use?

Salomon and Perkins’s depiction of transfer casts it as an elusive occurrence, one that defies concrete discovery. Other researchers—Thorndike and Woodworth (1901), Cormier and Hagman (1987), and others outside the field of composition studies—also seem to attribute instances of transfer to happenstance. Sometimes it occurs, but it is unlikely. In composition

studies, earlier examinations of transfer supported this notion by exploring methods of teaching for transfer that refer specifically to Salomon and Perkins's early conceptions of transfer. The focus on high road transfer occurring in the classroom or formal writing setting bolsters this idea that transfer happens in limited and unlikely situations. Though Salomon and Perkins's work in transfer does not represent all conceptions of transfer as it is understood in wider circles of academia, this version of the transfer story frames composition studies' chief focus on transfer. Salomon and Perkins also point out that instances in which participants undergo socializing activities can affect their development of, at least, low-road transfer, though they do not examine the components of social elements and how they contribute to the instance of transfer ("Teaching"). In fact, a good deal of progress has been made in building these early models of transfer. The early models continue to inform how we understand the nature of transfer.

### **Transfer in Educational and Learning Psychologies**

Much of early transfer research relies on laboratory-based examination of learning transfer. Predating Salomon and Perkins, the work of educational and learning psychologists provides a great deal of data in child development and military training. Some of the most varied and valuable researching transfer happens in workplace and education studies. Cormier and Hagman present a meta-study conducted in a number of fields and different areas of focus: cognitive psychology; military training; primary education instructional design; and childhood development of motor skills. This wealth of topics demonstrates a vital interest in researching transfer beyond its theoretical foundations. Cormier and Hagman examine research that considers how to measure transfer and its opposite, how it varies according to the ways in which it is acquired (by training versus rapid acquisition) (3). In particular, they reference Gagne's discussion of vertical and lateral transfer, similar to what Salomon and Perkins described when

they use the metaphor of the truck to describe high and low levels of transfer. Furthermore, they track the way transfer occurs in a number of situations, examining how processes related to matching-mismatching information, learning information, and then using that information to relate to successful transfer in both in laboratory settings and real-world applications. The differences between transfer of motor and cognitive skills are another area of interest to these researchers. Pressley, Snyder, and Cariglia-Bull (1987) examine how strategy is taught to children, with particular attention on how the strategies are applied to other situations. Baudhuin studies how flight training is affected by instances of transfer. These researchers, working outside the field of composition studies seem to rely on a fuller complement of data and ways to present that data. They use a variety of lenses for examining data that are typically not adopted in writing studies until recently.

### **Self-Efficacy and Cognitive Psychology**

Social cognitivists, researchers within the field of cognitive psychology, help us understand ways we might better discuss what happens when we are researching transfer or have data that we want to share. In particular, social cognitivists focus on connections between processes of learning and transfer in relation to qualities like *motivation*, *self-efficacy*, and *interest* in the development of writing. Proof of transfer is not the primary goal of these studies. Instead, they are interested in how individuals perceive of what they already know in order to accomplish some new task. The presence of self-efficacy in learning is documented by numerous scholars in both social cognition and learning psychology. Albert Bandura (1997) examines self-efficacy and offers self-efficacy scales for measuring participants' levels of investment in the work they're doing and how and where they are doing what they are doing. Further, he examines

how motivation works and how it can be stimulated in these writers and his work influences the study of all numerous studies of self-efficacy in social cognitivist psychology and other fields.

Other social cognitivists expand on Bandura's foundational work in the quality of self-efficacy and learning, offering several avenues for connections between their finding and what we want to understand about writing skills and knowledge transfer. McCarthy, Meier, and Rinderer (1985) discuss self-efficacy in writing by assessing student confidence in the correlations between writing self-efficacy and performance. Hidi and Boscolo (2006) look at motivation and writing, focusing on Bandura's work and social constructivist approaches during the examination of the intersections of writing and motivation research. Zimmerman (2000), also influenced by Bandura, examines persistence as well as writers' interest and self-efficacy in specific sorts of writing tasks. Zimmerman also looks at self-regulation, the subjects' use of personal principles of discipline in order to accomplish difficult tasks. This demonstration of self-regulation directly relates to confidence as a developmental influence in Zimmerman's study. Zimmerman looks at the coping strategies writers employ to overcome those specific hurdles. The perceived reward associated with student self-efficacy links directly to their ability to recall past instruction and learning for the purpose of applying that learning to a new situation. That application is at the heart of transfer.

Self-efficacy is responsible for the development of strategies for completing specific academic tasks. When writers are aware of and confident in their past achievements in writing, they are more likely to refer back to those experiences when they encounter new writing challenges. This process of referral makes it easier for writers or people in situations that call for writing to broach consequential transitions as they work to complete the new tasks. In studies of



transfer, a combined focus on issues like self-efficacy and motivation would be a helpful means of locating *where* in learning students begin to demonstrate the ability to achieve transfer.

Halpern (1998), another cognitive psychologist, also examines how the development of critical thinking skills helps to foster transfer in college students. She hits upon some major issues of transfer in terms of how students' ability to think critically, as well as their level of metacognition and their disposition about their learning directly impacted their ability to use an acquired skill in a new context. Her language and approach—domains, dispositions, metacognition, and so on—have bearing on what compositionists understand about connections between student awareness and transfer.

Addressing how much of the “problem of transfer” is a result of how we conceive of it, Packer (2001) uses the sociocultural lens to discuss how we teach for transfer based on those conceptions. He also connects his work to both Dewey and Lave's conceptions of the social in relation to transfer, offering a broad presentation of the two major end caps on the transfer discussion. Packer uses the element of the learner in social network to emphasize the importance of preparing students for interactions that foster transfer, rather than preparing them to do one specific task or, conversely, several random tasks.

## **Workplace Studies**

Outside of laboratory settings, the next steps in transfer research come from workplace studies. Workplace studies of transfer result from a need to understand and efficiently learn within a network. Many of these studies emphasize how employees utilize prior to engage with challenges in the workplace. Workplace studies take into account research models that make use of inventories. They tend to examine mixed-method models to ascertain common points of entry

into a conversation about transfer. In particular, network theories like activity theory offer compelling frameworks for this type of research.

Tuomi-Gröhn, Engeström, and Young (2008) use the framework of activity theory to explore how individuals at work are able to transfer knowledge they develop through vocational education and training, using new educational tools and moving beyond school and lab settings into other tasks and specific, high stakes situations. Their situated approach to network theory focuses on how learners learn and in what settings, laying groundwork for the research of transfer on the job. Because the subjects of the research are learning on the job, those subjects have a greater perceived risk than earning a grade or merely participating in a study. By focusing on the developing of skills and knowledge in the workplace, the researchers explore individuals in scenarios wherein failure can cost them their livelihood. This process of boundary-crossing, developing one's skill or knowledge levels provides the foundation for the research they introduce in their collection; the subjects of the studies, the boundaries, and the means for crossing them create a network wherein the researchers map the process of transfer. Accounting for challenges between cognitive and constructivist approaches to transfer, Tuomi-Gröhn and Engeström (2008) begin by looking at traditional views of transfer: first Thorndike's theory that transfer happens when it is needed; and then, Judd's assertion that transfer happens because of what we know and how we know it. The emphasis on these occurrences of transfer is, in part, on metacognition, knowing what we know and how we know it. Transfer is not always moved about in discrete identifiable portions; we transfer principles and dispositions. Transfer, then, is the event more so than the ability (Tuomi-Gröhn and Engeström). As an event, transfer involves more than one individual, a location, and a goal, all of which result in a writing event and the

production of some sort of text. The state of this event makes examinations of transfer particularly well-suited to actor-network theory and other networked theories.

In workplace studies, researchers have examined how individuals must press themselves to recall information they may have learned long ago, when they were students. Because composition studies rarely look beyond the academic environment for its source, it has been difficult to verify transfer is happening outside our classes. Explaining how interactions and collaborations with others, as well as the inherent pressures of being on the job, present different challenges than those of being an individual in the classroom, the research collected in these studies gives a fresh perspective on how we might research writing transfer in academic environments.

Those interactions and collaborations that frame the environments in which transfer happens are described in detail by King Beach (2008), who explains that beyond what we might consider “just plain learning” we must examine the intersections of boundaries that writers must cross in order to successfully master or demonstrate mastery of a skill like writing (40). Boundary-crossings, or consequential transitions result in transfer by way of the interactive processes and collaborations that occur in those intersections. As well, the stakes (risks and motivations) involved act as the catalyst for transfer in individuals. The situated nature of the work to be done helps to account for transfer happening outside the self. Still, in order to make an accounting of what is happening in these situated learning scenarios, a framework for the study is most important.

### **Learning Sciences**

In the learning sciences, the studies of transfer offer some clear directives on ways to document and teach for transfer in proposing how this sort of work can be done in new and

different contexts. Engle's (2006) study examines the correlation between the content participants learn and the conditions under which the acquired information or skill is subsequently used, emphasizing how the students' learning was enhanced by an understanding of how they fit into a larger community, thus providing a clear cut sense of the situated nature of the task they were to complete. Goldstone and Wilensky's (2011) model a methodology for teaching for transfer, providing students with a conceptual map of the potential components of the system that correlates with what they are trying to learn. Understanding the network that governs the context in which the students are learning seems to lead to calculable gains in the development of both specific and generalizable knowledge. Marton (2006) applies the concept of the situated nature of learning to examining the *differences* between situations, intoning that those differences help to foster instances of transfer. Reber et al (2009) examine the relationship between "prior knowledge, interest, or perceived control...and learning outcomes", determining that interest was higher for students who could exercise choice/control over their work, but that it was prior knowledge that "increased performance on a transfer of knowledge task" (Reber et al 509-10). These learning sciences studies provide a clear sense that the idea of networked or situated learning is directly connected to instances of transfer.

In terms of how writing instruction fits into this network, McCarthy, Meier, and Rinderer explained social cognitivist Bandura's theories about self-efficacy in writing, thus: "a student might know what is expected in an effective piece of writing and might even know the steps necessary to produce such a piece. But if the person lacks the belief that s/he can achieve the desired outcome, then effective behavior will likely not result" (466). McCarthy et al. go on to say,

...efficacy expectations lead to performance, followed by feedback and further development of expectations. Individuals with strong efficacy expectations evaluate themselves as capable, while individuals with weak efficacy expectations evaluate themselves as less capable of effective performance. Efficacy, then, can affect what behavior people will attempt in the first place and how long they will persist in the face of obstacles. (466)

This idea of persistence in the face of obstacles makes a clean and direct line to MacArthur Fellow Angela Duckworth's (2013) examination of the quality she calls *grit*. McCarthy et al. research how the level to which one feels confident about writing skill affects the quality of writing itself. The connections that they demonstrate over the course of two studies show that students do write better quality work when they feel more confident about how well they write. They also suggest that other studies look at how self-efficacy affects the processes that writers use to complete writing tasks. Examinations of writing processes are just a step away from examinations of the transfer of writing skills and knowledge.

### **Getting Gritty in Writing Research**

Recent developments in cognitive and learning psychology have revealed groundbreaking new research by Duckworth that examines how motivation and persistence combine to form a characteristic called *grit*. Grit has been identified as a predictor of success, and Duckworth and her associates present a host of data about student success by way of sticking with challenging tasks. Again, we get this idea that it is when learners encounter moments most complex that they are actually learning. Duckworth characterizes learning, particularly specific goals and learning, as "a marathon versus a sprint" (Duckworth). The research suggests a direct correlation between grit, motivation, self-efficacy, and transfer. Duckworth's examination of

grit shares clear connections to Bandura's theories of self-efficacy in social cognitivist studies of transfer. The determination characteristic of grit is directly linked to the cycles of self-efficacy and the learners' ability to stick to a task—one with far-reaching rewards.

In writing studies we should be able to take advantage of how self-efficacy results in transfer of learning for our students. It will be easier for us to construct more successful examinations of transfer if we frame our attention around self-efficacy and motivation related to students' and teachers' goals and expectations. For example, we could make sure that our understanding of student self-efficacy synchs up with the ways that we comment on papers. There should be a correlation between our teaching and the ways we then study the effect of that teaching when we use techniques like Salomon and Perkins's bridging and hugging. Having a clear understanding of what students feel confident about as they are writing has a drastic impact on how we build upon that self-awareness. Self-awareness in writing promotes transfer by helping students understand how well they communicate among their peers, to a specific job market, or within a specific discipline because that awareness, connected to prior knowledge, helps students to make connections to other skills and contexts. All these elements together help us to account for what the students bring the classroom in terms of prior knowledge, and this is why programs like the Learning Record are useful; they map out what it is the students were doing before they got to us and help us to understand where it is they want to go (Syverson). Consequently, considering that our students are not empty slates, it is helpful to know what has been written on these proverbial slates before. If you think of writing development as a palimpsest text, or a lamination, then you begin to see how the text itself, the erasure, the building, creates the writers we have in our classes. Combine that palimpsest nature with that of a redrawn map, and the text reveals even more rich detail about our writers.

It is not that transfer is new or impossible. The issue is that changes in education, brought about by administrative, economic, and technical changes in our culture prompt institutions to show and prove their work. In a discipline that stands outside the STEM emphasis in learning, relevance is important to the well-being of liberal arts programs. In the age of assessment, transfer-related research and assessment would be a boon to writing programs.

Non-composition transfer studies conceive of on the transfer phenomenon by way of a variety of aspects: how, why, when, and where it happens. They also offer some understanding of ways multiple contexts intersect in the lives of the participants. It is helpful to consider how networked theories about transfer take into account the place and situation in which transfer occurs. It makes sense that there exists a place for self-efficacy in that same network, just as there exists a place for considering how to teach for the end result. There is a place to consider how learning shifts, taking on new forms in the user. Thinking about that network, we tend to have better way of understanding of transfer. As I discuss below, newer studies, very recent studies, in our field are starting to consider this. Because we don't have a breadth of the answers to these questions, it seems necessary to push the understanding of how useful this sort of research can be.

These coping strategies can be directly related to the kinds of boundary-crossing issues addressed by researchers like Tuomi-Gröhn, Engeström, Young, and Beach. And others, like Driscoll and Wells (2012), in their examination of disposition, are also starting to make clear and direct connections to the influence of self-efficacy as outlined in Bandura's work and that of his contemporaries. These researchers have developed tools for determining self-efficacy and assessment, writing outcomes, and motivation. They have also established spare specific educational implications about why it might be important for us to examine issues such as self-

efficacy in writers. The complexity of relationships between self-belief and motivation strongly influences the kinds of writing that we do or assume that we are able to do. Each of these researchers contributes to the highly purposeful role social cognitive theories play in the development of new research that focuses on the transfer of writing skills and knowledge.

### **Transfer in Composition Studies**

In response to what other disciplines do in studies of transfer, there are a great many unexplored avenues for research in writing transfer. While early discussions of the transfer of writing skills and knowledge have offered a number of theories about what transfer looks like, how it occurs, or how likely it is to occur, only recently have we done any extensive researching into writing transfer. For the purpose of this review, I now offer an examination of studies of the progression of transfer in composition studies. While some studies might be considered outliers, those outliers—works in composition or literacy studies—are included here as relevant and applicable by way of research methodology, placing them in concert with others' efforts to unravel transfer in our field. Further, this rough timeline serves to demonstrate how composition studies has been influenced by outside research of transfer, the practices we have taken up , and those we have yet to explore.

Probably the earliest example of transfer research in composition studies, Walvoord and McCartney's work (1990), points to students' discussions of the research they do in their classes, focusing on "their ability to transfer this in-class lesson to their own research projects" (214). Further, the authors demonstrate that interactions between teachers and students promote this transferability (218). In their conclusions, they emphasize how students' work in classes is guided by their experiences in other classes, directly connecting this early study to issues of prior knowledge taken up in later studies. This study offers an example of how early conceptions of



writing and transfer—framed by the work of Salomon and Perkins—have influenced our ideas about achieving transfer in the classroom.

### **Longitudinal and Ethnographic Models**

Recent shifts in the conception of transfer have influenced what researchers in composition are looking for in transfer research. As more reports come in from these early studies, it is becoming more apparent that researchers' attention to networks is producing interesting results (Adler-Kassner, Majewski, and Koshnick, 2012; Wardle, 2007; Taczak, 2012; Roberston, Taczak, and Yancey, 2012). Developing a conception of transfer that is networked and influenced by the “social” has been highly influential in current trends in transfer research. Networks of activity inform many of the metaphors that relate to transfer and writing as a whole, and it is useful to focus on how networks intrinsically inform the kinds of research activities we get involved in. This networked conception of transfer is informed by ideas of writers in social space as well as physical space.

Following Walvoord and McCarthy's work, Chiseri-Strater (1991) presents research that begins to pull together a broader network of writing activity in her participants. Her research, described in *Academic Literacies*, offers an interesting look at writing as multi-contextual, layered, or networked. These developments and the resulting research are closely connected to composition studies, but they also have ties to other networked theories might actor/network theory, genre theory, and the like. Chiseri-Strater's longitudinal and ethnographic model of writing studies examines multi-contextual involvement in writing by way of a combination of student journals, classroom observations, and specific interviews, reflecting qualitative data that gives a clear illustration of how rich, but often complicated that data can be. The combined data

she collects about students Anna and Nick points to a connected writing life comprised of both academic and no-academic aspects working together in the lives of her participants.

This ethnographic model aligns with other examination of literacy in the work of Reynolds (2004) and Cintron (1997), who “map” literacy, noting its adherence to geographical or physical spaces. These mapped models reveal connections not normally observed in traditional writing research. And they share many of the same methods we observe in network theories that point to ecologies and laminate layered networks of activity.

Work that discusses writing in terms of ecologies or harmonies offers ways to analyze these networks of layered experiences and influences working within composition studies by exploring uncharted terrain in the discipline. Our best example of the ecological model comes from Syverson’s (1991) work. Using an ecological model, Syverson looks at several nonacademic contexts for writing and learning about writing; her examples are both personal and professional representations of people writing for specific ends: the network of activity surrounding the poetry of Charles Reznikoff, the collaborative efforts of student writers, and an online conflict between social scientists discussion the Gulf War. As she explains, “Our view of composing has been greatly simplified as a consequence of our methodological procedures. In the process, however, we have simply dropped out some rather large and complex components that may be significant for our understanding of what is involved in actual composing situations” (27). Syverson positions her work as dependent on an understanding of the systems at work.

In her work, Syverson maps out these connections to writing in the classroom by means of a pedagogical tool called the Learning Record (LR). The LR presents practices for teaching that focus on the networks surrounding students’ writing development. The LR also presents clear motivations and stakes for students, accounting for the learning that they have acquired

over a specific course's term. Students are asked to catalogue what they know at the beginning of the course, as well as to account for the development during the process of taking the course, and at the end. This accountability results in clear ways of marking and delineating where and when students are learning specific things; this also helps to create documentation about what sorts of activities seem to be pushing those learning instances along. However the process is dependent on self-reporting. The data recorded depends on the user's awareness of what s/he is doing. This awareness promotes developing students' self-efficacy and motivation toward specific goals in and out of writing courses. Furthermore, this shift also mirrors some of what happens in ethnographic research that incorporates interviews as part of its methodology.

### **Shifts in Our Conception of Transfer**

Since the late nineties, there seems to have been a shift in focus to pedagogy that ensures transfer in writing courses. Several scholars have made connections to how FYC and programs can teach for transfer more effectively by renegotiating the sorts of assignments that are given in first-year composition courses (Wardle, 2007; Billing, 2007; Fishman and Reiff, 2008). Taking up Salomon and Perkins's language of "bridging" and "hugging," these authors address the important role WAC programs play in helping students engage with how they re-use the concepts learned in freshman writing courses. Other transfer researchers explain that the goal of achieving transfer of FYC courses may be best served by a focus on the "place" transfer happens, the domain or the community.

Examining how students develop writing skills, Carroll's (2002) work gives attention to the transfer of those writing skills across academic disciplines focusing on four different case studies. In her study, Carroll is clear to point out that, while the goals of such research is evidence of positive transfer, one cannot ignore that students also experience the occurrence of

negative transfer. While lessons learned in first year writing may fail to transfer the type of writing students do in the majors, negative transfer results from levels of increasing difficulty in writing tasks and varying approaches to writing in different fields of study. In essence, negative transfer is what happens when learning doesn't stick – at least not the first time. Instead, when individuals learn new information, that new information often runs counter to one's learning style or recollection of related or analogous situations. Carroll's research provides evidence that the transfer of writing skills across contexts does not typically result in successful transfer, a stance that helps demonstrate why it would be useful to look at different contexts for research of this type of writing. Though we may be interested in fostering transfer in, for example, first-year writing students, ultimately, this goal is unachievable if we only consider the writing skill only in terms of the class in which it is taught. When writing development is distributed over the networks of writing, students may be able to counteract the effect of negative transfer. What is more, negative transfer speaks to the intersections of learning, precisely the place where learners push through by means of self-efficacy.

Offering another examination of how writing in multiple contexts influences writing development, Ketter and Hunter (2003) present a case study of an aspiring writer who draws from both her academic writing and the writing she does for her public relations internship. Their work focuses on how the student's awareness of the two communities of practice in which she was involved led her to make important and effective choices in her development as a writer:

Erin's story of negotiating the transition between writing for academia and writing for work is unique. But her experience suggests one way in which students might learn about writing in different communities. Erin's consciousness of her identity as a writer is heightened by her work on the boundaries of two contrasting communities of practice as she thinks about and comes to understand the constraints and freedoms afforded by each community. Her participation in the two communities of practice enhances her understanding of writing as a

complex interaction between the writer's identity and sociocultural practices of the community. (326)

This discussion of Erin's work within the boundaries of the two communities of practice links Ketter and Hunter's work to the kinds of consequential transitions Beach discusses. Erin's literate activity in both contexts serves to move her through the process of boundary-crossing that Beach describes.

Other ways of thinking about these networks get taken up in theoretical work that examines the layers, boundaries of a different sort, that envelope individuals' various literacies. Prior and Shipka (2003) examine literate activity through the Bakhtinian lens of chronotopic lamination, thus conceiving of the network of activities to exist like layered plains of activity, sandwiched together, yet fluid. The authors develop an analysis of images and discussions offered by writers who have been asked to illustrate and discuss their writing process. Their study illustrates the importance of understanding the multilayered nature of literacy acts. Understanding transfer, which is by its nature "multi", requires understanding these types of networks. Similarly, Bazerman and Prior (2003) also theorize about this multi-contextual multilayered representation of writing., Their examination of the ways that texts are composed adds to this idea that we need to be looking at more than just the products that people create as evidence of what they've learned when they write. The models for discourse analysis offered by Bazerman and Prior illustrate a highly detailed means for understanding the systems of discourse that intersect in writing production, particularly as they relate to material notions of writing, the tools used to produce texts, texts that result from networks of activity.

Bazerman (2004) also presents a framework for the classroom-centered study of relationships between students' speech acts and understanding of genres (and genre systems)

within the larger context of an activity system (“Speech Acts, Genres, and Activity Systems”). He presents a case study using his recommended structure for researching an activity system, including document collection, interviews, and observations of the classroom: “To examine the range of variation with a genre or the differing understandings of a genre, examine a set of papers of all the students in a class responding to a single assignment. (Be sure to get a copy of the original assignment.)” (337). He offers a series of research questions and also points out the usefulness of interviews with teacher and student/s. Bazerman’s offerings for this kind of research present a clear projection of just how far we might go in data collection for larger and more varied studies. His examination of *one* assignment (an assignment comprised of many parts) involves an intricate web of texts, speech acts, and genres working in concert. These webs develop as a focal point for transfer research in composition studies in the early 2000s, establishing an understanding of the interconnectedness of textual practices, and, thereby demonstrating the numerous avenues we might engage in transfer studies.

Each of these theories, as it adapts one or another way of conceiving of transfer, reveals that we have yet to settle on one unified way of thinking about transfer. It also reveals that, while our interpretations differ they share a foundation that values connections, intersections, in this process. Spinuzzi’s (2004) work offers further support for an ecological model related to the development of genre knowledge as he examines the clouds of assemblages, complex networks and begins to challenge the idea that the networks writers call upon when using a genre set function as “a sequential relationship.” In this theoretical model, the layers of literate activity are more flexible layers—like liquids of different volume layered in an Erlenmeyer flask or the earth’s tectonic plates. Agitation, stimulus, activity can move those layers around, into and

through one another, implying a steady potential for change within processes like writing, a potential that starts to get taken up as “repurposing” in later transfer examinations.

The fact that the layers of networked activity constantly change both the writer and the writing points to a need for studies that move over contexts. Further, those studies need to adopt a level of flexibility that mimics the studied subject. It seems fair to say that it may be difficult to devise one static means of research; however, our awareness of the mutability of developing writing skill should unify us in seeking out a more mutable framework of study. So, while a study of transfer in one course necessitates a more limited frame of study than one that is cross-contextual, both studies would require an understanding and expectation of the possibility for altered forms of writing skills and knowledge.

Ford’s (2004) work offers one example of how these altered forms could be revealed. Ford examines how students take what they have learned from a technical communications class and apply it in an engineering class. She looks at the impact of professional knowledge on those applications, and focuses on writers’ rhetorical strategies, which help them identify specific practices that the students use in varied situations. Ford’s work also demonstrates that the students were not always conscious of how they were using these strategies. This is an observation Ford points out has also been made by Beaufort in her research (310). This lack of conscious use points to issues of self-efficacy and disposition in writers. Writers who are more aware of the tactics they employ to achieve a goal demonstrate higher levels of self-efficacy and tend towards a more positive outlook on their abilities (Bandura; McCarthy, Meier, and Rinderman; Zimmerman; Hidi and Boscolo). This awareness points to the value many researchers place on prior knowledge.

As a response to the limitations and challenges present in our teaching and research methods, Yancey (2004) issues a call for writing instruction that involves students in a process of composition that values the many ways that students may compose texts in a digital age. That instruction would rely on what she refers to as “circulation” in order to achieve transfer; that *circulation*, she posits, is synonymous with Bazerman and Russell’s (2003) use of *activity theory*. Focusing on multimodality, Yancey discusses how allowing for a more layered approach to writing instruction might help to insure transfer. Using as her example her work fostering students’ development of rhetorical knowledge, she addresses how texts found outside composition contexts can be used in composition classes in the development of texts. Some of those texts take on newer, more flexible formats, like the E-portfolio, while others are the more traditional texts we expect to encounter in first-year-composition programs. Each of those texts, she posits, is involved in an ongoing process of making knowledge. In order to make knowledge, individuals have to call upon whatever skills and knowledge are available to them. When they apply previously learned abilities in new contexts, they are transferring that “old” knowledge, that “old” skill. In essence she is using a model of transfer that is similar to the one that Salomon and Perkins describe, but the model allows for more flexibility in terms of the genres of text students have to manipulate. However, Yancey’s model is enhanced by an emphasis on how prior knowledge influences the facility with which students carry out this variety of writing contexts.

Beaufort’s (2007) study demonstrates some of this flexibility in terms of types of texts, but she limits her research into a manageable, single, longitudinal case study. She works with student Tim during his matriculation as a college student and then during his early employment, but she is not able to posit a common experience of college and professional writing. This quality



of uncommon experiences in writers has been the trade-off for studies of transfer, which are intricately involved by the nature of the phenomenon of transfer itself.

Beaufort's study offers a broad, longitudinal examination of student writing across academic and early professional contexts. Focusing on the development of knowledge domains, her research with the student Tim follows him through his core composition classes, into his major program, and then into the workplace. While Beaufort seems to be focused on the development of specific qualities in Tim's knowledge domains, his development of genre knowledge directly relates to his ability to transfer writing skills and different contexts. As she states: "Freshman writing, if taught with an eye toward transfer of learning and with an explicit acknowledgement of the context of freshman writing itself as a social practice, can set students on a course of life-long learning so that they know *how to learn* to become better and better writers in a variety of social contexts" (7). Beaufort's argument connects to other researchers' perceptions of literacy practices as social and challenges Carroll's notion that first-year-writing can achieve transfer at all. Beaufort's evidence supports the fact that transfer *is* happening. Rather than affixing transfer to one point in time, she illuminates how it occurs on a continuum of learned experience. Her research also seems to offer the foundation for the research projects taken up by Robertson, Taczak, and other Elon scholars most recently.

As conceptions of transfer have circulated in the field, researchers have begun to focus on the fact that there is very little actual research in writing transfer while offering a review of discussions about transfer in the field and in other fields of study, primarily those related to the psychologies (Billing; Wardle; Fishman and Reiff). Billing's and Fishman and Reiff's use of the Salomon and Perkins model provides a great example of how strongly we are tied to their model of what transfer looks like—low or high road, bridged or hugged. This example acts as a

reminder and is useful because it challenges the approach that most studies of transfer tend to perceive of transfer in a negative way. Evoking the words of Smit—“We get what we teach for”—Fishman and Reiff address the development of rhetorical knowledge and vital communication skills as a means of teaching for transferability. Their primary claim points to the development of writing curricula that reinforce students’ ability to devise rhetorical strategies of the sort paralleled in Wardle’s research.

Billings (2007) adds to this perception of transfer happening in a social context, analyzing participants in the process of producing a text. As new studies emerge that adopt a view of this phenomenon as “situated” and “social” we are experiencing a shift in our understanding and observation of transfer (484). It is important to note that those who have had the most success with research of transfer tend to view writing as multivariate, opting, to focus on intricate networks of social and practical intersections. Though the focus of these studies was not always, primarily transfer research, the subject of transfer, the issue of transfer in terms of skills and knowledge, is a pivotal structure within the writing contexts explored therein.

In order to answer other disciplinarians’ concerns about why their students “can’t write” in the disciplines we are required to 1) verify transfer happens in a *particular* way and 2) influence how others think about writing in the disciplines. Wardle (2007) reiterates the presence of this difficulty, emphasizing that the wealth of theoretical and conceptual work in existence should be accompanied by developing research *about* transfer in the field of composition studies. Unfortunately, this practical research is lacking. Wardle’s work emphasizes our need to address the “dearth of systematic *research attention* paid to transfer” (66). Her own longitudinal study focuses on the development of students’ rhetorical knowledge. In “Understanding Transfer”, she points out that only three significant studies in the field of composition addressed transfer

directly, the works of McCarthy; Walvoord and McCarthy; and Carroll. Furthermore, she suggests ways that we might go further in engaging with the study of transfer in composition studies. Wardle's research challenges the conceptions of transfer that we typically hold in composition studies. Her discussions of transfer push back at notions of transfer that have failed to move beyond the classroom and the typical writing assignment. Examining issues of motivation in students, she provides the example of Matt, whom she characterizes as a strong writer performing uncharacteristically below expectations in writing contexts that offered him no "[motivation] to bring his abilities and experiences to bear in order to complete the writing assignment" (Wardle 75). Combined aspects of motivation and engagement (between teacher and student), speak to areas in these activity systems that explain why it is an imperative in composition studies. While some do not see transfer as a goal (teacher or student), proof of transfer is something "stakeholders expect" (Wardle 83). This expectation is, in part, the reason scholars like Smit have sounded the death toll for composition studies in general. It is difficult to account for the multitude of networks at hand for writers when they write. Studies of writing that track all these sorts of components are only in their early stages.

Bergmann and Zepernik's (2007) study, examining students applying writing skills/knowledge they acquired in composition classes to other courses, revealed that the transfer that students demonstrated also lacked a level of conscious use, similar to Ford's work. Their study, based on a series of recorded focus group sessions, points to the fact that, yes, transfer is happening, but the type of transfer seen in these studies is limited, low-road transfer. Further, their cross-contextual research points to the previously stated need for broader studies. It doesn't yet demonstrate a defined system of research but does reiterate the importance of the element of discussion as necessary to students' and researchers' understanding of writing development.

## **Broader Views of Writing Landscapes**

Research in transfer illuminates the influence of essentially two very different ways of looking at transfer. Outside of composition studies there seems to be a much broader set of parameters in place for looking at how we learn. While our focus is traditionally narrow, several people in composition and writing studies have ventured outside the comfort zone of the classroom with research that provides compelling combinations of qualitative observations and data about how much is being learned—new concepts vs. previous learning, how learners are using tools or working with other learners to do something different. They contain a broader repertoire of activities—how people do things in the workplace, lab, etc. In composition studies we tend not to look at extracurricular writing too much; we tend not to concern ourselves with writing that exists somewhere beyond formal writing assignments and personal writing. Our pattern is to look from the beginning to the end of specified periods of learning: semesters, school years, course sequences, assignments.

A few compositionists look at new study sites, for longer terms, and cross-contextually (Carroll; Beaufort; Wardle), but research in this area is limited. Primarily, we are still looking at the classroom setting. In cross-contextual studies, our context is still, primarily, the classroom. We only use bridging and hugging in a classroom context (Salomon and Perkins) to promote narrowly prescribed concepts like single skills or activities rather than complex skill sets and activity systems. Our research should be examining a broader spectrum of writing, writing-related activities, and other literacy practices, in order to construct a clearer map of how writing happens and how what is being learned is also being transferred. These broader views of writing give us a more detailed sense of writers' landscapes.

Examinations of the types of data produced in transfer studies of writing shows that there are some limitations to the ways that we've thought about presenting data. Fleckenstein, Spinuzzi, Rickly, and Papper (2008) discuss this when they address issues of harmony. They recommend an ecological model for transfer research, used to present data that appeals to our colleagues outside the discipline. Again, if we consider the ways transfer has already been examined outside the discipline, it is easy to see why models resembling those used in other disciplines might help us to gain ethos in larger academic circles, those "stakeholders" that Wardle mentions in her own work (83). And Hollis (2009), in her analysis of conceptions of transfer in composition studies, proposes that narrow depictions of transfer miss the mark in terms of scope. The overly optimistic goals established by adhering to a formulaic approach to teaching for transfer—emphasizing concepts like bridging and hugging—seems more likely to "[assume] that transfer does take place everywhere and that each student *will* transfer skills they learn in the classroom to other areas of their academic and non-academic careers, such transfer just may be for them to dictate and ultimately out of the hand of the instructor. An acknowledgement of this reality rightfully places agency and responsibility for education back on the student" (47). This agency and responsibility, however, must originate from some source. With our present understanding of the influence that qualities like self-efficacy, motivation, determination, and grit have on student success, the onus can only be assumed to be on students' shoulders if we've determined that they are consciously aware of that responsibility. The awareness begins somewhere and as teachers, if we've identified students are unaware, we cannot remain hands off. We are our students' guides.

Moving in a new and more complex direction, New Literacy Studies (NLS) presses researchers to look at sociocultural, local, and translocal foundations for creating studies of

literacy practices over a variety of contexts. These sorts of studies would typically be longitudinal. Furthermore, they offer a means of breaking down the data we've collected into categories defined by the various systems at work in writers' lives.

Street (2009), Kell (2009), and Warriner (2009) provide examinations of the impact of these varied systems in NLS. Street, examining social literacies "in theory... and multimodal practices" (21), looks at literacy skills as social practices and characterizations of literacy from outside that practice. Street also makes a comparison between the autonomous (Western) model versus ideological models of writing, and goes on to discuss academic literacies that include ethnographic and multimodality training for researchers. In the same vein, Kell proposes that, just as literacy practices occur over time and space, so should situated models of literacy and research related to that literacy. This framework is similar to ecological and other networked models. Kell argues that literacy is "transcontextual"—composed of context that should be local or global – and we should question what counts as literacy "event" or "practice." Further, Kell points out that the shift in research types to the ethnographical model has been limited to ethnographies of educational writing; we should be using ethnography as a means of addressing context; therefore, ethnographies should be used to examine a wider variety of types of writing, formal and informal, professional and personal. Warriner goes on to explain the conception of literacy as "situated social practice that is not only influenced by local understandings and cultural norms of interaction but is also a product of ideology and power relations" (161). Effects of globalization and social relations have to be considered in this representation of literacy. Furthermore, Warriner theorizes about how to perceive of the transnational as it refers to literacy practices. Street, Kell, and Warriner's contributions support research methods that map writing over social and physical spaces.

Each of the researchers involved in NLS is arguing for ways of thinking about writing that account for whole beings, individuals who are not only involved in literacy and writing, for educational purposes, but also as a function in other zones of their lives. These writers perceive of themselves as responding to more than just one writing context, or written product. This focus on a broader concept of literacy practices relates to the broader context of transfer and offers us a new way to think about how transfer might be studied differently. Greater inclusivity of a variety of types of literate activity into our studies of transfer, as prescribed in NLS, supports transfer research that examines broader swaths of area, providing richer data about how and when and where transfer happens. This broader swath rests at the heart of the sort of multi-institutional and complex work that current researchers are engaging.

### **Situating Writers Tools in Networks of Support**

Compositionists do not consistently use a broad array tools and foci when we discuss transfer. But we need to. We need to look at a broader spectrum of writing. We need to carefully consider what repurposing text, skills, knowledge, and tools might look like. We need to look at a range of previous knowledge/experience in subjects, and we need to examine many types of writing, not just academic (composition-based) writing. Some examples of where we might delve further include the notes that students take, letter-writing habits, texting, emails, electronic writing (Grabill, 2010), journals, spoken word (Roozen, 2009); planning tools like goal-setting, planning, etc.; job application materials. These types of writing may help illuminate high road transfer (Salomon and Perkins) and consequential writing (Beach). Beaufort talks about genre knowledge, but she's one of very few who are doing that (Wardle; Taczak; Robertson). Inventories of tools and skills will add to our understanding of writing ability and engagement with writing situations

Offering one example, Roozen's work provides a detailed description of the intersections in student Angelica's writing, for school, in personal journals, and at a journalism internship. Roozen analyzes these junctures for signs of "repurposing", places where she uses a previously acquired skill or style or understanding to accomplish a task elsewhere. Further, he examines how these situated networks of experience result in resonance or dissonance for writers, and how that might influence our teaching practices: "A pedagogy of repurposing might have students reflect on all of their writing, private and public, personal and academic, and then invite them to identify and interrogate both the points of common ground and conflict they see" (568). Much like Syverson's Learning Record, this pedagogical approach requires a level of consciousness about the strategies writers use; as well, there has to be a site for continued conversation about what is being learned and how it can be applied to new situations.

### **Elon and Critical Transitions**

In response to the challenges presented in transfer research, scholars in composition studies have begun to collaborate more intentionally to get answers. From 2011 to 2013, the Elon Research Seminar has combined the efforts of over three dozen researchers invested in issues of transfer on an international scale to address "the challenges around the concept of transfer in the future transfer research." Taking on Beach's language in establishing the purposes of the research effort, the application for the 2011-2013 Elon Research Seminar, "Critical Transitions: Writing and the Question of Transfer", explains,

We anticipate facilitating research cohorts focused on writing transfer at one or more of the following critical transitions:

- high school-to-college
- two-year college to four-year college
- writing in general education to writing in the major



- college to new workplaces, graduate, or professional programs,
- curricular to co-curricular or extra-curricular
- informal-to-formal (2)

In gathering together the scholars who were selected to participate, Elon has opened up a wealth of new research into these issues, the same sort of research Wardle says is missing a few years earlier. At the end of a video addressing the research they are doing, Adler-Kassner echoes Wardle's call for more research: "We are starting to build a sort of baseline of knowledge and theory, and I hope there are more studies addressing questions that stretch across disciplines and contexts" (qtd. in Taczak). Adler-Kassner's work with threshold concepts as they relate to the process of transfer demonstrates a need for research examining writers crossing boundaries as they learn (Adler-Kassner, Majewski, and Koshnick). She and other Elon researchers are now beginning to publish their findings and expand on what we know about transfer.

Truly, the circumstances that have brought these researchers together offer exciting developments in the area. The seminar has provided a larger community of people speaking the same (or at least a more similar) language about transfer, offering recommendations for the still ongoing research that will contribute to the ever present questions that still puzzle those interested in understanding and facilitating transfer. This group of researchers is breaking ground on areas of intersection in transfer studies, highlighting new information about how transfer works, the level of involvement that researching transfer will require, and the ever present sense that isolated research scenarios will not help us to discover new things about transfer. A primary focus of their time at Elon was both problematizing and defining (or redefining) transfer. As Taczak (2012) demonstrates in her resulting article and related video, many of the researchers came into this experience with a multitude of responses to the question

“What is transfer?” Ironing out the answer to that very wrinkly question is at the heart of the complexity of studies of transfer, future studies in particular. As Taczak states,

Transfer seems to offer its own level of complexity, as the scholar, researcher, and educator brings with them a different perspective as to what transfer means to our writing classrooms – both in and beyond first-year composition classes. Adding to the complexity are the constraints brought by students—varying prior knowledge experiences and external benchmarks – that often makes their ability to transfer more difficult.

Also affiliated with Elon, Driscoll and Wells’s (2012) work examines how disposition affects knowledge transfer, building on the research of social-cognitive and educational psychology informed by Bandura. Yancey, Taczak, and Robertson each examine transfer in relation to prior knowledge. Each researcher brings to the table different encounters with the questions of transfer, and it is that diversity of relationships to the question of transfer that helps one to understand why transfer has presented us with so many problems as we attempt to nail down what it is and how to get at it.

Certainly, the combined efforts of the Elon researchers indicate the need for transfer research that mimics the nature of transfer itself, multilayered, intricate, and broad. In short, it is important that we start thinking about other ways to research the process if we want to make what we learn valuable to a community of teachers, writers, and participants. Our research needs to call upon our connections with other disciplines. Instead of focusing only on what students have learned in our classes, we need to find ways to observe how our teaching practices serve students in other capacities, whether they are related to academic or other contexts.

Another associate in the Elon Research Seminar, Nowacek (2011) focuses on intersections between teaching practices and students enrolled in the second semester of a three-semester sequence in multidisciplinary writing. The course was set up so that, not only were students in a series of three classes together over the course of the semester, but the professors of those courses also worked in cooperation with one another and attended each other's classes: "Sessions with only one professor present were the exception" (Nowacek 4). Nowacek posits that students develop and cultivate a variety of networked systems as they write, pulling from what they both consciously and unconsciously know about writing. Students are *bricoleurs* (126), their writing processes and products, *bricolage* (120). In her implications, she also explores a number of ways these processes of connection and intersection might be enhanced to suit a variety of teaching situations from sequenced courses to stand-alone units and writing center sessions. Again, pointing to how writers function within networks, especially when they are aware of how to engage these intersections, Nowacek presents findings that add to the growing sense that both researching and encouraging writing transfer in our students is an inherently involved process requiring a high level of intentionality on the part of participants if they are to successfully meet certain goals.

Intentionality as a means to success is further supported by research in self-efficacy and consequently disposition. Grounding their work in Bandura's theory of self-efficacy, Driscoll and Wells address how the student Judy's disposition related to the level of value she placed on what she learned in FYC, a value directly impacted her ability to make useful transfer of writing skills or knowledge: "The low value that Julie placed on her FYC course essentially blocked her from engaging in the kind of reflection or "mindful abstraction" that is necessary for transfer to occur....Julie, therefore, demonstrated developmentally disruptive dispositions concerning

transfer—characteristics that prevented her from science writing success” (Driscoll and Wells). This focus on disposition reinforces the idea that writers require awareness of their abilities to benefit from them. Following in the model of the Elon group, researchers can begin to provide that broader, richer landscape in transfer studies.

### **Getting Reoriented: New Maps, New Metaphors**

The literature represented in this review is not extensive, and present research continues to chip away at the question of transfer in hopes of definitive solutions to the problem of achieving it for students and ensuring they are aware it is happening. All these studies do point to the fact that transfer is important to our field for a number of reasons, but as yet we have no systematic—to use Wardle’s phrasing—approach for transfer research. However, the number of studies point to some consistently useful practices:

- the examination of texts by means of discourse analysis
- use of a wide variety of texts from both academic and non-academic sources
- an ongoing discussion about texts and textual production by way of interview and or focus groups
- an examination of the systems at work in the process of textual production
- an understanding of the motivations and self-efficacy that contribute to writers’ goals

The development of transfer studies at present is not only important to researchers in composition studies. It is also important to students in our courses and to teachers both within and without the field of composition studies. The issue is equally important to employers who

will eventually hire those students, employers who may further support institutions that produce their employees. These are our stakeholders.

What we know about writing – if we accept that it is inherently social, situated, conveyed through networks of people and activities – seems to suggest that good research of transfer requires several considerations. First there has to be some combination of data sources. Whether focused on specific text, environments, or individuals, researchers should derive a variety of data from both the qualitative and quantitative traditions. This data includes transcripts of recorded interviews or focus groups. It also includes extensive document collection and document analysis. It should include quantifiable survey tools that help to reveal numerical patterns in the data that is collected, demonstrating correlation between qualitative and quantitative data.

If we think about what Wardle says about stakeholders, non-compositionists who are interested in what we're doing, we should carefully consider the stories our data tells others. This sort of research should be longitudinal; it should follow its subjects over an extended period of time in order to determine what networks are in place, what kinds of situations are subjects aren't counting, and what it is actually being asked to tap into when they asked to recall something they've learned before. Hand-in-hand with the notion of research being longitudinal is the idea that it should be ethnographic, allowing for rich descriptions that easily incorporate both the qualitative and quantitative aspects of the work.

Finally, this sort of research should account for multimodal and multi-contextual scenarios: the academic, professional, personal, and extracurricular. New research should be representative of that network and should strive to create the sorts of collaborations we are, in fact, studying. It may be necessary to consider how this impacts the future of our discipline, how we train graduate students, how we navigate interdisciplinary collaborations, and how we

theorize about new conceptions of what we mean by writing instruction. It also means that we may be in for a lot of instruction and training after the fact. If transfer is the goal, then not only should we be training graduate assistants in pedagogical methods that support transfer, but we should also be offering similar support to faculty who are invested in the process of teaching for transfer. This integration of multi-modal, multi-layered, extensive research calls for us to re-envision the metaphors we apply to transfer. In this final exaction of this review, I examine theoretical models that speak to the metaphorical concepts of transfer that have calcified around our ability to study the phenomena.

The word *transfer* is at the heart of how we take up studies of transfer in writers' work. And metaphorical implications of how we use the word *transfer* in relation to our research problematizes that research. Rigid metaphorical connections—particularly the ones that are discipline-specific—often fail to transcend the context from which they originated and do less to elucidate meaning for those who exist outside that discipline. As a result, when people in writing studies use metaphors specific to their field to describe situations they encounter in research, some of the meaning gets lost in translation because the metaphors complicate our understanding of what happens when someone is writing or teaching writing. Lakoff and Johnson's (1980) examinations of metaphor help to clarify this inflexibility: "The very systematicity that allows us to comprehend one aspect of a concept in terms of another (e.g. comprehending an aspect of arguing in terms of battle, for example) will necessarily hide other aspects of the concept." They explain that the problem is that the metaphor is inappropriate. Rather, the problem is that the metaphor is hiding some other important meaning or connection. Such is the case with the metaphor of transfer.

*Transfer*, whether in verb or noun form, denotes a sense of movement. One can purchase a bus *transfer* to move from one line of transit to another. Another way to think about transfer is to consider how electricity is transferred from a socket to an appliance. In each of these illustrations, we think of transfer as moving in one direction. And this notion of one direction defines the way that many in writing studies have conceived of transfer as the movement of skills or knowledge in one direction, for one purpose. This conception of transfer follows the old saying “You can’t get there from here.” It might be better to think of transfer in terms of how it is often perceived in the physical sciences, as moving in many directions, affecting all it touches. In physics, we might consider *heat transfer*, the conduction of thermal energy from one substance to another, radiating out onto a surface like heat from a stove to a pot of boiling water, in many directions at once and with the consequence that not only does the water get hot but also the surrounding stove, the handles of the pot, and any utensil or food left in the water as well. Transfer, from this perspective—physics rather than physical space is a much more useful application of the metaphor. As a result, you *can* get there from anywhere, provided you are willing to navigate around or through, backtrack, or tunnel under. In writing studies, the discussion of transfer is not a new one.

We can trace concern with how learning is transferred to new situations all the way back to Dewey’s (1916) discussion of “habitude” in the early 1900s. More recently it was a catchphrase of cognitive psychological theory made popular by Salomon and Perkins during the 1980s and taken up enthusiastically in writing studies until Smit (2004) declared transfer to be nigh near impossible. Since then, as indicated in this review, transfer has come up in discussions of activity and actor-network theory, ecological perspectives of composition, and the like. Seen from the vantage point of the other connections that people might have with the word *transfer*,

the overarching metaphor relates to the movement of solid, unalterable forms from one space to another. Furthermore, this meaning seems to prevail in the way writing studies and education refer to the term. Students themselves process what they are learning in each course as if learning were a product that could be transferred from course to course or school to workplace. In particular, writing studies is concerned with how those students, and writers in general, transfer skills and knowledge about specific written products and processes in order to use them later on. The metaphor works, but it is limiting because it doesn't take into account how transfer also has the potential to change the source. The term transfer also includes a much more complex notion of not only movement, but transformation, not only one direction or end but multiple paths to multiple results.

Uncovering new aspects of our conceptions of transfer, leads me to propose that we look at metaphors for the spatial practices and mapped practices we can further associate with the everyday practices that occur when we think about writing. In this way, I would like to consider the metaphor of transfer as a part of the spatial practices described by de Certeau in "Walking in the City." Whereas Dewey's discussion of habitude indicates a regularized path—one we might traverse out of tradition—de Certeau's examination of everyday practices indicates that these paths are often reinterpreted, rerouted, and reconfigured. De Certeau offers a new language for understanding what is happening in classrooms, within disciplines, and across curricula as students, instructors, and administrators navigate processes involved in writing instruction. In the same way, the experiences of individuals—both faculty and students—on university campuses involved in writing initiatives could be better understood through closer attention to these particular practices of a variety of practitioners, from novices to experts. In keeping with the works of Cintron and Reynolds, this concept of mapping is proposed for writers in how we might



study their work. With my own participants, I was following one of their "maps of the everyday" (Reynolds). I followed these participants as they made their way through an academic landscape, a journey through time as much as space. Reynolds even speaks to the idea of self-efficacy when she states

Margins and borders are comforting, in some ways, to those of us accustomed to knowing our place, in a text or in an institution. From one-inch manuscript margins to the difference between business writing and technical writing, we recognize and abide by dozens of spatial practices in the everyday. The clearer the boundaries, the more confident we are about keeping some out or letting some in. However, this 'border mentality' has made boundaries more important than the places themselves. (6)

Reynolds is focusing on the way these "constructed" spaces isolate individuals in our institutions. My map of my own case studies suggests that early writing instruction, focused on preparing students for these boundaries, would be equivalent to teaching for transfer. Furthermore, the mapping metaphor extends to transfer research. The newer models of writing research have already demonstrated the usefulness of *multi* research, research that takes into account the complexity of layered-ness. This sort of mapped reinterpretation of the transfer metaphor is purposefully targeted to examining those complexities.

### **Relevance of This Study**

The idea that there should be new conceptions of transfer is not itself new. In addition to the other authors mentioned in this literature review, the last decade or so has brought forth numerous works examining the problems inherent in dominant theories of transfer. The *Journal of Learning Sciences* has taken on this challenge as part of an ongoing transfer strand exploring a

range of new considerations of transfer. Particularly useful within this strand is the problematization of transfer presented by Carraher and Schliemann (2011) in “The Transfer Dilemma”: “transfer is characterized as the application, to a new problem situation or content, of previously learned solution strategies, without structural transformation of what was learned” (4). The researchers go on to state that, rather than an act of learning that moves neatly from one situation to the next, instead, learning relies on prior learning and usually takes on new characteristics: (a) former knowledge and experience may contribute to learning in subtle ways; and (b) learning only exceptionally relies upon the direct borrowing of procedures from one, easily identifiable ‘prior situation’” (4). Their examination of learning leads them to the following conclusion:

We believe it is now time for learning theory to abandon transfer as an approach to how prior knowledge and experience contribute to learning. Transfer encourages educators and theorists to continue to view learning as a direct carrying over of procedures from one situation to another. When one looks carefully at people learning rich concepts, there is evidence that learners characteristically make adjustments in knowledge, that they attempt to reconcile conflicting interpretations, and they work with schematized understandings that stand at odds with a theory of transfer. (Carraher and Schliemann 21)

However, given that some idea of transfer has permeated the idea of learning for more than a century now, it is fair to say, rather than discarding the whole concept, transfer should be reconsidered in light of all that we know about the various ways that individuals do learn. This is no small task, and there will surely be those that cling to notions of transfer that are, indeed, problematic. But perhaps if new theories emerge that take into account the reframing of our

definition of transfer, our understanding of what it entails, that would ease some of this dilemma. By comparison, our new understandings of the universe have not changed what we refer to as the universe so much as they have changed what we mean when we use the word *universe*.

Part of the difficulty of completely discarding the concept of transfer has to do with the metaphors that cohere to our understanding of the word. Lakoff and Johnson demonstrate our thoughts and actions are as much governed by these uses of language. We can no more do away with what we *say* or *do* about transfer than we can do away with what we *think* about transfer. Furthermore, these metaphorical connections also establish the dilemma that Carraher and Schliemann illuminate: “In allowing us to focus on one aspect of a concept (e.g., the battling aspects to arguing), a metaphorical concept can keep us from focusing on other aspects of the concept that are inconsistent with that metaphor” (10).

If the traditional, limited scope of transfer points to a concept that involves moving learning from one place to another, over a space, a geography, then this work will attempt to broaden that geographic metaphor, to give it new shape and span, to provide new information about what we might find in a map of the activity of transfer. Imagine a map. Imagine the *tracur*<sup>1</sup> on this map. The information a map provides, the kinds of maps that exist to tell readers certain things about a space or terrain tell a lot about the person traveling from one place to another. I favor maps for particular features they offer: Rand McNally road atlases full of intersecting paths and mileage indexes; National Geographic maps of national parks, prehistoric landscapes, and heavenly bodies; Google Maps and its customizability.

People travel this geography in myriad ways, navigating though, across, over, these spaces. People travel time similarly, plotting out their needs and responsibilities as steps in a

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<sup>1</sup> The *tracur*, as defined by de Certeau, is the individual who is traveling an unfolding path.

process of moving from one situation toward a goal. Learning is an integral part of this process, this activity, and involves individuals navigating their lives through a combination of tools and learning processes. In the context of scholarly “travel”, transfer serves as a hub, bringing together tools, users, and destinations. With consideration to the metaphors used to relate to transfer—the geographical perspective—so much of the literature portrays a narrow concept, or landscape; the map of transfer only looks at, say, a recommended route without considering the possibility of roadblocks, shortcuts, or different modes of travel. New studies of transfer would consider new technology, learner histories, and individual goals; in short, these studies would be helped by broadening the understanding of what plays within the metaphor of transfer as geography.

Reconceptualizing the geographical metaphor allows me to present an argument positing that some of the “problem of transfer” relates to how we see it, or perceive the map. I am suggesting here that the problem is partially a problem of focus. Transfer is interspersed, not always concrete, not always consistent with what it looked like “before”; studies of transfer thus need be prepared to observe changeable landscapes, considering how the shifting nature of transfer necessitates a flexibility of theory and methodology as well.

For the purposes of my own research, I hope to address several questions about transfer in my own participants:

1. How might we map the variety of contexts wherein students demonstrate transfer of writing skills and knowledge?
2. What does a multilayered study of writing transfer look like?
3. In what ways might new considerations of transfer help to shape the type of research we do in writing studies?

4. What do intersections of boundaries and learning help us to understand about how writers transfer skills and knowledge?

In my own project I have offered extensive case studies of my participants in an attempt to map their process of writing for multiple purposes. The case studies, conducted over no less than 1 year for each participant, includes data collection in the form of writing samples, interviews, and observations. The writing samples that I collected from each of these students can be categorized as multilayered, formal, and informal. Multiple interviews with each of my participants revealed some of what they were thinking about their writing processes and related end products.

Interviews also helped me to understand the goals, motivation, and challenges each participant faced. When possible, observations also contributed to my understanding of places of intersection in the writers' lives. This multilayered approach to transfer research demonstrates how the complexity of the phenomena of transfer requires a level of flexibility in each study. The work is inherently messy, and the subject is often obfuscated by our preference for finding evidence in one place rather than another. My own research contributes to a broader understanding of the fit of several moving parts involved in the transfer of writing knowledge/skill.

Further, my project offers a theoretical framework for this proposing that, just as many have identified part of the problem of transfer comes in the naming of the process, the implications of the metaphors connected to our definitions and conceptions of transfer limit the research informed by those definitions and conceptions. The conception of transfer that I propose is that of a student /traveler navigating an area with her/his goal being to arrive at a specific point. Motivation—the acknowledgement of such—is a compass. If we are present in our students' writing-related tasks such that we know their goals in those tasks and how those goals

and task connect in other realms of their lives, we can help them to engage their own self-efficacy in these processes. Imagine what would happen when we shape our pedagogical practices in such a way as to aid writers in seeking out paths of desire, plotting courses, and redrawing maps. Imagine what would happen if we could study what happens when writers create their own maps.

## Methodology

This chapter offers an overview of my research study, detailing the methods I used to complete my research project, and connecting that project to the purpose of my research and the resulting analysis. In so doing, I hope to demonstrate how the described case studies illuminate one possibility for the study of writing transfer. The case studies also serve to illustrate how the related results provide potential avenues for pedagogical frameworks in the classroom, frameworks that will lead to a fuller, richer understanding of how our students transfer writing skills and knowledge from one context, or class, or circumstance, to another.

While not purely grounded study, the case studies that I have conducted are informed by a social constructivist variant of grounded theory as defined by Creswell (65). Elements of this constructivist form of grounded theory are blended with elements of culture—in the participants' disciplines—that might imply an ethnographic slant in my research. Ethnography, with its interest in “shared patterns of behavior, belief, and language” (Creswell 68) is well in line with the focus in this study on participants' ways of doing, thinking about, and discussing their activities. Good ethnographic models in writing studies that can draw upon representations of quantitative and qualitative data might also bring this sort of research into closer contexts with issues related to first year composition and assessment.

My data analysis is also informed by Bazerman's (2004) framework for discourse and textual analysis, particularly when considered in relation to his ideas about intertextuality and

speech acts. As well, Carter and Sealy's (2013) focus on semiotics as it relates to the "moving target" in case studies (Hacking qtd. in Carter and Sealy 77) is significant. I developed each of my case studies to accommodate the different types of writing already being used by each of my participants. Neither participant opted to submit any writing from more personal spheres of life. This limits the scope of the study primarily to my participants' academic and professional writing experiences.

My work develops out of two case studies of students at a southeastern comprehensive university, enrolling approximately 25,000 students. Each student is involved in a broad series of writing process and writing-related activities that create a repeating cycle that moves from context to writing task to context. Writing-related activities may be the beginning-, middle, end-, or by-products of writing, which may or may not resemble their textual origins. Just as class lectures lead to notes and notes to tests or presentations or lab reports, which then lead to understanding of other uses for writing, the cycle is recursive. My participants use those activities interchangeably, intentionally or otherwise, to complete tasks and writing is further produced as a result of specific tasks. My goal in this project was to identify as many of those practices as possible, mapping their origins and their evolution during my time with my participants. Using the collective, descriptive case study approach, I am able to offer layered representation of my participants, effectively meeting them on their own terms in order to present a better picture of their writing and writing-related activities. That picture incorporates a series of intersecting themes based on their interviews and the documents they submitted and discussed during the time that I worked with them.



## Participants<sup>2, 3</sup>

Nancy is a white, female, undergrad biology student, age twenty-four at the start of her participation in the project. , A junior swiftly approaching the end of her college career and the beginning of her career as a graduate student, she was enlisted in the Army National Guard, having returned to school after serving for a year and a half in Afghanistan. I met Nancy during a time when she had decided to take advantage of her opportunities through the GI Bill. From a small town just outside of Huntsville, Alabama, Nancy explained that she had always wanted to work with animals. During our conferences when she was enrolled in my world literature course, she expressed to me—as many of my students do—that she was not comfortable writing, but that she had written extensively during her time in Afghanistan. My recollection of this information led me to invite her to participate in this study after the conclusion of her time in my course.

James is a white, male, an architecture undergrad, aged twenty-one at the start of his participation. James, a junior, is also a former student of mine. During his time in both my ENGL 1100 and ENGL 1120 courses, James demonstrated a remarkable sense of determination and self-awareness. During our student-teacher conferences, he mentioned having richly varied writing life—one that included extensive note-taking methods, illustration processes, and letter-writing practices. Invested in civic-minded building projects, James was also one of few students

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<sup>2</sup> The names of participants have been changed to protect their identity in accordance with the terms of my IRB.

<sup>3</sup> I submitted and was approved for a yearlong IRB in 2010, which allowed me to conduct interviews, collect documents, and observe, record, and photograph writing-related activities. I renewed this IRB twice in order to extend my data collection for a longer period of time. Nancy and James were not the first participants to join the study. I initially invited twelve participants from a group of former students of mine and other colleagues. Based on the terms of my IRB, I hoped to work with four or five students in total. After my initial invitation, three students agreed to participate. None of these students completed the consenting processes. After my second round of invitations—another six students--I was able get three more students started on the consenting process. Two finished that process – Nancy and James – and one more participant (whose varied contributions may be examined at a later date) consented later.

I knew who was working while in school. He was given to developing elaborate note-taking systems to keep abreast of challenges of his architecture program.

### **Data Collection**

For each of my case studies, I worked with participants for a minimum of 12 months, renewing my IRB as necessary. The length of time varied depending on the student, the time they were enrolled at the university, and the time they gave informed consent. Data collected for the study included an array of types: documents submitted by participants from class work or other writing they were doing; photographs of participants' journals and notebooks, including close-ups of pages detailing their work, and computer screen captures; observations of activities related to writing work that students had been developing; and interviews conducted over the course of at least twelve months with each participating member. The documents that I collected served to illustrate the subjects of our interviews. As they worked through specific tasks, assignments, goals, I have been able to connect the subjects of their interviews with specific products. These documents also provided me with a place to focus my attention in follow-up text-based interviews. The photos of participants' artifacts act as evidence of what writing transforms from and into. Often we imagine the end or beginning products as merely textual. Though they are material products, the textual elements are often obscured. My process of document collection produced artifacts that help to demonstrate what else exists as writing happens.

Though I was able to observe James in several different locations, the same was not possible for Nancy's participation. My observations of James's activities—during his presentations at the Rural Studio (and immersive design program for a select group of students in the architecture program), and during times when he was working on campus—certainly add a

layer of rich detail for me to interpret in his case study and are representative of his progression with specific texts. However, interviews proved to be my most extensive and informative means of data collection. When interviews were not convenient for Nancy and James, I would ask my participants to respond to certain questions via email. Because of the purposeful discussions that arose from those interviews, I focus the majority of my discussion on the interview transcripts, using the other means of data collection to add layers of understanding to my interpretations. Further, transcript analysis helped me to flesh out my understanding of the intersections between the interviews and documents collected during the study.

During the interview process, I worked to accommodate my participants as much as possible. When participants were not available to meet face-to-face, I arranged to conduct interviews via Skype and email. I categorized the interview questions relative to the subject matter for each interview:

- **Initial interview questions:** interviews with a pre-defined line of questioning. In the case of each of these case studies, the initial interviews would be classified as structured.
- **Unstructured questions:** interviews during which I asked students to talk about new developments without trying to guide them down a specific line of questioning.
- **Follow-up questions:** interviews I conducted because I had further questions about an issue we had discussed earlier or that resulted when an interview was cut short.
- **Follow-up questions via email:** interviews conducted via email, wherein participants respond to a series of prepared questions.
- **Text-based questions:** interviews in which my questions related in some way to a document to which the participant has made reference.

- **Informal comments:** (noted, but not recorded or transcribed) encounters during which I took notes but was not recording the conversation

I conducted all of my own interviews with my participants. For each of my participants, I began with a structured, initial interview wherein I was able to develop a sense of the context in which each student was using specific literacy practices<sup>4</sup>. Initial interview questions for each participant were identical. I also attempted to get a sense of zones in those practices wherein it might be helpful to focus more intently on what these individuals were doing. I used Brandt's model for initial interview questions in *Literacy in American Lives*, revising to account for relevance and time allowed with each participant. Brandt's questions allowed me some sense of the sources for each student's writing practices. These questions allowed me to begin my study with identical baselines for each of my participants.

Following the initial interviews I then asked for samples of documents they were working on at the time or that they had been working on. I collected numerous documents from my participants during this project. I asked for information about class and work schedules, and also asked about extracurricular activities. Additionally when possible I attempted to trace the participants' involvement in activities that resulted from their writing, were facilitated by their writing, or involved sharing what they were learning during writing. The follow-up interviews that would come out of those series of document collections were text-based. One example would be the interview during which James brought in several sketchbooks project files. James's time at the Rural Studio and Nancy's acceptance into a graduate program in microbiology at a large Midwestern land grant university also necessitated the use of Skype interviews. Informal

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<sup>4</sup> See Appendix A

conversations were the least conducted of my interview approaches and were indicative of chance meetings with my participants.

I conducted several structured follow-up interviews related to questions that I had about the documents that I had received from participants or connected to projects I knew them to be working on. I also conducted some unstructured interviews during observations where and I was able to ask questions about what I was observing. Other informal interviews may occurred when participants would stop by the office. Skype interviews facilitated face-to-face interviews when participants were not physically available. I organized my data electronically. Separating files to indicate the date of collection, the event represented, and the type of file collected (interview recordings, classroom writing, notes, photos, etc.) All data was kept electronically according to the terms of the IRB.

### *Transcription*

I completed all of the transcription for my interviews independently, representing words, pauses, and interruptions in speech in a basic format. Participants were given the opportunity to review transcripts, though neither of my final participants opted to do so. Observations were not transcribed though some of them were recorded. James requested and received copies of all photos taken during observations. He also requested and received a copy of the video recorded during his final presentation at the Rural Studio.

I used both commercial and open source software for data collection: Microsoft Word and Excel; my cell phone and a Coby digital recorder for recording interviews; a Flip camera for video recording; Dragon Naturally Speaking and open sourced Voice Walker and Express Scribe for transcription; Adobe Light Room photography developing software.

## **Data Analysis**

I selected transcripts for analysis based on the connections I could make between specific documents I collected in the study. Initial interviews were included based on their establishment as points of entry into the participants' literate activities. The remaining transcripts were selected based on connections I could make between that initial interview and the document collection process.

In an attempt to achieve triangulation, I consulted with participants about their submitted documents and interview transcripts, often making clarifications during follow-up interviews. Some larger categories that defined the context of the interview transcripts as a whole were accepted as always present. The first assumption is that of writing as a multilayered activity, a condition of the nature of the task itself; this multilayeredness also informs the metaphors we use to conceptualize transfer. The second assumption is that writing will typically fall into a category of formal or informal writing. Formal writing refers to the participants' assignments, handouts, texts, learned genres, and the resulting products of those texts. Informal writing refers to the notes, lists, plans, schedules, and personal writing produced as a means of working towards a specific end result, of becoming formal writing, *or* as a means unto themselves. Informal writing is, hence, the start of all writing, formal or otherwise. These two assumptions support the premise that writing exists on sort of continuum between formal and informal supports the assumption of a typically multilayered text.

### *Themes*

Based on my reading of the literature, there emerged several potential themes for my study. For my analysis, I narrowed down this list to five major categories of codes, chosen for the way in which they bring together points of intersection related to ideas about stakes and engagements as indicated in the review of literature.

**Self-efficacy and personal engagement (CODE A)** - *One's confidence or awareness of knowledge of a subject and/or ability to complete a task or to consult others in order to accomplish that task successfully.* Personal engagement and self-efficacy are qualities of disposition wherein individuals are actively working in hopes of specific end goals rather than passively absorbing information. This element of disposition dictates that individuals are prepared to encounter boundaries and to draw upon personal knowledge and consult experts and texts to advance toward that goal. These qualities may manifest in the form of motivation and persistence, the participant's ability and/or desire to stick to particularly challenging tasks often encountered in boundary situations. Motivation and persistence are, in part, applied due to what participants perceive as rewards for accomplishing goals or risks and inherent penalties for failure to accomplish said goal. Self-efficacy and personal engagement also call upon a writer's level of metacognition. Both Nancy and James can be described as personally engaged learners who are enthusiastic about their work and determine to get involved in academically enriching experiences that extend beyond their basic fields of study. For Nancy, this means working to achieve numerous prestigious grants for graduate research. For James this means being accepted to and successfully working at the Rural Studio.

**Boundaries (CODE B)** - *Individuals encounter boundaries when in collaboration or when they are encountering a boundary-crossing scenario wherein they perceive some loss or gain in the crossing.* As a boundary, collaboration refers to instances of learning and working in groups, outside of the classroom, distinct from the work/learning that writers may do independently. The boundary of collaboration involves learning to incorporate varying learning and working styles to achieve a common goal. Perceived risk refers to the negative consequences an individual understands will follow negative performance. Perceived reward, conversely, refers

to the positive outcomes one anticipates after performing well. The boundary inherent in these perceived ends relates to how an individual is motivated (or not) towards a specific end, whether it be one s/he desires (a goal) or not.

Nancy begins to work with professors, other graduate students, and post-docs as a means of getting more familiar with the process of abstract writing. Most of James's work at the Rural Studio was collaborative in some way or another, from the larger greenhouse project, to the neck-downs, to their presentation of the final results of their work. The final degrees that each of the participants are hoping to receive are good examples of goals and perceived reward. There is also the perceived reward connected to individual tasks that they are completing: good grades and/or evaluations on their work; scholarship opportunities; presentations to peers, supervisors and potential investors and colleagues.

Perceived risk could be the exact opposite of those rewards—failure to achieve—but it could also refer to imagined consequences that result from those failures: inability to land a job after graduation; disappointment that results from said failures, etc. End results refer not only to the finished products derived from participants endeavors, but the final realization of the goals each individual set out to accomplish. For example, at the end of Nancy's rotation, she was able to select Dr. A as her advisor. The end result of James's time in the Rural Studio was not necessarily the completion of the greenhouse so much as it was his presentation of the work that they were doing and his ability to help the incoming cohort to understand the project as he and his peers conceived of it.

**Inventories (CODE C)** – *Inventories of both conceptual and physical tools, genres, and texts can be compiled from those mentioned in the interviews.* I repeatedly requested that participants let me know about the acquisition of new skills, or knowledge. Skills acquisition of



tools can refer to an individual's understanding of physical tools—materials objects like software, databases, computers, tablets, documents—and conceptual ones—mental tools that include note-taking methods, heuristics, and writing processes and so on. The development of genre and rhetorical knowledge adds to each of the participants' inventories.

Nancy's notebooking systems represent both physical and conceptual tools; the setup of the notebooks were taught to Nancy to use as heuristics for retaining information. As well, she and James both learned how to use a wide range of software for specific purposes in their fields. Nancy acquired genre and rhetorical knowledge as she learned her professor's notebooking system and how to write an abstract. James learned this process while he was learning to draft spec sheets.

**Texts (CODE D)** - *Any references to specific texts are tracked, particularly in terms of how they connect to other texts.* Texts can be formal or informal, physical or conceptual. They may be defined by discipline, or they may be modified to suit the needs of the audience. Participants encountered numerous texts during this study. Many of these texts were submitted during my document analysis. More were directly referenced in interviews

**Networks (CODE E)** – *Networks constitute layered avenues of activity.* They may link to disciplinary structures, support, resistance, or texts themselves. In particular, networks of support refer to an individual's "people", family, friends, colleagues, and institutions instrumental in helping that individual to accomplish specific goals. Networks of resistance refer to individuals and institutions whose efforts (acknowledge or not) act as a negative force in against the achievements of other individuals. Textual networks illuminate places where texts are reworked and integrated with texts. By nature, most text would be considered (multi)layered.

Networks of support and resistance for Nancy include her mother, the post-doc who helps her with her lab work and abstract writing, her husband/ex-husband, and various professors. Similarly, James's networks of support and resistance include his family, his fiancée, his professors, and his group members on the greenhouse project. For Nancy, her various notebooks, which often converge into "coherent" notes and reports, represent multilayered writing, such that it repurposes an earlier form (prior knowledge) into one that she can use in new contexts. Similarly, James's projects derive from a series of sketches, specs, and notes that represent his multilayered writing.

Each of these codes, as defined above, speaks to a specific set of criteria, established in the review and relative to the kinds of work my participants reported in their activities and documents. The selected codes can be connected to each of the data points in my project: interview transcripts, documents, observations, and images. The codes offer a base for examining intersections that come up between those codes and language in the transcripts that connect to the documents and practices of my participants.

Initially, I intended to read for the codes as alphabetically organized. I read for self-efficacy and personal engagement first; this category is pivotal in terms of how we understand when a writer is most likely to transfer new skills or knowledge. Boundaries, which seem to be activating sites for self-efficacy made sense as the next code to search for in the transcripts. By this point the following occurred to me: 1) I would need to search for texts last as the final point of intersection in the transcripts, the point where I could connect to specific documents; 2) networks made sense as the third code to read for because boundaries revealed in the second

reading spoke to their presence in the lives of my study participants. I read for networks, then inventories, followed by texts (Fig. 1).

Code	Related Qualities
<b>Self-Efficacy and Personal Engagement</b>	<ul style="list-style-type: none"> <li>• One's confidence and awareness of knowledge/ability.</li> <li>• Addresses specific end goals</li> <li>• Dictates that individuals are prepared to encounter boundaries and draw upon personal knowledge and consult experts and texts to meet goals.</li> <li>• Qualities may manifest in the form of motivation and persistence due to what participants perceive as rewards for accomplishing goals or risks and inherent penalties for failure</li> <li>• Call upon a writer's level of metacognition.</li> </ul>
<b>Boundaries - Collaboration; Perceived Risk or Reward; Goals and End Results</b>	<ul style="list-style-type: none"> <li>• Individuals encounter boundaries when in collaboration or when encountering a boundary-crossing scenario</li> <li>• May refer to instances of learning and working in groups, outside of the classroom, distinct from the work/learning that writers may do independently</li> <li>• Involves learning to incorporate varying learning and working styles to achieve a common goal.</li> <li>• May involve perceived risk, the negative consequences an individual understands will follow negative performance.</li> <li>• May involve perceived reward, positive outcomes one anticipates after performing well.</li> </ul>
<b>Networks - Layers of Activity, Support, Resistance, Texts</b>	<ul style="list-style-type: none"> <li>• Layered avenues of activity</li> <li>• May link to disciplinary structures, support, resistance, or texts themselves.</li> <li>• Networks of support refer to an individual's "people", family, friends, colleagues, and institutions instrumental in helping that individual to accomplish specific goals.</li> <li>• Networks of resistance refer to individuals and institutions whose efforts (acknowledge or not) act as a negative force in against the achievements of other individuals.</li> <li>• Textual networks illuminate places where texts are reworked and integrated with texts.</li> <li>• Considered (multi)layered.</li> </ul>
<b>Inventories</b>	<ul style="list-style-type: none"> <li>• Inventories of both conceptual and physical tools, genres, and texts compiled from those mentioned in the interviews.</li> <li>• Physical tools--materials objects like software, databases, computers, tablets, documents</li> <li>• Conceptual tools--mental tools that include note-taking methods, heuristics, and writing processes and so on.</li> <li>• The accumulation of genre and rhetorical knowledge adds to each of the participants' inventories.</li> </ul>
<b>Texts</b>	<ul style="list-style-type: none"> <li>• Texts can be formal or informal, physical or conceptual.</li> <li>• Texts may be defined by discipline, or they may be modified to suit the needs of the audience.</li> </ul>

Figure 1 - Table of Codes

Once I identified the codes in the transcript, I analyzed each transcript for the occurrence of specific words that demonstrated types of literate activity and moments of intersection for the participants. Writing practice is transformative, mutable, and networked; “pure” representations of writing limit our ability to observe the process of transfer. Broadening my scope to literate activity led me to consider how participants’ references to key terms draw out connections between the shapes writing might take. Cross-referencing codes to specific terms (Fig. 2), I was able to chart a series of intersections between the literature review and literate activities of my

participants. In theory, this should allow for a conceptual map of each participant’s network of literate activity. Some terms were more prominent in one participant’s language than another’s, often as a result of how the terms were tied to each participant’s discipline. In theory, this should allow for a conceptual map of each participant’s networks of literate activity.

TERMS	EXAMPLES OF REFERENCES
“note”	<ul style="list-style-type: none"> <li>· notes</li> <li>· notebooks</li> <li>· note taking</li> </ul>
“book”	<ul style="list-style-type: none"> <li>· books</li> <li>· textbooks</li> <li>· sketchbooks</li> <li>· lab books</li> </ul>
“sheet”	<ul style="list-style-type: none"> <li>· work sheet</li> <li>· lab sheet</li> <li>· spec sheet</li> </ul>
“plan”	<ul style="list-style-type: none"> <li>· plan</li> <li>· lesson plan</li> <li>· building plan</li> <li>· plan of study</li> </ul>
“present”	<ul style="list-style-type: none"> <li>· present</li> <li>· presentation</li> <li>· represent</li> </ul>
“writ*”	<ul style="list-style-type: none"> <li>· write</li> <li>· writing</li> <li>· rewrite</li> <li>· prewrite</li> </ul>
“work”	<ul style="list-style-type: none"> <li>· work</li> <li>· homework</li> <li>· lab work</li> <li>· work up</li> </ul>
“test”	<ul style="list-style-type: none"> <li>· test</li> <li>· testing</li> <li>· pre-test</li> <li>· take-home test</li> </ul>

Figure 2: Intersecting Terms in the Transcript

### Potential Research Bias

I feel that there are two primary areas that pose a source of potential bias in my research. The first is directly related to the participants that elected to take part in the research study. Each of my participants was someone I knew prior to the study. Though I did make attempts to recruit participants from outside my realm of acquaintance, the participants that completed the consent process, initial interview, and document collection process were either former students or classmates of mine. Additionally, I feel that my efforts to maintain an appropriate distance from

each of my participants was successful. I am aware that as a result of our prior association, participants may have been eager to say what they believe I wanted to hear, but I feel that I dutifully instructed them against this and requested their candor in all situations.

## **Limitations**

Immediately, the first limitation I have identified with the study is one related to scope. Just as the development of writing transfer study is affected by this issue, so was my own project. My limitations as a single researcher with very limited resources made this immediately evident; as a result, in this project I have attempted to broaden the scope of my examination by collecting a wide variety of data from each of my participants. This broadened focus on the quantity of data collected is directly connected to limitations in my ability to expand my data collection to more participants. I determined early on, in my IRB process that it would be necessary to keep the number of participants in my study in the single digits. At some point I think a larger, more extensive case study should be conducted to examine a larger sample of participants for a longer period of time. Those studies could incorporate more researchers to divide up the work of collected documents, interviewing subjects, producing and reviewing transcripts and would allow for a richer development of triangulated data.

## **Conclusion**

Each of the themes that I code for will ultimately serve to illuminate the transformational aspect of transfer, demonstrating Hacking's "moving target", subjects interacting their environment, transforming the environments that simultaneously transforms them. The participants I describe, though they represent only two experiences at this medium-sized,

southeastern university, help to paint a picture of the scenario in which many of our own students find themselves. For those of us invested in the teaching and researching of writing development, these illustrations lend to a specific argument about writing instruction with transfer in mind. The story that I want to tell in the following data chapters is one that locates each participant on a map of their literate activity. Writing, for many of our students, is a blend of practices, and our studies should take this blended-ness into account. As I map my participants, I hope to demonstrate the varied practices we can consider in studies of transfer.

Throughout this project I have tried to establish a means of understanding the map of transfer, a way of reconceptualizing what we should look for in our investigations of this occurrence. Transfer is much like dark matter: we know it exists, but our means for proving its existence depend on identifying the space it inhabits. As I think about how to chart this map I am taking what we understand about transfer in our field and combining it with what others outside the field have also discovered about the phenomena. If we know that individuals experience transfer at moments of challenge, of consequential transition, then knowing when they are going through such moments is vital to our examination of transfer. Further, those moments of challenge are what trigger the qualities of self-efficacy and grit. In writing studies, what I think this means is that we must examine how writing and literacy are linked to those moments, to those triggers. What has resulted in the following data chapters is a study of the intersections between the themes, moments, and literacy practices that define my participants' moments of transfer. The next two chapters offer my examination of those intersections wherein transfer lies.

## Nancy

In this chapter I present the case of Nancy, a former student of mine who originally develops her notebooking practices as a student enrolled in a two-year high school biology class. She later repurposes this notebooking approach to navigate her academic, first life as an undergraduate biology student, and then as a graduate student majoring in genetics. Her techniques for maintaining these notebooks helps her in the process of applying to graduate school, she continues to use these specific skills in her graduate program. I posit that it is Nancy's notebooking practices that are responsible for her successful transition from one point in her academic career to another; those practices help her to manage the challenges that she encounters on her progress throughout academic terrain. In particular, they help her to organize information when she encounters specific writing tasks. Her learning to use this tool – both a conceptual and a physical one – illuminates a series of boundaries she must cross as she makes progress toward her academic goals. Throughout her interviews, I returned to her notebooks as an entry into our discussions.

Having an understanding of how Nancy uses her notebooks helps me to map what she has done and what she continues to do. As she has maintained a series of notebooks for over a decade, Nancy is able to trace her educational development from one specific period and place to another. In this way, her notebook falls into a similar category of practice as the one Dias et al (1999) present in their discussion of the design notebook as a genre. In *Worlds Apart*, the authors examine design notebooks as a genre, explaining their physical appearance, the purpose they

hold for their users as “heuristic...epistemic... [and] practical” (location 2095 of 6046, e-book version). The discussion of notebooks in their text foregrounds, among other things, how the practice of keeping such a notebook constitutes “research” for educators, whereas for students that practice constitutes “education.” As Nancy moves from the life of an undergraduate to a graduate, part of the consequential transition of this move involves her shifting her practices from purely educational to research-based. Nancy’s modification of the notebook to take on new parameters in her learning—her paring down sections of the notebook in order to address the only salient issues of her learning—her eliminating sections that pertain to what she has already learned. Nancy acquired the format for her notebooking during her days as a high school student enrolled in biology. The notebook style was dictated to her by her teacher at the time. She has adapted that practice into a format that suits her purposes more specifically, but, just as there are several genres of maps—topographical, highway, satellite, and so on—the notebook could easily offer a sort of personal historical map as it relates to the user’s educational trajectory.

## **Background**

When I first met Nancy, she sat crammed into a corner of my too small world lit classroom, but I didn’t lose her among the 27 other students. Sitting at the one table that faced sideways in the room, she was closest to the door, seated with four other young ladies. She was wearing army fatigues—not the camo that many of my students would wear to announce their interest in hunting or make a regional fashion statement in this region, but full-on military fatigues. She also seemed to be the most alert of my students that day (I’m not sure whether or not it was because of the fact that the door swung into her face every time another straggler entered). She also seemed most prepared, with her textbooks, a binder full of paper, and her pen



out and ready. Her attention, her questions, gave me the impression that I'd be able to expect a lot from her, and she did not disappoint.

Nancy had already started the process of undergraduate study before, prior to her deployment to Afghanistan. As a first-time college student, she explained, she hadn't been all that committed to successful completion. Reeling from the loss of her older sister, she "just didn't care" about her studies, her success; she didn't share the goals of her peers. Ultimately, that disconnect pushed her to seek out something different, so she enlisted in the United States Army. After serving in Afghanistan, she returned to the southern United States with a desire to recommit herself to higher education she eventually ended up in my world literature class, more than half of the way through her undergraduate degree in biology. Over the course of that fall semester, Nancy spent a great deal of time in my office talking about her writing, about her feelings about the class in general (she enjoyed the class but was frustrated about the level of engagement she felt with her peers), about her time in Afghanistan. By the end of the semester, she and I had developed a rapport and I felt compelled to ask her, having observed so much of her writing process over the previous three months, to participate in my dissertation project. She agreed and was consented soon after.

During my initial interview with Nancy, I ask her several questions about her background. This first structured interview provided me with a wealth of data to start. Using a modified version of Brandt's initial interview questions (see Appendix) helped me to frame my investigation around the practices and activities that seemed to be most useful to understanding how I might map literate practices across her life's experiences<sup>5</sup>. Nancy was raised in the late

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<sup>5</sup> In *Literacy in American Lives*, Brandt traces the sources of literate practices in participants' lived experiences. She begins her investigation with a series of questions that help to establish the participants' backgrounds and the places wherein they derive sponsorship for their literate practices. Her initial questions are included in the appendices of her book.

80s in Athens, Alabama, just outside of Huntsville. Growing up in a rural area—Nancy describes it as “the sticks”—Nancy was exposed to farm animals at an early age and decided that she wanted to study veterinary sciences. Though she was not raised with her father, who was an veterinary school graduate, she explains that, growing up in rural Alabama just outside of Huntsville, she always had a similar interest in biological sciences, an interest which never waned: “[E]verybody, when they’re two or three says they’re gonna be some kind of doctor... but I guess I just never gave it up. Like I always said still that’s what I wanted to do so—” That interest is much more specialized now, as she is invested in a more narrow focus into the study of bovine and porcine biological studies.

In this very first interview, she revealed to me her notebook process and I told her that I would love to see one of these at some point. I had no idea that she would actually give me one of these, but the notebooks that Nancy creates have become the integral to how I understand the maps that may be constructed around her literate practices.

**Data Collection**

In Nancy’s case study, I collected a wide variety of data in the form of interviews and documents during her senior year in college and her first year in graduate school (Fig 3).

<b>Document</b>	High school biology notebook	Photos of graduate school notebooks	Photos of graduate school lab notebooks	Screen capture of graduate school computer files	Copies of undergrad syllabi and assignments	Copies of graduate school syllabi and assignments
<b>Interview</b>	Structured interview	Text-based interview	Skype (text-based interview)	Open-ended interview	Follow-up questions via email	Informal conversation

*Figure 3 - Data Collected for N's Case Study*

All of our structured, text-based, and open-ended interviews were digitally recorded. After review of the recordings, I compiled transcripts of the interviews which seemed most relevant to helping me to understand how literate practices are mapped over the course of my time working with Nancy. I kept copies of her emailed responses to follow-up questions. I also kept a log of

reflective notes after our informal conversations. The observations that I have made about Nancy's notebook come primarily from my interviews with her, copies of the work she has emailed to me, the actual notebooks themselves (or photos where the physical notebooks were not available). The extent of my document collection is reflected below in the table below:

<b>Academic Phase</b>	<b>Related Courses</b>	<b>Tools in order of significance (based on what she mentions in interviews)</b>	<b>Tools used in conjunction with the following activities:</b>
High School	Biology class	Notebook	<ul style="list-style-type: none"> <li>• Developing notebooking habit</li> <li>• Intensive note-taking</li> <li>• Cataloging body parts of specific species</li> </ul>
Undergraduate Study	Vet school	Notebook Computer docs	<ul style="list-style-type: none"> <li>• Statistics</li> <li>• Ethics</li> <li>• Beef (Cow-calf project)</li> <li>• Molecular Genetics</li> <li>• Biology</li> <li>• Physiology</li> </ul>
	Core classes	Notebook	<ul style="list-style-type: none"> <li>• World literature</li> </ul>
	Applications	Notebook Computer docs	<ul style="list-style-type: none"> <li>• Applications</li> <li>• Letters</li> </ul>
Graduate Study	Requisite course work	Computer docs Notebook Scheduler	<ul style="list-style-type: none"> <li>• Statistical Methods</li> <li>• Biochemistry</li> </ul>
	Graduate advisor rotations	Computer docs Lab notebook Notebook Scheduler	<ul style="list-style-type: none"> <li>• Rotations</li> <li>• Data collection</li> <li>• Comparing project results</li> <li>• Selecting advisor</li> <li>• Writing first abstract</li> <li>• Conference presentation</li> </ul>
	Graduate Project – piglet project	Lab Notebook Computer docs Scheduler Notebook	<ul style="list-style-type: none"> <li>• Data collection</li> <li>• Answering research questions</li> <li>• Experiment instructions</li> <li>• Comparing project results</li> <li>• Writing abstracts/articles</li> <li>• Conference presentation</li> </ul>

Figure 4 - Connections to Document Collection for N's Case Study

The most important link to what I see in Nancy's literate practices is that she returns to the process of notebooking over and over again in much the same way that a traveler consults a map continuously throughout her journey. Not only does such a map show us where one has been and where one is going. It also demonstrates places of intersection, peaks and valleys,

climate, and geography. In particular, the practices that Nancy utilizes to complete academic and, later, professional work, are the most important element of her map, creating a visible trajectory for her journey into the field of microbiology. What is more, Nancy's reference to the notebook (Code D for text) often coincides with several other codes for each transcript. I start with five basic codes, reading through each transcript for language or concepts that connect to each of these categories.

- CODE A: SELF-EFFICACY AND PERSONAL ENGAGEMENT
- CODE B: BOUNDARIES
- CODE C: INVENTORIES
- CODE D: TEXTS
- CODE E: NETWORKS

Once I completed my examination for the initial codes, I looked for places where each of the responses demonstrated characteristics of two or more codes.

### **Intersections**

In relation to the codes that emerged in the transcripts I also noted how particular terms intersected with specific themes in the codes. What follows is a breakdown of these terms and their connections to those codes. This intersectional study helps us to conceive of a map of Nancy's writing development. If the development is forward (or even negative, for that matter), that would seem a relevant point of transfer, a place to ask "How is this information useful in telling us something about how Nancy transfers writing skill?" In another pass through, the issue of proximity between codes would help to fill in gaps here.

"note"

I looked for the code "note" notes, notebooks, and other informal written texts.

The word *note* never comes up in direct connection to issues related to boundaries.

Understandably, though, *note* comes up most in relation to the nature of notes themselves, in reference to texts. Similarly, the fact that notes also tend to convey the participants awareness of practices and tools, reference to the term *note* are also closely linked to references to inventories.

<b>Nancy</b>						
<i>note</i> *		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	3	0	13	15	4
	<b>Rate of occurrence</b>	8.57%	0.00%	37.14%	42.86%	11.43%

Figure 5 - Code Intersections with the Term "*note*"

"book"

In reference to books (notebooks, and textbooks, primarily), Nancy shows her highest rate of intersection with Code D, texts and, as with notes, inventories. There is some overlap here when the word notebook comes up, but, primarily, these are two distinct categories for Nancy.

<b>Nancy</b>						
<i>book</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	2	0	8	9	3
	<b>Rate of occurrence</b>	9.09%	0.00%	36.36%	40.91%	13.64%

Figure 6 - Code Intersections with the Term "*book*"

"sheet"

After a few read-throughs, the term "sheet" emerged in both participants' transcripts, enough so that I wanted to see how many intersections it held with the codes. In keeping with the pattern established in "note" and "book", texts and inventories dominated the majority of the responses.

This seems to point towards the idea that these texts and inventories become necessary items for travel in the academic realm.

<b>Nancy</b>						
<i>sheet</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	2	1	5	5	2
	<b>Rate of occurrence</b>	13.33%	6.67%	33.33%	33.33%	13.33%

Figure 7 - Code Intersections with the Term "sheet"

"plan"

The term plan, which seemed most prominent in the other case study, did not come up much in Nancy's transcripts, and it did so with equal measure in Codes C and D (texts and inventories).

<b>Nancy</b>						
<i>plan</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	0	0	3	3	0
	<b>Rate of occurrence</b>	0.00%	0.00%	50.00%	50.00%	0.00%

Figure 8 - Code Intersections with the Term "plan"

"writ\*"

Because of the wide reach of terms related to writing, I applied a wildcard (\*) to the base *writ* for this search, which seemed to be most closely connected to all the codes. I went back and reapplied a similar form with works like "note\*", but it wasn't until I had read for "writ\*" that it occurred to me to do this. While Codes C and D were most prominent, this terms prevalence in each of the codes speaks to its importance in each category. Furthermore, this seems to support the idea that writing, which occurs as a text, as an inventory in most situations, is also connected to our sense of self-efficacy, our connections with others, and our awareness of boundaries or

thresholds. Necessarily, as a writing transfer study, it follows that this term comes up so frequently. Furthermore, this condition accounts for some of the increase. Interestingly, though, “work” (below) matches “writ\*” in terms of frequency, a circumstance I find compelling in terms of what it seems to suggest we think about when we consider where we encounter our most involved types of challenges. Often, written tasks present challenges immediately associated with work in terms of what it requires and produces.

<b>Nancy</b>						
<i>writ*</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	5	2	14	17	7
	<b>Rate of occurrence</b>	11.11%	4.44%	31.11%	37.78%	15.56%

Figure 9 - Code Intersections with the Term "writ\*"

"work"

Work is another term, like the writing wildcard, that demonstrates sound links to all the codes. The transcript reveals even closer connections to each of the quote across the board. And here, the codes reveal that networks, connections with others, are more closely tied to this term, followed by self-efficacy. This seems to indicate that this sense of self-efficacy is fueled by certain kinds of interactions with others where the concept of work is involved.

<b>Nancy</b>						
<i>work</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	15	10	13	11	19
	<b>Rate of occurrence</b>	22.06%	14.71%	19.12%	16.18%	27.94%

Figure 10 - Code intersections with the Term "work"

"test"

For both of my participants, the idea of the test, was another term that adhered to each of the codes in the transcripts. "Test" falls back into the same pattern as the first few terms. It is most closely associated with Codes C and D.

<b>Nancy</b>						
<i>test</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	4	3	6	8	4
	<b>Rate of occurrence</b>	16.00%	12.00%	24.00%	32.00%	16.00%

Figure 11 - Code intersections with the Term "test"

## Mapping Nancy

Of all the personal maps in this study, Nancy’s covers the most physical ground, tracing a path from small town Alabama to small town Alabama to Afghanistan to small town Alabama to small town in the Midwest. Her map also spans the longest amount of time and the most consistent and long-standing practice, her habit of notebooking, which, in Nancy’s experience, acts as the *nexus of practice*, as described by Scollon and Scollon; the practice is one that Nancy has used for an extensive period of time to meet a number of purposes in her academic life.

Though Nancy is and has been involved in a number of literate activities—Facebook, texting, abstract writing, reports, notebooking, scheduling<sup>6</sup>—the practice that seems to have the

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<sup>6</sup> “Facebooking” seems to point to a very interesting nexus of literate practice as well, and might offer an excellent means of further exploring the sort of mapping I am discussing here in that participants willingly engage in overlapping their separate realms of literate practices onto this platform, making visible a three-dimensional (even four-dimensional, in light of the “timeline” feature) view of the goings on of Facebook participants. Such an examination, which would probably be best framed in terms of activity, ecological, or similar theory, might offer researchers new grids of literate practice to examine due to Facebook’s ability to track and store the thoughts, actions, locations, and histories of its users (sometimes much to their chagrin). Even in my interactions with Nancy I would often have more success reaching her via brief post on Facebook than I would through her email or by phone or text. A more extensive examination of the presences and use of technology as a whole would help to clarify what sorts of networks function in the writers’ lives as tools and as useful practices. Some research is just



most long-standing and involved (as well as evolved) position in her life is that of notebooking. Nancy's notebooks, when viewed from start to present, provide the sort of multi-dimensional map that necessary for understanding how transfer works in the realm of literate practices. Researchers and educators must locate just such practice at work in writers' lives in order to better understand how transfer happens. Nancy's notebooking practices connect her personal, academic, and professional lives into one zone, allowing me to get a clearer understanding of how I to assist her progress as a writer. As it is, the notebooks she has shared with me reveal how she organizes her literate practices toward the achievement of specific goals.

At this point, Nancy has moved on to an esteemed microbiology program, funded by the FDA at a university located in the Midwest. The choices, practices, and actions that are linked to her rich literate life illustrate a constant process of potential transfer instances. In particular, the practice of notebooking has been invaluable in plotting her course. Nancy's first notebook and her current notebook are not really identical aside from the fact that they are both notebooks; however, the act of recording in the notebook is what connects these objects, via particular usages, along Nancy's path to becoming a microbiologist.

### **The First Notebook**

We begin in an area of north Alabama that Nancy characterizes "the sticks," in Decatur, a small town outside of Huntsville. Nancy grew up with her mother, a teacher, and older sister. It is here, in her high school biology class, that Nancy begins her practice of notebooking. In high school, Nancy made several requests to be added to advanced biology class where she compiled that first notebook, and the approval to be admitted required that she skip a grade in order to

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beginning to scratch the surface of this sort of discovery (Grabill, "The Writing Lives of College Students") and it will be interesting to see how further developments in such research will help to push out the boundaries of what we know about literate practice as it relates to the transfer of writing skills and knowledge.

enroll. While her peers were probably content to struggle through their freshman science courses, she was taking a two-year biology course traditionally begun in students' sophomore year, a course that, by her estimation, continues to rival college-level courses in the same area of study. Her teacher for that class required that each student maintain a notebook for cataloging all the physiology—characteristics, bones, musculature—of the animals they studied in the two year sequence in addition to their regular quizzes and other notes for the class.

The first of her notebooks is actually a binder, three-rings, with over 350 pages of notes, diagrams, quizzes, exams, and vocabulary lists. Almost every page is protected in plastic page protectors. A few, like the table of contents<sup>7</sup>, are clustered into two protectors rather than several. The lower corner of each right-hand page is numbered in her handwriting to correspond with the catalog of pages she keeps at the front of the binder, a list, which, itself, covers some fourteen pages. In fact, each page is essentially a handout with Nancy's numbering and, when relevant, her own handwritten notes on the pages. It is immediately evident the care that she had taken to preserve what she collected in that binder, and I imagine that the process of compiling such a binder for *each* of her classes was a time-consuming commitments that presented her with additional mental and financial challenges.

Physically, the notebook looks like any other large, black three-ring binder<sup>8</sup>. The spine is 3" matte plastic with pockets on the inside. Each page (sometimes a group of pages) is kept in a plastic page protector. There are numerous protectors in Nancy's notebook. When I think about what it must have taken to compile this notebook, I realize that first notebook was a labor of love for Nancy, her commitment to doing well in her biology class, to proving herself as the youngest

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<sup>7</sup> See Appendix C

<sup>8</sup> See Appendix B

student in the class. Against these odds, Nancy compiled a notebook that would take her through the two-year course and on toward success as a biology student in her undergraduate program.

The first page protector in Nancy's notebook contains the majority of her table of contents<sup>9</sup>, which is several pages long. Here she catalogs all of the study sheets and lists of terms she needs during this course. The notebook that she has given me covers two years' worth of her time in the class. In looking through her notebooks, I begin to understand how she worked her way through this course; I am also able to get some idea of how the material was presented to students. Each copied sheet lists twenty-six page titles and page numbers, up to page 390<sup>10</sup>. I cannot imagine what it must have been like to be cataloging those pages, but the work involved helps to demonstrate the level of Nancy's early interest in the field of biology.

The first few pages cataloged in Nancy's notebook are the title pages and pages labeled G.E.P. and I.E.P. The latter two pages list the points that she gains or loses over the course of the class as well as any references to what she needs to review for future assignments. After these pages she lists a series of lessons, some that seem to go on for only a few pages and others that take up several (sometimes dozens of) pages. Pages four to nine list the *ologies*, all the sciences, and not just those related to biology. Separated into four fields, these lists include everything from *acology*, the study of therapeutic agents, to *zymology*, the study of fermentation. Following the ologies is a brief—only two pages—supplement to the ologies, and then the general terms, pages 17 to 35 are listed. These terms are the ones that will come up most in her studies. Throughout her time in the course, she will continue to add to this list of terms as she works her way through the various body conditions and systems (skeletal, muscular, nervous, respiratory, and so on) for pigs, frogs, cats, and humans.

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<sup>9</sup> See Appendix C

<sup>10</sup> See Appendix D

Compiling that first notebook in high school served as a starting point for a practice Nancy continues to use in her academic and developing professional life. Though the notebook ultimately served as a means of archiving the work that she was doing in her class, Nancy used it to manage the challenges of her coursework. It helped her to establish very detailed note-taking skills and kept her work organized and readily accessible. Furthermore, since Nancy already knew that she wanted to eventually pursue a career in animal sciences, her work with that notebook was precisely that—practice. She was not unwittingly developing habits of mind that would coincidentally lead her to other practices relative to her discipline; she was knowingly acquiring a set of skills that would point her toward her destination. In her transcripts, Nancy references her notebook 19 times and in general, she references the word *note* a total of 35 times. More than half of the time she was refer to her notebooks. By comparison, writing activity of any sort (indicated by “writ\*”) comes up a total of 30 times in her transcripts.

In college, Nancy’s notebooking practice is directed towards helping her keep track of the courses she’s taking. During her first attempt at undergraduate study, she kept no notebooks. She explained that her first time in college did not go as successfully for her as her work in high school or her work in college after she returned a second time: “I wanted to party and goof off. I had bad study habits. It just didn’t seem important.” Some of her acting out, she explains, was a result of losing her sister and being shaken by that loss. She joined the National Guard soon after and was then deployed to serve in Afghanistan.

“When I came back,” she explains, “I was more serious about school. About a lot of things.” She continued, talking about the World Lit class where we met: “A lot of people in our class were just not serious. It drove me crazy!” Still, she explains that a lot of those students are

in the same position she was in during her first attempt at college. “They will just have to learn the way I did.”

When I ask her what she thinks changed upon her return, she states that losing her sister and knowing she could have lost her own life in Afghanistan gave her a motivation for doing better. “And my mom was so supportive. I would write her letters all the time and she would write me back. Sometimes, I wouldn’t even mail the letters, but I always let her know I was writing to her,” she explained. Nancy’s letter writing habits are not the subject of this case study; however, it would be interesting to examine her habit of letter writing as well, to get a better understanding of the ways that practice also maps onto progress from high school to graduate school<sup>11</sup>. Similar studies would help demonstrate the variety of ways students’ practices can inform writing research in ways that, at present, are not traditionally explored or valued in this field of research. Of what she did discuss, the letter writing seems to serve as a release for her.

### **Notebooking in the University**

When Nancy returned from Afghanistan, she chose to be much more intentional about her studies, so her notebooks for her college courses were organized a bit differently than the ones she used in high school. Here, she is encountering a boundary and engaging it via self-efficacy. At the beginning of each semester, Nancy would set up notebooks for her courses, purchasing a three-ring binder and page dividers for each one. Each notebook was divided into sections for a syllabus, notes, and quizzes and tests. Most of these notebooks are not 3” binders

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<sup>11</sup> Letter writing represents another tool Nancy uses to work her way through the process of completing her academic goals because without those letters she would be burdened with *It*. I see the letter writing as a waypoint or weigh station, a means for unloading unnecessary encumbrances or refueling her stores of encouragement. Throughout her journey, Nancy relies on letter writing as a way of giving herself a mental and emotional tune-up. Though she did not share any personal writing as part of her contributions to the study, her comments regarding letter writing demonstrate that it was a significant part of her personal life.

like her high school biology notebook, but they follow the spirit of her practice to the letter: thorough in their organization, carefully documenting her time in each course. Much like before, the pages are typed, some with handwritten notes. This time, however, many of the pages included in the notebooks are not handouts. Many of them are comprised of work that Nancy has created herself: write-ups for assignments, pages of typed notes, exam answers, and papers. In college, Nancy's notebooks helped her to maintain her meticulous study habits, keeping her on task with each of her assignments. Especially during her last year of undergraduate study, Nancy's notebooking was extremely important to this process: for her beef class, she was working on a cow-calf project, a genetics project in which she traced the breeding and development of calves born to cows mated to specific steers); she was taking statistics and learning SPSS; she was taking classes in ethics, genetics, and physiology; she was also applying for graduate school. While most of this work went into a notebook, Nancy was beginning to fine tune her process. This evolution in her writing process continues throughout her time as a participant, and I have no doubt that it continues to evolve on her path to professionalization. A part of that evolution means that her notebooking becomes more streamlined, more utilitarian.

“After a while, though,” she said during one interview, “I realized that I didn't need a notebook for every class.” As she begin to identify which courses were more challenging or required more cataloging (of handouts, notes, graded quizzes/tests, comments, and so on), she modified this practice, first combining courses that were more “lightweight” into one sectioned binder and putting “heavier” courses into their own individual binders. Nancy also began to keep track of a number of her files electronically. Over time, she eliminated binders for easier courses or those with minimal paperwork, keeping their syllabi in one folder and then maintaining her binders for major-related coursework.

## What Transfer Looks Like in Microbiology

The path that Nancy has taken, from this high school biology course to graduate study in her graduate microbiology program, is probably the most direct of the three that I've observed. Moreover, with respect to that directness, there are ways that her own literate activity was specifically pointed to the purpose of helping her to travel a specific route to her career goals. What she has learned in the last several years about writing abstracts and articles has been inherently shaped by the knowledge she developed as she learned about body systems and ologies, cow-calf development and statistics. Keeping in mind that maps today can demonstrate so much more than mere destination, it becomes easier to see why Nancy's notebook offers a useful parallel here. If we were to visually reconstruct the loci of her repeated use of notebooks as a means of sorting out academic and professional challenges, what would result would be a series of points that form a path from Decatur to Central Alabama (by way of Afghanistan) to Midwestern America; furthermore, the practice itself exists on this map, regardless of how it has evolved, in the same way Nancy follows this map, progressing along the line from novice to expert in her field.

It is helpful in this case to consider how Syverson sets up a similar network (using an ecological framework) to describe the process by which the poet Charles Reznikoff composes<sup>12</sup>. One of the most important moments in Nancy's history is her transition from undergraduate to graduate, a change in part facilitated by her meticulous notebooking practices. Because she had been able to keep track of all her projects via these notebooks, Nancy had a wealth of material

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<sup>12</sup> In Syverson's text, the definitions of emergence and the physical and spatial aspects of writing lend themselves to a broader image of mapping. Indeed, the idea of an ecology quite closely related to an idea of mapping in the sense that it denotes an environment. In particular, Syverson's discussion of the writing practices of the Reznikoff family offers a lucid example of the means in which a text emerges, organizing itself over copious drafts and varied representations of Reznikoff's family history

from which to draw, all neatly cataloged chronologically and by importance/difficulty, for the purpose of moving through her application process. Often, students are at a loss as to where to begin with such a project, but I think it's fair to say the practice of notebooking provided Nancy with clear cues and road signs as Nancy worked her way through applications for graduate school admissions and funding. This notebooking also helped her to easily recognize sources of faculty support from which she might procure strong recommendations and assistance in completing the writing process.

Nancy's biology notebook is a good example of organizational writing skill. After the break she took between her less serious commitments to her studies and her deployment, she returns to this method of organization for specific learning needs. As a practice, notebooking extends across a broad spectrum for Nancy because, while she uses it primarily as a means of note taking, her habits of notebooking lend her to include detail about other aspects of her life in the notebooks. A clear example of this can be seen in her first notebook, the one she gave me to look through. In that notebook, one finds the extensive notes of her biology class, but there are also letters, a poem, the pledge of teenage love, reminders about upcoming events. So, in the process of learning about the anatomy of the myriad creatures presented in her course work, one can also get a sense of the other life that is unfolding around her. In particular, Nancy states that she learns better in groups; I asked her how she would initiate this in her graduate program and how that relates to her notebook. Her response was that she uses the notebook in conjunction with her planner, keeping track of what happens in her interactions with her graduate school classmates, mentors, professors, and other professionals. As her notebooking habit has progressed, Nancy has maintained this sort of overlapping practice, often using the notebook as a place to jot down ideas and then transfer them to other places—planning calendars, note taking,



drafting formal writing tasks. Another indication of the evolution of this practice, Nancy has developed the habit of starting her notebooks in a spiral bound notebook and then transferring what she has to a more formal, more durable three-ring binder.

Today her notebooks are separated into two different types, her lab notebooks and her large notebooks. The lab notebooks are where all of her rough notes are compiled<sup>13</sup>. Here one will find a table of contents much like the one in her original three-ring binder for her high school biology class. That table of contents lists a wide variety of artifacts: catalogs of her test subjects, lists of research questions, directions for tests she is to run, genetic gels taped to pages with descriptions of what the slides reveal, lists of tests that she runs as a part of her doctoral research projects. Her large notebooks are where she compiles the notes from her research after the fact. These notebooks take her much longer to do now, primarily because these notebooks constitute a review of all the work that she keeps track of both within and without her lab notebooks. Still, she continues to use the notebooks, connecting them to her lab notebooks, as a means of archiving her ongoing research. Herein she maintains her notes from write-ups of studies, drafts of abstracts, and slides from class and conference presentations. The majority of this work is typed and of her own making. As she types up the information she wants to collect into the large notebook, she also maintains an interesting sort of electronic catalog of her data<sup>14</sup>. Though I do not explore the practice here, there are sure to be informative and revealing connections between her developing notebooking practices and her chronological use and access of files on her computer. This sort of connection further demonstrates the usefulness of mapping practices in writing research. As well, the evolution of her notebooking habits speaks to her

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<sup>13</sup> See Appendix E

<sup>14</sup> See Appendix F

development of particular practices as a part of her understanding of methodologies inherent in her chosen field of study.

### **Evolving Practices**

In writing studies it is helpful to consider the purposeful nature of theories of analysis that look at where action is situated in the lives of actors; where users position and locate objects and tools in that network; how actors, objects, practices, and their related subjects and goals comprise the network itself. While there will always be a need for studies of writing that examine what students do in the classroom, Nancy's work with her notebooks is a prime example of why it is useful to look at the writing practices students bring with them into new locations, to closely examine writing that maps beyond the traditional classroom and onto a broader educational plane. Nancy's notebooking practice is her way of "getting there" from here, her path to professionalization. In the same way that practice presents us with a way to analyze the what and how of her literate practice, a similar sort of examination—one that investigates how particular practices adopted within specific disciplines—would be instrumental in further mapping students' writing and writing-related practice, as I hope to demonstrate in my next case study of architecture student, James.

## James

This chapter describes how James, an architecture student, has taken purposeful steps that shape the map of his literate practices as he has found himself involved in the process of developing an architectural methodology, in part through the use of specific notebooking habits. For architects, the term methodology is used to define the stylistic choices of the architect: the tools the architect uses during sketches, the type of sketchbook s/he favors, the materials used to construct the design, the style of the design itself. His development toward establishing such an informing and defining construct for his work is, by nature, a series of boundary crossing scenarios in his progress towards professionalization. Furthermore, having an opportunity to observe some of his work towards this process enables me to create a snapshot of his progress.

### **The Road to Design Methodology**

The concept of a design methodology in architecture is a newish one, its merits debated in the late 80s. Then the question was whether or not such “go-to” tactics might stifle the creative work done by designers. Now, about 30 years later, it is an accepted facet of curriculum in programs like the one in the university’s architectural program. In “Methodology in Architectural Design”, Wiggins argues for the purposeful use of design methodology as he addresses how architects might utilize systems within the “design process” (6). That process is particularly helpful to the architect when s/he encounters specific challenges within the process. Those challenges are further complicated when the architect lacks specific language to address the problem, demonstrating a deficiency in her or his understanding of how to define and,

therefore, overcome that problem (6-7)<sup>15</sup>. James's challenge, however, is not *whether or not* but *how to* develop a methodology that informs his work.

James's goal to develop a design methodology becomes clearer in light of recent research into the intersections writers encounter in environments that place specific constraints on their learning, constraints inherent in a discipline like architecture. In "Virtual and Material Buildings", Medway's examination of semiotics in the writing of architects, Medway presents an argument for understanding the intersection of writing and image, explaining how architectural plans demonstrate a use of language that is often occluded by the images of the designer. In his article, Medway explains how writing and semiotics – in this case, used in architectural media – help to convey details about "virtual buildings", structures that will exist in the future, or that exist based on their potential to become structures. In particular, Medway focuses on representations in designs and designers' notebooks as a combination of drawings and notes, signs and text that make the virtual building understood to audiences. In a later examination, "Imagining the Building", Medway speaks to this issue as the problematic intersection of architectural discourse and metaphor: "Architectural discourse is pervaded by metaphor and a lot of metaphors come from language, so we talk about the 'vernacular of the building', the 'vocabulary of the building', 'buildings making statements', 'reading buildings'...What will typically happen is that someone will first specify a design idea in either words or a sketch, and an interlocutor will take that representation and translate it into the other medium... In other words, each medium, each semiotic mode has its own performances, possibilities, and

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<sup>15</sup> Beaufort addresses similar difficulties in *College Writing and Beyond*, examining how the student, Tim, encounters writing in first his academic environment and then his work environment. Beaufort's model examines how Tim's successes or failures in courses that involve writing are a direct result of his development of specific areas of knowledge – writing process, subject matter, rhetorical, genre, and discourse community. Her work highlights the crucial nature of learning how to function within a professional discourse community by means of understanding how those professionals communicate.

requirements” (272). He goes on to say the challenge architects face in ensuring their designs “[communicate] all the associations and meanings and metaphorical connections...through [their] drawings and then through the built structure” (273). Those architectural plans, though grounded in the physical world, use language to clarify semiotics and symbolic structures possessing the potential to become physical structures. Furthermore, learning to negotiate between a developing design and the space it will inhabit becomes a locus for what Scollon calls a *nexus of analysis* and what Beach labels a *consequential transition*. James would refer to this as the development of his methodology. He is puzzling out the basis of his design method, and in the process he determines the habits and methods that will accompany him in his professional life: the types of projects he undertakes as a professional, the tools he uses to complete his preliminary sketches, the software he uses to draft his designs, the materials he will select for the construction of those designs, the practices he adopts to present those designs to clients.

Many of James’s practices have been developed through a combination of specific professional training and his personal learning style. One example of this sort of combination can be seen during the early part of James’s time in the architecture department, when he was instructed in methods for completing sketches. Originally, he would have created a sketch in pencil, with no annotation anywhere on the page. His sketch notebook would be larger (larger than 8.5 x 11), and his sketches would be completed in pencil.

After taking several sketching classes, these notebook s have undergone several changes. The first and most notable is that the sketches are in ink. James explains, “If you use a pencil, you just erase your mistakes. But sometimes you need to see what you were thinking of before, so they told us to get rid of the pencils.” Another notable shift is that there are numerous annotations in the margins. “I didn’t use to do this very well,” he tells me during one of my visits

to the Rural Studio, “but it helps to remember when you did a sketch, where, what time of day. You can give notes about the materials that are used, stuff like that.” Over time the notebooks have gotten a bit smaller, but they are so much more detailed than his earlier sketch notebooks.

Another place where I see this combination of personal style meeting professional training is in James’s notes for his Architectural History course. James initially used his laptop word processing software to take notes for his classes. Those notes were generally constructed as a series of lists, sometimes bulleted or numbered, highlighting the important points he wanted to remember about the structure being discussed. Over time, James moved from programs like Microsoft Word to OneNote, creating electronic binders of notes separated into specific sections. Then, one day in his history class, James stumbled upon the OneNote recorder function, which allows him to record the class as he’s taking notes; the recorder keeps track along with the notes so that, should some part of those notes be unclear, he can playback the recording of what was happening at that point in the class.

James’s combination of his specific note-taking methods and the sketch notebooks he compiles as an architecture student form a complex network of skills that help him to traverse the terrain of a five-year curriculum in the architecture program. Similar to Nancy’s notebooking practices, James’s approaches to his work as an architecture student provide me with several avenues into an examination of his academic and professional map. Even more closely than Nancy’s example, James’s case study demonstrates how the student, the writer, the individual, manipulates the path regardless of the boundaries that are usually in place within the academic environment.

James’s literate activities are part of a map that is not limited to the work found in his architecture notebooks. Still, it is within these notebooks that he has begun to etch out an

identity, a personal methodology, in his discipline. The notebooks provide a clearer sense of who he is as a budding professional. James's physical map isn't as long as Nancy's, not as widely traveled, as he is a first-time college student, fresh out of high school with no real world experience to speak of. Growing up in Birmingham, Alabama, he knew early on that we was interested in architecture and during high school he actually worked for a firm running errands, completing tasks for the staff, and learning about the ways that architects work. In this way, his map does share the same level of intentionality as Nancy's. He did not walk into his college education aimlessly but, rather, with at least an approximation of what he would be encountering.

### **James's Document Collection and Interviews**

For James's case study, I collected data from a wide range of interviews, documents, and observations over a period of roughly two years; the material I collected represents at least three years of work. In fall 2008, James was a student in my class two semesters in a row, for both Freshman Comp I and II, as a member of a learning community for the architecture program. After he moved on to his required literature courses during the 2009 school year, we continued to talk about his writing, and he would stop by my office frequently to ask questions about other writing work that he was doing. Because I had had James in those two classes during the 2008 school year, I was able to review samples of work he did for me prior to his joining the study. During his time at the Rural Studio (his junior year, 2010), I visited and recorded a day of design reviews as well as his end-of-the-year presentation of the greenhouse project at the annual pig roast. Several of our discussions were informal due to the nature of our existing relationship. I often conferenced with James about writing assignments he was completing in his other classes,

and he often answered questions related to my project during those informal conversations. I digitally recorded each of our interviews as well as my focused observations (Fig 12).

<b>Document Title</b>	<b>Document Type</b>	<b>Corresponding Semester</b>
Architectural History I (19 files)	PDF and MSWord Files (assignments and notes)	Fall 2009
WLI Notes (40 files)	PDF and MSWord Files (assignments and notes)	Spring 2010
Architectural History II (13 files)	PDF and MSWord Files (assignments and notes)	Spring 2010
WLII Notes (10 files)	PDF and MSWord Files (assignments and notes)	Summer 2010
2010 Procedures for Accreditation Final	PDF - non-assignment	Spring 2010
2009 Conditions for Accreditation Final	PDF - non-assignment	Spring 2010
German Dialogue	MSWord File (assignment)	Fall 2010
Initial interview	Recorded file (formal interview)	Fall 2010
Observation/Interview: Rural Studio	Photos and recorded file (informal interview)	Spring 2011
Greenhouse boards (31 images)	JPEG - presentation	Spring 2011
Zigzag chair process (13 images)	JPEG - design	Spring 2011
Interview	Photos and recorded file (informal interview)	Spring 2011
Observation/Interview: Rural Studio Pig Roast	Photos and recorded file (informal interview)	Spring 2011
Interview	Recorded file	Fall 2011
Notebook Photos	(images)	Spring 2011 - Spring 2012

Figure 12 - Data Collection for M's Case Study

Just as I did in Nancy's case study, I kept copies of emailed correspondence and maintained a log of notes for each of our meetings, whether formal or informal. Our long distance interviews were conducted via Skype and were recorded in the same way that our face-to-face conversations were. After receiving such a wide variety of data from James, I have settled on presenting my findings in terms of his work the Rural Studio project in relation to the development of his notebooking skills during is enrollment in the architecture program.

For James's interviews, I pulled his initial interview transcripts and two other transcripts that reference his work at the Rural Studio. The same basic codes were applied and then run against specific points of intersection of the codes themselves as well as specific terms. Note that some of the terms here differ slightly from those found in Nancy's case study. I think, primarily,



this difference, as well as the frequency of use of certain terms is directly related to the language that is taken up in the participants' disciplines. Certain other terms might turn out to be synonymous, and thus more prevalent, upon further analysis.

### Intersections

James's intersections were notably different in that there were several terms that manifested in his transcripts a great deal more than they did on Nancy's. I believe that, in large part, this can be attributed to the fact that the terms themselves have certain bearing in terms of how they are used in the discipline of architecture. Another contributing element may be that the time constraints I experienced with Nancy's project did not exist in the same way for James: we lived in the same time zone and he was available to meet with me more often. Furthermore, he was a much more talkative participant, taking time to explain situations in extensive detail.

"note"

Similar to the pattern that emerged in Nancy's work, James's intersections between codes and the term notes, fell primarily on Codes C and D, for inventories and texts.

<b>James</b>						
<i>note*</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	10	0	16	17	10
	<b>Rate of occurrence</b>	18.87%	0.00%	30.19%	32.08%	18.87%

Figure 13 - Code Intersections with the Term "note\*"

"book"

A similar pattern comes up in reference to Code C and D in searches for the term *book* in James's transcripts.

<b>James</b>						
<i>book</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	7	2	20	23	11
	<b>Rate of occurrence</b>	11.11%	3.17%	31.75%	36.51%	17.46%

Figure 14 - Code Intersections with the Term "book"

"sheet"

There was a higher instance of connection to all the themes in James's transcripts. While both participants showed no connections to boundaries in reference to the term *notes*, the term *sheet* is the only other term with no incidence of connection to Code B (boundaries) on my analysis of his transcripts.

<b>James</b>						
<i>sheet</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	3	0	2	2	3
	<b>Rate of occurrence</b>	30.00%	0.00%	20.00%	20.00%	30.00%

Figure 15 - Code Intersections with the Term "sheet"

"plan"

Plans are a major part of the work that architects do, and I feel this is why this term shows up well on James's transcripts in relation to how it shows up on Nancy's. While both of them mention the term, I believe the nature of James's discipline accounts for many of the higher counts in his transcripts. This was not my intention when I chose my terms. I believed myself to be reading the transcripts for terms that seemed common between the two participants.

<b>James</b>						
<i>plan</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>

	<b>Total from interviews</b>	4	8	10	14	10
	<b>Rate of occurrence</b>	8.70%	17.39%	21.74%	30.43%	21.74%

Figure 16 - Code Intersections with the Term "plan"

"present"

A major aspect of James's work, presentations accounted for a large number of intersections; furthermore, I believe the presentations are an excellent example of the repurposing of text into a new context. Complete with a continual assessment of rhetorical purposes, the presentations require students to embrace rapid revisions of their work in both textual and visual formats. They are also representative of the risks and rewards that James and his peers encounter. These presentations are major boundary-crossing scenarios in the architecture program.

<b>James</b>						
<i>present*</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	11	22	15	27	30
	<b>Rate of occurrence</b>	10.48%	20.95%	14.29%	25.71%	28.57%

Figure 17 - Code Intersections with the Term "present\*"

"writ\*"

Both the wildcard "writ\*" and "work" demonstrate more occurrences for both James and Nancy. I think, however, that because James tends to exhibit more confidence (and for much longer) in his writing, this estimation of his writing ability and his ability to complete tasks accounts for why the writing intersections in James's transcripts are often not characterized as boundaries or consequential transitions.

<b>James</b>						
<i>writ*</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	14	7	29	42	29
	<b>Rate of occurrence</b>	11.57%	5.79%	23.97%	34.71%	23.97%

Figure 18 - Code Intersections with the Term "writ\*"

"work"

With *work*, though, I think the high instances in relation to boundaries is related to the fact that the amount of work that James is doing is also very closely connected to the perceived risks and rewards (related to Code A) that correlate with the importance of the presentations that James and his group are constantly giving to investors.

<b>James</b>						
<i>work</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	23	32	15	17	54
	<b>Rate of occurrence</b>	16.31%	22.70%	10.64%	12.06%	38.30%

Figure 19 - Code Intersections with the term "work"

"test"

The term *test* and its derivatives most closely connected to networks (Code E) in James's transcripts. Not far behind, was a connection to the code for boundaries (Code B).

<b>James</b>						
<i>test</i>		Self-Efficacy / Personal Engagement	Boundaries	Inventories	Texts	Networks
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
	<b>Total from interviews</b>	3	5	3	2	7
	<b>Rate of occurrence</b>	15.00%	25.00%	15.00%	10.00%	35.00%

## **The Learning Community**

My relationship with James is the longest running one with my participants. During the first semester that I taught him in his freshman composition course, he established himself as one of the most committed members to the architecture program's learning community (LC). The architecture LC brings together incoming freshman who are all interested in enrolling in the architecture major. Students take at least three of their core classes together, and those courses are focused on a common theme, in this case sustainability, a theme that is of particular interest to the college and university as a whole. Though not all of the students in the learning community go on to major in architecture program, they are all exposed to ideas significant to the majors housed in that college. This focus on sustainability opened up opportunities for James to explore what he was learning and his own interests in working on community-centered projects, which I will discuss later in this chapter.

It would be an understatement to say that James was a busy student during his freshman year at college. Working at the campus Chick-fil-A, enrolled in a course overload both semesters, and preparing for the summer boot camp that would make him a bona fide major in the architecture program, he had little time to get caught up with the distractions many college freshman find to while away time. As a member of the architecture LC, he was also exposed to experiences that helped to shape the ways that he began to better understand his own role as a novice designer. During his first semester in the learning community, part of the students' requirement was that they complete a service learning project; part of my own requirements for James's freshman comp class was a component that required the students to complete an observation assignment that involved taking field notes, collaborative writing, and interviewing subjects. Though I offered the option during the semester to incorporate work students were

doing in other classes into the writing we did in the class, James's group was the only one that decided to combine the service learning project with the observation assignment. Though my assignment did not incorporate service learning in its design, I was well familiar with the concept, which I use regularly in the second course my freshman comp sequence. As a result, I was prepared to help the group frame their assignment as they worked. The students were so driven, however, that they needed little more from me than to have a few questions answered and to give them guidance on the elements of their drafts and the final presentation.

The results for his group were remarkable. Not only had they combined the assignments, James also pushed group members to tailor the assignment in such a way as to elevate the architectural interests of two of the group's four members, James and another student. After spending several weeks volunteering with a community recreation center, James's group drafted and submitted a proposal to his LC leaders to renovate the center's rundown playground, an area that suffered from poor drainage and the resultant combination of erosion and standing water. The proposal was accepted and the students were then asked to present the project to members of the local Board of Education. Following a successful presentation and positive feedback, the students were then asked to collaborate with the local board of education on the playground renovations, which would be implemented the following semester. Only James stayed on to do this; the semester ended prior to this aspect of the project, and to James's disappointment the other task students were not as passionate about the task as he was. Still, he was no less excited about the mission at that point in the process.

James, as a result of his championing the work of making connections between the courses and coordinating with the LC director, was invited to work as a student director for the learning community program during his sophomore year. His efforts had been well rewarded. In

my belief, his success with this assignment signals a developing level of intentionality in terms of the types of work that he seeks to undertake; this could easily be perceived as the starting point in a series of choices that led him to apply to work at the Rural Studio. But first he would have to be officially accepted in the school of architecture.

### **Summer Op**

During James's initial interview, he went into details about his first major foray into boundary-crossing territory. The summer following James's freshman year, he participated in Summer Op, an architectural boot camp that both prepares and filters out potential students for the program. Only half of the eighty students involved will even complete the Summer Op and be allowed into the program the following fall. The schedule is grueling. Students were challenged to complete two design projects a day during the first four weeks of the program. The first project of each day is turned in at 9 AM every day to be critiqued at 2 PM. Students received no instructions for the assignment, but they were allowed to ask questions. The professors that lead Summer Op are looking to weed out students who are not able to analyze the problem to come up with a viable solution. Some examples of the kinds of projects students are asked to do include intentionally vague assignments like the following: build a unique cube; design a living billboard. The first project requires students to come up with an unconventional way to put together a cube. James explained, "Mine ended up being like just a set of folded shapes, with canes. I took apart canes and folded them together to make this interlocking cube." When I asked how such a project applied to what he found himself doing later in the architecture program he talked about how one might think about how to design a structure out of unique shapes, or how to analyze how a room works, how one enters a room, how the door opens.

Each project is finished under a severe time crunch in order to get it done before the critiques in the afternoon. After the critiques, students receive a second assignment, the one that will be turned in at 9 AM the following morning. This high intensity design competition continues for the first four weeks of the program. At the end of the four-week period, the pool of students is culled down from 80 to 40 students, and not all of those 40 students will move on into the major.

For the next four weeks, the remaining 40 students were asked to design a pavilion for every college in the university. The final results of those designs would be set up as a room-sized model. Though the pace of the second half isn't as grueling as the first, students are still inundated with a daunting amount of work. Eliminations will still be made, and only the highest achieving of these students will receive a letter of accepts on the day after the second half ends.

During the final part of the program students begin honing their notebooking practices, learning how to produce acceptable sketches; to remember to record information like dates, time and locations into their work; to give details about materials so they can successfully reproduce their ideas later on in various forms. The first week of that period is spent learning drawing; the second is a crash course in visual media and software training; then they are instructed to use what they have learned to complete their final project. At the end of the Summer Op, students are culled once more, leaving a small class that will enter the architecture program in the fall. Many who are turned away from summer op will return to try for a spot later, but this rigorous pre-step offers a stark, slim glance at the exacting five-year degree program.

### **The Rural Studio**

During my first visit to the Rural Studio, located in a small central Alabama town, I watched as third years and graduate students underwent design reviews for their ongoing



projects. The projects that Rural Studio students participate in are specifically developed to give back to the local community: the 20K house project, the Rural Studio greenhouse, the Safe House Black History Museum, the local firehouse, and the Lion's Park playscape. During design reviews of their projects, students present their work to their peers, professors, and visiting professionals and then receive rigorous critiques in order to determine weaknesses to overcome, strengths to accentuate, and relevant issues to consider in their work. On that cold, damp, spring day, the draft design studio, a hollowed out space located in a weathered clapboard in the small town was a testament to the purposeful ways the program operates. The room was strewn with designs, displays, and large-scale models of each group's work. On the wall we faced was a large multimedia representation of the greenhouse students' food study. This study was the first phase of their project and helped to shape their work for the semester. At the Rural Studio, James's primary task was to work collaboratively with other students towards the design and building of a greenhouse housed on the premises where they live. The greenhouse project is particularly interesting because it serves both community residents and students in more than just a "giving to community" function. The greenhouse will be feeding students during the fall and spring semesters as well as the residents of the local community during summer semesters.

The Rural Studio has been in its present location since 1993. The projects that students complete there extend over years, some of them undergoing several iterations in terms of their execution (like the 20K home, which began in 2005). What's more, the people who support the project—students, family, and faculty—extend beyond just those interested in architecture. The Rural Studio defines itself as

a more hands-on educational experience [that assists] an underserved population in West Alabama's Black Belt region...focusing largely on community-oriented work...The Rural Studio philosophy suggests that everyone, both rich or poor, deserves the benefit of good

design. To fulfill this ethic, the Studio has evolved towards more community-oriented projects. Projects have become multi-year, multi-phase efforts traveling across three counties. The students work within the community to define solutions, fundraise, design and, ultimately, build remarkable projects. The Studio continually questions what should be built, rather than what can be built, both for the performance and operation of the projects. To date, Rural Studio has built more than 150 projects and educated more than 600 "Citizen Architects."

Each of the projects that students participate in offer them the opportunity to grow in their craft while simultaneously providing growth to the surrounding community. This seems to be a tenet of the program: students cannot just come to the RS and then leave, they must leave something of themselves there for others, and in exchange those others leave indelible marks with the students as well. Standing on the front lawn of Joanne's 20K home, I overhear a guest discussing calf-production, the biology project Nancy was working on during her final semester in the biology program. In that moment, I realize how other intersections are also being left throughout the experience of traveling through the larger college community of the university both these students attend.

### **Developing a Methodology: Another Way to Notebook**

James, as he develops his methodology, determines a specific path in terms of his design style. His drawings, his notes carefully or carelessly jotted in the margins, his choice of material and tools, are a distinct landscape in terms of how he will *do* architecture as a career (see Images 1 and 2 below). Those components exemplify how he impacts real world landscapes.

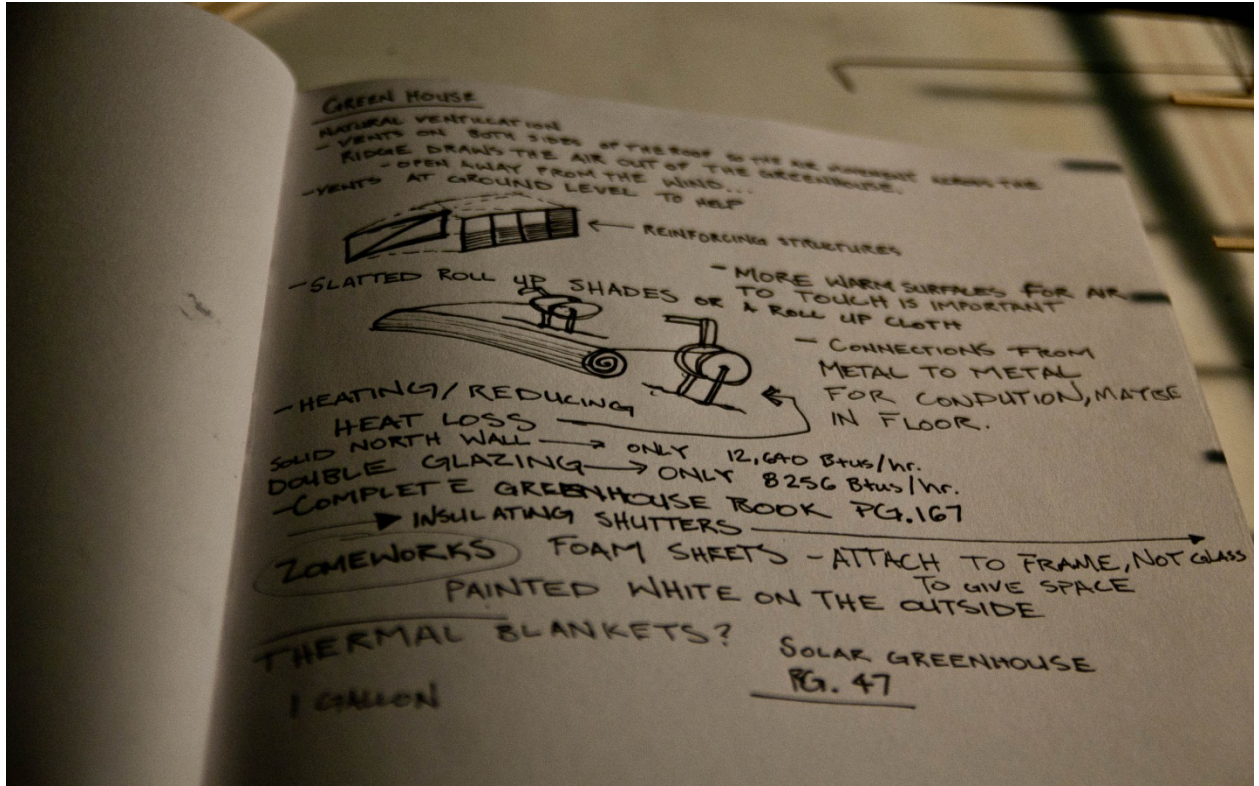


Image 1: Greenhouse Preliminary Design

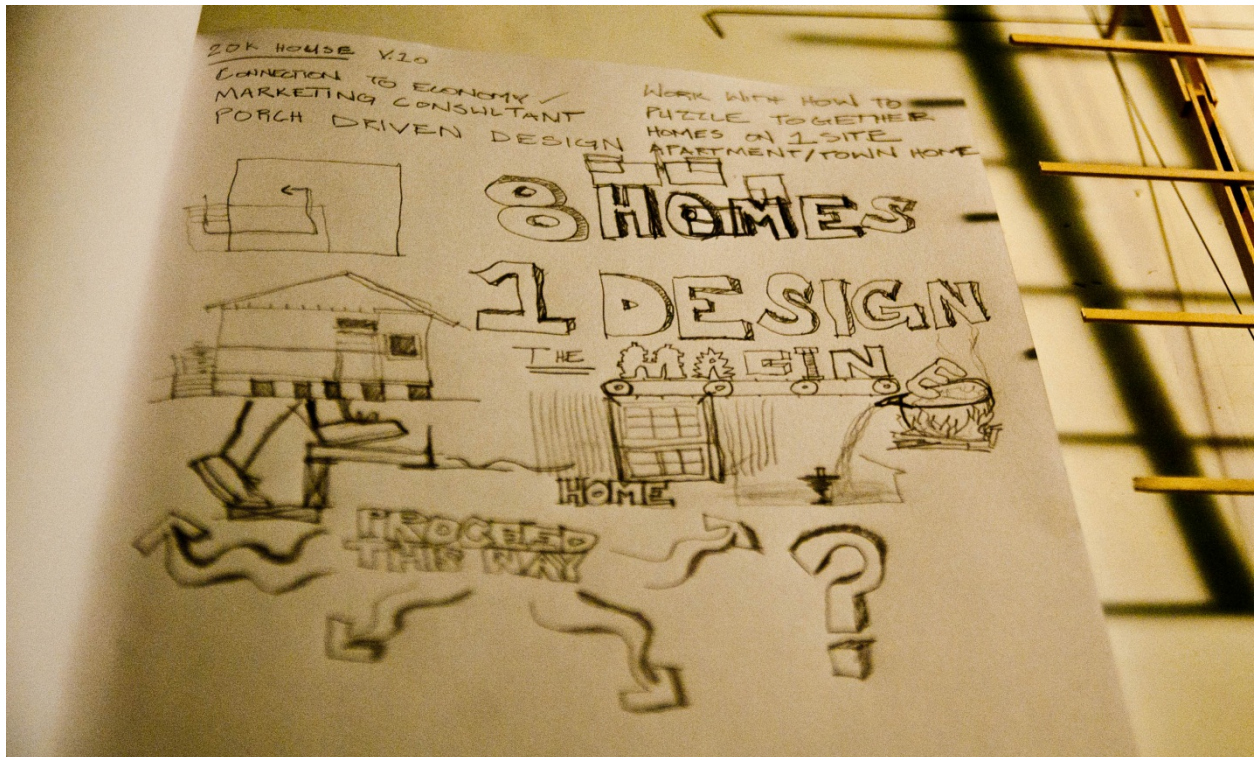


Image 2: Greenhouse Preliminary Design

The profession of architecture calls practitioners to consider how their paths directly affect the paths of others in a physical sense, so James's map takes on several distinct layers of meaning, of which James is well aware. That awareness plays out in terms of what I already knew about James as one of my own students as well as in relation to what I uncovered about him as a participant in this research project. In short, James makes choices about his path that affect layers of meaning as a student, as a designer working on his own projects, as a member of his family, as someone interested in doing work that directly and positively impacts the communities where those projects are located. Interestingly enough, as I reviewed James's use of terms in the transcripts, I began to pick up on an interesting fact that I wish I had considered earlier.

As I looked for writing in his work, it occurred to me that the issue of metaphor is still one that I, a part of the community I want to change, still struggle with when I work with individuals outside my field of study. The same seems true in Nancy's case as well. The problem is that, as an outsider, I am not always clear about what metaphors govern the discourse of my participants. In architecture, drafting involves not just written text, but also drawing and sketching. I must, therefore, push further if my aim is to make connections across contexts. In my initial passes over James's transcripts he referred the words *work*, *writ*, and *present*\* 141, 121, and 105 times respectively. On the other hand, the word *sketch* was referenced 52 times (significant enough to note); *draw* came up 42 times. While it makes sense that references to tasks like writing demonstrates a high rate of occurrence, those rates would necessarily shift in light of unconsidered forms, overlooked out of a lack of broad enough perspective.

### **Drawing His Own Maps**

During the first semester that I taught James, he demonstrated how he was already getting involved, by choice, in the process of creating his own consequential transitions. Whether he

knew it or not, he was engaging with his own learning in ways that are not typical for most freshman students. Even prior to his official acceptance into the architecture program he was investing in both a textual and group dynamic uncommon in his area of study. As Dias (1999), et al describe, “In the work produced over 5 years by the architecture undergraduate one cannot assume there will be a significant body of extended written texts through which progress in the use of architectural discourse may be tracked... There is no written test in design studio” (Location 1822 of 6046, e-book version). Dias goes on to explain the solitary nature of the work done by students pursuing this field:

Because the development of design ability, and there its assessment, are seen in the school as an individual matter, school design projects tend to be individual and not group tasks. This feature, too, is in contrast with –and even appears perversely to contradict—workplace practice, to which collaboration is center, providing another instance in which it only in a partial and indirect sense that the school can be said to provide professional preparation. (Location 3699 of 6046, e-book version)

The difference for James in his program hinges around his work in the Rural Studio, a unique learning experience in architecture. Whereas many architecture student will never venture outside the confines of the campus or the Lee County area for this educational experience, there are some who hope to exact a particular effect on a broader community. The Rural Studio affords a select population of architecture students one such opportunity.

During his work in the Rural Studio, James devised a number of tools and skills to successfully complete this intensive program. He takes traditional lecture notes and modifies them to suit his personal learning needs, keeping a very detailed record of his notes, but also

shifting back and forth from text to image to audio file as it may be necessary to the tasks he is completing. Some of the skills that he acquired are a result of his own interest in certain types of technology, just experimenting with things, whereas some of the traditional skills he brings to the table, such as note-taking, are being modified by the kinds of tools he has at his disposal for that note-taking. When his handwritten notes are not sufficient, he types them into Microsoft OneNote software. As he has learned more about the OneNote technology, those notes have become more detailed and often include recordings of the class that are time synched to the notes as he is taking them. He's also able to link to sources that the instructor is talking about. So what he ends up with is a multi-dimensional, multi-modal process that helps him to get tasks done in much more organized way, in a way that's much more technologically savvy than just a pen and paper or a notebook, though not necessarily any more or less complicated. While in other classes his handwritten notes are more useful to him, these electronic notes now represent a very specific and important addition to his learning tools. He has transferred what he would typically use in handwritten form into this outlined electronic space. The study notes are no longer merely on a page; they are both seen and heard, laid out in finely tuned chronological order. Furthermore, his use of this note-taking form is now a practice, a means of navigating challenging academic material. He has many strategies – many possible paths and modes of navigating the complex linguistic tasks of the college curriculum.

## **Conclusion**

I was riding through the Alabama countryside in the backseat of a school spirit orange Camaro as part of a convoy led by a powder blue early model Ford truck decked out with US and school spirit flags. It was early May, and the Rural Studio was holding its annual pig roast, a day-long event wherein all the students in the program would finally present their work to the

community, colleagues, and their family members. The day would end with an honors ceremony, commending all the students who were successfully completing their tenure in the program and moving on. As I watched the culmination of this work unfold, I realized something. For James and the other students involved in the Rural Studio, the work they do is about directly applying their learning to the communities around them. They do this in the most physical sense, transferring what they know into the tangible world. Furthermore, they are thrown into situations that necessitate the shifts in learning Beach refers to consequential transitions. The risks that James and his peers take are not fabricated; they directly impact the lives of the people of this small town and the surrounding area. Though I don't think that architecture is the only discipline that offers students an opportunity to see this, it is a discipline that values this representation of learning. For James, this is important because he already established, prior to his acceptance into the major, that he was seeking out ways to invest in projects that allow him to craft a particular kind of effect on the community. As a result, I see that James is directly impacting the environment around him – directly changing the map around him – using inherent skills as well as those given to him through his education. As he makes specific choices about his designs, cataloged in his sketches and related images, he maps out a course that may be shaped, though not limited, by pre-existing maps.

## Conclusion

When compositionists, writing studies people, or English instructors in general, discuss the occurrence of transfer of knowledge and skills in writing, they generally refer to the “problem of transfer.” When other researchers—say in cognitive studies, workplace studies, and education in general—discuss transfer, there ceases to be a problem. When the former group of researchers look at transfer, they look for transfer (in very strict terms, usually with a limited definition in mind), bound within narrow parameters and then conclude that significant transfer rarely happens, if ever. Those narrow parameters fail to locate transfer. The latter group uses much wider parameters and generally finds that it happens in multivariate ways. That problem rests in the fact that many of those interested in issues of transfer are hard-pressed to actually observe that transfer *where they seek it*. Most of these researchers are applying Salomon and Perkins’s original conceptualization of transfer as being *near, far, high, or low*; simultaneously, they are looking for it to happen under very strict circumstances, within the confines of an assignment or a classroom, or from one class to a subsequent class.

Given such strict parameters, it is not unusual that researchers seldom observe transfer; the circumstances under which they investigate make this possibility highly unlikely. What is usual is that, based on their failure to observe transfer in these contexts, many researchers then make the claim that transfer is unlikely, highly improbable, or nonexistent (Smit; North; Halpern; Billing). Proof of transfer is thus negated based on the tightly constricted parameters we use to observe it occurring.



The research I've conducted in my study proposes one way of getting at these problems of transfer, rooted in our ways of locating it. I offer the following conditions to those who might want to replicate and improve upon the design:

- 1) The study is modeled with careful consideration of the literature review, fashioned after what we have come to know about the nature of transfer itself.
  - i. It is *multi*, allowing for a variety of data points that can be adjusted based on the literate activities of participants;
  - ii. It adopts a theoretical framework that takes up the repeated geographical metaphor that comes up throughout the literature;
  - iii. It anticipates mutability in the story;
  - iv. It links individuals' motivations to observable networks;
- 2) The study, conducive to longitudinal research, can be expanded across a variety of timelines because it accounts for duration as it seeks out boundary-crossing situations.
- 3) The study makes a place for both qualitative and quantitative analyses as it addresses the data.

There are many ways that I would like to expand upon the research here. As I mentioned earlier, it would be interesting to analyze not only intersections, but also proximities, to uncover how specific codes and terms precede or follow others. Are there patterns there? What do those patterns suggest? I would also be interested in adding in some more specific analysis of subcategories related to the overarching themes. Additionally, adding in terms that might typically be overlooked by a writing studies person in a microbiologist or architect's world would be useful.

### **Notebooks as Tools for Mapping Transfer**

While James and Nancy both utilize a notebooking practice, their approaches are vastly different. In particular, James's practices allow for a larger creative space than Nancy's discipline affords. The evolving changes demonstrated in his notebooks are couched in terms linked to the individual artist's needs and wants rather than the strictures of a particular discipline. The type of notebook Nancy uses now, the standard lab notebook, always contains information that points to a specific type of data or research. In James's notebooks—which may vary in brand and shape or size like Nancy's—the wealth of types of projects alluded to therein is much broader. Nancy's notebooks are maintained not only for her benefit, but for the benefit of others, advisors, as well as future and fellow researchers, in a way that is not expected for James. His notebooks are produced for his own benefit, as a place to create, a space to modify, a record of an inherently changing and designed world. In this way, he can make choice about style and form and content that Nancy cannot. The true shape of his notebooking practices stem from a common goal in architecture students, the development of a methodology.

The differences in their use of notebooks—differences defined by their disciplines—relate to the perceived goals they have established for themselves. But in both cases, their goals and the inherent risks they encounter on the path to their goals, are inextricably related to the means they possess to succeed at prescribed tasks. These conditions define how each participant exhibits self-efficacy as each progress toward academic and professional goals. Because they are both what I would call *driven*, they define that grittiness that Duckworth describes. They are aware of the fact that they will encounter specific challenges. To meet those challenges, they assess what they know and what more they need to figure out. Furthermore, they do not necessarily imagine these tasks will be accomplished easily; rather, they anticipate working to get *there*. They anticipate challenges on the road, scenarios during which self-efficacious

behavior becomes an important orienteering tool, guiding them to seek out specific answers related to their circumstances: *What task am I attempting? What have I done before that looks like this? Who can I work with? What tools will I need? What are my terms?*

In Nancy's case, her records of cattle DNA are data that others—professors, post docs, and fellow graduate students—will share and discuss. The replication of that data, the fact that it will be reviewed, establishes a goal for her, one related to the relay of information. In the process of establishing this goal, of understanding what it is she must do, Nancy taps into her self-efficacy. She determines to use what she already knows about compiling scientific notebooks and add to that knowledge what she knows other will need to be able to glean from her notes. Further, the successful or unsuccessful ways people are then able to use her notebooks, helps her to return to those notebooks and repeat or revise the layout of their contents. As she develops in terms of her professionalization, she consistently seeks out guides in the forms of people and texts to map and travel her route.

James's notebooks work differently, but to similar ends. Though others may look at his notebooks, they primarily serve his own ends, as records kept as he works to develop his architectural methodology. His sketches and related notes and specs help him to map out how he *does* architecture. He looks over the sketches and notes as reminders about physical spaces and what structures fill or will fill those spaces. During one of my observations at the Rural Studio, a visiting architect, well-established in the field, spoke to them about how these massed collections of sketches helped him as he developed his own methodology. He discussed how his compiled lists of materials, the marginalia of sketch books, helped him to recall important details, how notes about the histories of neighborhoods, communities, and the people living therein, helped him to recall necessary facts about where he was building and who would inhabit those

buildings. And he brought with him at least a dozen of his own sketchbooks, different from James's own, but with similar combinations of drawings, notes, and ideas. The fact that this visiting architect still maintains his archive speaks to a similar development in James's professionalization. And James's desire to become a certain type of architect—one invested in designing structures that serve communities in terms of both utilitarian and pleasingly aesthetic ways, honed his self-efficacy toward that goal. He expected and was prepared to meet certain challenges; he asked for directions; he backtracked when necessary; and he always continued toward his goal.

### **The Traceur**

Envision the *traceur*. Standing on the roof, a solitary figure, we might imagine him filled with despair, but then a hop, a skip, he takes several quick paces toward the edge and leaps—falling

flying—

onto the fire escape of an adjacent building, her motions fluid as he uses all but the actual stairs

—somersaulting, swinging between the spaces of the bars like a trapeze artist,

descending, cartwheeling over landing corners

—to reach the ground below.

In the practice of *parkour*, the *traceur* is the composer, whose body interprets the text of the path into some unexpected trajectory. And, very much in keeping with de Certeau's discussion of paths and myths, the *traceur* creates a new path by redetermining how and where and when to make contact with the superimposed, traditionally mapped path. In the process of reinterpreting the dotted line that points out where one is and where one is going [YOU ARE

HERE], the *traceur* takes part in what de Certeau describes as myth-making, reappropriating the surfaces s/he encounters in order to move those predetermined paths in new directions.

In each case study, notebooks become a primary tool for creating a map of the experiences of the student or student writer, de Certeau's *traceur*. Notebooks are a tool for identifying important landmarks, instructions, waypoints, and guides. In a sense, the notebooks chart out each participants' path of desire, superimposed over the Concept City of the university (or the disciplinary study) represented in de Certeau's model. Knowledge about where students' maps point both equips students and teachers to help students meet specific goals in a way that is meaningful to both parties.

In James's case, he maintains a clearer sense of what he encounters as he progresses toward the goal of completing the greenhouse; at the same time, he is developing his own personal methodology, devising his own means for architectural problem solving. Many of James's encounters manifest as difficulties that require him to reroute and backtrack, to circumvent and improve on the way to the completion of the project. Each revision of the greenhouse plan offers a space for observing James's (and his group members') movements caught up in the process of consequential transition. The groups' use of what they refer to as trash paper reinforces this idea. An expected tool of the trade, trash paper becomes a receptacle of revision, an early draft of the mapped design, developing over time, the landscape being filled in and made permanent in the process. These early drafts, these roughed out sketches of the proverbial landscape provide other means of thinking about James's map of transfer.

The drafting, developing design reveals those moments of consequential transition, moments when James pulls from what he and his group know in order to complete tasks. This is the map of what transfer looks like. It looks like James and his peers collaborating, reinterpreting

their design based on what they are learning in lectures, based on materials they acquire through sponsored donations, based on restrictions they encounter in their original plan. Manipulating the moving parts involved in the process leads to their successful transfer of those components into a finished design, one that stands at the end of this particular path of desire, a path that is part of James's transfer network.

Nancy's notebooks map this progress in the form of a catalog of steps made as she develops her genetic experiments. Similar to the work James does with his group members, Nancy encounters a task and applies what she understands how to do (testing DNA profiles in her experiment against earlier tests) with concepts she encounters in her coursework. Differently from James's experiences as a member of a group working toward a common goal though, much of Nancy's work happens independently, in isolated experiments in which she collects her own finding and then connect those findings to what others have observed. Her consequential transitions occur most when she is figuring out how to apply what she knows about the data she collects to a particular model. For example, she is trying to figure out how to apply statistical models to her findings, she reaches a point where she is confused about how to aggregate her data for a professor. While she is sure she is missing some key element in terms of how she represents the data, she is initially unsure as to how to proceed. Should she talk to the post-doc in her office, the other graduate students, or her professor? Her frustration with these questions mounts until she finally decides to go directly to the professor, at which point she discovers that (1) her data collection looks sounds and (2) her professor is happy to show Nancy what she is missing and how to correct for it in her data analysis. In later reflection, Nancy can almost laugh off the worry she experienced in that moment of transition. Essentially, she was on a path of

desire that, while uncertain, was in fact moving her in the direction of her perceived goal. She merely needed a guide to answer her questions.

Using de Certeau's framework allows for a model of transfer that accounts for layered movement within a series of networked practices and goals. These case studies reveal the following about transfer:

1. Moments of consequential transition often map onto students' notebooking and parallel practices in the form of their selective process, not only what gets worked into but also what gets scratched out of the final product.
2. Transfer is often happening in the middle of the selective process.
3. Understanding individual's goals helps students and people in their networks (peers, teachers, and other sponsors) to identify the boundaries that touch up against potential moments of transfer.
4. Teaching for transfer then requires methods that help students and teachers alike to account for those moments when students demonstrate *gritiness* by digging in their heels and investing in the remapping process, connecting what they know to new tasks.

In writing studies we need to adopt methods like the Learning Record that make use of students' awareness of their goals and their awareness of the tools and skills they both possess and lack to achieve those goals. This sort of pedagogical model helps us to facilitate self-efficacious behavior in our students. A pedagogy that points to students' knowledge of their own skills and tools help to hold students accountable for their effective use of that knowledge. Furthermore, holding students accountable, being aware of what they know and need to know, means those students can then weigh the cost of how badly they want to work to get there. Are they following an established path or trudging out a demarcation for a new path? While we cannot force them to

travel a path they do not desire, we can help them navigate the terrain more effectively, empowering them to meet success when they take on their own navigation. Consequently, if our pedagogy makes spaces for students to engage in this process, it simultaneously makes a space for us to research and document how it occurs, allowing us to verify and validate how we help them in the process of their navigation.

Imagine what would happen if we could get our students to meet the challenges of the composition classroom with this level of freedom, confidence, ingenuity. In composition studies, early interpretations of transfer indicate that this sort of engagement is impossible, that students simply do not transfer writing skills in a way that would be considered repeatedly innovative. But the *traceur* is part of a different myth, the one that stands outside of the traditional notions of transfer, notions which require that one use the tools, the landscape, in precisely the same way over and over. Traditional notions of transfer miss what newer notions of transfer and theories about multimodal, laminate, activity-focused theories do not: each traveler *must* bring to the path myths, stories of the path as it existed before that traveler's arrival; each traveler must also bring along whatever tools permitted her/his presence at a given point in time; each traveler must decide how to travel the path based on how s/he has been prepared to use those tools in interaction with the landscape that unfolds. As teachers, we may merely point out the terrain, marking the spaces that are specific to travel (roads, sidewalks, stairs), or we may demonstrate to our students that they have the option of interpreting such boundaries differently, thus rewriting the myths that precede them. Imagine this classroom and the empowering nature of such a pedagogy.

Thinking about transfer as a transformational phenomenon that occurs in multiple directions brings me back to my own experiences as a traveler in the academic landscape.



Though I came into the Comp/Rhet program with some idea of what I might expect, I have often had to do my own reconnaissance, to modify the maps I'm given, in order to accomplish goals like completing seminar papers and teaching classes. I have also had to do my own reconnaissance to find out more about processes and products like IRBs and student loan paperwork. And as I pass on what I learn to other people, my peers, students, and coworkers, again, I can see that the nature of this transfer of learning is always moving in more than one direction. This broader conception of the metaphor of transfer, seems to offer a much richer landscape for thinking about writing.

My own progress in my profession has placed me in a position similar to that of my study participants. During my second round of graduate study, I have had to remember how to study, how to be student. I have had to develop a clearer understanding of what professional *do* in the field of rhet/comp. When I applied to graduate school, I was bringing with me several years of teaching experience and an even longer history as a student, having already completed undergraduate and master's degrees. Surely, it could not be said that I wasn't drawing from those stores of knowledge and experience, transferring them and repurposing them, to meet this new goal, to accomplish new sets of task, to encounter risks and rewards. Any challenges I met along the way were a part of the network of boundaries, forded by means of self-efficacy, that make up my own map. My own ways of traveling this map point to transfer as well.

As both Nancy and James use their practices—in self-efficacious form—the network of texts, practices, boundaries, and people points to the location of transfer at the boundaries. The boundaries are what we must spend more time examining, charting where the tasks they have to accomplish put them in situations ripe for transfer. My study helps to demonstrate where this happens for two individuals. Furthermore, I believe larger and more extensive examinations

would help us to not only record and assess it, but also to help our students make better use of it as we teach them to use writing as a tool in this process.

### **A Step Back**

In the early stages of my dissertation project, many of my conversations circled around the idea of pedagogy. I wanted to do this project because it seemed so clear to me that I was seeing transfer all around me, in my own life, and in the lives of my studies. Oftentimes the transfer was successful, but almost as often it was more the struggle to cross a boundary that was clearer to me. The pressure and desire and will to succeed were more apparent than the success, ever dwarfed by some new challenge. The site at which transfer occurs is just along that border of each new boundary.

I relate this geography of boundaries to my own experiences with maps, as an individual who has experienced them in many ways: in my own version of de Certeau's Concept-City (the PhD program); as an avid hiker; as a road-tripping weekend warrior college student; as a former over-the-road truck driver. Each scenario presented to me a set of immediate challenges that called me to, often unconsciously, pool together resources, inventories, of skills and knowledge. Often, the crossing was all I could attend to at the moment.

For our students, this means that we ought to pay careful attention to the boundaries we create for them. Simultaneously, we need to act as guides, trail blazers, who demonstrate where they encounter those crossings. The scenario here doesn't require an overhaul of what we teach, but it means that we help students get started with a clearer approach to how they *do* academic writing. Some of them are adventurous by nature; they will seek out boundaries. They regularly tap into their own self-efficacy and goals. They are naturally gritty, at least in terms of our classroom. There will be others who will need some prodding. And some will refuse. It is their

right to draw on the map “I AM HERE.” Oftentimes, this student is like Nancy, who had to take step or two back before tackling her academic goals. She had to relocate her path of desire. This philosophy of guided boundary-crossing has particular bearing on our pedagogical approaches to teaching first-year writing courses where students are introduced to the practices and tools necessary for approaching academic, and later, professional, writing tasks. Both James and Nancy were, I think, well-prepared for the crossings they encountered. They sought out and established networks for addressing their developing professionalization, but this is not always the case for many students.

This study illustrates one way of enriching how we make research out of our efforts to teach for transfer. Further, it points to pedagogy that *reinterprets* our roles and those of our students into cartographers of their own pursuits, mapping these processes as we continue to fill in layers of detail. If the metaphor has become rigid, reconsider it, expand it on its own terms; add landmarks, weigh stations, road maps, signals, gore lines, rest stops, and – especially – a path of desire.

## Appendix

- A. Brandt's Initial Interview Questions
- B. Nancy's Binder: Outer View
- C. Nancy's Binder: Table of Contents
- D. Nancy's Binder: Pages in the Notebook
- E. Nancy's Grad School Notebooks
- F. Nancy's Electronic Filing System (an Evolution)

Appendix A: Interview Script from Brandt's *Literacy in American Lives*

**Demographic Questions**

Date of birth

Place of birth

Place of rearing

Gender/race

Type of household (childhood)

Type of household (current)

Great-grandparents' schooling and occupations, if known

Grandparents' schooling and occupations, if known

Parents'/guardians' schooling and occupations, if known

Name and locations of all schools attended

Other training

Degrees, dates of graduation, size of graduating class

Past/current/future occupations

**Early Childhood Memories**

Earliest memories of seeing other people writing/reading

Earliest memories of self-writing/reading

Earliest memories of direct or indirect instruction

Memories of places writing/reading occurred

Occasions associated with writing/reading

People associated with writing/reading

Organizations associated with writing/reading

Materials available for writing/reading

Ways materials entered households

Kinds of materials used

Roles of technologies

### **Writing and Reading in School**

Earliest memories of writing/reading in school

Memories of kinds of writing/reading done in school

Memories of direct instruction

Memories of self-instruction

Memories of peer instruction

Memories of evaluation

Uses of assignments/other school writing and reading

Audiences of school-based writing

Knowledge drawn on to complete assignments

Resources drawn on to complete assignments

Kinds of material available for school-based writing /reading

Kinds of materials used

Roles of technologies

### **Writing and Reading with Peers**

Memories of sharing writing and reading

Memories of writing and reading to/with friends

Memories of writing and reading in play

Memories of seeing friends reading and writing

Memories of reading friends' writing

### **Extracurricular Writing and Reading**

Organizations or activities that may have involved writing or reading

Writing contest, pen pals, and so forth

### **Self-Initiated Writing or Reading**

Purposes for writing and reading at different stages

Genres

Audiences/uses

Teaching/learning involved

### **Writing on the Job**

Purposes for writing and reading at different stages

Genres

Audiences/uses

Teaching/learning involved

### **Civic or Political Writing**

Purposes for writing and reading at different stages

Genres

Audiences/uses

Teaching/learning involved

### **Influential People**

Significant events in the process of learning to write

### **Purposes for Writing and Reading Overall**

#### **Values**

Relative importance of writing and reading

Motivations

Consequences

### **Current Uses of Reading and Writing**

All reading and writing done in the six months prior to the interview

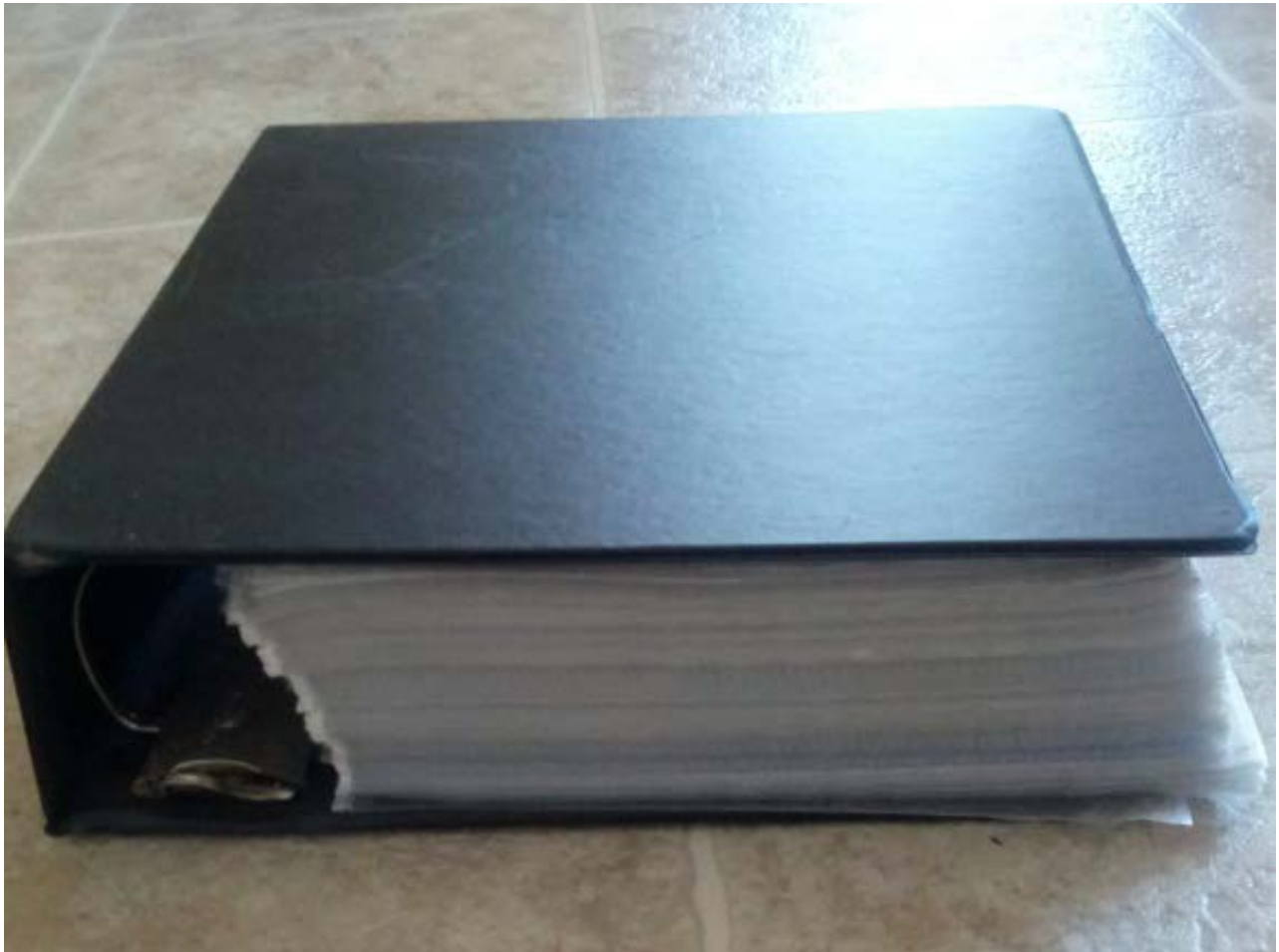
### **Sense of Literacy Learning**

Interviewee's own sense of how he or she learned to read and write

Sense of how people in general learn to read and write



Appendix B. Nancy's Binder: Outer View



Appendix C. Nancy's Binder: Table of Contents



Page Title	Page #
1. Little Prince	2
2. CIP	3
3. JFD	4
4. Outings	5
5.	6
6.	7
7.	8
8.	9
9.	10
10. Supplement to Outings	11
11.	12
12. Terminology	13
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17. Terms	18
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26.	

Page Title	Page #
1. Human Medical System	27
2. JFD & Koro Koro	28
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4. Terms Related to JFD	30
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19.	45
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25.	51
26.	52

Appendix D. Nancy's Binder: Pages in the Notebook

32

double lateral crest  
dorsal fin  
cartilage

vertebrae  
dorsal  
spinal  
cervical  
thoracic  
lumbar  
sacral

pharynx  
larynx  
trachea  
bronchi  
lungs

stomach  
intestine  
pancreas  
liver  
gallbladder  
bladder  
ureters  
kidneys  
urethra  
penis

testes  
epididymis  
vas deferens  
seminal vesicle  
prostate  
urethra  
penis

ovaries  
uterus  
fallopian tubes  
vagina  
cervix  
vulva  
clitoris  
penis

64. blue mandible  
black crest  
white rump  
yellow rump  
green rump  
red rump  
pink rump

65. red mandible  
green rump  
pink rump

66. white rump  
yellow neck  
black rump  
white rump  
yellow rump

67. yellow hood

68. pink lateral crest

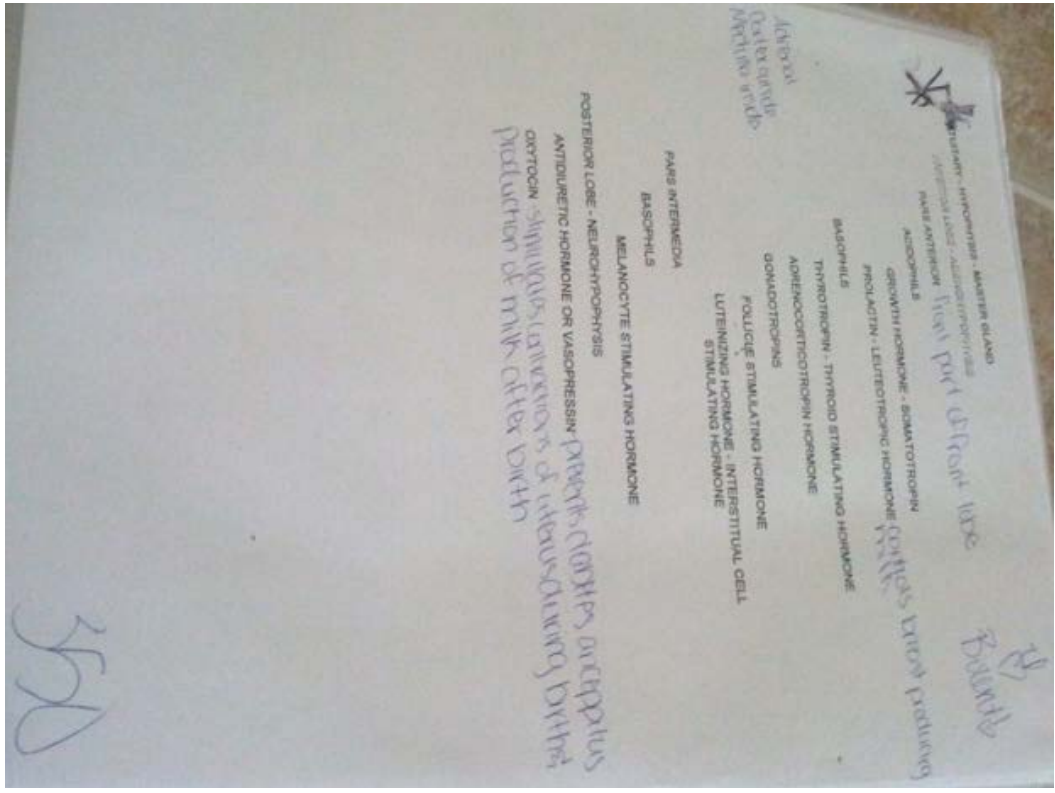
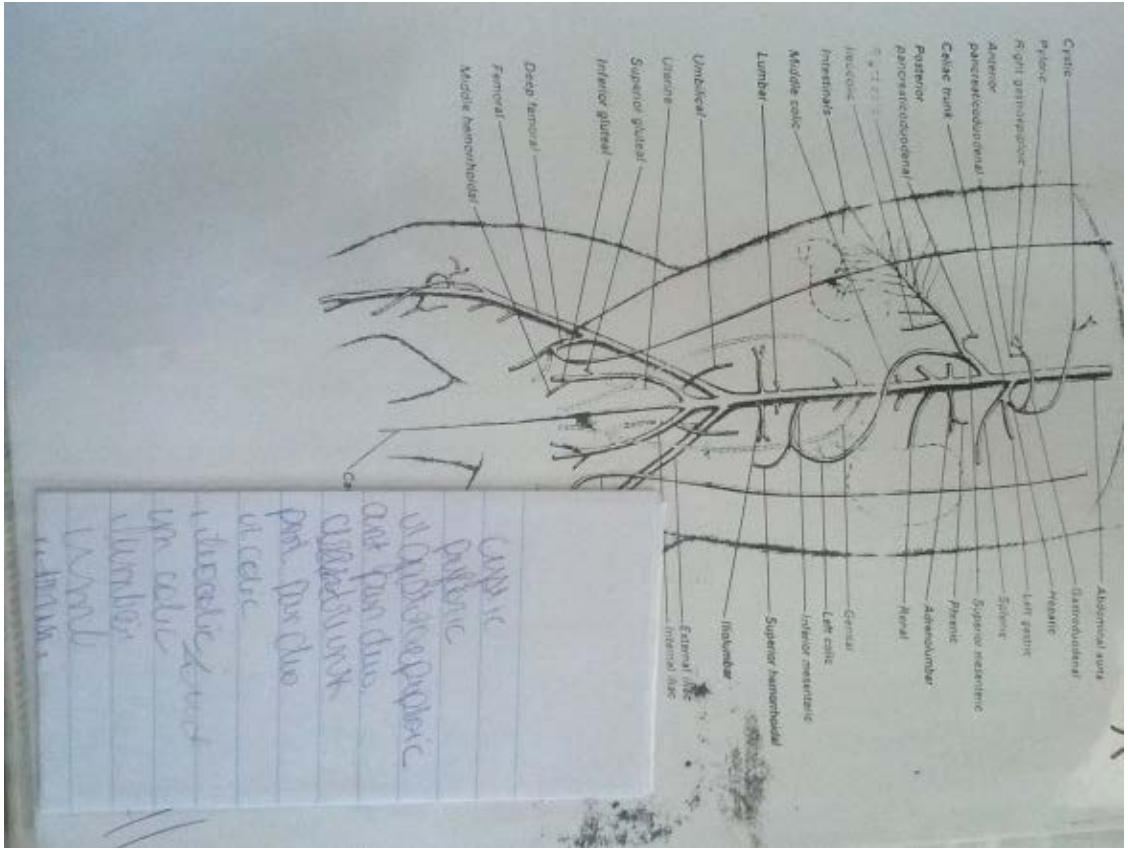
69. red radial crest  
white radial crest  
yellow lateral crest

70. red rump  
green rump  
black rump  
white rump  
yellow rump

71. green rump  
white rump

72. white rump  
red rump  
black rump  
green rump  
yellow rump





# Anatomy

WHAT IS THE NAME OF THE MAJOR EXCRETORY ORGAN IN THE CAT  
1. kidney  
WHAT IS THE NAME OF THE MAJOR EXCRETORY ORGAN IN THE  
EARTHWORM  
2. metanephridia  
WHAT IS THE NAME OF THE MAJOR EXCRETORY ORGAN IN THE  
EARTHWORM  
3. metanephridia  
WHAT IS THE NAME OF THE MAJOR EXCRETORY ORGAN IN THE CRAYFISH  
4. green gland  
WHAT IS THE NAME OF THE STRUCTURE IN THE PROTOZOANS THAT  
ELIMINATES WATER  
5. contractile vacuole  
GIVE THE NAME OF THE THREE MAIN INSIDE SECTIONS OF THE KIDNEY,  
LIST THESE STRUCTURES FROM LATERAL TO MEDIAL

- 1. cortex
- 2. medulla
- 3. renal pelvis

GIVE THE NAME OF THE FILTER IN THE KIDNEY  
THIS FILTER CONTAINS FOUR MAIN PARTS, GIVE THE NAMES OF THESE  
FOUR PARTS FROM PROXIMAL TO DISTAL

- 1. glomerulus
- 2. capsule
- 3. proximal convoluted tubule
- 4. distal convoluted tubule

WHAT IS THE NAME OF THE ARTERY THAT SUPPLIES THE KIDNEY WITH  
BLOOD

renal  
THE ARTERY THAT SUPPLIES THE KIDNEY ORIGINATED FROM WHAT  
ARTERY

aorta  
INSIDE OF EACH FILTER IS A CLUSTER OF BLOOD VESSELS, WHAT IS THE  
NAME OF THESE BLOOD VESSELS

glomerulus  
EACH FILTER IN THE KIDNEY IS CONNECTED TO WHAT ON THE DISTAL  
END

ureter

3/5/21

# Appendix E: Nancy's Grad School Notebooks

Table of Contents		Page
Colony picked PCR, seq		26 & 27
Plasmid isolation Protocol		28
Genomic Primers		29
Allele Specific Primers & Gradient PCR		30 & 31
Genomic DNA Extracted from Tail Issue		32
Cl of AS primers		33
Optimization for AS process		34 & 35
DNA concentrations (extracted + 50)		36
AS test of known genotypes		37 & 38
AS test of unknown animals to ID carriers		39 & 40
PCR of genomic DNA using exon primers (#27) pooled DNA		41
AS testing sorted		42 & 44
Genomic pooled products sent for sequencing		43
Optimization of PCR conditions for exons 14, 5, 6, & 11, 12		45 & 46
AS test of litter 109		48 & 49
AS test of litter 110		50 & 51
PMT of litters 109 & 110 - carriers		53
DNA concentrations of litters 109 & 110		54
DNA pools for genomic PCR & sequencing		55
Touhdown PCR on exon 5		56
PCR of exons 2, 3, 7, 14, & 15A using new pools		57 & 58
DNA extracted from whole blood (litters 1 & 2)		59
DNA concentrations - 109, 109, 109, 109, 109, 109, 109, 109		60

SCIENTIFIC NOTEBOOK CO.

Project No. \_\_\_\_\_ TITLE: YFP Carrying / DNA Extraction  
 Book No. \_\_\_\_\_

From Page No. \_\_\_\_\_

Primer Pairs:  
 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24  
 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

Genomic DNA Extraction from tail tissue  
 Animals: 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200

1. 1.5 um section of tail cut
2. Add 200 um of 50 mM Tris, 100 mM EDTA, & 0.5% SDS soln. Add 55 ul
3. Incubate at 56°C overnight, using rotator.

Gel run on gradient PCR

Primer	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Top	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A	1A
Bottom	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	2A

Witnessed & Understood by me, \_\_\_\_\_ Date: 14MAY12 Invented by: \_\_\_\_\_ Date: \_\_\_\_\_ To Page No. \_\_\_\_\_  
 Recorded by: (Amin) \_\_\_\_\_

Project No. \_\_\_\_\_ Book No. \_\_\_\_\_ Page No. \_\_\_\_\_

Primers were used in equal amounts. C.T suggests that I use 3x more allele specific primers vs other genes primers.

04032011

**GDC8510-Yin**

**Mutational Analysis**

Overview 1  
 Overview 2  
 Paper discussion: Loss-of-function mutants: daf2 & bcl2  
 Paper discussion: Gain-of-function mutants: bax & bcl2  
 Paper discussion: Transcription-mediated apoptosis enhancer  
 daf2

Genetic Pathways and Genetic Analysis  
 Overview 1  
 Overview 2  
 Paper discussion: Transmembrane signaling pathway  
 Overview 1  
 Paper discussion: Wnt signaling 1  
 Paper discussion: Wnt signaling 2

Epigenetics: epigenetics

**Mutational Analysis**

**Outline**

- What are mutations and how do they affect gene function?
- How do we generate mutations experimentally?
- Designing mutant screens [1]

**Why do a Mutagenesis?**

1. To learn the function, or functions, of a gene or protein.
2. To learn what genes function in a biological process or system.
3. To learn about a biological process or system, itself.

**Experimental Mutagenesis**

- Genetic analysis relies on variation.
- Phenotype traits
- Clonality
- Variation arises through mutation (DNA level)
- Spontaneous mutation rates are low
- Spontaneous mutation rates are low
- Mutagenesis studies create new variation

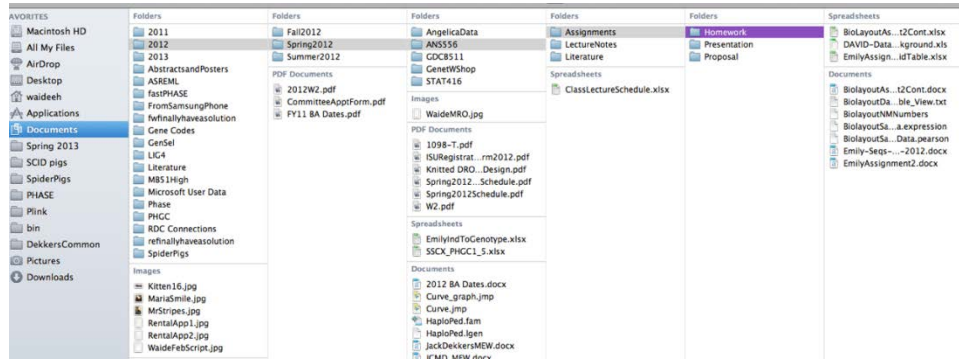
**Outline**

- Why do a mutagenesis?
- What are mutations and how do they affect gene function?
- How do we generate mutations experimentally?
- Designing mutant screens.





## Appendix F: Nancy's Electronic Filing System (an Evolution)



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