CHAPTER 3

BUILDING A CONCEPTUAL TOPOGRAPHY OF THE TRANSFER TERRAIN

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SIGNPOSTING: WHERE WE ARE HEADED

At the close of their essay exploring the role of dispositions in writing transfer, Dana Lynn Driscoll and Jennifer Wells (2012) comment on a problem that plagues researchers as they attempt to understand and explain complex phenomena such as learning. When scholars focus on one kind of theory—just like the six blind men and the elephant—they are likely to end up with a partial or distorted perspective. Driscoll and Wells (2012) ask, "How might the field create a map that simultaneously focuses on multiple theories of transfer?" One way would be to gather key theories of transfer together in one place and, then, starting with a few pieces, gradually begin to chart the relationships between them, as the *Elon Statement on Writing Transfer* does in its text and visual graphic. In this chapter, I take another step. Working with selected features from the *Elon Statement's* visual, I offer a conceptual topography of the transfer terrain. In the spirit of the Statement's invitation to "continued inquiry and theory building," I begin forging linkages between selected theories to deepen our understanding of some of the document's core concepts and principles as well as point to new pathways and relationships for further exploration as writing studies teachers and researchers.

To demonstrate the project's adaptability to other kinds of critical transitions, my point of reference for this discussion will be Western Washington University's (WWU) first year writing program where only MA-level graduate students teach the first-year writing course.[1] These graduate student instructors (GSIs) must learn to occupy dual roles as teacher and learner simultaneously as they continue to re-envision themselves, their teaching, and their course over six quarters. Thus, this population offers a rich site for thinking about multiple theories of transfer and learning during periods of liminality and critical transition, when the relations between individuals and the social activities they are engaged

in are constantly changing. Mary Jo Reiff and Anis Bawarshi's observations about the first-year writing course as a "transition point" and "site for disrupting the maintenance of strict domain boundaries for new undergraduates" (2011, p. 331) may be even more applicable to the GSIs learning to teach this course.

In the mapping expedition that follows, I focus primarily on the third working principle of the *Elon Statement* that states: "Prior knowledge is a complex construct that can benefit or hinder writing transfer. Yet, understanding and exploring that complexity is central to investigating transfer" (2015, p. 4). I explore the complexity of the connection-making process between prior knowledge/learning and new knowledge/learning during periods of critical transition by unpacking the subtle distinctions between forward and backward forms of transfer. In forward transfer, the focus is on how prior or current knowledge/learning influences new or future knowledge/learning. In backward transfer, the focus shifts to the ways that new knowledge/learning can influence prior knowledge, often knowledge that is still developing. I then introduce a new category of backward transfer called "retrospective understanding." Retrospective understanding directs our attention to the transition process itself and illuminates the roles that dispositions, motivations, and meta-awareness play in transformative forms of transfer and in the development and expansion of expertise. Understanding transfer processes in connection with the development of expertise suggests an additional trajectory: As individuals travel deeper into a domain or discourse (and in order for individuals to travel deeper into a discourse), general knowledge becomes "reconstituted" into more specialist and nuanced understanding (which, for all intents and purposes, is *new knowledge*). This gradual transformation of general knowledge into specialist knowledge also aligns with discussions about the role that threshold concepts play in supporting transfer and furthering expertise. Finally, I suggest how the furthering of expertise is tied to both the individual and the community's capacity for modification. Over the course of six quarters, most GSIs will undergo "significant cognitive retooling." How much retooling occurs depends in part on their capacity for modification of prior knowledge and practice and in part on the First Year Writing (FYW) program's ability to adapt to the ever changing community of practitioners. For some GSIs, this critical transition may eventually become a "consequential transition" as the FYW program makes its mark on them and they make their mark on the FYW program.

I begin with a stripped-down view of the territory represented by the three overlapping spheres (learner, context, and knowledge) from the *Elon Statement's* visual graphic. As shown in Figure 3.1, I have labeled each of these spheres with the corresponding marker from the WWU first-year writing program: Graduate Student Instructor (learner), WWU First-Year Writing Program (Context), and

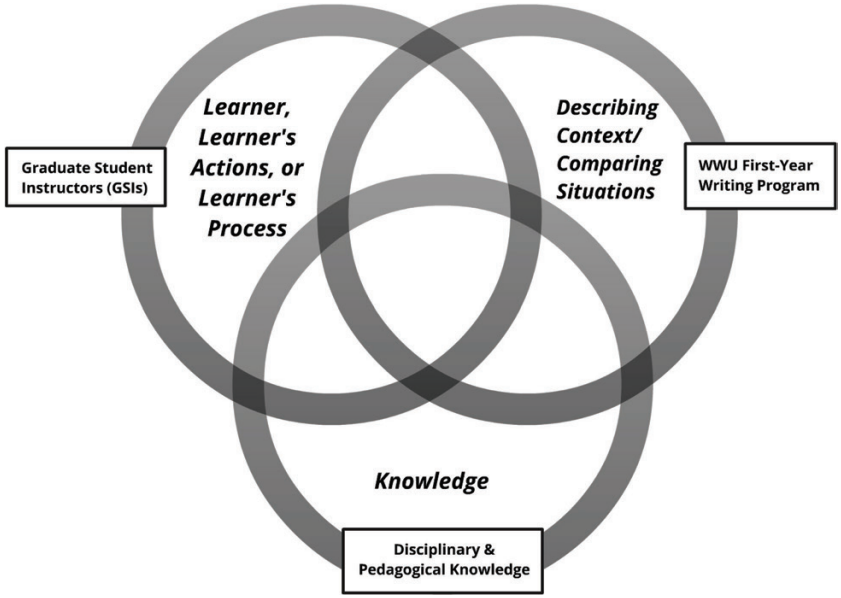

Figure 3.1. *Base Camp: The three territories of the Elon Statement's visual graphic and corresponding WWU first-year writing program markers.*

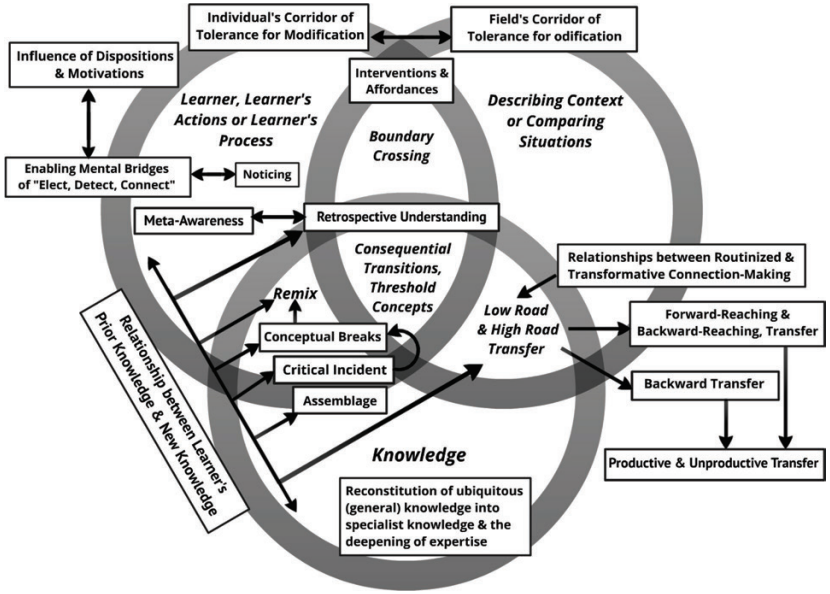

Figure 3.2. *A conceptual topography of the Elon Statement's visual graphic populated with additional signposts and new layers.*

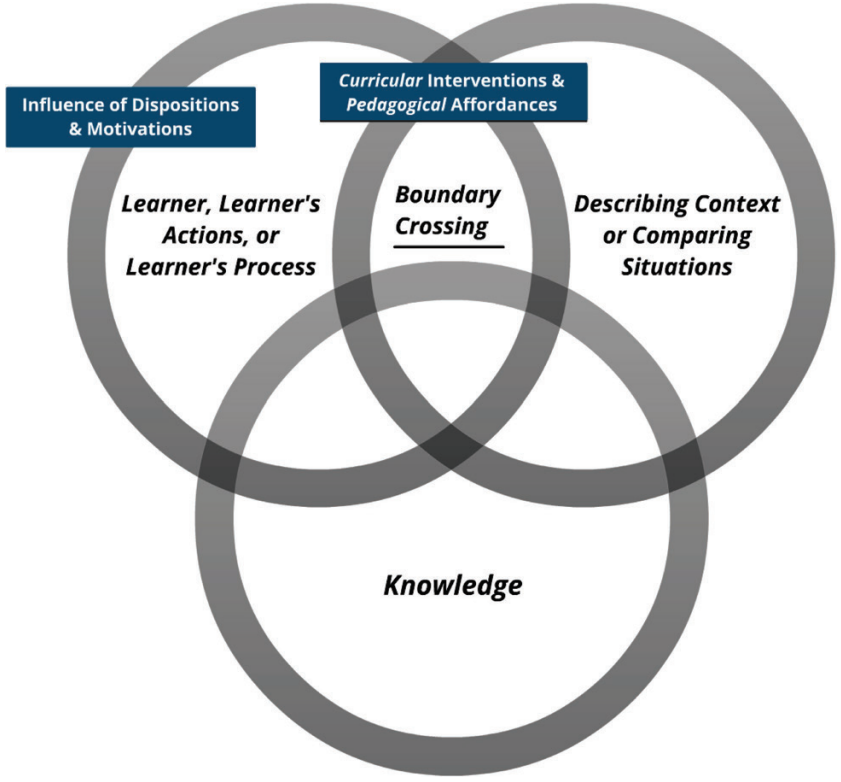

Figure 3.3. Mapping the terrain, first stop.

Disciplinary and Pedagogical Knowledge (Knowledge). Over the course of this chapter, I will slowly repopulate this map by pinning additional signposts from the *Elon Statement* visual as well as layering in new landmarks that will take us deeper into the conceptual terrain. Figure 3.2 depicts an aerial perspective of where we are headed. This more densely inhabited landscape reveals the general location of things. Gradually, I will bring the concepts and the links and pathways that connect these markers into visible relief as I zoom in to examine GSIs' critical transitions in learning to teach first-year writing.

CONTEXT AND DRIVERS OF THE FIRST-YEAR WRITING PROGRAM

Describing Context: The First-Year Writing Program

Except for the WPA and Assistant WPA, only MA-Level graduate students teach the first-year writing course. Half the staff turns over every year. Thus, the

first-year writing program functions as a kind of way station where everyone except for the resident WPA is passing through en route to somewhere else. Indeed, Terttu Tuomi-Gröhn and Yrjö Engeström's (2003) concept of "boundary-crossing" (a key landmark in the *Elon Statement*) captures the experience of GSIs. These GSIs, who have come to Western Washington University for further study in literature or creative writing, are asked to teach composition. They are "entering into territory in which [they] are unfamiliar and to some [large and] significant extent, unqualified" (Tuomi-Gröhn, Engeström, and Young, 2003, p. 4). The constant movement of new teacher-learners into and through the program, where the flow of knowledge, ways of knowing, identities, dispositions, and goals are always in flux, gives rise to a culture where both individual understanding and programmatic approaches to writing, learning, and teaching are continually examined, re-articulated and re-designed.

Almost all graduate students enter the terrain of the first-year writing program with no specialist knowledge of composition and rhetoric, and most have no prior teaching experience. A few bring experience as writing center assistants or teacher aids, and one or two have taught high school or spent a year teaching abroad. Most are in their mid-twenties; a few are thirty or older. Unlike many universities where graduate students are required to complete course work prior to stepping into the classroom, new GSIs begin teaching their first quarter. Both new *and* returning GSIs arrive on campus a week before fall quarter commences for "Comp Camp," an intensive, weeklong orientation. While returning instructors play a role in ushering new instructors into this community of practice, some of the information at Comp Camp will be new to them as well, since the texts and parts of the curriculum change every year. New instructors take a seminar in composition theory and pedagogy during their first quarter. In addition, all GSIs meet formally throughout the year for weekly staff meetings and day-long, end-of-quarter paper and portfolio readings.

Drivers that Support Transitions

Like most social contexts, the first year writing program employs certain mechanisms or "drivers" that are intended to support (or "drive") the development of GSIs' practice and to acclimatize them to the discourse.[2] Curricular and programmatic interventions and pedagogical affordances are external supports. Individual dispositions and motivations are internal drivers.

Curricular and programmatic interventions refer to the actual content of the first-year writing course and the program structures that the WPA puts into place each year to "intervene" and guide GSIs' socialization and enculturation into this community of practice. Specifically, these interventions include the

aims of the program, the course texts and resource materials, sample assignments, and the intellectual moves and rhetorical strategies that GSIs introduce to their students.

Pedagogical affordances include technological and material supports (having a course management system, teaching in a computer lab every week, and so on); but mostly they refer to specific practices and approaches for teaching the course as outlined in the fall annotated syllabus. Pedagogical affordances comprise everything from the familiar array of "best practices" for teaching writing to more localized ways of doing things within this program to certain "learning" principles (such as the importance of repetition and recursiveness). The usefulness of any particular affordance also changes and evolves as GSIs become more practiced in navigating the terrain. Some affordances (such as the detailed, day-by-day descriptions for approaching each class in the first half of the fall annotated syllabus) are temporary, important for initially ushering GSIs into the landscape of teaching first-year writing. If some of these scaffolding affordances are not eventually dismantled, adapted, or redesigned, they run the risk of turning into constraints that can prevent the further development of expertise. In keeping with an important working principle in the *Elon Statement*, the program has long maintained that successful transfer and the development of expertise only occurs when GSIs do more than simply draw on knowledge and strategies introduced in their first quarter of teaching; they must continue to "transform or repurpose that prior knowledge, if only slightly."

Pedagogical affordances work in tangent with curricular interventions. Changes in one area often give rise to changes in the other. For example, during his first quarter of teaching, Justin Ericksen[3] drew on his prior experience of working as a prosecuting attorney and began to develop a practice intended to help students consider their audiences that he called "anticipating objections." In one of his reflective writings for his composition seminar, he explained how this process worked in the courtroom and how he redefined the move to the classroom:

> Generally speaking, this move is used more aggressively in persuasive and/or oral rhetoric. It functions as a "stealing of thunder" in a way. In court you could raise the issue, anticipate the opponent's likely argument and deal with it in an effective (very gently condescending) way. Sometimes you'd glance over at your adversary and almost see the wind go out of their sails a bit as evidenced by a scowl, frown, slumping in the chair, or rueful smile accompanied by a subtle head shake. If they did bother to make the argument themselves, it always

> sounded sort of lame and reactionary, instead of momentous and revelatory as they undoubtedly hoped. In writing, I think it's more subtle and used more to open up alternate lines of inquiry. Instead of rejecting a claim, it tends to invite people to look at different perspectives.

Two years later, "anticipating objections" became a formalized part of the FYW curriculum and began to also appear on the evaluation rubric. What started as a pedagogical affordance turned into a curricular intervention.

Finally, as noted in the working principles of the *Elon Statement*, GSIs' dispositions and motivations for teaching play a "key role" in this process. They determine whether and to what extent GSIs' transitions into and out of the program will become "consequential"—for them and for the program. In other words, it matters whether GSIs demonstrate "problem-exploring" or "answer-getting" dispositions (Wardle, 2012) or exhibit "boundary-crossing" or "boundary-guarding" tendencies (Reiff and Bawarshi, 2011). The four general dispositions that Driscoll and Wells (2012) identify as being important for successful learning (motivation, self-efficacy, theories of attribution, and self-regulatory strategies) also play an important role.[4]

So, while both curricular and programmatic interventions and pedagogical affordances are necessary and important for "cuing" the transfer of learning from quarter to quarter, GSIs' motivations and dispositions generally govern the extent to which the two external drivers will be effective in furthering their expertise via low-road and high-road transfer.

THE INTERACTION BETWEEN HIGH-ROAD AND LOW-ROAD PROCESSING

Probably some of the most familiar landmarks in the literature on learning transfer are David Perkins and Gavriel Salomon's (2012) concepts of "high-road" and "low-road" transfer (see Glossary). The *Elon Statement* acknowledges that individuals may engage in both processes (routinized and deliberate or transformative) when they draw on or utilize prior knowledge and learning. In mapping these concepts, however, it is helpful to take a more nuanced look at their relationship and the ways they work together to further the development of GSIs' expertise.

While it may be tempting to dismiss low-road transfer or see it as less desirable than high-road transfer, as with most binaries, the relationships between opposites are usually more complex. Rebecca Nowacek suggests that high-road and low-road connection processes exist along a "spectrum" or progressive

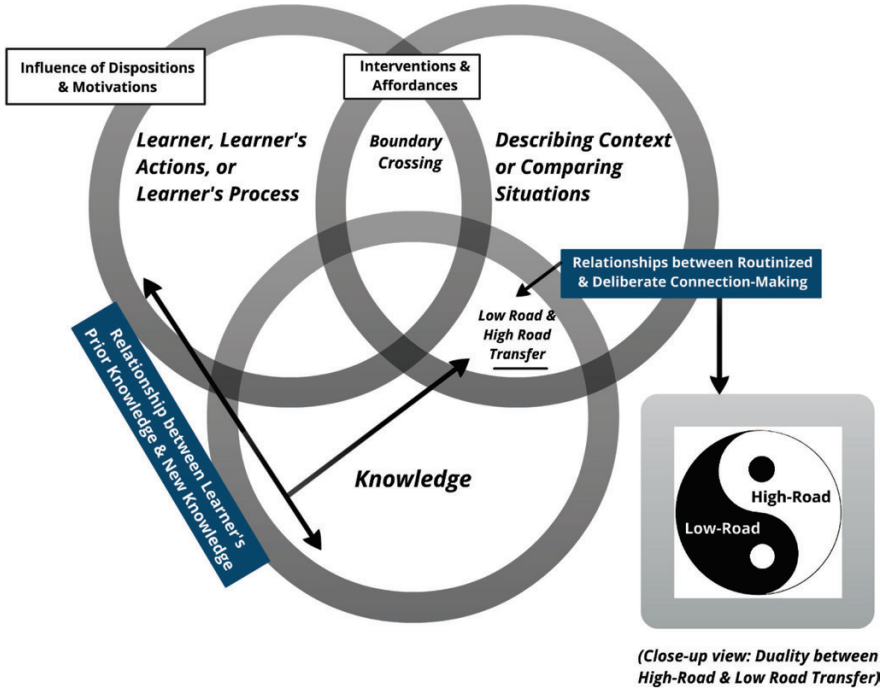

Figure 3.4. Mapping the terrain, second stop.

continuum from "no transfer" to "transfer" to "integration" (2011, p. 33). For Nowacek, "transfer" means low-road transfer while "integration" denotes high-road transfer because it "assumes some degree of meta-cognitive awareness" (*Elon Statement*, 2015, p. 2). In Nowacek's representation, individuals are situated somewhere on the continuum and either move ("progress") or don't. Perhaps a more fertile representation of the relationship between low-road and high-road transfer would be to see them as "dualities" as shown in the close-up image in Figure 3.4 (Wenger, 1998). That is, it may be more productive to think of these kinds of transfer processes as interactive rather than oppositional or existing as points along a continuum. Etienne Wenger explains that while "a continuum does allow for more nuanced distinctions, it is still a relation between opposites. . . . With an interacting duality, by contrast, both elements are always involved, and both can take different forms and degrees" (1998, pp. 66–67)

If both kinds of transfer are always involved in a duality, then we might consider the ways that low-road and high-road transfer often become "coupled." King Beach (1999; 2003) notes that in "developmental coupling," one activity is not "antecedent" or "consequent" to the other; rather they are "correlational or relational in nature" (1999, p. 120). In other words, they are linked. They work

together, and a change in one of the elements in a duality necessarily affects the other. How we depict the contours of the relationship between low-road and high-road transfer as well as other kinds of transfer relationships—as binary, developmental continuum, or duality—then, will have implications for how we conceptually map these processes as well as how we teach and sequence learning activities.

Furthermore, some forms of low-road-transfer may be necessary so that high-road transfer becomes possible. In the case of new GSIs, it is both necessary and helpful if certain procedural knowledge, habits, and practices take root quickly so that they can indeed "carry" them forward somewhat unconsciously in their teaching each quarter. For example, at the end of his first quarter of teaching, Justin, the former prosecuting attorney, noted: "I plan to more frequently revisit core concepts, ideas, and strategies. Even though, in my past life, I used to find a way to repeat every key point and argument at least three times for a jury, I somehow didn't initially understand that students would also struggle to retain information they only heard once or twice." By the end of his second quarter, this conscious intention of revisiting concepts had become routine in his teaching.

Another way to think about this relationship between routinized and deliberate forms of transfer is via James Paul Gee's concepts of learning and acquisition. He distinguishes between these two process in his discussions of how individuals become "literate" in the particular "saying (writing)-doing-being-valuing-believing combinations" of secondary discourses (2012, p. 151). Learning always involves some form of overt instruction or explanation, while acquisition occurs gradually and unconsciously through ongoing practice and participation in the discourse. If the goal is mastery of performance (such as in teaching or writing), then acquisition is key. If GSIs are to develop their expertise as teachers in the classroom, some of what they initially learn will have to become an unconscious, routinized part of their repertoire. However, learning is essential if the goal is developing a meta-knowledge of the principles that underlie the practices. In order to engage in high-road transfer, GSIs have to be able to articulate the principles operating in one situation to be able to determine their applicability to another situation. At first, Justin didn't see the connection between juries in the courtroom and students in his writing course. It wasn't until he articulated the rhetorical and pedagogical principle that was common to them—the importance of repetition for novice audiences—that he was able to make his acquired knowledge explicit and apply it to the new situation.

CONCEPTUAL BREAKS AND ENABLING BRIDGES

If GSIs' transitions are to become what Beach (1999; 2003) might call developmentally "consequential," both for them and for the program, they will

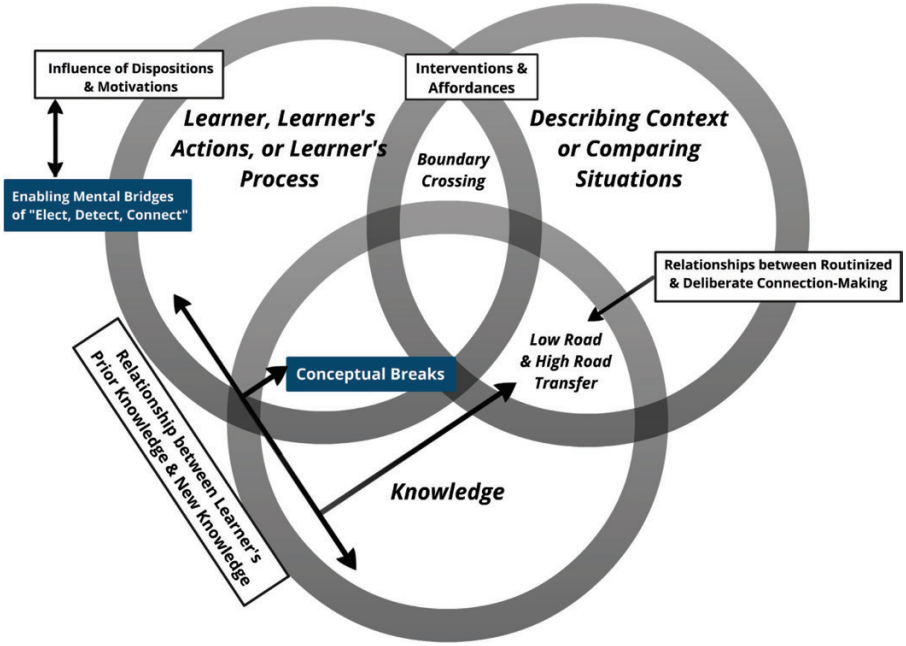

Figure 3.5. Mapping the terrain, third stop.

have to engage in the deliberate and mindful abstraction of high-road transfer in order to "re-understand" the information in the annotated syllabus, their classroom practice, and themselves as teachers. This process typically begins in their composition seminar. As GSIs begin to read composition and pedagogical theory, some of them will start to "translate" their understanding of teaching writing "into a new frame of reference or intelligibility" for themselves (Guillory, 2008, p. 9).

John Guillory argues that when reading difficult and complex texts, readers eventually have to make a "conceptual break" with their current levels of comprehension so that "reading begins anew" (2008, p. 9). Although Guillory focuses on literary texts, a similar principle works for "teaching to begin anew" for GSIs. Teaching and learning, like reading and writing, are always emergent processes. In order to develop further expertise, GSIs will sometimes need to make "conceptual breaks" with the customary ways of thinking and working that they have acquired through prior experience or have only just recently learned. But not always. Sometimes GSIs develop "new frames of intelligibility" for understanding that don't actually necessitate a conceptual break.

Early in his composition seminar, Justin read Nancy Sommers' "Responding to Student Writing" (1982) and "Between the Drafts" (1992). He noted that he

had already "put a lot of thought into responding to student writing." He figured he had a "pretty good grasp of the genre," saying that "I had always taken pains to include some level of specificity in responses." Sommers' two essays, however, also revealed what he didn't know. "I have never consciously considered the full impact of my written responses and I was woefully ignorant on any research on the subject." While the information in these essays gelled with Justin's proclivities for being positive and specific in his responses to students, they also provided him with a new framework for the purpose of written comments: "Sommers articulated the necessity of developing comments with the awareness and expectation of further revision. It is with this purpose in mind that I intend to make the first essay project during winter quarter a draft for the second essay and to engage in extensive dialogue and revision between the two."

When he read Summer Smith's "The Genre of the End Comment" (1997) a few weeks later, the routine that Justin had established for commenting—being positive and focusing his comments with an eye to further revision—was again destabilized. He wrote:

> I didn't realize how generic my commenting format was until I read Smith's essay, and then I immediately wanted to take everything back and rewrite it again. The way in which she pinpointed genres that I had unconsciously been following was uncanny, and created a sense of both wonder and apprehension. I hadn't considered that positivity could be construed as insincerity, nor that suggestions for revision could be construed as punishment for mistakes, and I certainly didn't recognize that I was following a formula that I now realize is appropriated from feedback I've received on my own writing.

Justin did not simply add this new information to his understanding of commenting practices as he did after reading Sommers' essays because Smith's theories were in direct conflict with his prior assumptions and practices. In order to process this new perspective, Justin had to first make a conceptual break with his current understanding, an understanding that had just recently been fortified by his reading of Sommers' work. Justin's feelings of "both wonder and apprehension" perfectly capture the experience of liminality, when one's conceptual moorings have been suddenly loosened. Carl Bereiter and Marlene Scardamalia (1993) remind us that expertise develops only if we reinvest the mental resources freed up by the learned automaticity of routine into more difficult tasks and more complex representations of problems. In other words, expertise is sustained only by the effort to surpass itself or to destabilize the very knowledge and practice upon which the expertise is based. But it is more difficult to utilize these mental

resources if some parts of the work don't eventually become a matter of routine transfer or "lift and carry."

Perkins and Salomon's (2012) recent discussion of the construction of the transfer-enabling "mental bridges" of "detect, elect, and connect" points to the interactive relationship between low-road and high-road transfer. Individuals "detect" a possible link, "elect" to explore or pursue it, and then make the connection. Alternatively, individuals may "elect" to pursue a possible hunch, "detect" a promising link, and then elaborate on the connection. Finally, individuals might encounter a connection and "elect" to examine the connection more closely so as to "detect" the significance of it. These bridges may be deliberate (high-road), automatic (low-road), or include a mix of high-road and low-road processing. With low-road transfer, less mental effort and motivation is required to construct these bridges so the processes of "detect, elect, connect" are less discernible and can seem to "occur virtually simultaneously." (2012, p. 250). As Perkins and Salomon explain, these processes "unfold relatively automatically" out of habit rather than being triggered by "motivational or dispositional drivers." (2012, p. 251). However, the construction of these bridges is more likely to occur in serial fashion during high-road or mixed high-road and low-road processing. For example, when the similarities between situations are not immediately apparent and when individuals cannot easily "detect" a possible linkage, they will have to construct one. If they are not disposed or interested enough or otherwise motivated to pursue a perceived linkage, they will have to find a reason to become interested or motivated. Even when individuals detect a possible link and elect to pursue it, they may be unable to make the connection. At any point in the process, each of these bridges may become "a bridge too far" (Perkins & Salmon, 2012, p. 250).

Perkins and Salomon's discussion here suggests one reason why the internal drivers—GSIs' motivations and dispositions (the extent to which they are interested, willing and able to pursue a potential connection)—may be crucial for engaging in the high-road connection-making that will further their development of expertise. The external drivers, the curricular interventions and pedagogical affordances, are the transfer-enabling bridges that the WPA puts in place so that some aspects of teaching can gradually become more routinized and automatic. These drivers support GSIs by freeing up some of their mental resources while they are acclimatizing to the discourse of the first year writing program.

When new GSIs begin teaching first-year writing, very little of what they have to learn to do is automatic. As Justin noted on numerous occasions, his first quarter of teaching was all about learning to "see the big picture." Until GSIs start to grasp how the many parts of the course fit together, almost everything they do initially requires conscious deliberation. In time, perhaps, some

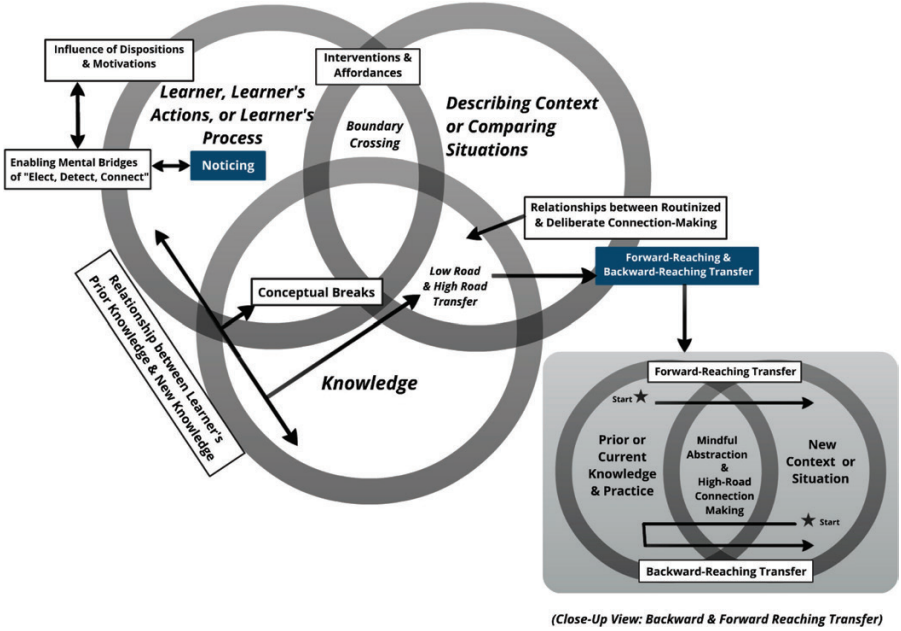

Figure 3.6. Mapping the terrain, fourth stop.

"bridges" may become more automatic (which, of course, comes with its own set of dangers). But as GSIs gain more knowledge and continue to examine and reflect on their practices, they may notice different connections and the bridge building processes will shift back into high-road processing.

FORWARD AND BACKWARD-REACHING TRANSFER

Perkins and Salomon's (1988) descriptions of "forward-reaching" and "backward-reaching" forms of high-road transfer both depict the utilization of prior knowledge and practice in the development of *new* knowledge, practice, or application. The focus is on solving a problem or developing knowledge in the *new* context. As we see in the close-up image in Figure 3.6, the starting place for deliberation differs for each kind of transfer, but the destination is the same.

GSIs engage in both forward-reaching and backward-reaching forms of transfer throughout their time in the program. The WPA typically does a little "curricular intervention" in the first quarter composition seminar to make these processes more visible to GSIs. For example, GSIs write the same inquiry essay that they will be assigning to their own students. When they use their experience of writing this essay to anticipate the kinds of issues that might emerge

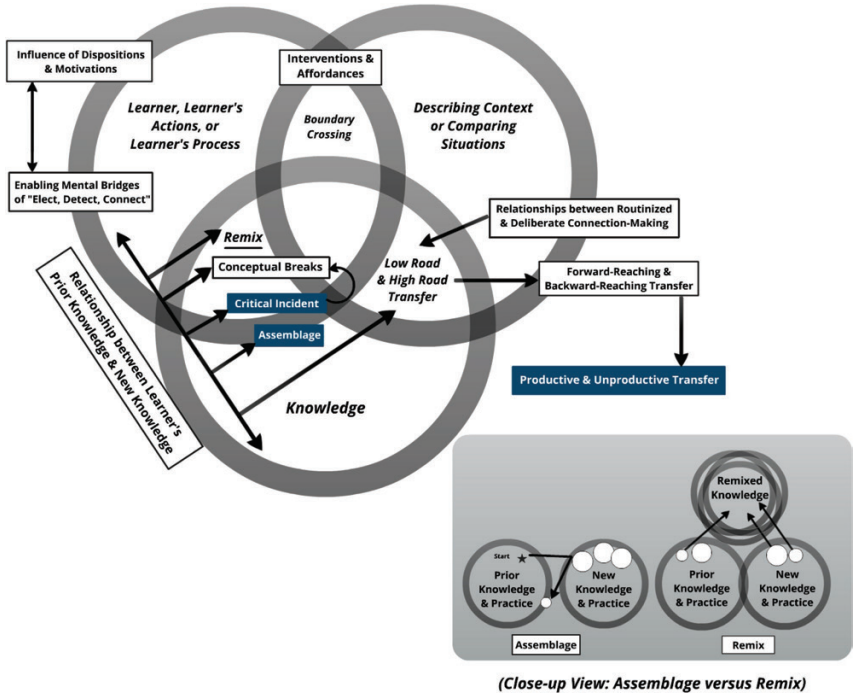

Figure 3.7. Mapping the terrain, stop five.

for their own students with this assignment, they engage in forward-reaching transfer. When GSIs identify and hypothesize about the challenges or difficulties that their students actually had when completing the assignment, GSIs engage in backward-reaching transfer. They reach back into their own experience of writing this essay or to other relevant information in their course texts and materials to help them explain what they see. In a similar fashion, the winter syllabus that new GSIs construct at the end of fall quarter offers an indication of the extent to which they are engaging in forward transfer of the principles of the first-year writing course. To actually make the syllabus, though, they continually reach back into their seminar readings, course materials, concepts, and practices to be able to "solve the problem" of re-imagining a different course. Forward-reaching transfer and backward-reaching transfer, then, often work together. However, there are other ways to map the relationship between prior learning and new learning.

ASSEMBLAGE, REMIX, AND CRITICAL INCIDENT

In their discussion of how first year students utilize prior knowledge, Liane Robertson, Kara Taczak, and Kathleen Blake Yancey (2012) identify three ways that

first-year students "take up" new knowledge of writing in relation to old knowledge: assemblage, remix, and critical incident. These methods are not limited to writing or to first-year students. GSIs also employ these methods in learning to teach writing. Each method offers a different take on Perkins and Salomon's concepts of forward-reaching and backward-reaching high-road transfer.

In their first quarter, GSIs frequently employ assemblage methods especially when their recent prior experience is "somewhat" related to the work of teaching first-year writing, such as teaching high school English, assisting in the writing center, or working in publishing and editing. Because GSIs see their prior experience as being similar or at least constituent to their new experience, their prior knowledge initially exerts a strong pull in the ways they understand and take up key concepts and rhetorical strategies in their teaching. Although Robertson et al. (2012) don't explicitly say, assemblage methods can result in both productive and unproductive learning. Justin's grafting of Sommers' theories onto his current understanding was initially productive for his teaching practice. Assemblage, however, is unproductive when it takes information out of context, distorts it, or overly simplifies it.

Assemblage appears to be more of a low-road connection-making process that can actually by-pass new learning. Often occurring without mindful deliberation, learners assume a similarity between contexts and select elements (such as key terms or rhetorical strategies) in piecemeal fashion from the new domain that seem to fit with their prior knowledge and current practice. They "graft" these new bits on to their prior schema in such a way that their current framework remains supported and intact. In other words, the addition of new knowledge doesn't change or transform their prior knowledge immediately in noticeable ways. Their comprehension of the new knowledge is also limited and constrained because they have only accessed those bits and pieces that can be used to bolster what they already know.

Robertson et al.'s (2012) concept of remix describes how students take elements of new knowledge and integrate them with their prior knowledge to create a new or revised understanding or practice. The close-up image in Figure 3.7 illustrates the differences between the methods of assemblage and remix. In assemblage, selected elements of the new context work as "add-ons." Grafted onto the perimeter of prior knowledge, these elements are never fully integrated, and thus prior knowledge doesn't really change. In the remix method, selected elements from both prior knowledge and new knowledge are combined and reworked together to create something new. Thus, the remix includes features from both domains, but is distinct from either of them.

In the culture of the first year writing program, GSIs are encouraged to repurpose and remix their current knowledge and practice with new knowledge

and practice—hopefully in generative and productive ways. A remix is only possible, however, when GSIs perceive or "detect" a potential relationship between new knowledge and prior knowledge and "elect" to "connect" elements together from both domains into something new.

The third way that students take up new knowledge is via a "critical incident." Although such incidents can induce temporary "setbacks" or "bottlenecks" that prevent further learning (Middendorf & Pace, 2004), Robertson et al. (2012), suggest that reflection on these critical incidents can spur "conceptual breakthroughs" that can lead to the creation of new knowledge or understanding. A critical incident seems to function much like the Guillory's notion of the conceptual break; both can set the stage for the possibility of a creative or conceptual *breakthrough*; but these breakthroughs do not always come easily or quickly for GSIs.

Justin, who typically exhibited characteristics of "boundary crossers" (Reiff & Bawarshi, 2011) and easily accepted his role of novice (Sommer & Saltz, 2004), was initially resistant to the notion that mechanical correctness should be of less concern when first responding to student writing. Right before he entered the program he had worked as a copy editor and proofreader, and the program philosophy of focusing on content before correctness was in direct conflict with his prior experience. In a reflection written at the end of his first quarter, he explained that he "physically heard and took note of repeated instructions to mainly avoid correctness and focus on content," but he was "unable or unwilling to internalize this instruction." Justin's observation that he was "unable" or "unwilling" to "internalize" new knowledge suggests how difficult it can be to alter or dislodge a "continuing schema of old knowledge" (Robertson et al., 2012). However, he continued to examine the reasons for this disconnect:

> In addition to what I'm now recognizing as a likely fear to deviate from what I perceived as my evaluative strengths and experience, I was more consciously concerned that to ignore mechanical correctness would be a disservice to the students. For instance, whether fair or not, mechanically correct writing is often seen as a marker of social class. Writing with poor spelling and grammar are stereotypically seen as indicative of an uneducated, lower class individual. In short, people are judged on their writing.

Justin has given voice to what is still an unresolved conflict for many writing teachers and scholars: Current disciplinary thinking does not always gel with the recognition that people are judged by their language. Perhaps, by association, Justin felt that he too would be negatively judged as the teacher of these

students. Even though he was using texts in his first-year writing class that suggested a variety of counters to his position (e.g., Mike Rose's *Why School* and essays on literacy and social class by Lynn Bloom, Jean Anyon, Earl Shorris, and Professor X), Justin remained unconvinced throughout most of the quarter.

For Justin, Robert Connors' 1985 essay, "Mechanical Correctness in Composition Instruction," was the critical incident that finally precipitated the conceptual break or what he calls a "mental shift" in his thinking about the significance of mechanical correctness. Sounding much like his ex-lawyer self, Justin described how the new information in Connors' essay roughed up his thinking enough so that he could "adjust" his position.

> To put it mildly, I had never before thought of evaluating correctness as a "stultifying error-hunt" that had essentially replaced a great rhetorical tradition. After planting the seed, Connors proceeded to cement the point by illustrating specific reasons for the shift. . . . These factors combined to create a composition culture focused almost exclusively on "avoidance of error" in lieu of effective rhetorical communication. When he put it that way, my allegiance to mechanical correctness as a vital aspect of composition instruction wavered. The final assault by Connors took that crumbling resistance and basically annihilated it. He discussed composition teachers at the height of the mechanical correctness era and claimed that they "rationalized this sort of reading by claiming that they were giving students what students really needed most" (p. 67). Those words evoked a painful awareness moment for me as I recognized echoes of myself, and was called on to uncover and examine my own values. I consciously recognized for the first time that I was imposing my values and ideas of what mattered in composition. . . . I was forced to come to terms with the truth that it doesn't matter how correctly you say something if you have nothing interesting to say and no rhetorical framework for your words. In short, the grammar police (of which I was a high-ranking officer) act largely pursuant to self-interest while serving to stifle creativity, innovation, and original thought. When forced by Connors to view the inclination toward mechanical correctness in this light, I resolved to adjust my ideas of composition instruction.

In this situation, Justin's prior understanding was at odds with this new perspective, and so he couldn't use what he knew to reach forward. He couldn't

reach backward because his prior knowledge offered no way to resolve the problem. Instead he had to find a way to make a break with prior knowledge. He did this by identifying and reflecting on his own core values. The new knowledge afforded by Connors' essay coupled with his mindful deliberation enabled him to realize that the values that supported his prior position were not the values he wanted to "impose" on his students. Given his normally open-minded disposition and his strong motivation to serve his students, the essay became the "critical" occasion to complete his "mental shift." Justin used the new knowledge from Connors' essay to revise his prior thinking and construct a new understanding through backward transfer, a process that is quite distinct from backward-*reaching* transfer.

BACKWARD TRANSFER AND RETROSPECTIVE UNDERSTANDING

Backward transfer (see the close-up image in Figure 3.8) begins to take us into less explored territory on the transfer map. Backward transfer occurs when the acquisition and learning of new knowledge influences understanding of prior knowledge. Backward transfer more readily allows us to see the dynamic and reconstructive nature of high-road transfer. Meta-awareness and reflection, so important to all forms of learning, are especially critical to the processes of backward transfer.

When individuals must rapidly familiarize themselves with large amounts of new knowledge and gain new levels of competence in a compressed time span, it is unlikely that they will have the chance to fully process this knowledge or, in Gee's (2012) terms, "acquire" full proficiency before more new knowledge and practice is introduced. Under these circumstances, understanding will be partial in both senses of the word—partial, meaning not full or complete, and partial, meaning idiosyncratic and individualized. In terms of the first-year writing program, GSIs grasp the new texts, concepts, and practices with varying degrees of accuracy, depth, and specificity, and they will understand them differently based on whatever antecedent frames they can initially utilize to connect to the new material. The information gained from their summer reading and Comp Camp will not have had an opportunity to sink in before they have to wrap their minds around new knowledge and new practices—or before it is complicated by the arrival of their own students. Although both the graduate seminar that new GSIs take and the first-year writing course that they teach are purposely sequenced so that new knowledge builds on, reinforces, and complicates prior knowledge, it is hard to build on knowledge that has not fully taken up residence in one's mind. Yet, gradually throughout the quarter and over the next five quarters, GSIs' ongo-

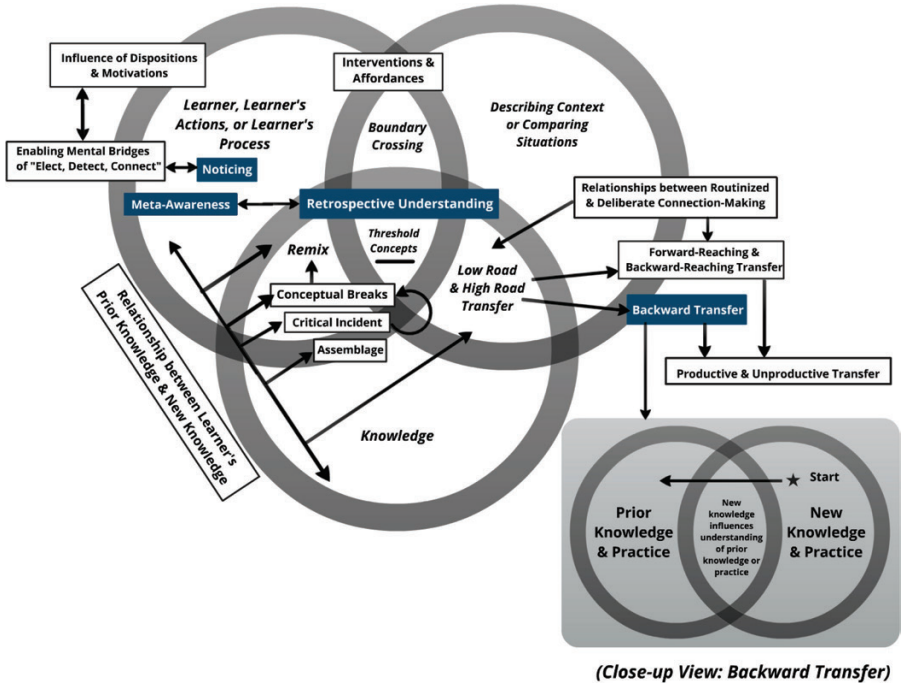

Figure 3.8. Mapping the terrain, stop six.

ing learning serves to solidify and deepen their previous learning through a process of backward transfer.

There have been a few studies of backward transfer, most notably in transdisciplinary linguistics research examining the influence of L2 language learning on L1 language (e.g., Chen, 2006; Pavlenko & Jarvis, 2002). In many of these linguistic studies, backward transfer is seen as unproductive; i.e., it had a negative effect on L1 language.[5] The most extensive study of productive backward transfer that I have located is Charles Hohensee's 2011 dissertation, *Backward Transfer: How Mathematical Understanding Changes as One Builds upon It.* In this study, Hohensee stipulated that productive backward transfer was more likely to happen when prior knowledge was still developing and when it was considered foundational to the acquisition of new knowledge (which would likely not be the case with L2 influences on L1 language, but is probably often the case with GSIs). Proximity also seems to be a factor in backward transfer, just as it is with forward transfer. When two events occur within close proximity to one another, individuals are more likely to "notice" connections between these two events.

Hohensee found "noticing" to be a useful frame for explaining instances of both productive and unproductive backward transfer. Basically, "noticing" refers

to the process of detecting, selecting, and attending to certain features of a problem, text, situation or environment. The products of noticing, the specific features that individuals actually select to attend to, are called the "center of focus" (Lobato, Rhodehamel & Hohensee, 2012). In his ethnographic work on "professional vision," Charles Goodwin (1994) posited that what individuals see (notice) and what they attend to (center of focus) will be related to their current discourses or professional communities. Noticing is a concept, then, that expands Perkins and Salomon's notion of "detecting" by linking it to particular ways of seeing that are employed by professional communities. Much of the work involved in developing and deepening one's expertise as a GSI in the first-year writing program seems to involve learning to notice what the larger discipline and the local community deem important about student writing. Such work sometimes requires GSIs to dramatically shift their center of focus, as we saw with Justin's "mental shift" concerning the importance of mechanical correctness.

Justin's mental shift occurred as the result of *consciously noticing* something that did not jive with his prior mind-set as a copy-editor and proof-reader, where detecting "error" was the center of focus of his work. As he acquired more control of the "big [disciplinary] picture" in his new discourse, his center of focus gradually, but unconsciously began to shift. However, he did not become aware of this mental shift taking place until he was asked to revisit a text that he had read earlier in his composition seminar.

Distinctions between Backward Transfer and Backward-Reaching Transfer

While both backward and backward-reaching transfer represent a break in forward momentum, the exigence for backward-reaching transfer is an encounter with a problem, something that compels individuals to pause, reverse direction, and consult previous knowledge or experience. Backward transfer, on the other hand, may initially need to be "cued" and "guided' even more than other forms of transfer, as Justin noted at the end of his second quarter of teaching: "The only reason I make these connections is because we've been cued or trained to make the connections. And I think it becomes a habit of mind. Once you understand the concept and the strategies for doing this yourself, then it's really easy to pass on to the students." The exigence for backward transfer in classroom situations often comes in the form of some kind of curricular intervention such as a reflective assignment that directs students to shift their center of focus in order to use new knowledge to enlarge or deepen their understanding about prior learning.

Hohensee observed that backward transfer seems to happen more readily when the prior knowledge is foundational to new knowledge, but has not yet been solid-

ified, which is likely the case for first-quarter GSIs. The new knowledge serves to clarify and enhance the understanding that is still being constructed. On the other hand, when prior knowledge has solidified, backward transfer is more difficult. Here, individuals may be more inclined to adopt an assemblage method (Robertson et al., 2012). Reluctant to dislodge what has already been cemented, they simply add the new information to the old, regardless of fit. Gee alludes to this process in his discussion of learning and acquiring new discourses. He explains that if a person has "not fully mastered a particular secondary discourse"—in this case, teaching the first-year writing course—two things are like to happen: The person may revert back to their primary discourse, "adjusting it in various ways to fit it to the needed functions," or the person might adopt a "simplified" or "stereotyped" version of the discourse they are learning to control (2012, p. 172).

Backward transfer, however, does not always require an exigence in the form of a curricular intervention. Backward transfer can also occur when individuals (typically those who exhibit more "problem-exploring" or "boundary-crossing" dispositions) are involved in gaining new knowledge in multiple contexts simultaneously. Some GSIs will shift their center of focus from their students' writing and reading to noticing their own prior or current ways of writing and reading. For example, in learning how to teach cohesion via the principle of connecting new information to known information, some GSIs have used this information to help them understand their own difficulties with reading dense, critical theory texts in their literature classes. The knowledge GSIs gain from teaching offers a provisional explanation for their own reading difficulties. In this instance, "backward" transfer is not exactly backward; it appears to operate laterally across domains with "similar levels of complexity" (Hohensee, 2011, p. 20). Although GSIs are still in the process of acquiring knowledge in both domains, in this situation, one domain is not necessarily foundational to the other; rather they are linked by their proximity. Thus, the knowledge they are learning in each discourse can serve a meta-function for better understanding the other, as we see with Justin's discussion of hybridity below.

At the end of his fourth quarter, Justin described a paper he had written in one of his literature seminars where he focused on the "hybridity" that comes from occupying two, often conflicting discourses at once: "I ended up showing how linguistic hybridity mirrored social and cultural hybridity. This hybridity ultimately could promote brand-new epistemologies of knowledge, ways of thinking and speaking and communicating that could challenge the dominant discourse." He then described how his insights into hybridity gained from his seminar paper illuminated his understanding of his own position as a learner attempting to master two (sometimes conflicting) discourses as a graduate student and teacher simultaneously. What he initially viewed as a weakness, he now began to think of as a strength:

> Being the teacher and the student puts us in a position of hybridity and that's a good thing because that's when you can create something new. You have a foot in each group so you can have insights into both discourses, and you can talk about each discourse with the other group in a way that is both credible and makes sense. Being in this hybrid position, or being bi-discoursal, creates a greater sensitivity to both groups.

There is a further distinction between backward transfer and backward-reaching transfer. In backward-reaching transfer, individuals typically reach back into their repertoires for already articulated or fully formed solutions that they can bring "ready-made" to a current problem. Many studies of the composing process (e.g., Flower & Hayes, 1981) have depicted experienced writers reaching-back into their repertoires for solutions to the current writing problem. These professional writers draw on their already formulated rhetorical knowledge of "what works," bring it forward, and adapt it to fit the new rhetorical situation. On the other hand, revision, understood as a process of re-seeing and re-understanding what is just developing on the page, likely also involves a process of backward transfer.

From Backward Transfer to Retrospective Understanding

Just as individuals utilize prior knowledge and learning to influence new knowledge and learning in different ways, new knowledge and learning also seems to influence prior knowledge and learning in a variety ways. As we saw above, new learning can *inflect* or *replace* prior knowledge in productive or unproductive ways, often via an unconscious, low-road transfer process. Second, new learning can *refresh* or *shore up* prior knowledge. Reminiscent of the assemblage method that Robertson et al. (2012) describe, new learning doesn't substantially alter prior knowledge and learning. Third, new learning can *build, extend*, or *deepen* prior knowledge in ways that may or may not involve high-road processing. Both the second and third possibilities are the focus of Hohensee's dissertation on backward transfer, subtitled *How Mathematical Understanding Changes as One Builds upon It* (emphasis added). In both these instances, "the foundational knowledge is usually still developing as the new content is already being taught" (Hohensee, 2011, p. 398).

A fourth possibility occurs when elements of new learning are *integrated* with elements of prior knowledge and *reworked, repurposed, or remixed* to create something new or distinct. I include the remix among these seven possibilities because it represents the point where we can see the interaction between forward and backward forms of transfer most clearly. Robertson et al. (2012) identified remix as one of the ways students utilize prior knowledge in new writing situations; however a remix can also entail backward transfer in the process of creating something new.

Although in Robertson et al.'s example, the student Alice did not totally reinvent her current understanding of writing by inventing a new coherent whole; instead, like many students, she made piecemeal adjustments by editing, patching, and adding bits and pieces together.

A remix can also function on a meta-level, which suggests a fifth way that new knowledge can influence prior knowledge: New knowledge can be used as a lens to *examine* or *critique* prior knowledge. This possibility bears similarity to Gee's (1987; 2012) concept of "powerful" or "liberating literacy." Here, individuals use knowledge "learned" in one discourse as meta-knowledge to explain or critique knowledge in another discourse. And finally, a sixth and seventh way: new knowledge can make *tacit prior knowledge visible* and it can also substantially *revise* or *transform* prior knowledge.

The last four possibilities all entail high-road processing and point to a somewhat different kind of influence of new knowledge on prior knowledge. These relationships do not depend on a prior domain that is antecedent or proximal. In fact, changes may occur to prior knowledge that are not obviously connected to the new knowledge or learning. These possibilities also differ from the first three possibilities in that they may entail what Salomon and Perkins (1988) refer to as "far transfer," connection-making between drastically different discourses or domains far removed from each other in time. The last four possibilities then, seem distinct enough to warrant their own category, "retrospective understanding," as well as their own designation on the transfer map.

Retrospective Understanding

Retrospective understanding is similar to backward transfer to the extent that both entail a shift in the center of focus from new knowledge to prior knowledge. In Hohensee's (2011) research, backward transfer, however, was explicitly concerned with what was being learned—the propositional knowledge or skill per se. When individuals brought features of new knowledge to bear on prior knowledge, the results could be assessed as being productive (positive influence) or unproductive (negative influence). However, this backward transfer is not really focused on changes in learners—their identities and relationship to the larger social context—only on their knowledge. On the other hand, most forms of retrospective understanding (with the possible exception of the remix), also focus on qualitative changes in the learner as well. While sometimes startling or troubling, retrospective understanding is almost always "productive" in terms of enlarging, deepening, and complicating, or transforming learners' prior understanding of themselves, their goals, and their ways of knowing, saying, doing, valuing, and so on. Table 3.1 summarizes the seven ways that new knowledges can influence prior knowledge.

Table 3.1. Seven ways that new knowledge can influence prior knowledge in backward transfer and retrospective understanding

How New Learning Influences Prior Learning	Relationship between Prior & New Knowledge	Near/Far High/ Low Transfer	Focus
1. New learning can inflect or replace prior learning in productive or unproductive ways.	Prior knowledge may or may not be still developing.	Near transfer; low road processing.	Backward Transfer
2. New learning can refresh or shore up prior knowledge (assemblage).	Prior knowledge is still developing.	Near or far transfer; low road or high road processing.	Backward Transfer
3. New learning can build, extend, or deepen (reconstitute) prior learning.	Prior knowledge is still developing and may be antecedent or proximal to new knowledge; general knowledge may be reconstituted into more specific knowledge.	Near or far transfer; low road or high road processing.	Backward Transfer
4. Elements of new learning are combined with elements of prior learning to create something original or different (remix).	Does not depend on prior knowledge that is still developing, antecedent or proximal.	Near or far transfer; high-road processing.	Forward & Backward Transfer and/ or Retrospective Understanding
5. New learning can be used as meta-knowledge to reflect on or critique prior learning.	Does not depend on prior knowledge that is still developing, antecedent or proximal.	Far transfer; high-road processing.	Retrospective Understanding
6. New learning can make tacit knowledge visible.	Does not depend on prior knowledge that is still developing, antecedent or proximal.	Far transfer; high-road processing.	Retrospective Understanding
7. New learning can revise or transform prior learning.	Does not depend on prior knowledge that is still developing, antecedent or proximal.	Far transfer; high-road processing.	Retrospective Understanding

To further elaborate on the distinction between backward transfer and retrospective understanding, I will use my "new knowledge" of transfer to revisit my own prior conceptualization of reflexivity. In *Turns of Thought* (Qualley, 1997), I

define reflexivity as a response triggered by a dialogic (back and forth) encounter with an "other." The "other" might be a person, concept, text, theory, culture, discourse, and so on. In the process of trying to understand and make sense of the other, individuals shift their center of focus back to the self by making a "reflexive turn." This description of reflexivity, which, at the time, was influenced by my reading of ethnographers' reports of their experiences in the field, shares aspects of backward-reaching transfer, backward transfer, and what I am now calling "retrospective understanding."

In backward-reaching transfer, when individuals encounter a problem with new knowledge, they scan their prior knowledge for something that will help them access or understand the new knowledge. In backward transfer, individuals shift their center of focus from new knowledge to "re-connect" to prior knowledge. A similar process initiates the reflexive turn, but with a difference. In trying to make sense of an "other," individuals don't necessarily reach back to their prior knowledge and repertoires for *solutions* to a problem; they reach back to identify and examine their own sense-making instruments. In other words, they shift their center of focus from what is being observed to themselves, the observer. They make a meta-move. Backward-reaching and backward transfer, then, describe problem-solving, cognitive processes. Reflexivity and retrospective understanding stimulate meta-cognitive processes that are better suited to problem-finding and problem-exploring. In all three cases, individuals shift their centers of focus, but they shift them for different purposes in order to achieve different goals.

Forward and backward transfer involve a movement in a single direction, either forward toward new knowledge or backwards toward prior knowledge. In backward-*reaching* transfer, the movement goes forward toward new knowledge, then backward toward prior knowledge and then forward again. As already noted, the center of focus in backward-reaching transfer is still on solving the problem of understanding the new knowledge.

On the other hand, *both* the movement and the center of focus in the reflexive process are *bi-directional.* In this instance, individuals consciously direct their attention back and forth between trying to understand the new situation while they are examining their own prior knowledge, understanding, and ways of knowing—ideally, with an eventual gain of understanding in all domains. Retrospective understanding then might be thought of as the successful outcome of this bi-directional, reflexive movement. With retrospective understanding, individuals don't just build on recent, prior knowledge as they do in backward transfer; they become consciously aware of it. This prior knowledge and understanding, when viewed from the perspective of new knowledge and experience, may become "complicated" or questionable in the process. It may be

seen and experienced as "troublesome" in ways that it wasn't previously. Again, we might recall Justin's response to reading Robert Connors' essay. The essay revealed a conflict in his own student-centered values and he had to examine his values and reassess his goals. Retrospective understanding, then, may also add a dimension to our understanding of the challenges that threshold concepts pose (Adler-Kassner et al., this volume; Meyer & Land, 2003, 2006). Threshold concepts involve encounters with "troublesome knowledge," require a conceptual break with previous understanding, enlarge the possibilities for noticing, connection-making, and integration, and are generally irreversible (i.e., we can't un-know them). Furthermore, grasping threshold concepts often involve "messy journeys, back, forth, and across conceptual terrain" (Cousins, 2006).

Backward transfer and retrospective understanding are virtually uncharted territory in writing studies research, and yet they both seem important to our understanding of transfer and the ongoing deepening of expertise in both writing and writing instruction. So many of our disciplinary truisms—writing is a recursive process; all writing is rewriting; writers write from a position of not-knowing—point to the necessity of some form of retrospective understanding. In addition, many recent conceptualizations about writing—writing as repurposing and writing as remixing—depend on being able to re-envisage old knowledge in new ways. Most forms of reflective writing are designed to elicit backward transfer or retrospective understanding. Finally, the concept of revision as re-seeing and re-envisioning would seem to depend on backward transfer and retrospective understanding. If students (or teachers) are to bring new knowledge and information to bear on the subjects they are writing about (or teaching) and, thereby deepen, extend, and transform their understanding, then we need to map a theory of backward transfer and retrospective understanding. Retrospective understanding also directs our attention back to the transition process itself.

CONSEQUENTIAL TRANSITIONS, RECONSTITUTION OF KNOWLEDGE, AND DEVELOPMENT OF EXPERTISE

Beach (2003) describes a transition as a "developmental change." Changes to the individual or to the activity lead to changes in the relation between the individual and the activity. As we saw with Justin, these changes are often understood *retrospectively*. In one sense, retrospective understanding may be a process that both activates the transition and serves as a by-product of that transition—a transition that may at some point become consequential. Transitions, according to Beach, become "consequential" when they are "consciously reflected on, struggled with, and shift the individual's sense of self or social position" (2003,

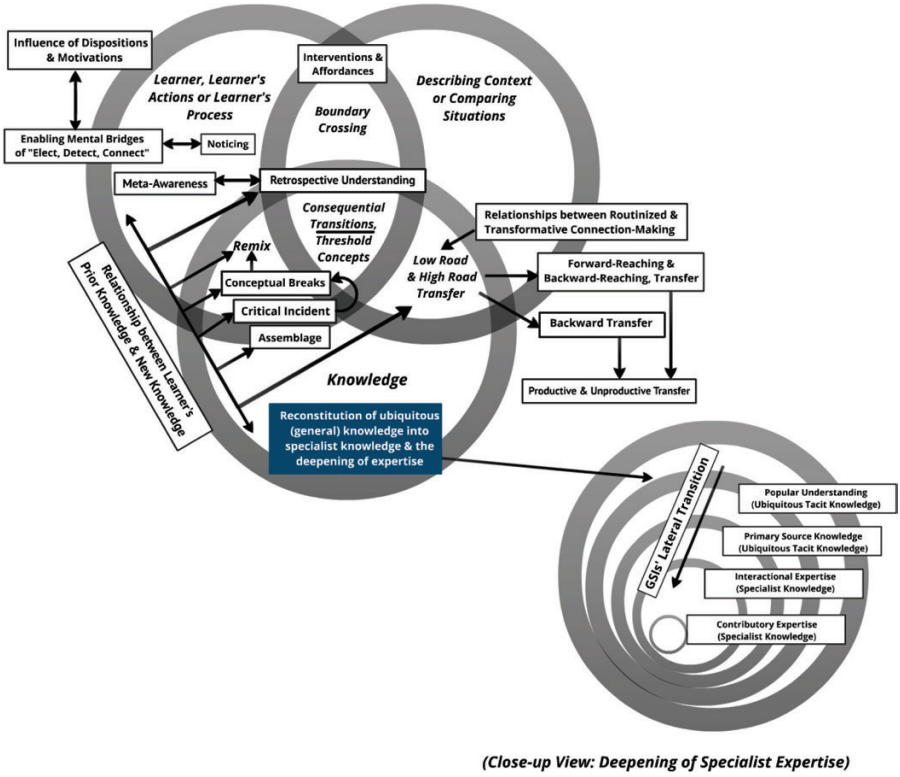

Figure 3.9. *Mapping the terrain, seventh stop.*

p. 42). But these transitions affect more than the individual, which is why consequential transitions are located at the intersection of learner, knowledge and context on the *Elon Statement's* visual map.

Although Beach (1999; 2003) is most closely associated with the concept of consequential transition, Nowacek (2011) and Hagar and Hodgkinson (2009) offer slightly different perspectives. Nowacek's (2011) concept of transfer as "recontextualization" also allows for consequential changes in the individual's knowledge, ways of knowing, identities, and goals, but foregrounds the rhetorical dimensions of these changes. Both Beach and Nowacek see a relationship between individuals and contexts; however, an important distinction is that Nowacek focuses more on the individual, while Beach highlights the relationship between the changing individual and changing social activities within the domain.

Like Nowacek, Paul Hagar and Phil Hodkinson are concerned with how knowledge is specifically reconstituted within individual learners. They claim that

both knowledge and skill "become changed and reconstituted within the person who has gone through and is going through a learning process" (2009, p. 632). For them, a more useful metaphor would be to think "of *learning as becoming* within a transitional process of boundary crossing" (emphasis added, 2009, p. 635). The extent to which individuals "become" (reconstituted) when they encounter new knowledge and situations depends in part on prior knowledge, in part on the motivation, dispositions, and various forms of capital (Bourdieu) that individuals have acquired, and in part on the new social context in which they enter. As I noted earlier, however, there is only so much the first-year writing program can do in the way of curricular interventions and pedagogical affordances to assist GSIs in their processes of becoming (teachers). A great deal depends on their own goals and motivations for further developing their expertise.

The Reconstitution of Knowledge and the Development of Expertise

In terms of their specific knowledge of first-year writing and teaching, GSIs bring various levels of "ubiquitous tacit knowledge," knowledge and skill that they have acquired just by navigating their way through life and interacting in human society (Collins & Evans, 2011). In their research on the nature of expertise, sociologists Harry Collins and Robert Evans differentiate between three kinds of ubiquitous knowledge. When they enter the program, GSIs generally have more than what Collins and Evans refer to as a "beer mat" knowledge of teaching, the kind of fact-like knowledge needed to succeed in knowledge or trivia quizzes. Much of the knowledge that GSIs bring when they enter the program stems from a "popular understanding" of writing and writing instruction. Such general knowledge, of course, hides detail and nuance and is especially questionable on matters that are complicated or not "settled" (such as the teaching and evaluating of writing). A few GSIs bring some "primary source knowledge" from their reading (or perhaps from their own prior course work). Familiarity with the primary source knowledge of a field is necessary, but not sufficient for developing more specialist forms of expertise.

If their transition into the first-year writing program is to be (at least somewhat) generative for them (and the program), GSIs will need to turn their ubiquitous prior understanding of writing and the teaching of writing into more complex and specialized forms of knowledge and meta-expertise. Accomplishing this task requires more than simply replacing or adding to their prior levels of general knowledge via a process of assemblage. To develop their expertise, GSIs must use new knowledge to *reconstitute* their "popular understanding" into a more nuanced understanding of writing and the teaching of writing. This process involves the kind of backward transfer as indicated by possibility 3 ("new learning can

build, extend, or deepen (reconstitute) prior learning") in Table 3.1.[6]

Similar to Salomon and Perkins' (1989) and Michael Carter's (1990) theories about the usefulness of general knowledge for developing local knowledge, Collins and Evans note that ubiquitous tacit knowledge is always exercised in the course of gaining more explicit and specialized forms of knowledge (2011, p. 17). This process requires opportunities for both acquisition and learning (Gee, 1987; 2012). Through their ongoing conversation and interaction with the activities of other domain specialists, GSIs gradually acquire more specialized expertise. Through their learning (explicit instruction), GSIs develop the meta-knowledge of writing and the teaching of writing that they need to evaluate and critique the "what's" and "why's" of performance for both themselves and their students.

GSIs' relationships to the activities of teaching first-year writing change as their ubiquitous knowledge evolves into more specialized understanding and know-how. In the process, both GSIs and the first-year writing program may be reconstituted in multiple ways. Similar to the irreversibility of the awareness that comes from mastering a threshold concept, when knowledge is reconstituted into deeper individual understanding, it is unlikely to be "un-constituted."

Collins and Evans (2011) distinguish between two kinds of specialist expertise, contributory and interactional. Contributory expertise equates with most people's general understanding of what an expert is. Contributory experts *do* things with their specialist knowledge and contribute to furthering the knowledge and practice in their fields. Interactional experts are individuals who acquire fluency in the *language* of the domain through their interaction and ongoing conversation with specialists. Interactional expertise "is expertise in the language of a specialization in the absence of its practice" (Collins & Evans, 2011, p. 28). Here, "practice" would refer to the practice of being a rhetoric and composition scholar and not to the practice of teaching writing. Even though teachers "contribute" much, teaching in all forms would be considered a form of interactional expertise.[7] Over their two years in the program, most GSIs develop varying degrees of interactional expertise; only a very few become or go on to become contributory experts. This gradual deepening of specialist expertise represents what Beach (1999; 2003) calls a lateral transition.

Lateral Transitions.

Beach (1999, 2003) identifies four kinds of consequential transitions, two of which (lateral and encompassing) I'll reference here with respect to GSIs and the first year writing program. Lateral transitions describe a developmental progression in a single direction e.g., from novice to expert, and are generally seen

as positive and transformative. Grasping a threshold concept is an example of a lateral transition. The close-up image in Figure 3.9 depicts GSI's "lateral transitions" from more ubiquitous forms of knowledge to the more specialized knowledge of interactional expertise. The movement through the concentric circles is meant to suggest that this transition represents a deepening of expertise. As GSIs become more enculturated into the language and practices of the domain, they begin to notice or detect different things, and as their centers of focus shift, they make finer and finer distinctions. Thus, popular understanding knowledge is not *replaced* with specialized knowledge; it is reconstituted, gradually thickened and layered with more nuance. Like a prior draft that has been typed over and revised, these kinds of lateral transitions are irreversible.

Encompassing Transitions.

Beach notes that "learners and social organizations exist in a recursive and mutually constitutive relation to one another across time" (1999, p. 111). GSIs adapt and change to fit the requirements of the writing program; but the writing program also morphs to meet the needs of a constantly shifting demographic of graduate student teachers. This dynamic captures different forms of what Beach describes as "encompassing transitions," transitions that "occur within the boundaries of a social activity that is itself changing" (1999, p. 117). The degree to which GSIs and the program are changed by their "mutually constitutive" relationship, and whether these changes reflect small, incremental adjustments or represent more substantive, fundamental shifts, may depend, in part, on the program's and the individual GSI's capacity for modification at a given time.

CORRIDORS OF TOLERANCE OF ACCEPTABILITY AND AREAS OF MODIFICATION

The concept of the "corridor of tolerance" offers a way to link theories of developing expertise to the "motivational and dispositional drivers" (Perkins & Salomon, 2012) that activate new learning and lead to changes in the relations between individuals and activity systems during periods of transition. This hypothetical construct was originally posited to explain why teachers decide to make changes in instruction on the basis of their own self-evaluation and reflection (McAlpine & Weston, 2001; McAlpine, Weston, Beauchamp, Wiseman & Beauchamp, 1999; McAlpine, Weston, Berthiaume, Fairbank-Roch & Owen, 2004). When teachers' self-evaluations are negative, or lie outside of their "corridor of tolerance" or limits of acceptability for themselves, they will typically make changes to their teaching. When their evaluation is positive, teachers are

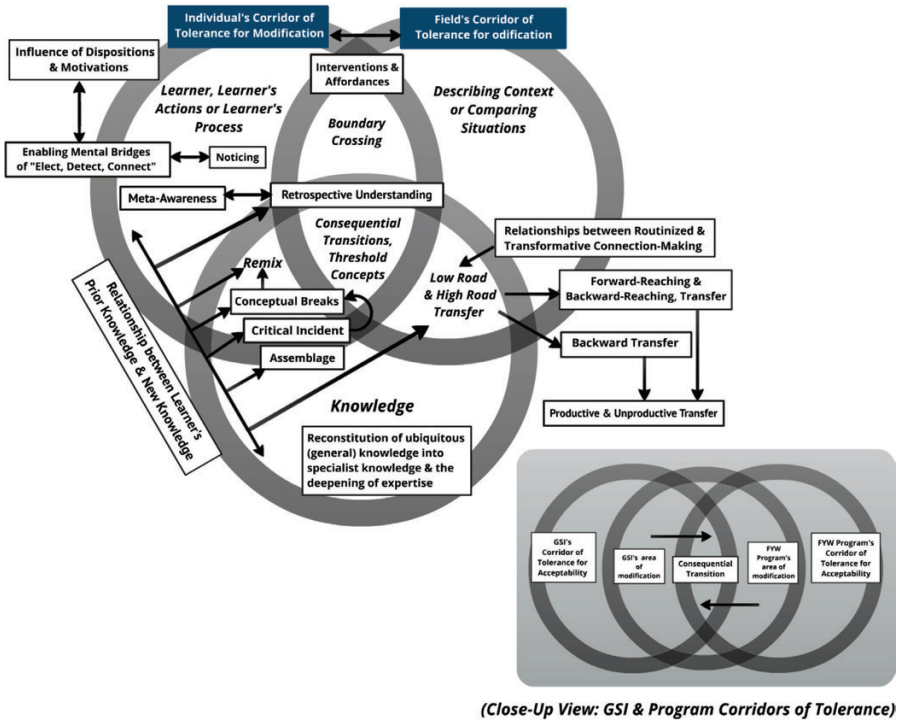

Figure 3.10. Mapping the terrain, eighth (and final) stop.

less likely to make changes. When their evaluations are neutral or fall on the outer edge of the perimeter of the corridor, some teachers may make small, incremental adjustments. The smaller the corridor for acceptability, the more likely teachers will decide to revise and modify their practices. The larger the corridor of acceptability, the less likely teachers will make changes since their "tolerance" for what falls into the acceptable range of performance is greater. The level and kind of expertise is also pertinent. Teachers with the least amount of specialist expertise tend to have larger corridors of tolerance for acceptability and are less likely to modify their practices because they are less likely to *notice* the fine points of distinction that teachers who have developed more specialist expertise see. Thus, if individuals are to develop their levels of expertise further, they may need to "shrink" the size of their corridors.

In the above studies, experienced teachers made adjustments when they recognized that something was not working in terms of their specific goals and expectations. However, to move beyond current levels of expertise, teachers also need to think about what *could* be made to work more effectively—even when

their assessment of their teaching is generally positive. In the following reflection, Justin explained why he was going to revise an assignment that he believed had resulted in some of the strongest work from his students that quarter. In this assignment, students produced a short piece of writing where they consciously tried to emulate the mindset and rhetorical sensibilities of Mike Rose.

> Rose's tone and style forced them [his students] to be more rational, thoughtful, and open-minded. As it turned out, the assignment instilled some enduring lessons about tone, attitude, ethos, generous countering, audience awareness, and so on. Gratifyingly, I saw that many students maintained some noticeable influences of Rose's approach in future writing. *This quarter I plan to alter the assignment slightly so that they use Rose's approach to respond to or counter one of the other authors and I hope that this results in an even more beneficial exercise.* (Emphasis added).

Many new GSIs would have simply engaged in low-road transfer, carrying the exact same assignment into their next quarter's course because it had been effective and fell within their corridor of tolerance for acceptability. Understandably, when designing their course, new GSIs typically put their mental energies into changing what they know didn't work, leaving what did work alone. However, Justin's corridor of tolerance for acceptability was rapidly shrinking by the end of his first quarter.

GSIs' internal drivers (dispositions and motivations) also seem to play a role in the size of their corridors and the speed in which they contract or expand. Justin not only had to have enough specialist understanding of the larger course to notice or detect what he might do differently; he had to be motivated enough to elect to make this change, and he had to see himself as capable of doing so. The external drivers that the WPA introduces to support GSIs' development and integration into the first-year writing program are also intended to permeate and shrink GSIs' corridors of tolerance so as to accustom them to the possibilities of ongoing course revision and innovation. The extent to which these external drivers succeed in this endeavor is in part connected to GSIs' internal drivers, and in part related to their length of time in the program.

Just as individuals have a corridor of acceptability and areas where modification is possible or likely, so too do institutions and fields. The close-up view in Figure 3.10 depicts the respective corridors of tolerance for modification for the first-year writing program and for GSIs. While GSIs (are expected to) do the bulk of modifying and "cognitive retooling" during their lateral transition from ubiquitous to specialist expertise, the first-year writing program does change in

response to the constant flow of new GSIs through its borders. However, the pace of change for the program is much slower and the scope of these modifications much smaller and more incremental in nature. The intersection of the two areas of modification represents the space where changes to both GSI and program may eventually result in a consequential transition in the relations between them. For instance, Justin's assignment on "anticipating objections" that I mentioned earlier in the chapter led to changes in the curriculum and assessment of writing.

The construct of the corridor of tolerance, then, adds another element to the conceptual topography of the transfer terrain by suggesting the important function that specialist knowledge plays in both forward and backward forms of transfer. As GSIs begin to integrate more specialist knowledge into their current understanding of teaching writing, the areas in which they are likely to modify their prior knowledge and practice expand. The constant flow of new GSIs through the first-year writing program likewise keeps the program's corridor of tolerance elastic and permeable to further modification.

WHERE WE ARE NOW (OR WHERE ARE WE NOW?)

A map is only effective to the extent that it can help us locate where we are so we can see where we might go. In this chapter, my aim has been to forge more detailed linkages between selected points in the *Elon Statement on Writing Transfer* as well as scout further afield into less explored territory.

Many of the terms and concepts that the *Elon Statement* uses to describe transfer depict movement of some kind, for example: (expansive) learning, (critical) transition, boundary-crossing, remix, and integration. I have suggested possibilities for what might trigger or activate this movement, what this movement looks like, what direction this movement might take, and how deep it might go. Newton tells us that a body at rest stays at rest. And, unless acted upon by some outside force, the body in motion can resist speeding up, slowing down, or changing direction. The curricular interventions and pedagogical affordances operating in the first-year writing program remind us that movement is more likely to happen when cued and prompted by some outside force or exigence. Of course, human beings are subjects, not objects. They have volition, will, and desire (dispositions and motivations) that can shape and impact their learning trajectories through space and over time. Unlike objects, subjects have at least partial navigational control of their speed, velocity, and pace of acceleration/deceleration in response to a multitude of forces—political, institutional, economic, cultural, social, educational, and psychological. As we continue the project begun with the Elon Research Seminar on Critical Transition: Writing and

the Question of Transfer, how can we better describe the directions, rhythms, and pace of these movements in other locations, especially during times of critical transition? What other factors influence whether individuals go-with-the-flow, push back, slow down, speed up, idle, stall, retreat, or change direction?

Like geographical maps, conceptual maps that endeavor to depict a dynamic and multi-dimensional reality in a two-dimensional medium can distort as well as illuminate. However, what is clear is that the many, overlapping paths that lead through transfer's theoretical thickets sometimes only become visible in hindsight, perhaps through a process of backward transfer. And when they do become accessible, they will continue to require further modification. My preliminary efforts in plotting potential relationships between selected pieces of the transfer map are necessarily partial and provisional, but I hope they will prove generative for future treks into this terrain. Right now, you are here, but I trust that this vantage point can provide some direction for locating a more complex there.

NOTES

1. In this chapter, I draw from interview and document data collected for a research study that I began while I was a participant in the Elon Research Seminar on Critical Transitions. The study examines what GSIs say they routinely utilize and creatively repurpose in their teaching and graduate studies classes. Because of their dual status as teachers and learners, I was initially interested in the boundary-crossing exhibited by GSIs in their development of expertise. My hypothesis was that being learner and teacher at the same time may contribute to a heightened meta-awareness in each discourse, especially when explicitly "cued" to look for connections.
2. My use of the term, "driver" comes from Perkins and Salomon's 2012 article where they note that high road transfer often require "significant motivational and dispositional drivers" because of the "extended cognitive effort" necessary to pursue connection making. (p. 251). I have repurposed the concept to also include external drivers that might nudge and support GSIs motivations and dispositions.
3. Justin Ericksen was one of six GSI "co-inquirers" in the study I describe in my first note. All references to his work in this chapter come from taped interviews and course work that he did while he was a graduate student. After he graduated with his MA degree, he served as my Assistant Director of Composition for a year. He is now employed in a full-time, tenure track position in a local community college. He read every draft of this chapter and offered helpful feedback and editorial suggestions.
4. Examples of how Driscoll and Wells' four general dispositions apply to GSUs include: (1) What is their motivation? What do GSIs value about teaching? Are GSIs teaching primarily to pay for their graduate education or to make themselves at-

tractive on their applications to Ph.D. programs? To be part of a community? Do they see teaching as an important and integral part of their graduate education? As an end in itself? (2) What is their level of self-efficacy? How capable do they feel as teacher-learners? How do they deal with uncertainty? How do they approach difficulty? How do they respond or persevere in the case of setback or failure? (3) What is their theory of attribution? Who or what do they see as being responsible for what happens in the classroom? When they become stressed with the demands of the work or when things do not go well in class, do they attribute these difficulties to the unreasonable expectations of the WPA, to a time-consuming or overly-difficult curriculum, to their dis-interested, under-prepared, or lazy students, or to their own lack of preparation, understanding, or engagement? (4) What are their self-regulatory strategies? To what extent can they juggle their many competing demands? What is their work-ethic? How do they plan and organize their time? Can they get the work done without compromising their performance in the classroom or their graduate studies courses?

5. In these linguistics studies, "unproductive" seems to mean interference or "contamination" of the "norms" of conventional L1 language structures by L2 language structures. We also see the fear of "unproductive" contamination from backward transfer at work in every literacy crisis all the way back to Plato's fear of writing. Currently, this fear manifests itself in concerns that texting will interfere with students' ability to write extended prose in Standard English. In other words, texting will exert an unproductive influence.
6. Haskell's (2006) taxonomy of transfer noted in the *Elon Statement* doesn't include knowledge reconstitution as one of his fourteen kinds of transfer, but it seems important to mark on the map.
7. The contributory-interactional distinction becomes blurred when we think about the differences between being a writer and a writing scholar, a movie-maker and a movie critic, or a studio artist and an art historian. The expertise of some contributory experts, especially in the arts and humanities where the expertise is based on knowledge about texts, is a case in point. In the case of the scholar, critic, and historian, expertise really means specialized forms of judgment or meta-expertise. We can also see the different levels of interactional expertise when we consider the difference between being a graduate student instructor who is the teacher of record for his or her own classroom and a teaching assistant who assists another professor in teaching a course.

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