

THESIS

A METAPHOR-BASED APPROACH TO REPRESENTING WRITING TASKS

Submitted by

Frank Stoner

Department of English

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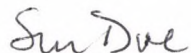
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WE HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER OUR SUPERVISION BY FRANK STONER ENTITLED A METAPHOR-BASED APPROACH TO REPRESENTING WRITING TASKS BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS.

Committee on Graduate Work




Andrew Merolla



Sue Doe



Advisor: Kathleen Kiefer



Department Chair: Bruce Ronda

ABSTRACT OF THESIS

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This document argues that the long-standing practice of imitation within the field of rhetoric, along with recent qualitative studies in rhetoric and composition, foster problematic attitudes of student deficiency. In this thesis, I propose a cognitive theory-based alternative. Recent work in cognitive science, metaphor theory, and linguistics suggests that metaphors may be more significant than mere flourishes of style—they may be evidence of mental structures called schema that organize the human mind. I argue that certain generative metaphors can be drawn from students' own experiences to help them more successfully set goals, plan, and mentally represent writing tasks. This approach empowers students by focusing their attention on their own experiences rather than problematically requiring students to rely upon expert writing models.

Frank Stoner
Department of English
Colorado State University
Fort Collins, CO 80523
Spring 2010

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Chapter 1: Introduction to this Thesis

Discovering what is missing from a plan is perhaps the most difficult part of assessing any plan. To find out what might be missing, one must have a sense of what ought to comprise the whole. If such a sense of the whole is absent, assessing the plan can be very difficult. However, relying on some mechanism often helps. This is precisely what Dmitri Ivanovich Mendeleev did in creating his Periodic Table of Elements first published in 1869. His table was designed around principles that enabled him to predict the existence of elements that had not yet been discovered or identified. Charting the elements onto his table in groups of like characteristics—rather than by atomic weight as others had done—Mendeleev was able not only to predict missing elements; he was able to predict the characteristics of that missing element. This thesis has a similar aim. But instead of chemical elements, I'll be dealing here with the difficulty inherent in locating and identifying missing or absent parts within the writing process. Specifically, I will look at task representation in the writing process, and rather than attempting to locate specific elements, I'll be proposing a way to identify the *means to locate* those elements.

In this document, I'll argue that the long standing tradition of imitation within the field of rhetoric fosters an attitude of student deficiency. The student of rhetoric has long been required to imitate with an eye toward the works of masters. For example,

Quintilian suggested to his students that Cicero may be imitated entirely as an ideal of both character and style. Much more recently (within the last few decades), qualitative studies of student writing have reinforced the attitude that students of composition and rhetoric possess a certain deficiency; chiefly, their writing practices revolve around low-order concerns such as the production of content and revisions primarily on the sentence level or even word level. These recent studies also point to the expert's ability to chunk information and knowledge of writing scripts and procedures into manageable, simplified directives, further distancing experts and novices. If we turn to other investigations of the developing writer and the writer's mind, however, we find models that do not emphasize deficiency. Recent work in metaphor theory and linguistics suggests that metaphors may be vastly more significant than mere flourishes of style—they may point to the very structure of the mind. I argue that certain generative metaphors can be drawn from students' own experiences to help them more successfully set goals, plan, and mentally represent the tasks of writing.

In Chapter 2 I'll cover some of the major contributors to imitation within the field of rhetoric. Those contributors will be delineated into three groups organized around three themes: practice-based imitation, ethos-based imitation, and transcendent-based imitation. Those groups will represent the bulk of opposition to the model this document proposes. I will argue that those views on imitation are problematic for learners and incompatible with modern conceptions of the human mind and its structure.

In Chapter 3 I'll argue that recent expert-novice studies reinforce the attitudes that imitation had long fostered, namely that student writers are deficient compared to experts. I see this as concurrently valuable and detrimental. Knowledge of how the expert

mentally represents a writing task is very valuable; I will argue, however, that this can lead to what some call an *expert trap* in which student deficiencies become unproductively problematic. I'll move from there into several other fields in which mental structures called schemas¹ were being investigated. Schema theory suggests that what worked about imitation is substantially more complicated than it may have seemed to earlier theorists. Simply put, student minds, like all others, are structured hierarchically and not simply empty vessels in need of filling.

In Chapter 4 both traditional and recent theories of metaphor will be explored. There are two species of metaphor that I'll address. The first is the *conventional* metaphor, which is understood to be primarily language-based and not related to any particular structure in the mind. This type of metaphor stands in contrast to second species I'll address: the *conceptual* metaphor. The conceptual metaphor is a cognitive linguistic metaphor embedded in one's use of language that is believed to be a sign of certain mental structures. It is believed that those structures process language through the same channels that visceral processing occurs. The metaphor is no longer treated as a rhetorical flourish. It is instead understood as a light shined into the so-called "black box" of the mind. Understanding metaphors in this way provides a valuable application for both process and domain knowledge generation.

In Chapter 5 I'll bring schema theory and metaphor theory together to synthesize a suggestion most useful and immediately applicable to the *task representation* aspect of composition. I adopt the attitude that task representation via goal setting and planning is

¹ Usage note: Some authors use "schemata" as the plural form of "schema." I will use the more colloquial "schemas" form of the plural. Quotations which employ the "schemata" usage have been left intact.

perhaps the most important part of the writing process. In order to do that successfully, I'll propose a method by which students of writing can summon domain and process knowledge from activities other than writing to generate the means by which their goals and plans can be realized. Two such types of generative metaphors will be explored here: the *procedural metaphor* and the *affective metaphor*. The method is meant to develop both the student's own understanding of her mental organization and to empower her by centralizing and validating her own experience and knowledge.

In concluding this document, I'll discuss some of the limitations inherent in the various features of my approach.

Chapter 2: The Opposing View: Imitation

The argument this thesis presents is fundamentally at odds with the rhetorical practice of imitation. The theories and ideas surrounding the practice of imitation that have been laid down over the last twenty-five hundred years, I believe, are unnecessarily tedious and they foster an understanding of the student and his work as deficient. In this chapter I will address seven rhetoricians who were chosen because they represent the major landmarks in imitation's entire history. Rather than presenting these rhetoricians in chronological order, I have grouped their imitation theories—in ascending order of opposition—into three groups: 1) practice-based 2) ethos-based 3) transcendence-based. These three themes will serve as touchstones throughout this document.

Practice-based Imitation

Of the views on imitation that I will deal with here, the practice-based applications are, by far, the least egregious. At some base level, imitation is understood as something people do naturally. Extensive practice by copying, imitating, aping, or the like only seems to be an extension of that natural tendency. In this sense, practice-based views on imitation may be viewed positively and negatively as both exhaustive and tedious. I want to be clear, though, that I am not opposed to imitation on the basis that it takes a long time. Rather, I believe that the practice-based modes of imitation are more complicated than they appear. I believe that contrasting expert work against the student's

fosters a view of the student and his work as deficient. I also believe that practice-based models of imitation obscure motivations to implant the student with certain ideologies or privileged wisdom. In this section, I'll address Quintilian—the master Roman pedagogue—and Desiderius *Erasmus* of Rotterdam.

Quintilian wrote extensively on the value of imitation, devoting an entire chapter of his *Institutio Oratoria* to the subject. He writes, “Yet that there have been recently, and are now, many writers whom we may imitate entirely, I would not only allow, (for why should not?) but even affirm. But who they are it is not for everybody to decide. We may even err with greater safety in regard to the ancients; and I would therefore defer the reading of the moderns, that imitation may not go before judgment” (Bizzell 376). Of his students, he argues that certain works from antiquity should be avoided until the maturation of the pupil has occurred. He says, “When their taste is formed, however, and out of danger of being corrupted, I should recommend them to read not only the ancients (from whom solid and manly force of thought be adopted, while the rust of a rude age is cleared off, our present style will receive additional grace,) but also the writers of the present day, in whom there is much merit” (Bizzell 376). This remark seems to confirm the idea that imitation must first instill in the youth privileged and proper cultural wisdom. Only afterwards can imitation be employed to develop eloquence in the mature student.

Further, Elaine Fantham points to three arguments Quintilian *implicitly* makes in the second chapter of the *Institutio*, which discusses the ideal teacher. She writes, “Although the greatest achievement is innovation, it is also advantageous to follow the direction *suggested* by successful innovation” (Fantham 103, emphasis mine). Second,

she says, it is “part of human behavior to copy what we admire in others: this is the way in which children learn handwriting, and learn to sing or paint or farm.” She adds, “When [Quintilian] describes the ideal teacher in Book 2, he assumes that the teacher will use this faculty to instill moral precepts: he should give short speeches for his pupils to remember *because* boys imitate living models more easily than they do the material of books; he should be a man who calls forth love and respect, *because* we are more eager to imitate those we are fond of” (Fantham 103). “The third argument is more artificial, based on the dilemma that we must be either like or unlike what is good; but resemblance seldom arises by nature (in the sense of undirected chance), whereas it frequently results from imitation” (Fantham 104). Striving toward perfection, she argues, should still remain in our sights “since not even the greatest orators have possessed every positive quality or been free from every fault” (Fantham 104). What I find problematic about Quintilian here is the desire to instill a particular morality in his students almost unconsciously. In other words, the hope seems to be that while the students copy and memorize they will somehow soak up what is it to be virtuous. While this may be valuable to social stability, I do not believe it must be the purview of the teaching of rhetoric or effective writing.

Taking up Quintilian, Erasmus suggests extensive practice and imitation, translation, paraphrase, integration of poetry and prose, and constant revisiting of the masters. I want to consider the following lengthy quotation not only for coverage of his exercises, but also to highlight their exhaustiveness:

...We shall treat a connected line of thought in a number of ways. Here it will be best to copy the expertise of the famous Milo of Groton and develop our powers

gradually, first of all rendering it twice, then three times, and eventually treating it over and over again, so as to attain such facility in the end that we can vary it in two or three hundred ways with no trouble at all. In addition we shall add greatly to our linguistic resources if we translate authors from the Greek, as that language is particularly rich in subject matter and vocabulary. It will also prove quite useful on occasion to compete with these Greek authors by paraphrasing what they have written. It will be of enormous value to take apart the fabric of poetry and reweave it in prose, and vice versa, to bind the free language of prose under the rules of meter, and also to pour the same subject matter from one form of poetic container into another. It will also be very helpful to emulate a passage from some author where the spring of eloquence seems to bubble up particularly richly, and endeavor in our own strength to equal or even surpass it. We shall find it particularly useful to “thumb the great authors by night and day,” especially those who were outstanding in the rich style, such as Cicero, Aulus Gellius, and Apuleius. We must keep our eyes open to observe every figure of speech that they use, store it in our memory once observed, imitate it once remembered, and by constant employment develop an exercise by which we may call upon it instantly. (Erasmus, from Bizzell 599).

In addition to the exhaustiveness of Erasmus’s suggestions, I find it problematic to focus so sharply on privileged works. Like the author of the *Rhetorica ad Herennium*, Erasmus seems to believe that imitation is the height of technical skill: “... in one’s own treatise to succeed [is] also using borrowed examples!” (Bizzell 244). I believe that imitation always inherently privileges the work being imitated, for why else would one imitate?

Simply put, what is overlooked here is the implied deficiency of the student who must to imitate to correct himself.

Ethos-based Imitation

During the reign of church-dominated pedagogies, imitation took a turn toward ethos. In essence, the good character of the church, its staff, and its literature became the focus of imitation. On educating the youth for service in the Church, Augustine writes,

For in the case of a keen and ardent nature, eloquence will come more readily through reading and hearing the eloquent, than through pursuing the rules of eloquence. Nor is the Church wanting in its own literature, even apart from the Canon which is the saving grace fixed in the place of supreme authority; and if a man of ability uses this literature, although he has no further aim, but is occupied only with the matter which he finds there, even while he is attending to this alone, he becomes imbued with the eloquence of its diction. (from Bizzell 457).

In offering proof of this, Augustine points to the way in which children were believed to learn and asks:

Wherefore, as children do not learn to talk except by listening to the talking of those who talk, why cannot men learn to be orators not by studying the rules of oratory, but by reading and listening to the orations of orators [priests], and, in as far as it is possible, by imitating them? Is it not true that in actual experience we find that this is so? For we know many who are more eloquent without the rules of rhetoric than many who have learned them, but none who are eloquent without having read and heard the discussions and speeches of the eloquent.

Here imitation's focus is not on "how" it works, but rather "that" it works. Another way to put it might better be "from whom it works?" Attention is placed on the orators/priests as the best models, not rules or theory. It is the *character* the students should learn from.

Centuries after Augustine, Edward P.J. Corbett embraced an ethos-based approach to imitation. In his book *Classical Rhetoric for the Modern Student* (the first edition was printed in 1965), Corbett offers an entire chapter of imitation exercises. He covers briefly the history of imitation practices like hand copying, memorization, paraphrasing, re-rendering poetry into prose and vice versa, translating, and the like. But before he presents some 40 pages of imitation exercises, he offers personalized testimonies on the worth of imitation by a range of admirable moderns. They include Malcolm X, Benjamin Franklin, Winston Churchill, and Somerset Maugham. Corbett offers testimony from each regarding his own experience imitating (in the classical sense) his way to success. From his autobiography, Malcolm X describes his experience in jail when he began copying the dictionary beginning with "aardvark." Franklin discusses his experience with the *Spectator* and recalls imitating it and attempting to memorize it. Churchill speaks of long practice with English writing before he got the structure of it into his bones. According to Churchill, "understanding the structure of the ordinary British sentence ... is a noble thing" (Corbett 415). The playwright Maugham wrote of teaching himself how to write. The interesting thing about what Corbett has done is not in the 40 pages of imitation exercises. To me, the interesting thing Corbett did was in turning to ethos to resurrect imitation. In some ways, it is simply a complex bandwagon argument: Come look at all the great men who learned by imitation! For a British youth or an African American from a Southern state, Corbett pitches an admirable range of

worthy proponents of imitation. For this reason Corbett's approach is here marked as an ethos-based imitation. I want to be clear, here, that ethos-based imitation itself does not directly evoke a deficiency model of students. However, a focus on admirable characters, I believe, draws important attention away from the student and his or her own situation and experience.

Transcendent-based Imitation

The final group of imitation contributors I am referring to as transcendent-based. By this I mean that each of the following men conceived of imitation that requires some kind of "going beyond" or air of superiority. Gorgias believed that both rhetoric and imitation work by means of magic; Edward Channing believed that imitation is the bane of genius; and Plato believed that imitation is a scourge along the path to ultimate truth. In this section I will elaborate on each of those views and show how they are most anathema to the model this thesis proposes.

Although Corax is recognized as the first rhetorician, it was Gorgias who brought rhetoric to the fore of ancient Greek culture. Having studied under Corax and Empedocles, Gorgias traveled on an embassy from Sicily to Athens in 427 BC (Herrick). It was on this trip that Gorgias delivered his "Encomium of Helen" and became widely known as an oratorical sensation ever after. Bizzell and Herzberg write:

The power of his words was akin to magic, conjuring up conviction where no knowledge had existed before. At the same time that Gorgias's rhetoric provided this magical experience, however, which was like the power of poetry, its very artificiality called attention to its manipulative effects. In other words, Gorgianic

rhetoric pointed up the fact that language can be crafted to suit particular purposes; powerful speech is not simply the result of the speaker's inspiration or the audience's transport. (42).

Note that the ancient Greek audience itself was willing to allow the interpretation that language has magical qualities. Gorgias himself believed that rhetoric was a kind of magic. In the *Encomium*, he likened the power of words to magic, witchcraft and drugs. Both Kennedy and Herrick discuss this. Kennedy describes Gorgias's devices as being those things by which he "sought to work his magic" (35). Herrick, citing Kennedy quotes him as saying "that Gorgias considers a rhetor to be 'a *psychagogos*, like a poet, a leader of souls through a kind of incantation.' If this was Gorgias' view, then rhetoric worked magic on auditors, who were captured by the orator's spell-casting abilities" (Herrick 41). Herrick cites Jacqueline de Romilly for confirmation of this, pointing to her book *Magic and Rhetoric in Ancient Greece* as a connecting agent between Gorgias and "early practitioners of magical incantations reputed to bring healing, such as Empedocles and Pythagoras" (Herrick 41). Herrick goes on to claim that what Gorgias "is after is a magical incantation to virtually hypnotize his audience, not a tight, logical proof appealing to reason" (42).

Gorgias also believed that the art of rhetoric is learned by imitation. As a sophist, he would likely have composed or borrowed speeches for his students to directly copy, imitate, and strive towards. It is important to note that while Gorgias did not contribute significantly to any discrete, novel theory or pedagogy of imitation, he was among the first of the early rhetoricians to employ it. I am marking Gorgias as significant here because his conceptions of rhetoric and imitation as "getting into" people by a kind of

magic will endure through the centuries and evolve into similarly vague explanations of how rhetoric and imitation work. Those include divine inspiration, holiness, genius, natural talent, and the like.

My point about genius comes from a rather strange bedfellow of Gorgias's. As far as natural talent is concerned (of which Gorgias was a very strong proponent) few hold opinions more virulent than the American Edward T. Channing, third Boylston Professor of Rhetoric at Harvard. That professorship was first held by John Quincy Adams (1806-1809) and then by Joseph McKean (1809-1819). It was a very prestigious professorship which Channing held from 1819-1850. Under Channing, a veritable Who's Who list of great American authors, thinkers, and statesmen matriculated. They include Ralph Waldo Emerson, Thomas Wentworth Higginson, Oliver Wendell Holmes, Sr., James Russell Lowell, Charles Eliot Norton, Wendell Phillips, and Henry David Thoreau (Broadus). I'd like to include a lengthy quotation from Channing to convey in context two things: first, the high culture Romanticist championing of genius, and second, the adamancy with which Channing rejected imitation:

... And shall authors then never be allowed to lose sight of the motley race, who are to judge them? A heavy day it will be for poetry when society is made the school of genius, instead of solitude. You might as well take a man from the quiet, unconfined seclusion in which he has lived, and rioted from infancy, and fit up a cell for him in the inquisition, in some large city, where the treat of the tormentor is heard above, and the laughter of the world without the walls.

We may differ in our tastes as much as we please. It is a way to encourage

all sorts of mind, and bring to light every thing fitted for poetry. But we must get out of the bad habit of dictating to great minds, and striving to bring them up in our own way. Genius is not willing to be interfered with, and told how to work, where to travel, and what to admire. And yet there are men who go so far as to hold up models for imitation, and standards of taste, for writers of every age and country, let their minds be ever so lofty and original. We shall say a little of this interference, for it appears to be the most mischievous of all.

It may well be for minds of a common cast to read and obey. They may profitably give themselves up all their lives, to the superior intellects about them. They are not made nor wanted for authors, and they only leave a gap in the busier parts of society, when they venture to be such. It is the great men of a country, who are to make and support its literature. And to tell such men that they must give their days and nights to any models, ancient or modern, is to destroy the whole worth and character of genius. (Channing 203).

This attitude is antithetical to the views of the prior champion of imitation: Quintilian. Consider this: using a metaphor about marching or walking regarding human frailty, Quintilian argues that “the man who tries only to keep up will inevitably fall behind, but he who tries to overtake will at least keep level with his predecessor” (paraphrased in Fantham 104). Essentially, the argument goes, the pre-trodden path is more easily traversed by those who follow the trailblazer. This especially pains Channing, who writes: “It is irksome and exhausting to walk in the dusty track of an earlier traveler,

especially when the whole world, in ‘morning freshness’ lies open to the observing, intrepid and ardent. Their refreshment is in toils and adventures of their own seeking” (204). For Channing, the genius should remain free and pure of the molestations of imitation. While that opinion may be a valid one, genius is simply no better a way to account for *a writer’s preparation* than Gorgias’ magic.

Finally, I would like to cover Plato, whose conception of imitation endures in popular culture even now. Plato doesn’t seem wholly opposed to imitation as a teaching practice—he, like Socrates, probably simply preferred a dialectical approach. On the other hand, Plato was vehemently opposed to any imitation that distances people from Truth. No mimetic copy, however accurate will ever replace the thing *being* copied. Moreover, the “real” thing—a bed, for instance—is still only ever the copy of an ideal bed that exists in some transcendent realm beyond. He explains this in the famous cave allegory in which the philosopher travels outside the cave to view and bask in the glory of the true forms. The difficulty then is for the philosopher to return to the depths of the cave and try to explain the Truth to commoners so that, at some base level, they at least “believe not lies.” While these views are substantially more epistemological than pedagogical, they are still poised in the pursuit of truth. Access to ultimate or transcendent truth is irrelevant. My argument here is based upon provincial knowledge of modern conceptions of how the mind works. Really, my aim is invention, which should never strive towards truth—only generation.

Conclusion

At the most basic level, the fundamental problem I find with imitation is the lack of any coherent theory explaining *why* it works. As I have said, it is not *that* it works that is a problem. More importantly, I believe that other models are much more efficient. The practice and repetition that is involved in what I've called "practice-based imitation" is not to be singled out. Any model for acquiring a new skill must require sufficient practice of some sort. My concern for this basic approach to imitation is that it seems too often imbued with some act of citizen making. This was particularly true of the church-based pedagogies which sought to instill Christian values simultaneously with writing skills. It was even true with the Romans who worried that too much imitation of Greek culture would lessen the worth of their own civilization. For ethos-based imitation, I am concerned that the weight of motivation for a learner is made to rest on the shoulders of another person—a good character model to be inspired by. I will argue later in this thesis that locating the weight of that motivation on one's self, and generating ideas from within can be much more empowering to a learner. Finally, the group that I have named "transcendent-based imitation" holds views absolutely anathema to the model I'll be proposing here. Having identified the basis my opposition, Chapter 3 will move on to discuss the beginnings of my proposal.

Chapter 3: Moving beyond Current Traditionalism: Expert-Novice Studies and Schemas

In the late 1980s when Patricia Bizzell and Bruce Herzberg were compiling their anthology *The Rhetorical Tradition*, early incarnations omitted substantial content from the 19th century. One of the historians of rhetoric who had been asked to read for the volume was Robert Connors. He implored them with what he describes as “welkin-rending cries” to include more 19th century material (2). Connors wrote to Bizzell and Herzberg, summarizing their omission as taking the form of the following claim: “... after heady new developments from 1590 through 1828, the field of rhetoric just *shut down* for a century, that *nothing* of real interest or importance happened between 1828 and 1928. For rhetoric, there *was* no nineteenth century” (2). Certainly, this was not the case. Connors—practically heckling—continued, saying, “There were, of course, incredibly important nineteenth centuries for chemistry, history, biology, philosophy, psychology, literature, sociology, mathematics, philology—in fact, every other modern discipline was *formed* in the 19th century. But not rhetoric” (2). All the other fields that had momentous nineteenth centuries were (and perhaps *are*) thought of as having “more cachet, more status” (Connors 3). He argued that the period would be seen as dead or in severe drought. He notes the irony saying:

Poor rhetoric. A field without a history for a whole century when every other field was being created. If you were outside observers of this field, knowing nothing about it, can you easily imagine that it could exist as claimed? That there could be *any* field for which the nineteenth century did not exist? (Connors 3).

Connors says that he went on like this for months before Bizzell and Herzberg eventually relented. They included forty pages from the period Connors describes as post-Whately, pre-Bakhtin. This time period, of course, covers the bulk of the tenure of the Current-Traditional Rhetoric paradigm—or what Connors calls Composition-Rhetoric.

With an eye towards those other “booming” 19th century fields of study, some composition theorists turned toward scientific explanations of the change. Both Richard Young (in 1978) and Maxine Hairston (in 1982) summoned Thomas Kuhn in making arguments about the massive shift that occurred in composition following Current-Traditionalism. They both seem to accept the proposition that “for [the last] several decades members of the discipline have shared a remarkably stable system of beliefs” and those beliefs are in fact what constitute Current-Traditionalism as a paradigm (Fogarty qtd. in Young 397). That paradigm determines “... what is taught and not taught, what problems are regarded as important and unimportant, and, by implication, what research is regarded as valuable in developing the discipline... For those working within a discipline, a paradigm is an eye to see with” (Young 397). Young points to the transparency of the paradigm using Polanyi’s concept of *tacit knowledge*. That, of course, being the knowledge that is held and contained without knowing from whence it came—or in a word: *why*. Young writes:

Such is the case with the vitalist assumptions, inherited from the Romantics, that underlie so many of its overt features. The overt features, however, are obvious enough: the emphasis on the composed product rather than the composing process; the analysis of discourse into words, sentences, and paragraphs; the classification of discourse into description, narration, exposition, and argument; the strong concern with usage (syntax, spelling, punctuation) and with style (economy, clarity, emphasis); the preoccupation with the informal essay and the research paper; and so on. (398).

Young clearly feels the presence of a paradigm is fairly obvious, but only after those features have been pointed out. One bit of overwhelming evidence for the presence of such a paradigm, he argues, is evident in composition's textbooks and anthologies—three generations worth, in fact. He writes, “The frequently heard complaint that composition texts are too much alike is, I think, unwarranted; the striking similarity is more a symptom of a widely shared paradigm than lack of imagination” (Young 398). Anyway, Young continues, originality is neither the basis nor the criterion on which composition texts are judged. He argues that the texts exist the way they do to elaborate on and perpetuate the paradigm. So, then, where is composition's paradigm leading it, and, moreover, is that the right direction? Young cites D. Gordon Rohman who answers:

If it is to “program” students to produce “Letters and Reports for All Occasions,” it is not only ignoble but impossible ... However, if it is to enlighten them concerning the powers of creative discovery within them, then it is both a liberal discipline and a possible writing program ... What we must do is place the

principle of actualizing in the minds of students and the methods of imitating it in their hands. (Qtd. in Young 403).

It is that very actualization in their minds and methods of imitation in their hands that the revolution hoped to bring. We should look forward, rather than backward—and we should hold no grudge against the Current-Traditional paradigm. For “We cannot reasonably expect a theory to do something it was not designed to do” (Young 405).

In addition to Young, James Berlin and Robert Inkster would point to the textbook industry as fueling, in part, the steady state mentality of the paradigm that put so much emphasis on expository writing (from Hairston). Maxine Hairston agreed, and added three additional points about the Current-Traditional paradigm. In her article “The Winds of Change: Thomas Kuhn and the Revolution in the Teaching of Writing,” she says, “First, [Current-Traditionalism’s] adherents believe that competent writers know what they are going to say before they begin to write... They also believe that the composing process is linear, that it proceeds systematically from prewriting to writing to rewriting. Finally, they believe that teaching editing is teaching writing” (Hairston 78). But clearly that was all changing. Hairston argues that the theoretical shift probably began in the middle 1950s, “from intellectual inquiry and speculation about language and language learning that was going on in several fields, notably linguistics, anthropology, and clinical and cognitive psychology” (80). She points to work by Noam Chomsky, Carl Rogers, and the Anglo-American Seminar on the Teaching of English at Dartmouth (1966) as the signs of changing attitudes from product to process generally.

This chapter picks up the trail along that transition period in composition—a period in which linguistics, psychology, and cognitive science (those disciplines Connors mentioned were taking off during the 19th century) sparked the imaginations of composition researchers and caused them to look beyond the tenets of Current-Traditionalism. There are many threads we could follow here, but for the scope and purposes of this thesis, we’ll look at one major vein of research and explore the connections it makes to cognitive understandings of the ways writers write. It will also be useful here to establish an important connection between this line of research and the imitative models that were discussed in Chapter 2.

“Deficiencies” in Expert/Novice Studies

By the middle to late 1970s, some research in composition and the teaching of English took on a much more social scientific feel. The *treatise* that had been the typical vehicle of new understandings in rhetoric had long since given way. Viewing writing as an aspect of human behavior brought new methodologies to bear on how writing was believed to take place. Scholars in psychology, particularly behavioral and cognitive psychology, started to be cited more and more frequently. Composition scholars and researchers began turning to psychologists like Lev Vygotsky, A. R. Luria, and Jerome Bruner (Emig 7). A growing trend in the research was comparative. Researchers tacitly adopted the axiom that comparisons between what the expert writer can do against what the novice cannot do would point teachers toward what needs to happen in the classroom. The expert-novice studies (roughly from the mid 1970s to the present) that I’ll address here will generally conclude that the expert has both thorough domain and procedural knowledge and the novice lacks those things. I believe that these studies thoroughly

confirm the student's deficiency compared to the expert's, but knowing so is not necessarily productive. Expert/novice studies like the ones that follow share with imitation a MIND-IS-CONTAINER metaphor that does not reflect modern understandings of the human mind—namely that the mind is no longer understood as vessel, but rather that is structured hierarchically. However, some expert/novice work will avoid the container metaphor and strive towards teaching awareness of patterns and other larger-order structures—that comes a little later. In the meantime, I would like to draw attention to a body of studies that reinforce the deficiency model of student writing.

In 1979, Sondra Perl published her study “The Composing Processes of Unskilled College Writers.” This is one of the early cognitive-oriented writing studies that drew a great deal of attention. Perl scrutinized closely a small group of students and then analyzed the copia of data that that produced. There are several key findings of this study that are relevant here. One, she says, is that “...all of the students displayed consistent composing processes” (Perl 31). That is not to say proficient writing, of course, but at the time much of what the unskilled writer did was still largely viewed as haphazard or arbitrary. Another crucial observation relevant to my argument here was found in *planning*. Students reported that after reading the prompt, they had “no idea” what they were going to write (Perl 32). What typically followed was the transcription or rewording of the prompt which allowed them to clarify what their plan was, and then be able to write more. I would like to draw special attention to this. Perl observed that it *was only after* her study participants re-imagined the task *on their own terms* that they were able to continue producing text. Perl warns against the conclusion that the students began writing prematurely and instead views the action of these students as part of the

process. Not knowing *is* the beginning of the process, she says. During the writing portion of the process, Perl observed the way students would write, and then (often immediately) reread and then write more. On the one hand this shows the student writer as not having a clear idea in mind about how to proceed. On the other hand, it reinforces the idea that was gaining currency at that time that writing is indeed a process, but, like Hairston said before, it is a recursive one that does not move in linear fashion from prewriting to writing to rewriting. Findings like these led, in part, to the quick transition between Process Theory and the so-called post-Process Theories of writing.

Just two years later, Nancy Sommers published her article “Revision Strategies of Student Writers and Experienced Adult Writers.” In making her case, she made many distinctions between written and oral discourse². Sommers drew on Roland Barthes, for example, arguing that the possibility of revision is precisely what “distinguishes the written text from speech” (45). She writes, “In fact, according to Barthes, this is the essential difference between writing and speaking. When we must revise, when the very idea is subject to recursive shaping by language, then speech becomes inadequate” (Sommers 45). One of her most relevant findings here was that the students she studied were not comfortable with the language/jargon of their teachers. Where teachers would use “revision,” the students preferred more colloquial understandings of that activity such as “scratch out and do over again.” The primary finding in comparing the revision strategies of these two groups was quite simple: the novice writer/reviewer is consumed with low-order sentence level concerns like word selection and rejection, and the expert

² As a side note here, those divisions between written and oral discourse are emblematic of the branching (that had begun much earlier) of rhetoric from a unified practice into the separate domains of speech and public speaking and English and written composition.

writer/reviewer is concerned with higher-order analysis of big picture issues like audience, structure, and argument (Sommers 47-49). The finding that novices tend to be absorbed by low-level concerns and experts tend to be concerned with higher-order patterns is not surprising. What does seem surprising is the way the students seem to resist assimilation. Not only is the “deficiency” confirmed by the research, but it also seems to be acknowledged by the students who seem to resist using jargon that locates them within the domain of their teachers. If they *are not writers*, they are not bound by the strictures that *govern writers*—a *revision* is something a writer does. A *do-over* is something *an ordinary person* does. Consider the way children will sometimes play checkers with chess pieces if they don’t know how to play chess. It is not hard to imagine that if the children were ashamed of not knowing how to play the game according to the rules of chess, they might become defensive: to them, they are not playing a deficient version of chess—they are simply *playing checkers*.

David Kaufer, John Hayes, and Linda Flower also highlighted some distinctions between experts and novices in their 1986 article “Composing Written Sentences,” which was based on the 1980 Flower and Hayes cognitive writing model. The article reports the findings of four studies which investigated various topics related to sentence composition. Studies 1 and 2 contain most of their observations about differences between expert and novice performance. Study 1 observed the fairly predictable pattern that expert writers wrote longer essays generally, and also “proposed longer sentence parts” (Kaufer et al. 127). The article, in hypothesizing a reason for why experts outperform novices so extensively, points to work done by Simon and Chase in the early 1970s about chess players. The expert has tremendous access to pattern knowledge

which can stand for thousands of individual bits of information, whereas the novice tends only to recognize the bits, and few if any larger patterns. Because of her extensive knowledge of patterns, the master chess player can account for around 50,000 piece-locations in a given game situation; the novice can account for about a half-dozen (Simon). The contrast could scarcely be more dramatic. Drawing from the chess-explanation, the sentence-level revisions of the novice writer seem to be the equivalent of recognizing only single pieces, without any recognition of any larger pattern or scheme. In Study 2, the proficient (but not professional—marked as novice) writers observed were found to make revisions more often at the sentence level. Those revisions included “deletions, qualifications (e.g., "She no longer. . . she may no longer"); and changes and additions to meaning. The major revision categories we have observed, then, involve word choice without change of meaning, choice among alternative meanings, and choice of grammatical structure” (Kaufert et al. 130). Operating on this level seems to be the hallmark of the novice.

Over a decade later, Joan Peskin compared novices’ abilities to analyze and interpret poetry to those of PhD graduate students of literature. Her work reinforces the same theme of deficient novice verses pattern-recognizing expert that endured through the 1990s. Peskin concluded a number of things, some of which were fairly predictable. For instance, the novice doesn’t particularly enjoy doing the analysis and interpretation where the experts do. The novice struggled to make meaning from the poems because of insufficient domain knowledge about and around the topic of the poems. In this case, Peskin focused more on that lack of domain knowledge than on procedural knowledge about hermeneutics. What’s most important to note here, (and will be increasingly

important later) is that the lack of domain knowledge on the part of the novices prevented them from being able to understand the use of metaphors in the poems they observed. Absent from their interpretations was the ability to recognize the second half of the metaphors used. By second half I'm referring to what Richards called the *vehicle* (i.e., tenor and vehicle) and what cognitive linguists call the *target domain* (i.e., source domain and target domain). For example, in the famous Shakespearean metaphor "Juliet is the sun!" Juliet is Richards' *tenor* or Lakoff's *source domain*. *The sun*, then, is the second half of the metaphor, or what Richards named the *vehicle* and Lakoff the *target domain*. No matter which scheme is used to explain it, Peskin's novice participants could not resolve the metaphors. In one of the test poems, the poet compares "the pursuit of a lover to a huntsman pursuing a deer in the forest. Five of the novices, missing the terms of the comparison, tried to assimilate the sense of the poem to their current life themes, such as "cruelty to animals" (Peskin 244). The results, again, point towards the expert being able to manage high-order functions and the novice lacking that ability.

Moving into the 1990s, researchers shift their focus to computers and word-processing-based composition, but still interest in expert and novice work remains. There are even some examples in which the expert/novice work abandons the container metaphor that the previous studies seemed to embrace. In fact, some even attempt direct instruction with pattern and structure recognition. In 1990 Erna Kelly and Donna Raleigh wrote that even with computer assistance, the novice writer still lacks the ability to make revisions at the structural level. Kelly and Raleigh tried to get students to acknowledge some of the larger structural issues by playing what they call WHAT-IF games. "To play the WHAT-IF game, students try several alternate forms, i.e., different organizational

patterns or other sentence styles, and assess the effects of each alternative” (Kelly 6). The purpose of such strategies, they report, is to “help students move away from blind rewriting: they begin to build a revision strategy repertoire and learn to choose an appropriate tool from it” (Kelly 6). They also worried that the volume of incoming stimuli and distractions that bombard novice writers would divide their attention. The expert writer is believed to possess the ability to mute those distractions in order to focus on a single, specific revision task. To address this, Kelly and Raleigh introduced revision prompts designed to narrow the attention of the novice to focus on those local (usually structural) tasks. A year later, Robert Kozma found that the expert writers he studied worked well with computer-based programs designed to initiate structure-level revisions (13-14). He found that the advanced students worked well with topical and rhetorical prompts and they were also successful at representing their goals graphically using the computer. While these studies still to some extent confirm the notion of novice deficiency, they do strive to shift the student’s focus away from lower-order concerns toward larger-order structures like patterns, planning, and goal setting.

But expert/novice studies are not without their detractors. Critics of the expert/novice model have expressed concerns over the implications of such research. By the mid to late aughts, warnings were being marshaled from the past about some of the perils of the expert/novice model. McCutchen et al. write:

Goldman (1995) warned of the dangers of the “expert trap” as a model of skill acquisition, a trap that inevitably casts the learner in terms of a deficient model. It was not our intention to characterize children’s writing processes as deficient versions of expert processes, and this is the very trap that Bereiter and

Scardamalia (1987) sought to avoid when they characterized knowledge telling as a process distinct from knowledge transformation, not necessarily a deficient version of it. Rather than standards that children fail to meet, we consider models of expert writing as indices of proximal development toward which we might scaffold children's writing (Vygotsky). (McCutchen et al. 465).

But not every critic of the expert/novice construction considers it potentially detrimental to students. More than two decades after writing her "Revision Strategies," Nancy Sommers argued that freshman writers who embrace their role as novice make the greatest gains ("Novice as Expert" 124). That, she argued, was contingent on the students seeing a larger purpose to the writing assignment—in other words, see themselves in development and not simply fulfilling the requirements of a cold, distant writing assignment. On that, she writes, "We were also unprepared for the pride of accomplishment that many freshmen experience, the joy of holding in their hands the physical representation of their thinking, the evidence that they have learned something in-depth" ("Novice as Expert" 129).

My purpose in offering coverage of the expert-novice studies and discussion that's been going on for the last three decades is to connect the present argument to that long history of imitation from Chapter 2. As Goldman said above, the expert-novice model conceals a certain trap in which the novice is perpetually deficient. I believe that both traditional imitation and the expert/novice studies that followed Current-Traditionalism point clearly towards that student deficiency. Not only that, but they both, then, require a container metaphor for the mind. I see this as anathema to my argument primarily because that container metaphor implies that the mind is a single hulk without

any partitions or structure. Modern psychology suggests that there are at least two kinds of knowledge: domain knowledge and procedural knowledge. On one side *domain knowledge* or *content knowledge* is stored. This can be thought of as the nouns of storage: what is meant by essay, ocean, truck, Aristotle, Marxism, entropy, etc. On the other side *process knowledge* is stored. This can be thought of as the verbs of storage: how to write a letter, how to tie tennis shoes, how to ride a bike, how to calm down, etc. From ancient times continuing on through the expert-novice models we've just seen, both aspects of knowledge are vacant in the mind of the beginner and it's best if what gets *put in there* is content and procedures of the masters. For why fill the mind with poison? Better fill it with gold, when possible. But, unfortunately, the vessel metaphor is much more complicated than it seems at first glance. The mind of the novice writer is not the hollow hulk I just described. There is structure already there, and that structure governs what can be stored, where it can be stored, and how it can be stored. That hierarchical means of storage is drawn from the current understanding of how the mind is structured into schemas.

Schema Theory: The Mind with Structure

I want to begin with a simple yet fascinating approach to schema theory that was being used in the late 1970s and early 1980s. In his report *Understanding Understanding*, David E. Rumelhart explains his investigations of the ways people comprehend story fragments. He argues that small changes to a story indicate that overall meaning is not constructed from word meaning to sentence meaning to text meaning. He begins with this story fragment:

Mary heard the ice cream truck coming down the street. She remembered her birthday money and rushed into the house.

Rumelhart writes:

Upon hearing just these few words most readers already have a rather complete interpretation of the events in the story. Presumably Mary is a little girl who wants to buy some ice cream from the ice cream man and runs into the house to get her money. Of course, it doesn't say this in the story, there are other possibilities. Mary could be afraid that the ice cream man might steal her birthday money, etc. Still most readers find the first interpretation most plausible and retain it unless later information contradicts it. ("Understanding" 1).

Next, Rumelhart asks us to consider a slightly different version of the story:

Mary heard the bus coming down the street. She remembered her birthday money and rushed into the house.

He writes:

Upon hearing a fragment such as this, most people get a rather different notion of what the story might be about. The story fragment is less coherent. For most, Mary is older. Rather than the 4- to 8-year-old of the previous paragraph, Mary is now at least a teenager and possibly even an adult woman. Moreover, the quantity of money is somewhat greater. Almost surely the money is not needed to buy the passage on the bus itself—somehow bus fare is too mundane for birthday money. (Rumelhart "Understanding" 2).

Lastly, consider this final version of the story:

Mary heard the ice cream truck coming down the street. She remembered her gun and rushed into the house.

Rumelhart, again:

Here we get a rather different interpretation again. Is Mary going to rob the ice cream man? Does she fear for her life? Note how the modification of a single word or phrase signals an entirely different interpretation. What sort of process could be accounting for such radical differences? Surely, it cannot be a process which takes word meanings and parlays them into sentence meanings and then those into text meanings. (“Understanding” 2).

Looking at the way people assemble coherent meaning from passages like this, schema theorists argue that preexisting structures in people’s minds allow them to make meaning. Later we’ll see that the notion of schema may not be all that metaphorical. However, a great deal of time and brainpower has been spent pursuing the idea *as a metaphor*. Long before that, however, schema was being used in a much different sense.

The notion of schema has a long, rich, complicated history, and many definitions. One conception of it is very vague—perhaps purposely so—to account for the massive range of meanings and connotations it has. In such a conception we take schema to mean something like *category*. An alternative conception of schema is more specific, and it is taken to mean something more like *archetype*. The confusion that can surround schema is caused by significant confusion (or misunderstanding, perhaps) about the word itself. In her book *Schemas in Problem Solving*, Sandra Marshall tracks the usage of the word

through time, space, and scholarship. She states that schema “is an everyday word whose concrete, commonplace meanings fail almost completely to capture either the richness of the term as it was used by Greek philosophers long ago or the precision of the term as psychologists use it today” (Marshall 4). The word schema is letter-for-letter transliteration of the Greek word *σχῆμα*, she says, and is typically translated (or mistranslated) to be either *form*, *shape*, *figure*, or *fashion* and is generally found in discussions about the intrinsic nature or essence of things (Marshall 4). Marshall traces the use of *σχῆμα* through Plato and Aristotle, who use the word to mean *basic outline* and *category* respectively. The next milestone usage of *σχῆμα* is found in the work of Immanuel Kant, who used it as a link between concepts (innate, a priori understanding) and percepts (perceived phenomena) (Marshall 8).

The term would largely remain in the purview of philosophy until the 20th century, when European psychologists began to adapt *schema* to their applications. Notably among them were the British psychologist Frederic Bartlett, who was interested in what and how individuals remember, and the Swiss biologist Jean Piaget, who studied scientific reasoning (Marshall 9). According to Marshall, Bartlett derived his understanding of schema from Sir Henry Head, who was using the term somewhat strangely to refer to the imagined posture of people’s limbs whilst blindfolded. She notes the similarity of use here with the translation of *σχῆμα* to mean *posture*. She says, “Schema as ‘posture’ refers here first to the movements of dance, a concrete instance of schema as essence. Then through analogy and abstraction, it refers to the essential characteristics that attach to ‘goodness’ or ‘badness’” (Marshall 5). Bartlett adopted Head’s term but lamented the vagueness of its understanding to be something like *form of*

arrangement. He himself defined schema as “an active organization of past reactions, or of past experiences, which must always be supposed to be operating in any well-adapted organic response” (Marshall 12). Piaget, pursuing his stage theory of development, and with his interest in memory, marks his description of schema with an emphasis on action. Marshall reports that Piaget “described the schema as a completely coordinated set of physical actions and cognitive functions, a set that worked together in its totality to respond to every perceived experience that could be related to the schema (14). It is these early psychological adaptations of schema that motivate the contemporary usages of the term.

Unfortunately, though, most of the definitions and usages of schema that I’ve located are immensely metaphorical in nature. There are many differing interpretations about just what schemas are. It seems that the idea of the “black box” is present in at least two ways. The human brain, itself, has been described as a black box for the obvious reason that no one can pop it open like a paint can and see what’s going on. But I’ll also add that schema as black box is a great deal like the game teachers often play with their young students. An object is placed into a shoe box which is then taped shut. The students are allowed to shake the box, smell the box, and sometimes even reach into the box through a hole cut out of the side. The students are given as many tactile and sensory observations as is possible with the single exception of sight. Such seems to be the case in defining schema because there are copious definitions and usages of the word; few of them contradict the rest entirely, but none are really specific enough that one could call the definition concrete.

Consider Rumelhart's "Schemata: The Building Blocks of Cognition" from 1980. He offers four similes to try to communicate to the reader what schemas are. He says that schemas are like plays and they are enacted as scripts are. He writes, "Just as a play has characters that can be played by different actors at different times without changing the essential nature of the play, so a schema has *variables* that can be associated with (bound to) different aspects of the environment on different instantiations of the schema" ("Schemata" 35). Rumelhart also says that schemas are like theories, but sort of informal and private. They allow people to make reasonable predictions about the activity surrounding them. All of those personal, private theories of the world put together, then, constitute something like our private, unique theory of nature of reality. He further says that schemas are like procedures or computer programs. This is markedly different than the previous two, according to Rumelhart, because the two just mentioned are passive. Procedures, on the other hand, are active. They actively process incoming data and, moreover, they determine on their own the fidelity with which they account for that data. His final simile/definition is that schemas are like parsers. A parser, says Rumelhart, "is a device that, given a sequence of symbols, determines whether that sequence forms a legal sentence (according to the rules of some grammar) and, if it does, determines the *constituent structure* of the sentence" (40). Those four analogies are intended to support Rumelhart and Ortony's (1977) four major characteristics of schemas, which are:

1. Schemata have variables.
2. Schemata can embed, one within another.
3. Schemata represent knowledge at all levels of abstraction.

4. Schemata represent knowledge rather than definitions. (Rumelhart “Schemata” 41).

To which Rumelhart adds (in 1980):

5. Schemata are active processes.
6. Schemata are recognition devices whose processing is aimed at the evaluation of their goodness of fit to the data being processed. (Rumelhart “Schemata” 41).

All of these characteristics are congruent with the simple idea that a schema is a category of categories. Or, to put it another way, a schema *names* a category of categories.

Naming will become increasingly important in Chapter 4 which deals with metaphor and in Chapter 5 which deals with task representation.

In 1987, Robert W. Howard began to stress the importance of recognizing concepts and schemas separately. Concepts, he argues, should be thought of as the preliminary building blocks of schemas. He writes, “A concept is a mental representation of a category, which allows a person to sort stimuli into instances and noninstances” (Howard 1). A schema, then, “is a mental representation of a set of [those] categories” (Howard 30). Drawing from Rumelhart’s earlier work, Howard says that both are representations abstracted from experience that constitute the expectations people have for how they expect the world to be organized. But, like Rumelhart and Ortony, Howard expands on his own (self-described) “vague definition” with examples that aim to shed light on the *characteristics* of schemas. A concrete definition, it seems, is fairly hard to

come by. Definitions of schema, for the most part, seem only to narrow down the possibilities.

However, a definition is precisely where Sandra Marshall picked up in 1995. She identified two distinct threads within schema theory. She writes,

One perspective seeks to explain important psychological issues surrounding schema formation and content, with the primary emphasis on how individuals create and use schemas ... The second perspective addresses the issue of memory storage and is concerned with architectural details about the shape and form of the schema and its role in cognition. (Marshall 38).

Those two perspectives, she argues, cannot be unified into a “full model of the schema” unless they are considered together. She proposes a four-fold model in which each of the four functions she identifies is paired with a corresponding type of knowledge. She writes:

A schema is a vehicle of memory, allowing organization of an individual’s similar experiences in such a way that the individual

- Can easily recognize additional experiences that are also similar, discriminating between these and ones that are dissimilar (Identification knowledge)
- Can access a generic framework that contains the essential elements of all these similar experiences, including verbal and nonverbal components (Elaboration knowledge)

- Can draw inferences, make estimates, create goals, and develop plans using the framework (Planning knowledge) and;
- Can utilize skills, procedures, or rules as needed when faced with a problem for which this particular framework is relevant (Execution knowledge). (Marshall 39).

But Marshall was not the only person to attempt a comprehensive theory of schema.

Sharon Derry produced a similar model a year after Marshall published hers. Derry identified three of the most common classes of schema which she describes as *memory object*, *mental models*, and *cognitive fields* (167). Memory objects occupy three levels, according to Derry, the first of which are the phenomenological primitives, or “p-prims” for short. These are understood as relatively unproblematic and organize our understandings of common events (Derry 167). Midway in Derry’s understanding is another sort of second-tier memory object which is considerably more complex than p-prims. They “permit people to recognize and classify patterns in the external world so they can respond with appropriate mental or physical actions” (Derry 167). Although, she reports, these types of knowledge represent basic information, they are nonetheless structured and complex. This level of schema organization within the memory objects grouping includes “visual cues, set relations, mapping and planning procedures, and procedures for constructing arithmetic expressions” (Derry 167). Her final grouping within the memory object sub-schema is what she calls an “object family.” This family is “a loosely organized collection of ideas that tend to work together in certain types of situations” (Derry 167). This will be the most typically referred to level of schema through many of parts of this document. The object family schema is the highest order of

memory-object sub-schema and names one of the most common usages of the term: the tennis schema for the tennis player; the statistics schema for the student taking the statistics test; etc. Derry's next level of schema structure is the *mental model*—the goal of which is to account for or construct a particular meaning of a particular phenomenon. Mental models construct, test, and adjust mental representations of memory objects into coherent “situations”, but they almost always “represent situational understandings that are context dependent and do not exist outside the situation being modeled” (Derry 168). Derry's final class of schema is the *cognitive field*, which she explains as:

a distributed pattern of memory activation that occurs in response to a particular event (such as a problem posed, a classroom demonstration, a discussion, etc.) that makes certain memory objects more available for use than others. Cognitive fields are very important types of schemas because they mediate between experience and learning. That is, experience triggers activation of the cognitive field, which in turn delineates the memory objects that are readily available for modeling the experience. The cognitive field thus determines what interpretations and understandings of experience are probable. The cognitive field activated in a learning situation also determines which previously existing memory objects and object systems can be modified or updated by an instructional experience. (168).

This explanation of schema, too, is congruent with an understanding of schema as names of categories of categories. Although that may be the simplest and perhaps most reductive way to account for the complexities of schemas, it is nonetheless generally accurate.

Conclusion

When we look back at where this chapter began, with Young and Hairston banging the drums of revolution, we can start to get a sense of the difficulty inherent in making that paradigm shift. As Connors remarked, so many of the fields that would pave the road to the revolution were still upstarts in the 19th century. Even more than that, the major developments that would come from psychology, anthropology, cognitive science and the like weren't extant enough to deliver serious contributions by the time composition was due for an overhaul. I think it is fair to say that the researchers conducting those expert-novice studies covered here were aware that the winds were changing, but the long reach of imitation still held them fast. Goldman warned that the so-called expert trap still concealed the tacit belief that novices are deficient—that they are vessels who need filling with proper knowledge and skills. That had been the way since Corax and Gorgias first began tutoring. The cognitive understanding that schemas are formed in the mind of the student long before he or she ever steps foot in a composition classroom suggests something rather different. The structures in the minds of those novice writers are already formed when they arrive. Therefore they are far from being the empty vessels prescribed by the expert trap. The problem that the composition revolution had, quite simply, was that the emancipating discoveries from other fields were happening concurrently with composition's desire to break free from Current-Traditionalism. It wasn't so much that a newer, better idea was waiting to be implemented—there was only a feeling that the current models weren't working. That there wasn't a new paradigm waiting patiently nearby is, in my opinion, the reason for the explosion in pedagogical theory that took place in the latter half of the 20th century.

There is a metaphor that I would like to introduce here. The following I'll call the source domain: cognitive understandings in composition. Let the following be the target domain: In the Bering Sea off the coast of Alaska there is a fleet of crab boats who suffer through all sorts of hell to go out and fish for crabs. The crews try to fill their boats' hulls with as many appropriate crabs (only particular crabs are allowed by the authorities to be harvested) as fast as possible. The captains and crews often work shifts as long as 80 hours straight. One of the main concerns, though, apart from the hellish conditions, weather, and seas, is the prospect of a crab dying inside the boat's tanks. You see, when crabs die, their bodies release a toxin intended to drive other crabs to avoid the same peril. Unfortunately, though, a single crab dying inside a boat's tank can often cause a chain reaction that results in the spread of many more toxins (from even more crabs dying) which leads to ever more dead crabs. To help reduce the possibility of this happening, the crab tanks are fitted with an internal structure that prevents the vast amounts of water from sloshing around and killing the crabs while the ship is pitching on rough seas. We know that the minds of students are not simply empty vessels yet to be filled. There is structure to the student mind which cannot be ignored. We know also that there may be serious consequences in believing the "vessels" are without structure. Rumelhart, Marshall and Derry have given us sufficient reason to believe that there are at least three or four structural divisions (possibly more) we all need to pay attention to. Without heeding those insights, we may remain mired in a self-perpetuating paradigm that nobody wants³.

³ This metaphorical connection between crab boats and student minds implies/requires a situation in which toxins become spread through the minds of students. This unfortunate irony can be understood as a failure point of this metaphor, which will be explored later.

As we move forward to the next chapter, we'll explore the sort of metaphor I just described. We'll also look at what are called linguistic metaphors and see how those are often embedded in our everyday speech. The aim of the next chapter, then, will be to show how those metaphors may improve our understanding of schema, and I'll start to develop a new model that will hopefully succeed in doing what the ancients tried to accomplish by imitation: move the student from novice to expert.

Chapter 4: Conventional and Conceptual Metaphors

The metaphor may be the single most pervasive of all of the rhetorical figures. Quite simply, metaphors are everywhere. I believe metaphors are so common that many probably slip by without notice, but more than that, there are so many sorts of metaphors that most people might not even recognize one if they saw it. For instance: metonymy—a reference to something by naming an attribute. This is a form of metaphor, and probably one of the most common; it is probably also one of the most commonly overlooked. Consider these examples of metonymy: *the pen is mightier than the sword*; *he asked for her hand*; *three suits walk into a bar*. These may all seem too easy: the pen is meant to signify thoughts written down, the sword warfare, the lady's hand marriage, the suits businessmen or bureaucrats. The point is that each one is a sort of mini-metaphor, and whether because they're clichés or because they're so readily understood, they don't seem to be metaphors at all; they almost seem to be understood literally. In this chapter, my primary focus will be to discuss some important aspects of two particular species of metaphor, what I'll call the *conventional* and the *conceptual*. The ultimate goals will be to explore how those metaphors may be generative to problem solvers and how those metaphors may be scrutinized to foster invention. But, it will be important not to overlook the first predicament of metaphors, which is identifying them in first place. With that in mind, I'll organize this chapter into three main sections. In the first section,

I'll present a way of looking at metaphors of varying complexity based on explicitness or implicitness of their parts in order to "reduce" them to a base level of operation. In the second section, I'll discuss some important aspects of the language-based *conventional metaphors* and discuss how that sort of metaphor may be generative to a problem solver. In the third section of this chapter, I'll discuss the *conceptual metaphor*. The conceptual metaphor is distinguished from other sorts of metaphors because it is closely linked with schema theory and is understood to be a sign of *the structure* of one's thoughts rather than simply a sign of those thoughts. If there is a broad goal here, it is to admit the difficulty problem solvers are faced with when inventing, but also the goal is to meet that difficulty with strategies to scrutinize and interrogate one of the most prevalent and pervasive rhetorical figures.

The Explicit Metaphor as a Base of Operations

I would like to suggest that the complexity of a metaphor may be delineated along the line of a one-dimensional axis with explicitness toward one end and implicitness toward the other. For a metaphor to be understood as fully explicit, both the terms—the source term and the target term—must be explicit. Consider the Shakespearean metaphor *Juliet is the sun*. For my purposes here, the source term *Juliet* can be thought of as explicit because no further work is required to locate the domain concerning knowledge of that specific woman. No other *Juliets* are in question; no other women are in question. The same can be said of *the sun*. Here again, Romeo is referring to the star (that we conceive of, at least) at the center of this solar system and no other. The term directly signifies with limited ambiguity the domain of knowledge concerning the brightest star that appears to rise and set each day. Presumably, the sun is very mighty and beautiful

and pleasant, and so, naturally, the reader is led to believe that Romeo thinks those things about Juliet. This cross-referencing of domains is known as *mapping*. Now, interpretations may differ about the significant features of the sun and therefore what is being said about Juliet. There could be widespread agreement or there could be occasioned or even incredibly idiosyncratic responses. As a base of operations, though, at least the terms are explicit. If a metaphor exists in explicit terms, a problem solver thirsty for idea generation will have found a starting point. The purpose in identifying explicit terms as a “base of operations” will be important because the next two delineations of metaphor must be “reduced” to this level for them to be generative in my framework.

The second of my metaphor delineations I’m calling *partially implicit*. On a continuum, *partially implicit* may seem interchangeable with *partially explicit*, but I am attempting to draw attention to the increasing idiosyncraticity that one encounters when moving away from the explicit. In the *partially implicit* metaphor one domain of the metaphor is explicit and the other is implicit and requires some work to sort out. Consider this example from Corbett: *On the final examination, several students went down in flames* (396). The source domain—students—can be thought of as explicitly identified. Corbett, one can understand, is referring to a specific batch of students and no others. The target domain, though, is not explicit. It is implied from the phrase *went down in flames*. It would be natural here, to make the assumption that only aircraft are available to “go down in flames.” Under the domain of AIRCRAFT one would find this description, or perhaps one could also find this description fitting of any elevated combustible thing. One would not find it within the domain of GARDEN or OCEAN or

VOCABULARY. I suppose watercraft could be acceptable here, but I think aircraft is probably a better fit. In that case AIRCRAFT, then, becomes the identified target domain of Corbett’s metaphor. I’m marking this usage as implicit and distinct from *Juliet is the sun* because the target domain—AIRCRAFT—is not mentioned in the comparison. The hearer has to make that leap on her own. But that “leap” is necessary to reduce the phrase down from “went down in flames” to a single explicit domain interpretation: only aircraft fit that description. Therefore, Corbett’s metaphor can be read as STUDENTS ARE AIRCRAFT. From that explicit metaphor one can work forward again to cull out the details of the metaphor. The students have the ability *to fly* (at least, metaphorically) like airplanes (or helicopters, blimps, zeppelins, other man-made flying objects, etc.) and travel great distances (conceivably, again, educational *distances*), but sometimes things go wrong and they aren’t able to *fly* (learn, succeed, etc)—or worse: they burst into flames and presumably crash and people die (or fail the course as the case may be). The bald point intended here is that there are severe consequences for those students. Keep in mind though, that *severe consequences* was the easy part. That bit seemed to be readily communicated and understood automatically—which is to say, without noticing the expression *as a metaphor*. If a problem solver wants to know more about what Corbett thinks about his students, he or she can reduce Corbett’s expression back to explicit terms naming domains that can then be elaborated upon.

In my third delineation, both the source *and* target domains are implicit. This will be referred to as the *implicit metaphor*. Consider this example: *my heart is the open sky*. In this example, the source domain is metonymic. The phrase *my heart* is meant to stand for the agent’s emotions, resilience, sentiment, affect, identity, core, etc. But those things

are implicit meanings of *heart*. Note also how they are potentially incredibly idiosyncratic. Before a problem solver could develop this source domain metaphor as a topic for invention, he or she must identify what *heart* implies. In other words, the problem solver must first reduce this mini-metaphor into an explicit term. The target domain *the open sky*, too, could mean many things, and therefore must also be resolved. In essence, this example is composed of a mini-metaphor source domain and a mini-metaphor target domain. Until the terms are reduced down to more limited values, the metaphor could mean nearly anything. However, if those terms are reduced down to explicit domains, the metaphor may become usefully generative. Here, *heart* is simply a metonymic noun, and not necessarily a domain. If *heart* is meant to signify *emotions*—which *is* a domain—then the problem solver could scrutinize *emotions* as such. He or she could express the features or attributes of that domain and be able to successfully *map* or resolve those features against the target domain. Resolving the terms of a metaphor down to a single, explicit domain is therefore the base of operation for any attempt at a clear mapping.

Conventional and Conceptual Metaphors

The *conventional metaphor* is distinct from the *conceptual metaphor* primarily because the former is generally understood as being language-based. By language-based I'm referring to the idea that words stand for meanings which exist under the umbrella of some domain of knowledge. In this sense, the language-based metaphor is understood as a direct comparison between two domains of knowledge. The conventional metaphor can be thought of as the garden variety sort like that famous Shakespearean one already

mentioned—*Juliet is the sun*.⁴ There are two distinct and explicit domains being compared here.

The second species of metaphor I'll be dealing with is the *conceptual metaphor*. This sort of metaphor is drawn from the imbedded meanings of certain words in a phrase and is understood to be a sign of mental structure. Consider this example: *Shakespeare delicately knitted his words together*. In this conceptual metaphor there is an imbedded or implicit comparison being made: WORDS ARE YARN. For Shakespeare to be able to *knit* words together, they must be understood as sharing some set of primary characteristics with yarn. Yarn, of course, being the typical *object* of knitting. The idea behind the conceptual metaphor is that, for a comparison to “work,” the schema for the first domain must overlap the schema of the second. In other words, a person has the ability to understand *Shakespeare knitted his words* if his or her mental frameworks for *knitting* and for *words* have primary characteristics in common. Without that commonality, the metaphor would not “work.” Perhaps more interesting is the implication that those schemas may not be separate. If *words* and *yarn* are understood so easily when being compared, there may not be a comparison at all: *words* and *yarn* may be component parts of a larger schema already mentally linked together. This notion of higher-order schemas will be further explored in the section on conceptual metaphors.

In the two sections that follow I'll cover each of the two types of metaphor described above and show how each can be generative to a problem solver. I want to show that conventional metaphors are rich with generative possibilities despite any

⁴ Lakoff calls this a poetic metaphor, but for clarity's sake, and to avoid becoming entangled with poetics, I'm going to use the term *conventional*.

understanding of *conventional* as “common” or “basic.” As for the conceptual metaphor, I aim to show that it, too, can be generative. But the generative qualities of conceptual metaphors may be additionally significant because they may help the problem solver understand some of the structure of his or her own thoughts. Understanding that structure may help the problem solver extrapolate knowledge he or she already has into other domains as necessary for the completion of a writing task.

Conventional Metaphors

Compared with the cachet and status of conceptual metaphor, conventional metaphors may seem old hat, common, or basic, but I believe they remain a perfectly good tool of invention. We may here conceive of the conventional metaphor as language-based. The words themselves are understood as the components of the metaphor; each word stands for an idea which is being compared to some other word which represents another idea. The metaphor is *not* understood as a schematic map of the mechanics of the mind. But we should not regard this form of metaphor as lesser than because it is still rich with possibilities.

Those generative possibilities, noted as early as Aristotle’s time, rely on the creation of a third meaning. Aristotle believed that the strength of a metaphor is based upon the creation of a third meaning. Lanham writes

Aristotle’s explanation of how a metaphor works conceives of metaphor not only as a comparison between two elements but creation of a third, new meaning:
[Aristotle] ‘We all naturally find it agreeable to get hold of new ideas easily:

words express ideas, and therefore those words are the most agreeable that enable us to get hold of new ideas.’ (100).

As Lanham and Aristotle both confirm, metaphors are understood as language-based, and the strength of the metaphor comes from the synergetic third definition it creates. In Corbett’s metaphor about the students, there is a third-tier richness created concurrently when the metaphor is understood. In effect, the stakes are higher. If a student does a lousy job on an examination the consequence is, say, course failure. But in linking the students with aircraft, Corbett raises the stakes. Course failure is not nearly as bad as, say, a plane crash. Attention is drawn to the students who, rather than soaring, are metaphorically burning. A corollary of this hybrid Lanham-Aristotle view of metaphor is that it is distinct from simile because it’s the *identity* of the thing being compared. It is the very *nature* of thing 1 that is being compared to the *nature* of thing 2. Lanham says simply that simile is an assertion of *likeness*; metaphor is an assertion of *identity*. Note that it is this connection between the thing and its nature that have allowed scholars like Lakoff, Johnson, and Ortony to connect *identity* to *domain*. This will become increasingly important when I deal with the conceptual metaphor later on.

Let me turn now to the idea that these conventional metaphors can be generative. Consider this excellent example from Donald A. Schön’s “Generative Metaphor and Social Policy.” He writes:

Some years ago, a group of product-development researchers was considering how to improve the performance of a new paintbrush made with synthetic bristles. Compared to the old natural-bristle brush, the new one delivered paint to a surface

in a discontinuous, “gloppy” way. The researchers tried a number of different improvements. They had noticed, for example, that natural bristles had split ends, whereas the synthetic bristles did not, and they tried (without significant improvement resulting) to split the ends of the synthetic bristles. They experimented with bristles with different diameters. Nothing seemed to help.

Then someone observed, “*You know a paintbrush is a kind of pump!*” He pointed out that when a paintbrush is pressed against a surface, paint is forced through the *spaces between bristles* onto the surface. The paint is made to flow through the “channels” formed by the bristles when the channels are deformed by the bending of the brush. He noticed that painters will sometimes *vibrate a brush* when applying it to a surface, so as to facilitate the flow of paint. (Schön 140).

The metaphor, says Schön, allowed the R&D researchers to pay attention to different things. They began looking at the gradual curves in the bristles and the different spaces those curves created. It was the “channels” that were important, not the bristle itself. The researchers had focused on making a bristle that resembled the hair of the traditional brush. The imbedded understanding of the bristle as the main feature is driven by an understanding of *wiping*. Wiping is what a brush does, or at least, that’s what it does if you’re imagining painting as smearing with a brush. Alternatively, the pump works by “pushing or sucking liquid through a channel.” To understand the paintbrush this way is what draws attention to the channels and away from the bristles. It’s a change of focus on what’s important. The puzzle became rather easy to solve once the nature of the brush was re-imagined.

Now, it is important to connect Schön's example to two things. First, there is no clear mechanism for making the leap from bristles to channels. That connection seems to have been made spontaneously. Think back to Chapter 2 on imitation. Through the ages of imitation, it was believed to work by magic, by divine inspiration, by genius—or, in a word, spontaneously. Schön's example is clearly both metaphorical and generative. But unfortunately those generative qualities are contingent on the user's creativity. The researchers who were able to re-imagine brush-as-pump did so seemingly effortlessly. However, some metaphors may be more difficult to draw from. For those of us who aren't brimming with inventive creativity, a model is needed. Fortunately, a model already exists. I'll get to that shortly. The second thing I would like connect to Schön's example is the problem solver. Chapter 5 will deal extensively with generative metaphors and writing, but I would like to establish here that problem solvers often need to solve problems very similar to Schön's R&D researchers. Quite literally, those researchers needed to redirect their attention to something that is not there: the spaces in between the bristles. Similarly, problem solvers must contend with creating meaning from absence—a *seeming absence*. The problem solver must understand what contexts exist that give substance to absence. For the paint brush researchers, the bristles are the context in which the “absence” is given substance: identifying the absence not *as an absence*, but *as a channel*. This, they achieved by reducing the metaphor down to an explicit metaphor: PAINTBRUSH IS PUMP. It is from the domain PUMP that *channel* is arrived at. The researchers reduced their situation understanding from implicit to explicit, and then built upon the explicit. They moved from PAINTBRUSH IS WIPER to PAINTBRUSH IS PUMP. From the domain pump, they generated SPACES IN

BETWEEN and from there to CHANNELS. For the writer, the problem may be in understanding the rhetorical situation, for instance. He or she must move from a state of not knowing about the situation, audience, or purpose toward some *knowing* about the situation. Only after identifying those classic features can the writer expect to persuade or change anything. And, like I said before, “hooray” if that happens spontaneously. If not, a model is needed to cull out that generative faculty.

Fortunately that model already exists in the form of the *topoi*. If we look at the *topoi* (topics of invention from classical rhetoric) we find that the general tool *comparison*—and by extension metaphor—is one of the primary means of invention. Aristotle divided the topics into two groups: the Special Topics and the Common Topics. I’ll deal first with the Special Topics. They are sometimes called the Branches of Oratory and they include the big three: Judicial, Ceremonial, and Deliberative. *Comparison* is implicit in all of them, generally, in form of binaries. Judicial relies on its own special means of invention known as stasis theory which is designed to assess reality (e.g., did X event actually happen or not?; is this the right forum to discuss it? etc.). Ceremonial or *epideictic* discourse is concerned with praising or blaming. And deliberative is designed to assess whether something is worthy or unworthy in nature. Each of these topics has an imbedded framework through which one may approach topic’s content. They each aid invention because of the user’s ability to strike off all the other things unrelated. In a phrase, narrow it down.

The Common Topics as Aristotle identified them included several dozen. Modern condensed lists like Gideon Burton’s generally narrow those down to include *definition*,

division, comparison, relationship, circumstances, testimony, and other similar groupings (Burton). But metaphors are useful for all of the common topics listed by Burton.

Definition is, quite simply, a metaphor that is understood to be literal--the *target domain* is really just context. *Division* is really a branch of definition since the aim is to say what something is. The only difference is that division is understood as a definition in terms of a thing's parts (metonymy). Since each of those parts is a definition, metaphor applies the same way: a definition is a "literal" metaphor. *Comparison* is fairly straightforward and it is absolutely the jurisdiction of metaphor. The same goes for the topic *relationship*. Burton describes cause and effect as the primary mode of *relationship*. For an example, he writes:

In Jonathan Swift's A Modest Proposal, he argues from effect, indicating what the results would be if his ironic proposal to sell Irish children for food were to be accepted: For first, it would greatly lessen the number of papists, with whom we are yearly overrun, being the principal breeders of the nation as well as our most dangerous enemies ... etc. (Burton).

Burton's example from Swift exemplifies the marriage of cause and effect and metaphor. The two acting together foster Swift's ability to create an extended metaphor on top of which his message is delivered. This one, like Burton's first three common topics, seems a natural fit for metaphor. The last two common topics—*circumstances* and *testimony*—are not as easily wed to metaphor. Nonetheless, we see here that four of Burton's six common topics accommodate metaphor very readily.

In the case of Schön's paintbrush researchers, a metaphorical understanding of the situation sparked a brilliant shift in understanding. I think it is plausible to assume that some of the time, the human mind will be able to make that sort of leap without any explanation—certainly without any predictability. However, when that spark fails to ignite, one can turn easily to the classic topoi for further generative inspiration. This may be a crude way to explain, but the bottom line seems to be this: if the ideas spontaneously arrive: wonderful; if the ideas don't, one should find a relevant metaphor and farm it through the topoi.

Conceptual Metaphor

Research and theory in linguistics, philosophy and cognitive science and psychology developed during the last half century has led a number of scholars including George Lakoff and Mark Johnson to believe that metaphors are much more than linguistic comparisons between domains. They may be the embodied mind manifest. This understanding of metaphor is important for two reasons. The first reason is simply that the conceptual metaphor is markedly different from the earlier conceptions of metaphor. The second reason is that it poses serious problems for the consistency of the worldview implicit in the language-based understandings of metaphor. Let me begin with this example from Lakoff and Johnson:

We see color, and yet it is false, as false as another thing we see, the moving sun rising past the edge of the stationary earth. Just as astronomy tells us that the earth moves around the sun, not the sun around a stationary earth, so cognitive science tells us that colors do not exist in the external world. Given the world, our

bodies and brains have evolved to create color ... Take a banana. The wavelengths of light coming from the banana depend on the nature of the light illuminating it: tungsten or fluorescent, daylight on a sunny or a cloudy day, the light of dawn or dusk ... The color of the banana will differ considerably, yet the color of the banana will be relatively constant... Color, then, is not just the perception of wavelength; color constancy depends on the brain's ability to compensate for variations in the light source. (Lakoff and Johnson "Philosophy" 23).

They add that light itself is not *colored*. "It is not the kind of thing that could *be* colored" (Lakoff and Johnson "Philosophy" 23, emphasis added). They write:

Visible light is electromagnetic radiation, like radio waves, vibrating within a certain frequency range ... Only when this electromagnetic radiation impinges on our retinas are we able to see. We see a particular color when the surrounding lighting conditions are right, when radiation in a certain range impinges on our retina, and when our color cones absorb the radiation, producing an electrical signal that is appropriately processed by the neural circuitry of our brains. The qualitative experience that this produces in us is what we call "color." (Lakoff and Johnson "Philosophy" 24).

The connection that is being implied here is that metaphors, like color, are not external to us—at least not in the way externality was previously imagined. People understand metaphors partly because of the world, but partly because of our own hard-wiring. As Lakoff and Johnson said above, people have evolved to *create* colors. They aren't there

on their own: *people made* colors. Likewise, metaphors are not inherent in the world. They're there, but only because human minds *make them be there*. The neural circuitry of the brain and the pathways through which electrical signals flow are the same channels through which electrons flow when we walk or touch or balance. In this way, metaphors are understood viscerally, but they could not be understood any other way.

This understanding of both metaphors and the world poses serious problems. For metaphor, the notion of literality is impossible. For the world, objectivism is impossible. In literalism/objectivism, writes Johnson “the world consists of objects, properties, and relations that exist in themselves, independent of human conceptual systems and human agency” (45). Those objects, properties, and relations may be observed via sense impressions and with the rational faculty. Literality is believed to be the correspondence between what we think and what the world is. Truth, then, is “a correspondence relation between propositions and states of affairs in the world” (Johnson 45). Metaphor cannot exist in a scheme of this sort “because the cognitive content of a metaphor would need to be reducible to some set of literal concepts or propositions,” which they cannot (Johnson 45). Therefore, the literalist/objectivist take on metaphor cannot be correct. The alternative to literality of metaphor, then, is the conceptuality of metaphor. In this section, I'll be dealing with conceptual metaphors which are unlike the conventional metaphors described above because they function *as the world* and *as the mind*—instead of merely *with the mind*.

Conceptual metaphors rely on a symbiotic relationship between the mind and the world. Johnson writes, “Conceptual metaphor is a structure of human understanding, and

the source domains of the metaphors come from our bodily, sensory-motor experience, which becomes the basis for abstract conceptualizing and reasoning. From this perspective, truth is a matter of how our body-based understanding of a sentence fits, or fails to fit, our body-based understanding of a situation” (45). This is, Johnson says, certainly a form of correspondence, but he is quick to note that the correspondence here “is not the classical correspondence of literal propositions to objective states of affairs in the world. Instead, the correspondence is mediated by embodied understanding of both the sentence and the situation” (45). The line between the world and the observer becomes both blurry and circular.

What might be called “bodily understanding” of metaphors has to do with space. Space, for many theorists, is the basis for abstract thought. Merideth Gattis writes:

...sensory processors and motor programs may have become adapted to more abstract tasks that share some of the same computational structure as sensorimotor tasks ... One of the primary candidates for sharing computation structure with abstract cognition is spatial cognition. As a domain, space is well learned across many species... and it often involves the integration of information across multiple modalities and multiple dimensions ... These characteristics make it an appropriate and appealing platform for building new structures essential for higher cognitive processes. (1).

One sort of structure Gattis is pointing to is the conceptual metaphor. Let’s consider now the following conceptual metaphor: TIME IS SPACE. Since *space* is so well understood to us already, imbedded comparisons in our language can rely on this implicit metaphor

without much trouble. Each concept is composed of an elaborate schema which may be simply overlaid atop the other concept. Again, this is what is known as *mapping*. It is very important to note, though, that “conceptual products are never the result of a single mapping. What we have come to call ‘conceptual metaphors’... turn out to be mental constructions involving many spaces and many mappings in elaborate integration networks constructed by means of overarching general principles” (Fauconnier 53).

Consider these selections from a list that Fauconnier offers:

- Minutes are quick but hours are slow.
- Those three hours went by slowly for me, but the same three hours went by quickly for him.
- For me, the hours were minutes, but for her, the minutes were hours.
- At the end of the three hours, you’ll have solved the problem, but at the end of the same three hours, he will have solved it and five more.
- Time has come to a halt.
- Sure, it’s Friday afternoon, but Monday morning is already staring us in the face.
- Next week was an eternity away.
- For me, the three hours were forever, but for her, they did not exist.
- It’ll go by faster if you stop thinking about it.
- Where have those years disappeared?
- I didn’t see those years go by. (Fauconnier 55).

These examples blend the schemas for each domain. In the domain of objects moving through space, all moving objects are understood to occupy different locations. That's how space works. Two things can't be in the same space (or at least in this conception). Fauconnier notes that it is also unusual within this scheme for objects to follow the same path. We can imagine that being so, however, as in the case of trains which always follow the same path. If we turn to the domain of time, it is in fact standard that objects or people inhabit the same location (in time). It is not unusual at all, within the TIME domain, for many people and things to be concurrently present. The two domains seem incompatible because their maxims contradict—but this is precisely how the metaphor works. We might say that TIME is not an object, and therefore is not available to GO anywhere in SPACE. Yet we often say, for example, that some *amount of time passed*.

I would like to elaborate on this idea of blending domains by making a distinction about the tired, shopworn phrase “in terms of.” I believe the proper usage of this phrase is to achieve specific context about a specific topic for a specific purpose. Consider this: *please tell me about the stars in terms of astrology*. Here, the person asking for information wants it *in specific terms* at the exclusion of others. An appropriate answer here would conceivably include astrological signs of the zodiac and probably include some mention of the effects those things have on people on Earth. Now consider that same request for information slightly differently: *please tell me about the stars in terms of astronomy*. Here, the person asking for information still wants that information in specific terms but now wants a very different set of terms. An appropriate answer here would conceivably include terms like *light years, quasars, pulsars, red giants, yellow dwarves*, etc. In asking for information about the stars *in terms of* either of those two

domains, the inquirer is specifically requesting the omission of other sets of terms. The stars, *in terms of astrology*, should omit the terms of astronomy, and vice versa. The request for specific terms is worthwhile because the two domains are imagined separately.

Now consider this example: *please tell me about your day in terms of how it went*. Presumably, including the phrase *in terms of* is meant, like before, to cue the inclusion of certain details at the exclusion of others. But the problem is that *the terms* of one's day are not a separate set from those that would be used to describe *how it went*. The phrase has become tiresome because it is often used merely as an expression to draw out details and specificity. Seldom is the phrase used to actually request a particular set of terms. I believe that the phrase is used out of habit and probably without awareness. In fact, it probably belongs on a list somewhere with other vapid examples like the ones Ken Macrorie defined as "engfish" back in 1970. The point is, the phrase "in terms of" is often asking for a distinction where none exists. I would like to mark this as similar, but distinct from another occasion relevant here in which separate sets of terms are equally impossible. I want to return, now, to Gattis' metaphor SPACE IS TIME. Her examples above demonstrate the immense difficulty in using different sets of terms for *space* and *time*. While the two appear to be separate, it can be inferred that they are not understood separately precisely *because* they share the same set of terms. Or, to put it another way, *time* borrows *space's* terms. In each of the examples Fauconnier listed above, time is conceived of spatially. Specifically, time is described *in terms of* an object moving in space. *Time came to a halt*. *Hours went by*, et cetera. If Lakoff and Johnson's description of color being the co-creation of light and human minds is true, then so must

be the case with time and human minds. To this understanding, *time* is the co-creation of space and the human mind. Time can only be understood *in terms of* objects in space because humans have evolved visceral understandings congruent with the spatiality of world. In this sense, time and space are simply inseparable. What this means is that the metaphor TIME IS SPACE is fundamentally neither a metaphor nor a comparison. The two are inextricably linked as one domain in the human mind.

Conclusion

There are several things about this approach to metaphor that are useful here. While these two conceptions of metaphor seem to be incongruent with each other, they are both still available to be scrutinized and explored using the topoi. Any conceptual metaphor can be farmed through the topoi in the same progressing manner as before: definition, division, comparison, etc. The advantage becomes more apparent when one takes into account the view that the conceptual metaphor is not imagined as being solely symbolic—quite the contrary. It is understood as being evidence of the robust mental hierarchies that categorize and organize vast amounts of data into concepts and then into even larger schema. The conceptual metaphor actually acts like a signpost giving navigational direction. It suggests and defines what things are alike and unlike. It determines what can be compared and what cannot. In addition, viewing this sort of metaphor as already inherent in the mind lets us reverse the strategy employed to understand the conventional metaphor: rather than trying to internalize what is thought of as *outside* the individual, the conceptual metaphor points to schema which need to be drawn out. In this respect, we can regard such metaphors as doing the reverse of what

imitation sought to accomplish. Plain and simple, the problem solver will benefit from understanding the situations in which ideas are bound within the same domain or schema.

I believe it is possible to anticipate robust and elaborate connections between the insights brought from metaphor studies and the schemas that cognitive scientists say organize and give structure to what we know and how we do things with what we know. The cognitive psychology that resurrected the much, much older notion of schema has proposed that schemas are complicated mental structures that change little, if at all, during an individual's lifetime. It is as if each individual establishes a single set of mental tools with which he or she must use to engage with the world. It is in this sense that the importance of the metaphor becomes dramatically apparent. For people to understand new things, they must always do so *in terms of* something else they knew prior. This is precisely what a metaphor is, and precisely what a metaphor does. It maps one domain of knowledge onto an alternate domain of knowledge. In essence, such activity leads one from the known to the unknown (or at least the not-yet-known) with a two-fold increase in the understanding of each domain. In the next chapter, I will bring schema and metaphor together and discuss the usefulness of that marriage in the context of representing a writing task. A secondary aim will be to show how that approach is practically and theoretically different from the imitation models of writing.

Chapter 5: Task Representation

About a decade ago I encountered for the first time many of the articles and essays mentioned in Chapter 3. The expert-novice studies, in particular, led me to a sort of defensive attitude about academic writing. If the expert has robust domain and topic knowledge and elaborate process schemas with which quick assessment of a task is recognizable through patterns, it makes sense then that he or she will be able to write very well. If the novice (me) lacked those abilities, why should he be able to write well? More than that, is it not approaching some realm of sadism to ask someone to do something knowing he or she will fail? In retrospect, this attitude seems quite exaggerated. The assignments I was given were designed to help *develop* my abilities. I was clearly not being expected to produce fine, polished scholarship. Nevertheless, I remember perceiving a gulf between the articles my classmates and I were reading in our courses and the assignments I was handing in.

I'm certainly not the first to make this observation. Bartholomae says in his essay "Inventing the University" that he is "continually impressed by the patience and goodwill of our students" (606). They must re-invent the university every time they are asked to write. After including an entire student essay, he makes the following remarks:

[The student] is trying on the discourse even though he doesn't have the knowledge that would make the discourse more than a routine, a set of conventional rituals and gestures. And he is doing this, I think, even though he *knows* he doesn't have the knowledge that would make the discourse more than a routine. He defines himself as a researcher [in the student text Bartholomae included] working systematically, and not as a kid in a high school class ... He moves quickly into specialized language (his approximation of our jargon) and draws both a general, textbook-like conclusion ... –and a resounding peroration... (Bartholomae 606-607).

Bartholomae says that there must be a certain enabling of fiction—that the student must imagine himself or herself as the equal to the teacher/researcher/scholar. By asking students to adopt the discourse and feign the knowledge of a full-credit member of the discourse community, teachers essentially require this fiction. But “requiring” this fiction complicates things. On the one hand, Bartholomae is right that a gulf does exist between the student and the teacher. On the other hand, I think this is a sign that Bartholomae and others like him may still be rooted in Current-Traditional thinking that is somewhat short sighted. Shifting focus away from the tendency to make those distinctions between expert and novice may be one of the first steps necessary for someone who wants to move beyond Current-Traditionalism. I think this tendency to compare the expert to the novice is parallel to the divisions inherent in the imitation model (student orator verses master orator), and I think those problematic divisions are also very apparent in the expert-novice studies covered in Chapter 3. Given the way schema theory works with conceptual metaphor theories, I think it is possible to avoid the

expert-novice trap by bringing those theories to bear on student writing practices. In this chapter, I will propose a way for writers to approach the task representation aspect of the writing process by using certain kinds of metaphors to cue certain schema. Simply, I believe this approach may help to narrow the gulf between the novice and the expert.

Task Representation

The idea of task representation is fairly straightforward. When people set out to complete a task, they often begin by anticipating the steps or parts that may be involved. There may be many complex steps or parts or there may only be a few. A simplified way to begin approaching task representation is to see it as an act of naming, but even this can quickly become complicated. The act of naming is important because it can change the way the task is understood. In effect, it can change the terms of the task. By naming a task in a certain way, certain task schemas are cued. Once this happens, only the steps or features included in that schema will be accounted for. Consider the difference between *take out the trash* and *take out **all** the trash*. *Taking out **all** the trash* may imply several additional steps not explicitly named in the representation *take out the trash*. For instance, *take out the trash* may only signal the kitchen trash can. However, *take out all the trash* may mean the kitchen trash and all the rest of the “little” trash cans like those usually found in the office, the bathroom, the bedroom, etc. After all that is collected, the person must take the whole lot out to the dumpster. That accounts, at least partially, for the difference between *taking out the trash* and *taking out **all** the trash*. But there may be additional steps implicit in *take out all the trash*. These may include replacing all the trash can liners, collecting all the recyclables, or even removing certain items to a compost pile. For some, *taking out all the trash* may include steps like emptying ashtrays

or even cleaning out the refrigerator. The point is, for even simple tasks there may be many implicit steps or parts “covered” by the representation. Note, too, how many low-order steps are never mentioned: putting on shoes (or snow boots if it’s winter), walking, opening and closing various doors, etc. It is easy to see why naming a procedure is so efficient. By the time someone could explain all the steps involved in taking out all the trash, someone else could have completed the whole process!

Now consider how a comparatively more complex task like a two-page reading response for a class could quickly spiral into a very lengthy process description. In fact, such a process description may be so massive that attempting to explicate it may simply be too expansive. This is precisely why the simplifying or reductive aspects of task representation become so important.

In Linda Flower and John Hayes’ 1980 article “A Cognitive Process Model of Writing⁵,” they place a high level of importance on problem representation. They write:

At the beginning of composing, the most important element is obviously the **rhetorical problem** itself. A school assignment is a simplified version of such a problem, describing the writer’s topic, audience, and (implicitly) her role as student to teacher. Insofar as writing is a rhetorical act, not a mere artifact, writers attempt to “solve” or respond to this rhetorical problem by writing something.

⁵ There are several theoretical routes that could be marked as the ancestry or initial trajectory that led to the 1981 Flower and Hayes Cognitive Process Model of writing. The first has its roots in psychology in the works of Dewey and Vygotsky. Another has its roots in the Information Processing models of cognition found in the work of scholars like Allen Newell and Herbert Simon. In some ways, I think a case could be made also for the Flower and Hayes model to have some ancestry in the Symbolic Interactionism work done first by George Herbert Mead and Herbert Blumer.

In theory this problem is a very complex thing: it includes not only the rhetorical situation and audience which prompts one to write, it also includes the writer's own goals in writing. A good writer is a person who can juggle all of these demands. But in practice we have observed ... that writers frequently reduce this large set of constraints to a radically simplified problem, such as "write another theme for English class." Redefining the problem in this way is obviously an economical strategy as long as the new representation fits reality. But when it doesn't, there is a catch: people only solve the problems they define for themselves. If a writer's representation of her rhetorical problem is inaccurate or simply underdeveloped, then she is unlikely to "solve" or attend to the missing aspects of the problem. ... Defining the rhetorical problem is a major, immutable part of the writing process. (Flower and Hayes 257).

The injunction that "people only solve the problems they define for themselves," places a great deal of the weight of a writing task squarely on the shoulders of task representation. No amount of genius or natural talent will ever produce an appropriate piece of writing if the representation that drives it does not fit reality. But, as McCutchen et al. write, "task schemata were [only] implicit in the original Flower and Hayes model ... [Task schemata] were subsumed under the general control mechanism known as the "monitor" (453). Task representation has been studied elsewhere in writing theory; however, it has unfortunately not been studied in ways immediately useful to my argument here.

McCutchen et al. covered task representation briefly in their chapter "Writing and Cognition: Implications of the Cognitive Architecture for Learning to Write and Writing to Learn" published in 2008. They drew once again on expert-novice studies. They write

that experts employ their task schemas to formulate goals such as attending to a particular audience or assuming a particular voice. The expert also employs task schemas to set plans that will achieve those goals. This may take the form of adopting “a particular genre or rhetorical stance” or including or avoiding certain vocabulary, “with clear distinctions between the plan and text” (McCutchen et al.). The novice, by contrast, uses task schemas to generate content. Bereiter and Scardamalia dealt with task representation in *The Psychology of Written Composition* (1987). In that work they described two main ways writing is represented: through knowledge *telling* and knowledge *transformation*. Those divisions are similar to the divisions made in the expert/novice studies I discussed in Chapter 3, but Bereiter and Scardamalia actively focused their attention on dismantling the so-called expert-novice trap. Task representation in writing has also been investigated by Smeets and Sole as recently as 2008, but their application for task representation was to help students avoid plagiarism.

Since I have not found what I am looking for in writing theorists’ coverage of task representation, I have turned my attention to other fields that have focused on task representation. Unfortunately, looking outside of writing theory to inform the insights of Flower and Hayes complicates things. I have found two areas that may help inform my application of the Flower and Hayes model, but, since neither was designed for writing applications, utilizing them requires some creativity.

In trying to account for vast differences in the data researchers had collected on whether tables or graphs are the superior means of transmitting information, Iris Vessey

developed Cognitive Fit theory⁶. This, she accomplished throughout several essays published in 1991. The problem she had been finding was that, within the field of accounting, a sufficient corpus of data had been published claiming that tables are the superior way to present data. Simultaneously, another sufficiently large corpus had been published claiming that graphs are the superior way to present data. Drawn from the Information Processing theories like those of Newell and Simon, Cognitive Fit theory proposes that certain kinds of information are inherently symbolic, and other kinds of information are inherently spatial. The hearer or interpreter, then, creates in his or her mind a representation of the problem. That representation is of great import to Vessey, who writes, “Although there may be many factors that ‘fit’ the problem solving, we view the problem representation as perhaps the most important, followed by other task related factors such as problem solving tools” (“Empirical” 65). If the representation (here, either spatial or symbolic) matches the task (again, either spatial or symbolic) there is said to be a strong “cognitive fit.” Vessey explains:

When a mismatch occurs between problem representation and task, similar processes cannot be used to both act on the problem representation and solve the problem, and problem solvers will therefore no longer be guided in their choice of problem-solving processes. They will either formulate a mental representation based on the problem representation, in which case they will need to transform it to derive a solution to the problem; or they will formulate a mental representation based on the task, in which case they will need to transform the data derived from

⁶ Vessey’s Cognitive Fit theory bears little if any connection to David Chan’s 1996 Cognitive Misfit Theory. Chan’s work was based on Kirton’s 1976 Adaptation-Innovation theory about Person-Organizational fit. There may be similarities between the two, but Chan either eschewed or didn’t mindfully connect his work to Vessey’s

the problem representation into the mental representation suitable for task solution. In either case, performance will be worse than if the problem solver had been supplied a representation emphasizing the type of information that best supported the task solution. (“Theory-Based” 221).

Tables, in Vessey’s scheme of things, are well-suited for symbolic information, whereas graphs are well-suited for spatial information. The whole approach is somewhat positivistic, holding that information can be definitively sorted into two categories, but it nonetheless provides for a testable model from which productivity could be increased, employee frustrations could be abated, or other similar benefits could be understood or enjoyed.

Like Vessey, I believe that the problem representation that precedes the cognitive labor of production is perhaps the most crucial part of performing a task. This seems to be at least an implicit view held by Kotovsky, Hayes and Simon, who studied the problem of isomorphs. An isomorph, in this context, is simply another version of a common problem. More specifically, it has to do with what Kotovsky et al. call “problem spaces.” In Information Processing, problems are analyzed “by means of a ‘problem space’ representing various states of knowledge of a problem solver along the way toward a solution, the transformations between allowable states, and the operators that accomplish those transformations” (Newell & Simon, 1972 qtd. in Kotovsky, 248). One frequently-studied puzzle of this sort is called the Tower of Hanoi. In the puzzle, the participant is asked to move different sized discs from left to right along three pegs. There are two primary rules: only one disc may be moved at a time; and larger discs cannot be placed on top of smaller discs. The goal is to move a stack of discs from the

left position, through the middle position, to the right position. Problem solvers typically represent this task spatially. Kotovsky et al. therefore refer to it as a *move problem*. As they conceive of it, Kotovsky et al. describe a three-disk Tower of Hanoi problem as having a problem space of 27 nodes. Most people can solve this problem fairly quickly by means of trial and error. However, this solution is contingent on those trials being physically observed by the problem solver in step by step fashion. That is, the problem solver asks himself or herself during each move “Can I put this one here? Yes. Okay. Now what about this one; can it go there? No. Okay. Put it back where it was before.” Even though the method employed is trial and error, the strategy is still represented spatially. However, an isomorph of this puzzle requires the problem solver to represent the situation differently.

To elucidate this notion of isomorphs, I would like to include two isomorphs of the Tower of Hanoi puzzle studied by Kotovsky et al. The description for each goes as follows:

A Monster Move Problem

Three five-handed extra-terrestrial monsters were holding three crystal globes. Because of the quantum-mechanical peculiarities of their neighborhood, both monsters and globes come in exactly three sizes with no others permitted: small, medium, and large. The small monster was holding the large globe; the medium-sized monster was holding the small globe, and the large monster was holding the medium-sized globe. Since this situation offended their keenly developed sense of symmetry, they proceeded to transfer globes from one monster to another so that each monster would have a globe proportionate to its own size.

Monster etiquette complicated the solution of the problem since it requires that:

1. Only one globe may be transferred at a time;
2. If a monster is holding two globes, only the larger of the two may be transferred; and,
3. A globe may not be transferred to a monster who is holding a larger globe.

By what sequence of transfers could the monsters have solved this problem?

A Monster Change Problem

Three five-handed extra-terrestrial monsters were holding three crystal globes. Because of the quantum-mechanical peculiarities of their neighborhood, both monsters and globes come in exactly three sizes with no others permitted: small, medium, and large. The small monster was holding the medium-sized globe, the medium-sized monster was holding the large globe; and the large monster was holding the small globe. Since this situation offended their keenly developed sense of symmetry, they proceeded to shrink and expand the globes so that each monster would have a globe proportionate to its own size.

Monster etiquette complicated the solution of the problem since it requires that:

1. Only one globe may be changed at a time;
2. If two globes have the same size, only the globe held by the larger monster may be changed; and,
3. A globe may not be changed to the same size as the globe of a larger monster.

By what sequence of changes could the monsters have solved this problem?

(Kotovsky et al. 251).

By including these isomorphs studied by Kotovsky et al. I am drawing attention to the importance of the way a task gets represented, but I would like to be clear on what they meant. Kotovsky et al. write:

As can be seen in [those two monster problems], the Move problem ... involves three globes of different sizes that are passed back and forth between three monsters, which are also of varied sizes. The rules determining move legality are based on the relative sizes of the three globes. The problem corresponds to a five-step Tower of Hanoi problem with the three disks (globes) distributed over three pegs (monsters) at both start and finish. The Change problem ... is also a five-step problem involving three globes of different sizes that can be changed from one size to another. Each globe is held by a monster that is also one of three sizes. The rules in the Change problem depend on the relative size of the monsters, rather than the globe sizes. Here the monsters correspond to the disks of the Tower problem, and the globes correspond to the pegs. Hence the problems are structurally isomorphic to each other and to the corresponding three-disk Tower of Hanoi problem. (Kotovsky et al. 250).

Unlike Vessey's theory in which information is declared to be either spatial or symbolic, the isomorph puzzles here are designed to complicate such an assessment. In other words, the participant puzzle solver is coaxed into a more difficult representation.

Compared to the simple 3-disk Tower of Hanoi puzzle, Hayes and Simon found (in 1977)

the Monster Change problem to be sixteen times more difficult (from Kotovsky et al. 250).

The point I want to make clear here is this: although a problem may be “available” to be understood in more than one way, some problem representations seem to make the problem significantly more difficult. Likewise, a different problem representation may make the problem solving effort comparatively easier. I believe this is likely true for metaphorical task representations as well. That is, a particular metaphor used in a task representation may effectively simplify the task by changing the schema activated to perform the task.

I believe that “simplification” is at the core of how writing works—and that is precisely what schemas accomplish for us. In effect, schemas *name* the relevant categories of categories that allow us to simplify matters into discrete processes. They let us decide what gets investigated and what gets thrown overboard. Moreover, I think that task representations determine the strength of the writing effort. And, as Flower and Hayes said, if that representation is a poor fit for reality, the writing effort is predictably weaker. For the remainder of this chapter I would like to introduce two hypothetical examples drawn from conversations I’ve had with writers about how they simplify and represent writing tasks to themselves.

The Procedural Metaphor

I recently spoke to a writer who feels he is able to begin his writing tasks, but his task representations often fail him somewhere along the way: he tends to get stuck someplace in the middle of his drafts. Rather than asking himself “How do I begin?” he finds himself asking, “Where do I go from here?” In talking with him, I found out that he

draws very well. He even showed me some of his work. In looking at his drawings, it became very clear to me that he possesses extensive knowledge about how to draw a picture. I asked him if he ever “got stuck” in the middle of a drawing the same way he “gets stuck” in the middle of a written composition. He thought about it for a few minutes and then said that that doesn’t really happen to him when he’s drawing. When I asked him *why not* he said that he doesn’t get stuck because he knows how to assess the drawing for mistakes and then knows just how to fix or attend to them. In some cases, it’s a matter of scaling. There is a clichéd image of the artist in a smock standing in front of his canvas with one hand outstretched. He is comparing the length of his thumb or a section of his pencil to the scene he is drawing. This is called scaling. Perspective forces nearby small objects to appear the same size as large objects far away. If the artist is rendering a landscape, say, he can hold out his pencil and “measure” the height of a tree against the length of his pencil. When the same section of his pencil is held at a known distance from his canvas, the artist can scale his drawing of the tree to fit within the composition of the rest of the scene. By applying this method to each object in the composition, the entire drawing can be drawn to scale, and moreover it can be assessed quickly for scale. The scale of the tree must match that of any building, person or object within that landscape. In the midst of composing the drawing, the artist may notice something that for him triggers revision. When this happens, the artist here knows just what to do. He can check his entire composition for scale to eliminate that as one of the things that might need correcting. If the problem is with scale, the artist can correct the piece by the same means he just used to assess it. He can hold out his arm again, get a

“measurement” on the height or width of the object, and then simply repair his composition.

In a writing situation, this same person doesn't feel as though he has a method to resolve that “stuck” feeling he often gets. In the middle of a draft, he says, he perceives something needs to be attended to, but he has difficulty in identifying *what* it is, *where* it is, and *how* to attend to it. If he were to adopt WRITING IS DRAWING as a metaphor for his task representation, he may be able to rely on that domain knowledge and procedural knowledge from drawing to inform his writing. What's useful about this is the richness of his knowledge in the drawing domain. He has deeply engrained and thoroughly understood schemas for drawing and issues surrounding the production of a drawing. The difficulty, really, is in accessing that knowledge and making it commutable to writing. If he perceived his difficulty as having something comparable to scaling, he might simply be able to check through his document to see if he had treated each of his topics in appropriate depth. Perhaps one topic received only cursory coverage where another, even an unimportant one, say, received extensive coverage. This might be a case where the strategies employed from one domain could be carried across to the other. However, scaling may not be his difficulty.

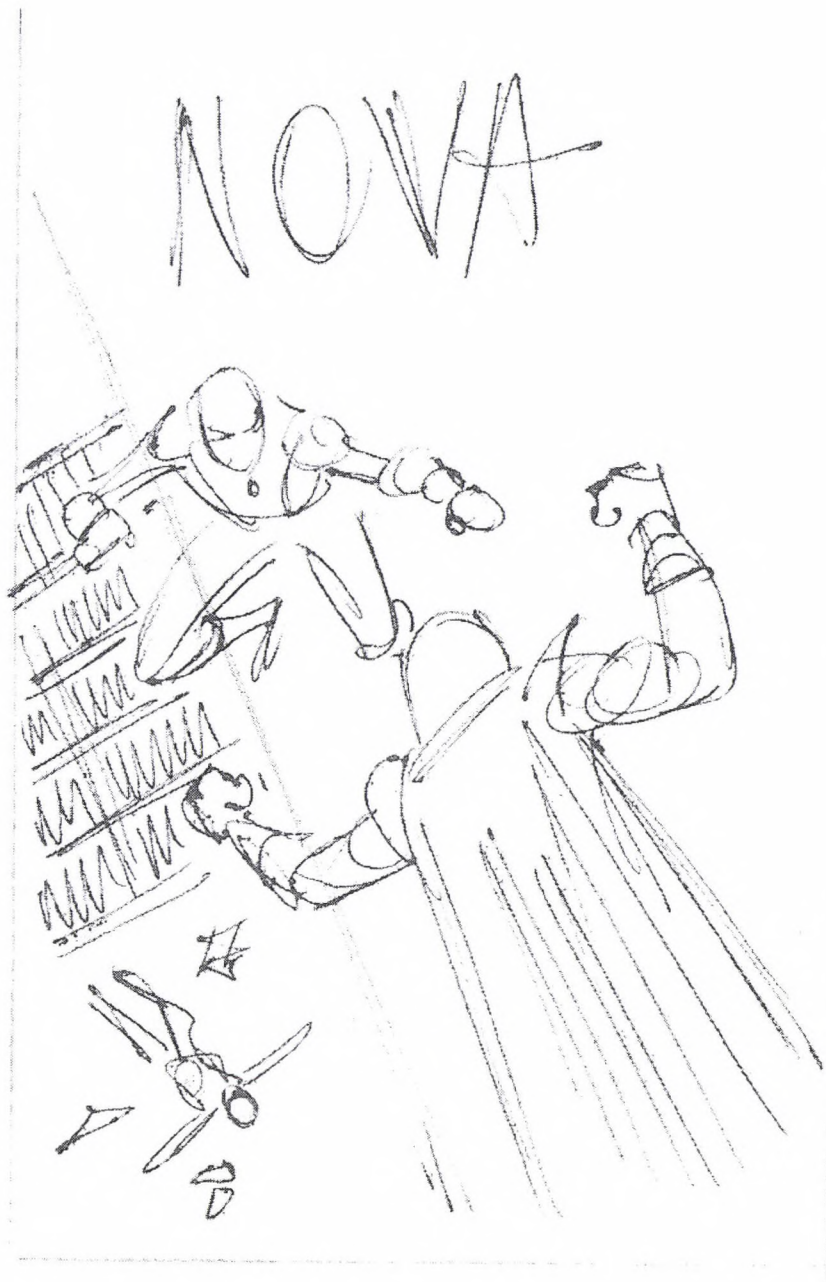
As Flower and Hayes said above, the expert usually represents his or her task by setting that representation within the context of rhetorical situation, audience, and the goals of the writer himself or herself. Let's say, for instance, that our artist/writer's difficulty may be with perspective. I am aware that, as an artist, he has spent a good deal of time reading, drawing, and studying comic books. Consider this study from Stan Lee and John Buscema's “How to Draw Comics the Marvel Way.” On the process of the

composition of comic book covers, they write, “Usually the editor will create an idea for a cover with the artist who is about to do the illustration. Then, if time allows, the artist may do a number of simple layouts which he’ll discuss with the editor until one final version is agreed upon” (Lee and Buscema 138). Here are four layouts with commentary by the authors for each one.



1

Fig. 1 “The figures of Nova and Spider-Man are too small. They don’t have enough punch” (Lee and Buscema 138).

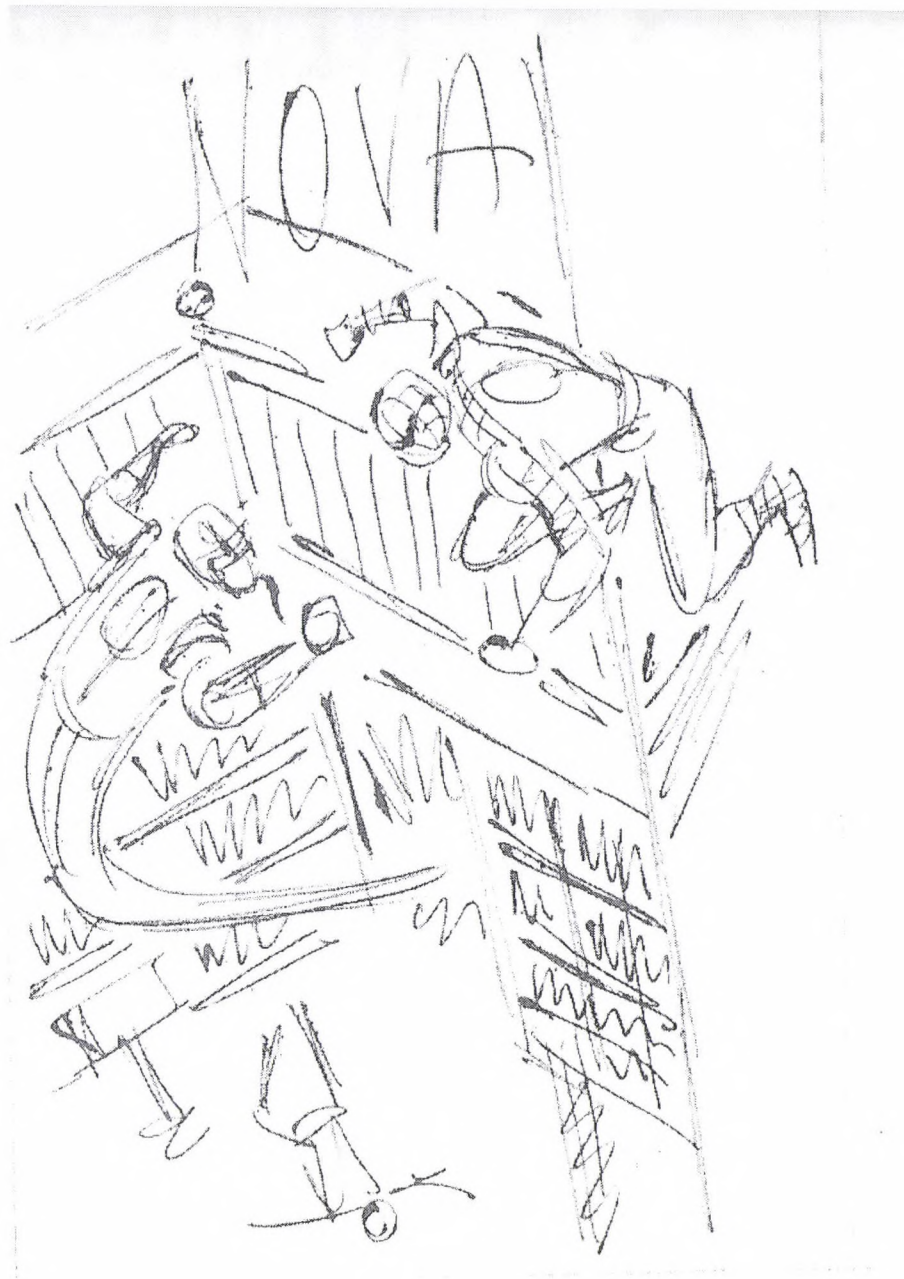


2

Fig. 2 “Not bad, but Nova is the star of the magazine and the editor didn’t like to have nothing showing but Nova’s back” (Lee and Buscema 138).



Fig. 3 “Too much wasted space on the right side of the cover. Also, even though Spider-Man is just a guest star in this issue, we’d like to see more of him” (Lee and Buscema 138).



4

Fig. 4 “This is the one that was selected. We get a good view of both Nova and Spidey, and they’re much larger than in layout 1. Also, the perspective is more interesting because the reader’s eye level is up high with the two heroes” (Lee and Buscema 138-139).

I think it could almost go without saying that there is a great deal more complexity to comic book knowledge than this cursory study of perspective allows. However, the point is sufficiently made for those of us who know very little about comic book illustration, design, production, etc. The point is, though, that we may expect the comic enthusiast/writer in the current example to know and understand what has been described above, and much more. For instance, the comic enthusiast likely possesses a good deal of knowledge about the Nova and Spider-Man characters: how they fight, whether they can fly, what their histories are together and apart, etc. Challenging the writer to interrogate his schema about comic drawing can provide a concrete way for him to assess his writing schema.

Using the above example, there is a rich opportunity for commuting knowledge from one domain to another. I warn against low-order comparisons because I imagine them to be of little use: writing and drawing both require pencils and paper, etc. The focus of the commutation must be on the higher-order features like those described by Flower and Hayes. The writer here must ask himself about rhetorical situation, audience, and his own personal goals for the composition. As illustrated by Lee and Buscema's commentary, there is a very definite rhetorical situation to this episode of Nova in which Spider-Man is a guest. There are known expectations about Nova being fore-grounded in his own series. Though it must also be known that Spider-Man is a character with a great deal of cachet and therefore must not be under- or misrepresented. Our comic enthusiast/writer will also be aware of the audience for this particular issue. There is bound to be a particular following of the Nova series who would be interested in him no matter what the case is. One might also expect the same following of Spider-Man. A

question the comic enthusiast/writer here might be able to answer is “what do those two audiences have in common?” As far as goals are concerned, the comic artist likely has a very good idea of what he wants to accomplish: it may be sales; it may be to shore up a declining series; it may simply be for the excitement of it. The point is that the comic enthusiast/writer would presumably be able to answer many more questions which I—not having much knowledge for the comic domain—cannot at this moment conceive of. It is the richness of *his* knowledge that this approach relies on. He can answer far better than anyone else why the metaphor WRITING IS DRAWING is valuable.

I would like to point out here that the source of generative ideas comes from *within* the comic enthusiast/writer. The comics themselves and the larger discourse community are certainly *without*, but the generative metaphor here is privately tailored to our writer’s own understanding of both domains. Our exemplar here has already *internalized* that knowledge of comics, and so I think there are valuable senses of ownership and control within this method that are not the purview of imitation-based modes of invention and idea generation.

The Affective Metaphor

In 1983 Catherine Lazars Bauer published a short article in the *Rosierucian Digest* called “How I Feel When I’m Alone and Writing.” In it, she cites Rust Hills (the former editor of *Esquire* and *The Saturday Evening Post*) who wrote, “All my friends and most of my acquaintances are writers of one sort or another... but it’s remarkable how little I know of what happens to writers when they’re actually alone and writing” (Qtd. in Bauer 18). Lazars Bauer says, “I can identify with these honest assessments, and yet in

my heart I believe that writing is an apprenticeship that leads to the soul, to Self. For me, it is akin to prayer, so why the accompanying pain, anguish, and frustration? Perhaps it is an attempt to bring compatibility to inner and outer worlds” (18). Following that reflection, Lazers Bauer asked her students to jot down some thoughts on how they feel when they’re alone and writing. One wrote:

Everyone is alone when writing. There’s no way I can imagine another soul’s entry into this temple without ravaging. I feel holy, in a very private sense, detached, separate from the world, moving in a different place on a different plane among entities who exist for themselves. I empathize with every fiber. I bleed, I cry, I laugh, I celebrate, I mourn, and I’m exhausted when I quit. (Bauer 19).

There is a clear theme that Lazers Bauer is building—one of a transcendent state, of prayer. Why prayer? She writes:

Well, let me put it this way. It brings to mind that some place, not too long ago, I saw slides of somebody’s trip to China. Two ferocious beasts guarded each side of the entrance to a magnificent house of worship. Paradox and Confusion were their names, and the idea was that you had to somehow get past those devil-dogs to reach the temple. ... Once you’ve plugged into the deepest, most secret rhythms of life (even accidentally)—into that generative force which is a part of us and apart from us—there’s a resultant elation. ... When a writer knows the desperate bliss of having successfully transmuted a special moment—a feeling too deep for human tears—so that another can, in his own way, experience it vicariously, with the result that both writer and reader gain insight into who they

are, and that's like participating in an act of magic. Even more than magic, it resembles prayer. (Bauer 20).

There is something else that I have heard described this way. I've been told by long-distance runners that their activity often resembles the sublimity on which Lazers Bauer wrote. I was reminded of this a few months ago by a writer who compared her writing to long-distance running. I was confused at first because I could not conceive—at least not procedurally, like the prior example—of how that could be. After speaking for a while with her, it became apparent to me that the metaphor was not procedural at all—it was an *affective* metaphor.

For someone making this comparison the difficulty inherent in writing is not mechanical. The difficulty is emotional. Again, as in the procedural metaphor example above, it is important to shift focus away from low-order comparisons (e.g., what sort of shoes should I wear to perform the task, etc.) and toward higher-order comparisons that are goal-oriented. These would be questions about affect during both successful bursts of writing and bothersome black-out periods. How do I *keep up the pace*? How do I *get going again*? Other comparisons may be made between the sorts of pain a runner may encounter along the way. The strategies for dealing with physical pain may be commutable to strategies in writing for contending with worries, doubts or pain regarding audience, publication, or public reception. Moreover, the writer may be a member of a niche discourse community that expects or requires, for instance, certain modesty about the strength or power of an author's work. For that matter, there may any number of conventions to which the author is expected to abide. At its core, though, the metaphor

WRITING IS RUNNING suggests a task representation of both activities being long, arduous, painful, lonely, and co-determined by practice and will.

In her 2008 auto-ethnographical study “Running the Routes Together: Corunning and Knowledge in Action,” Jacquelyn Allen Collinson used Symbolic Interactionism to account for complex mental practices while corunning with a partner. Collinson chose to apply Symbolic Interactionism (hereafter SI) theory for its “conceptions of self and identity” (39). One extension of this, she writes, is “the conceptualization of social actors as pragmatic in that they respond to, and adjust their behavior in line with their interpretations of the actions of others” (Collinson 39). She also notes, “A salient theme that emerged from the data analysis centered on emotional dimensions of running-together, specifically our emotional management, emotion work, and emotional intersubjectivity” (Collinson 40). Spatial proximity is another important feature of SI within the context of corunning. Copresence, Collinson argues, does not offer an unambiguous sign of togetherness. Runners are known to keep pace with one another, however briefly, but the runners themselves scarcely recognize this copresence as having any “real social significance” (52). She writes

Analogously, one might find oneself running along in close proximity to another, but not by design and usually for only a short period. This occurs particularly on routes highly populated by runners and may lead sometimes to feelings of unease as one decides at what pace to continue and whether to end the chance encounter as soon as possible or to run alongside the unexpected companion, at least for a while, to avoid giving offense by appearing unsociable. (52).

As I said with the WRITING IS DRAWING metaphor above, I personally have very little knowledge about the domain of long distance running. In fact, it is not important that I do. The strength of this approach is in empowering the writer to use his or her own schemas—not some external exemplary models—to generate the means with which writing is accomplished. Let’s briefly consider a few explications of Collinson’s examples listed above.

One of the first applications that Collinson finds for SI is in the conceptions of self and identity. Not only does this speak to what Lazars Bauer said (writing is an apprenticeship that leads to soul, to Self) but it also gets at the heart of what it means to be emotionally invested in a piece of writing. In that respect, the affective implications for tying emotion to self are obvious. If writing suffers, so too must the author. The second of Collinson’s observations relevant here is that social actors adjust their behavior “in line with their interpretations of the actions of others” (39). Whether a discourse community is rhetoric-based, poetry-based, or sporting-based, there is inherent bondage to the behavior conventions of that community. Behavior is likely to be scripted—or at least somewhat predictable—in a recursive way in which the behavior of one member affects another, who in turn influences the original social actor, and so on. Behavior of this sort is a cycle. The behavior described by Collinson in the bloc quote above speaks to this. In her community of runners, one ought not to “appear unsociable.” Lastly, I want to consider what Collinson described as a salient theme of her research. She cited emotional management as one of the specific dimensions of running. In the student example cited by Lazars Bauer, the student writer reported that he empathized with every fiber. He said, “I bleed, I cry, I laugh, I celebrate, I mourn...” A writer who experiences

his work in that way has almost certainly developed systems or mechanisms to manage emotion. This emotional management could mean many different things to many different people, but the author who draws upon the WRITING IS RUNNING metaphor most likely has a very clear idea of what “emotional management” would look like to her. The value here is in being to draw upon those strategies from running and apply them to the affective situation inherent in the writing process.

As with the WRITING IS DRAWING metaphor, the aim of this approach is still to empower the writer. She can import her own strategies from a known domain back to a source domain for application. She need not rely on the advice of another person or some external source because she has already internalized the means to which to cope. I think that most writers would agree that the act and process of writing can indeed be an emotional rollercoaster constructed of fear, doubt, pride, sheer joy, or any combination of emotions. If one happens to be a runner, the difficulty may only be as difficult as running past the twin devil-dogs of Paradox and Confusion.

Conclusion

Towards the end of Chapter 4, I argued that because the terms for the domain of *space* are effectively inseparable from the terms for the domain of *time*, the schemas organizing both likely overlap. In other words, some part of the schema for *space* IS PART OF the schema for *time*. I think that a procedural metaphor like WRITING IS DRAWING seems fairly familiar and therefore may not stand out. Understanding how to perform one activity and then simultaneously understanding how to perform another, and then making comparisons between the two may seem simply mundane—an ordinary

understanding of how things work. However, I have argued that such a seemingly mundane metaphor can be understood as something much more significant. The WRITING IS DRAWING metaphor comes from the writer's own experience and therefore empowers him by privileging his own knowledge. That inward focus also turns the writer's attention away from comparisons between himself and experts. Such comparisons are likely to reinforce his deficiencies and are, therefore, unhelpful.

I think the affective metaphor achieves this much more obviously. In the affective metaphorical representation WRITING IS RUNNING, I think it is much easier to see how the affective schema operating and organizing the emotions during running is very likely the exact same schema operating and organizing the emotions during writing. The aspects of privileging the student/writer's experience hold also: her focus is turned inwardly rather than outwardly. What is additionally significant about this observation is the way it recovers and incorporates the conventional metaphor. In the conventional understanding of metaphor, a synergy is created by a comparison between the natures of two things. Both Aristotle and Corbett suggested that the power of metaphor lies in its ability to create a third meaning from a comparison. *Running*, for instance, is not understood *in terms of writing*; nor is writing understood *in terms of running*. Rather, each becomes newly understood and defined AS the other. As far as the affective aspects are concerned, the new, uniquely and idiosyncratically defined entity may well be understood as RUNNING-WRITING.

As I said before, this approach strives to banish from the writer her need to compare herself and her work against experts and their works. To some extent, such comparisons can be seen as relying on an internal/external binary. In terms of that

binary, my approach privileges *the internal*: the student's own experiences are what guide her. She must carefully consider her own knowledge as well as the structures of her own mind in order to proceed and succeed. Focus is shifted away from the *externalized* expert who has no stake in her writing success. This leads to my next point, which is about a stakeholder.

Some of the weight of this approach lies on the shoulders of the writing teacher or instructor. I believe that many teachers of writing still understand the mind of the student in terms of that container metaphor from the legacy of imitation. Relying on such a metaphor can cause the teacher to view the student as some empty vessel that therefore requires *filling*.

To succeed with this approach, the teacher must be prepared to abandon that container metaphor and, like the student, privilege the structures and knowledge already governing the writer's acts of writing. Only then will the student and the teacher be able to work in an atmosphere of patience required by this approach. The student must deeply and honestly reflect on her writing methods and processes to understand what schemas she actually employs. After that, she can define an operational metaphor which can then be used to identify, explore, and expand on missing or absent aspects of her mental representations of her writing task. This procedure is meant to help the student better define the writing problem she is attempting to solve. It is also rooted in a desire to focus the student's attention inwardly to help alleviate her frustrations caused by the massive legacy of scholars, theorists, and teachers who view her writing as deficient.

Chapter 6: Conclusion

This thesis has argued that the traditional practice of rhetorical imitation is fraught with several significant flaws. I have argued, for instance, that imitation is unnecessarily time consuming, as in the case of Erasmus who required of his students literally hundreds of style-based iterations of single phrases. I have also argued that imitation is unnecessarily in the service of the society which employs it. In the Church-based pedagogies of the middle-ages, for example, indoctrinating students with Christian wisdom was, in fact, a stated aim. Finally, I have argued that, like the expert/novice studies published during the last few decades, imitation fosters attitudes of student deficiency as in the cases of Quintilian and Erasmus. The approach presented here offers an alternative to those limitations of imitation and attempts to empower students of writing with an ability to scrutinize their own mental structures to develop the means necessary to locate and attend to absent aspects of their writing. But even more than that, it is an attempt to answer—at least in part—the call Flower and Hayes made nearly 30 years ago to pursue the way writers represent writing problems.

In concluding this document, I would like to address several limitations to my approach that have not yet been mentioned. The limitations described in this conclusion do not pertain to Chapter 2 because the limitations and shortcomings of its topic, imitation, were the basis of this thesis. My purpose here is to discuss the limitations of

the theories used both in arguing against the problematic features of imitation and in exploring a cognitive-based alternative. I will consider these limitations individually according to each of my main subject chapters (Chapters 3, 4, & 5), and then I will consider limitations of the whole approach paying special attention to my own application of this approach during the production of this document.

The very notion of schema is somewhat problematic. While schema theory is one of the most widely-accepted theories of cognition, the schema itself is fundamentally a metaphor. It is a claim that the *nature* of the human mind is like the *nature* of a hierarchical set of categories. In other words, the term stands for a structure of the mind that may not actually exist. Lakoff and Johnson certainly seem to believe such structures exist (and I would agree), but I must concede that a schema is not the sort of thing a brain surgeon could open up a skull to find. It seems to me that psychology along with cognitive and computer scientists contributed to the development and production of “computerized minds” that operate the way the human mind is expected to operate—which is to say, hierarchically. Metaphors of the mind, then, seem to shift easily toward computers and the way computers have been *made* to be. This is somewhat risky business, here, because this thesis relies, in part, on schema theory for its basis.

The limitations of metaphor within an approach like this seem fairly straightforward. The application for metaphors here is to provide a framework within which a writer or problem solver can delve ever deeper into a topic. The real aim is twofold: first, a metaphor can be employed to discover missing or unforeseen aspects of source domain or topic; second, a metaphor can be extended as far as possible to continue that process of discovery. I believe that, at some point, any metaphorical mapping can be

expected to fail, because some aspects from either the source or target domains will not commute—if a perfect commutation existed, the source and target would be identical, and no metaphor would exist. Therefore, if the metaphor is useful according to some scale, the writer or problem solver must abandon that metaphor when the scale of his or her mapping is no longer generative or leads the writer or problem solver towards problematic or inappropriate conclusions. At that point, either the writer or problem solver must abandon the metaphoric approach, or he or she must choose a new working metaphor. If the writer or problem solver continues choosing new metaphors, the process may become excessively complicated with layer upon layer of disconnecting metaphors. Perhaps the very awareness of this sort of runaway metaphor is enough to get the writer to avoid letting it happen; or perhaps not. If this method were applied, it would be useful to discover just how problematic multiple operating metaphors really are.

Similar issues of scale affect this document's application of task representation. As with any approach to writing, the proposal made in Chapter 5 should not be understood as comprehensive. I believe that no method, however sound or generative, should ever be expected to succeed in isolation. Other methods and processes must contribute to the generation of text. Furthermore, the approach presented here strives to help writers generate ideas ahead of time to put them in a position to anticipate issues and cope with them as they arise. This method can be understood as "front heavy" because it places so much emphasis on the planning and prewriting periods of writing. I have a great deal of confidence in the task representation notion drawn out of that Flower and Hayes injunction: writers only solve the problems they define for themselves. But writing processes are very personalized and immensely idiosyncratic. Some writers, for

instance, prefer to write multiple drafts before they feel they have achieved their purpose. For these writers, heavy emphasis on planning and preparation simply will not do.

However, since my writing methods *do* rely significantly on this “front heavy” approach, I feel that my experience producing this document is both relevant and necessary to include here. I would like to focus specifically on two aspects of this document’s production: representations leading into the research; and representations leading into the drafting.

In approaching the research process for this project, I began with a kind of affective metaphor like the WRITING IS RUNNING metaphor presented in Chapter 5. I anticipated that motivational problems could be expected if I spent hours and hours reading articles, essays, and books that would turn out to be not useful. I was assured from others who have written theses, that that is simply part of the process. But I needed more assurance than that, so I developed and explored a metaphor that would help me contend with worry: I began understanding the research as a kind of hobgoblin. In Tolkien’s *Lord of the Rings* series, a schizophrenic goblin-like creature called Gollum serves as a guide to the protagonist, Frodo. At one point, Frodo expresses concerns about Gollum to the wizard, Gandalf, who tells Frodo that the goblin must be trusted. The wizard says that he is certain the goblin has some part to play, for good or ill, and that Frodo must, therefore, trust him all the more. The purpose of a representation like this is clearly motivational. In effect, the metaphor becomes RESEARCH IS AN ADVENTURE TALE. Subscribing to a metaphor such as this encourages a belief in *the happy ending*—which is the predominant result of adventure tales. The protagonist in an adventure tale can be expected to succeed or at least *survive*. Such is the case with the

Tolkien's character Frodo. While the goblin, at times, misdirects and misleads Frodo, he nonetheless contributes to Frodo's success. Lakoff and Johnson's metaphor: LOVE IS A JOURNEY works similarly. A metaphor like this one is useful because it can cue knowledge from any of several domains as necessary, which can help add flexibility to the need to account for problems that arise. For instance, understanding "journey" as a car trip signals ideas like *bumps in the road*, *dead-end streets*, and *spinning our wheels* (Lakoff and Johnson "Metaphors" 45). Implicit in a metaphorical concept like "bumpy roads" is that one can expect the "bumpiness" to end sooner or later. Thus, for instance, when I discovered no connection between Chan's Cognitive Misfit theory and Vessey's Cognitive Fit theory, I was able to recompose myself with the understanding that a certain amount of "being led in circles" could be expected.

Prior to the drafting of this document, I struggled to locate any suitable metaphor to work with. The source domain—*writing a thesis*—seemed to have no conceivable target domain. I floundered for several months before coming to what seems like the most obvious metaphor ever: THESIS WRITING IS ARGUMENT. This may seem like an inconceivably simple connection to make, but frankly, it wasn't. After this connection was made, I was able to draw readily upon my knowledge of rhetoric and argumentation to anticipate what would be required. The scale of a written document as large as a thesis was certainly a factor, but the simple problem for me was that I did not understand this document as an argument based upon definitions, claims, proofs, and warrants. This is particularly embarrassing for me because my entire post-secondary education has been focused on rhetoric. I want to draw attention to this because it shows that even someone with a background in rhetoric can be thrown off course by expectations of what *literature*

review, research methods, and the like mean to the production of an argument. In a phrase, those feelings of confusion and dislocation turned me upside down.

And task representation was not the only area in which I struggled. As with the cliché *old habits die hard*, I likewise suggest that *old schemas die hard*, too. Throughout both the drafting and revising of this document, I found myself ignoring the findings of the very research I've presented. In Chapter 3, I discussed the expert/novice studies that largely concluded that expert writers rely on their schemas to set goals, to recognize patterns, and to tend to other high-order concerns like audience and purpose. Novices, on the other hand, tend to rely on their schemas to develop content, to correct sentence level issues, and to deal with other lower-level concerns. Armed with this knowledge (and my own metaphorical task representations), I still, at times, found myself awash in floods of sentence-level—even *word*-level—preoccupations. I think it is fair to speculate that I was unconsciously ignoring the strategies I'd created for myself, and instead relied on older writing schemas, notions, and procedures that had been “successful” in the past. By successful, I really just mean that I finished the project—but that is not to say that the resulting product was “good.” The main point I would like to make here is this: if schemas are taken to be the organizational structure of the mind, a simple change in approach may not be enough to counterbalance entrenched or even intractable methods a person has successfully employed in the past. I am, clearly, no exception. In fact, my experience may serve as a cautionary tale for both student and instructor. Making the necessary adjustments to an approach like the one offered here can be expected to take a great deal of effort and it may never be perfected.

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