MEANING THROUGH METAPHOR:

VISUAL DIALOGUE AND THE PICTURING OF ABSTRACTION

A Synthesis Presented

by

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Critical and Creative Thinking Program

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ABSTRACT

MEANING THROUGH METAPHOR:
VISUAL DIALOGUE AND THE PICTURING OF ABSTRACTION

May 2008

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Directed by Dr. Nina Greenwald

This synthesis builds on the connections between language and cognition, and the parallel subdomains of linguistic metaphor and visual knowledge representation, to argue that traditional dialogue processes might aptly be employed to help collaborative learners examine complex abstractions. The starting premise, that habitual language-embedded metaphor may be used as a window into the understanding of abstractions, such as tolerance, education, justice, and integrity derives from the important work of Lakoff and Johnson in developing their Embodiment Theory of Metaphor. Further parallels for what is thought of in cognition as the spread of activation are considered in tandem with theories

about the spread of connection-making in creative thinking. A look at the works of Isaacs and Bohm, both pioneers in theories of dialogue process, leads directly to the proposal that dialogue, with slight modification, could provide an effective atmosphere for capitalizing on the linguistic metaphor-visual knowledge relationship. Pulling together all of these connections, the paper proposes the principles of what the author calls visual dialogue. Visual dialogue is a collaborative framework within which learning participants might focus on the details of the metaphoric thinking embedded in their language, "seeing," as a result the abstract knowledge represented by their mental imagery. Within the atmosphere of a visual dialogue, it is argued, deeper and more subtle understandings of abstractions may be revealed collaboratively, or perhaps even re-constituted into new meanings. Understanding or meaning built in this way may then be used to approach more practical problems systematically, though such systems are not described in this paper. The paper concludes by considering a number of issues raised by the notion of thinking about, or visualizing, complex social abstractions via the process of visual dialogue. Among these are: the philosophic implications of examining implicit ambiguity metaphorically; the practical use of dialogue processes that are often thought of as open-ended; the application of visual dialogue to different age groups; the potential for the use of other media (music, sculpture, etc.) in examining abstraction; and thoughts on the use of creativity in visual dialogue for promoting potential problem solving strategies or approaches.

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The Critical and Creative Thinking Program, University of Massachusetts Boston
My peers in the Critical and Creative Thinking Program

"For the child, and in many ways for all of us, to see is to know. As in, "Let's see what's in the box!" ~George Lakoff

FORWARD

A Peek inside the Box

"In terms of you or some other teacher as a pourer (of education), Mr. Quirk, and me as a container (to be filled with learning)…I guess I'd say that I'd rather think of myself as a barrel to be filled by rain. That fits better with how I'd like to think of it. My brain is a big opening, and I want the learning to fall in from all over the place, sometimes heavy and sometimes lightly." So says a bright and thoughtful young woman in my Latin class, as we sift through a number of metaphoric images of the abstract concept of education. This day, we have talked about education as a commodity and of students as purchasers of it, an especially interesting and provocative metaphor in a private school setting. We have talked about educators as nourishers of hungry minds, an apt metaphor just before lunch…and because the Latin verb *educo* means just that – to nourish. We have talked of minds as blank pages and teachers as scribes. We have suggested that education is a foundation of some metaphoric student-building. We have struggled through an inaccessible notion of education as a right (seems we needed another metaphor to consider what we meant by a right!). Yet here, in the last moments of a 25 minute dialogue on visual imagery, something new emerges from something pretty well-worn. Suddenly, we are talking about what kinds of containers, what sorts of buildings our collective minds' eyes are viewing. And in doing so, we begin to consider what these details mean for how we are thinking, or of how we might be learning. Maybe we are even starting to make some new meaning for ourselves. I've never really thought of myself like rain before. What kind of rain could I be?

PROLOGUE

First Steps in a Journey of Words and Meanings

LEARNING is a JOURNEY

> "Let's *orient* ourselves to the problem, and think this through *to the end*."
> "By all means, let's not get *off course*."
> "The *goals* of this project could not be more explicit, nor could the *steps* to be taken *along the way* be better marked out."
> "*So far*, it is clear to me that there is *much ground to be covered*. Eventually, though, we will *arrive* at our *destination*."

I have long been interested in the ways in which the structure of language might be thought of as a reflection of the structure of our thinking and reasoning systems. In thinking back about it, I would trace my first thoughts on the matter to my studies of Latin and Greek, and especially to the related field of etymology. The histories of words and of the ways in which they have evolved, while often thought of as trivial niceties for those accustomed to using words without great consideration, held for me greater possibilities. Early on in my undergraduate studies in classical languages, I had become intrigued by a number of instances where adjectives that described states of being (honest, for example) had evolved to become abstract nouns (honesty), and what this meant for the thinking of the time periods in which this had happened. Some of these words were being treated by people, it turned out, as if they had distinctly and explicitly concrete or physical meanings despite the recognizable abstraction of the words. At the time, my focus was on how what I was calling "concretized abstractions" (worthiness, *dignitas*, as used by Caesar in his

explanation of the Roman Civil Wars, was my initial focus) were being used by speakers to convey a variety of points related not just to the quality of the concept, but also to its quantity. I remember thinking that something about the way Caesar and others were visualizing these abstractions did not quite add up in a thinking sense. I wrote a number of papers and an honors thesis on topics related to my observations, and moved along with my study of classics.

In the years to follow, I often took note in my language teaching of the ways in which patently concrete words or concepts had evolved over time to take on more abstract meanings. In particular metaphors for understanding – the great majority of which relate somehow either to "seeing" or "grasping" (Lakoff and Johnson, 1999) – had me wondering about the ways we visualize what we cannot see or grasp, but desire or have need to understand. So often, physical, experiential meanings, implicit in the language we use, had evolved to describe complex abstractions, and this area of language fascinated me. Many, many years later, while sitting in a cognitive psychology class, I began to understand why, as a number of connections started to reveal themselves to me.

A great deal of the material in that course had to do with memory. One particular part focused on the phonological loop, a verbal practice pattern that enhances memory. A paper in the course found me considering how this rehearsal loop might function in the absence of actual words to describe the knowledge being learned. To what extent, I wondered, were knowledge and memory reliant upon the very existence of words, and in what ways did they function cognitively and linguistically to help us represent pieces of information? Exposure in that course to the concept of the visuo-spatial sketchpad, which permits us to manipulate visual imagery in our mind's eye, and my own interests in visual

expression (metaphors, similes, etc.) in teaching literature, prompted further thinking about the information that was contained in words, and about how that information could blossom cognitively from its essentially symbolic simplicity (letters grouped together into words) into so powerful a set of thinking tools and knowledge representation. Rarely, it seemed to me at the time, had the parts of something, the letters of a simple word, added up to so much greater a whole!

This first threshold of thinking on the efficiency of words and of the information they contain sparked an interesting survey on the topic of cognitive linguistics. The breadth of the field, of course, leaves me far short of any expertise in it. However, one area I got into served to significantly forward my thinking on the topic of language and knowledge, and in a way that helped me to make some key exciting connections. In particular, learning about Lakoff and Johnson's (1980) theory of a structured metaphoric coherence between our cognitive systems and our language systems pushed the envelope of my own interest with respect to how represented knowledge is made available to us in a cognitive sense. The theory proposes a crucial role for metaphor in our cognitive thinking, building on the concept of spatial, embodied reference points to explain in wonderful detail the connection between metaphor as language and metaphor as cognitive, mental necessity. In evolving this theory, the authors illustrate the extent to which we rely on metaphor to help us structure, and therefore perceive, otherwise inaccessible abstractions, and they establish a clear connection between our metaphoric facility and the fluidity of our thinking processes. Ultimately they establish that metaphor, which most of us think of merely as a figurative linguistic vehicle, is actually an extraordinarily complex cognitive tool, one that is both a reflection of and a contributor to our thinking about abstractions.

Lakoff and Johnson's theory has both cognitive and philosophic implications. But for me it has prompted more careful consideration of the ways in which we work with ever-present abstractions, and how we use these to represent the most interesting topics of thinking, controversy, human emotion, etc. My earliest thinking on the matter, you will recall, had to do with a Roman general's inability to reconcile his perceived worthiness as a possession. It became clear, as I worked through the theory, that Caesar's struggles in this arena were in many ways really our own. Among some number of flaws in his thinking disposition, one had him misunderstanding his own implicit metaphor of his worthiness as a possession. He did not see (I choose this word for a reason…) what his metaphor entailed, and so he could not handle or manipulate it (on purpose, again) the way he wanted and needed to. Like Caesar trying to keep hold of his worthiness, we often struggle today with trying to quantify and qualify seriously important topical abstractions – integrity, tolerance, respect, et al. We do so, however, with too little general understanding of the intricacies of the primary tool – knowledge representations through metaphor – we are using to try to do so; this, assuming we recognize the tool's existence at all.

While my thoughts on this topic remain of interest in a global sense (who wouldn't desire to advance the world on its most pressing concerns?), their immediate relevance is much more local. I have been thinking specifically about how we work with and teach such abstractions to students. In what ways, I wonder, can we converse about abstractions, especially given the significant metaphoric baggage – intended or not – that is necessarily present in the discussions? In the end, if we as teachers are unable to unpack all that resides in our omnipresent metaphors of abstraction, or (worse) if we are unaware that these metaphors and all they entail even exist in a thinking sense, how can we be teaching such

things at all? Are, perhaps, some of the struggles we often have in teaching such things due to this disconnect? These questions are central to my thinking on the topic, and at the very core of what I will ultimately propose in this paper. To be sure, they resonate with some of my earliest thinking on the language of abstractions (looking back at those undergrad papers was a treat). But they also have me thinking in novel and broader ways about my role as an educator, and about the many possibilities that teaching through enhanced awareness of metaphoric thinking might offer to students along their paths to adulthood.

CHAPTER 1

Introduction and Goals, or *Building a Concept from the Foundation Up*

A THEORY is a BUILDING

> "Let's try to *build* the *framework* of this theory."
> "Without a *solid foundation*, this whole notion will be *shaky* and might even *fall apart*."
> "The initial ideas will be *buttressed* and *supported* by the various *levels* of the argument."
> "The theories in this paper will *stand* or *fall* on the *strength* of ways I *construct* them."

In this paper I hope to set forth the foundation for considering metaphoric thinking as a teaching tool at the highest levels of education in cognitive abstractions. I intend to do so by reflecting on Lakoff and Johnson's theory (1980) of metaphoric embodiment, and also by examining the many ways that metaphoric thinking is present in our work with abstractions – sometimes in grand or complex ways and sometimes more simply, but always with serious implications for our understanding. In doing so, I will further discuss the manner in which this complex metaphoric relationship between the workings of language and the workings of cognition has to a certain extent shaped not only our conception of the way we think, but some of our actual thinking as well. Along the way, I will propose that coming to understand the manner in which our language and use of metaphor has shaped some our thinking about abstractions has key implications for the ways in which we might structure teaching approaches when dealing with some of the most challenging abstract topics or concepts. Ultimately, I will offer a model through which I believe metaphoric thinking, both as a conveyor and a builder of meaning, might

be developed for use by students and teachers considering pressing topics in character education or social abstractions. This model will be closely based on the modified principles of dialogue, as set forth by William Isaacs (1999), and on the connected notion of methodological belief, as described by Peter Elbow (1986). Consideration of the role of creativity in visual, metaphoric thinking will also be woven throughout the paper.

While it will not prove especially difficult to make the connections I seek – indeed, this work has an implicit and pervasive common sense that is readily observable once pointed out – I need to recognize for my reader the challenge from the outset of talking well about concepts that are so patently difficult to describe. It is my intention to disperse as many examples as possible throughout the paper (note that sections headings will generally include either metaphoric descriptions or linguistic subtleties aimed at highlighting the information), or to use one or two key examples as points of focus. I would like to be clear, however, that the methodology I will ultimately propose, though first considered within the context of character education, has application for any learning group facing the challenge of coming to know (or at least to know better) the essential nature of the key abstract concepts that reside in so many of the most pressing problems we face in schools, at work and in society at large. There is, perhaps, an impracticality in thinking that having a better understanding of such concepts as tolerance, truth, the value of life, responsibility, etc. can actually push us along to better work in these areas. Obviously, the context of the issues is relevant and changes our perspective somewhat from scenario to scenario, and in a way which makes essential understanding difficult to attain. I would argue, though, that some significant portion of our struggle to do well with decision-making on some of the most monumental thinking challenges of society –

abortion, stem-cell research, euthanasia, social justice, etc. – has its roots in an inability to reach common ground on the central topics. By common ground, I mean common meaning or understanding; not so much a correct answer to an abstract dilemma, but rather a level of trustworthy knowledge (Elbow, 1986) that is constructed collectively and has, as a result, an essential accessibility to all involved in sorting through the problem.

The goal, then, of finding ways to best use cognitive metaphoric thinking to unfold on the one hand, and partially create on the other, meaning and understanding of abstraction seems a worthwhile endeavor. Building on the science of cognition in working through it, there are elements of philosophy, creativity, collaborative and group thinking, and active listening that can be brought to bear on the task synthetically. It is my intention to weave these many elements together sensibly, clearly, and perhaps with an element of emergent excitement that will compel readers – be they teachers, students, or just people interested in taking on the most difficult and interesting of abstract problems – to take a deeper look at what the connections offer.

CHAPTER 2

Review of Topics and Associated Literature

Parallels in Cognitive and Language Systems, or *Layers in Learning and Language*

An IDEA is a PLANT

> "A great idea, but it *died on the vine*."
> "Once the *seed* was *planted*, she turned the idea over and over in her *fertile* mind."
> "This *budding* idea may take years to come to *fruition*."
> "There will many *branches* to this study of cognitive linguistics, some of which will *grow* to be *offshoots* of others."

In considering the important use of metaphor in conveying and learning about complex abstractions, it is helpful first to set forth some important premises. First, there needs to be an understanding of and an openness to the proposition that language and cognitive knowledge representation can be thought of as similar in a number of ways, and perhaps even the same in others. Recognizing this from the outset starts us along the path of unifying the use of language specifically and thinking generally into a more synthetic and helpful whole. Further, there must then be an examination of the environments in which we employ language. We engage in conversations, arguments, discussions, dialogues, read and write papers, etc. in an effort to share knowledge and understanding, yet we tend to do so with such fluency that we are not always aware (depending on the hoped for outcome of this knowledge sharing) that there is an implicit linguistic, and therefore cognitive, collaboration going on. What immediately follows is an overview of important similarities between the ways we think about cognition and the ways we think about language.

Memory and Language Networks

The parallels between the structures of our cognitive systems and our language are many. Among the most important is in one of the ways we choose to describe long term memory. Reisberg (2006), surveys a number of associative theories of the long term memory system. Chief among these is the idea of a network of memory nodes, each linked by associations with other nodes. The concept of a node as a piece of information within the larger network evolves to include the idea of propositions, the smallest verifiable truths/untruths that can be constructed or housed in our memory. The premise of the associative network theory is that these bits of information, nodes, are connected via retrieval paths, and that it is these connections – the strength or weakness of them, the number of retrieval paths, etc. – that comprise our long term memory and make it possible to use (as knowledge) our stored memories. The result of these connections is a sort of propositional network, where more complex ideas – relationships between and among nodes, really – might define broader concepts or scenarios, or where the relationships might most easily be considered or manipulated.

It is not a particularly challenging intellectual leap to begin thinking about this conception of associated memory and knowledge structures in linguistic terms. We might easily recognized that nodes, for example, which can be described as local representations of information, are somewhat akin to simple words; a word, like a node, represents a particular set of information about a particular object or concept. It is difficult to understand what being a memory node entails, I think, or how it comes to contain the information it does, but certainly not any more difficult than to understand how a single

word comes to hold so much or such varied information within it. In both cases, however, it is clear that there is a great deal represented by a relatively small piece of memory (a node), and that it is more or less the same for a small piece of language (a word). The power of the nodes and words resides in their ability to efficiently hold a tremendous amount of information as "chunks" of represented knowledge. These chunks become even more powerful when combined to form cognitive propositions or linguistic sentences. Here again the long-term memory/language parallel construction is quite self-evident. As nodes are combined into propositions, which describe the relationships of the smaller pieces of information, so words are combined into sentences. Through sentences, agency or context can be described, as can subjects or objects, in a network of language structures – sentences, paragraphs, books, etc. These propositions "spread," just as activation spreads in memory associations, so that a network of language knowledge might be imagined that parallels the memory networks that are believed to comprise our memory system. It is as if our long term memory network, which exists within our mind as the embodiment of all that we know in terms of knowledge, also exists outside of us (between people, that is) in the form of a language network. It is a network we can project through writing or speaking, and one which we can access or receive by reading or listening. In clarifying the structure of this parallel, we might consider that we can combine words into sentences into paragraphs, etc. in the same way we can encode nodes, propositions, episode, etc., recognizing that as a result we can at once possess knowledge and communicate or receive it.

Connectionism and Shared Meaning

The high level of locally represented knowledge in even a propositional network, and the limits of such localization, leaves open the possibility of a more complex network comprised of distributed representations. This type of connectionist system, as described in Reisberg (2006), does not allow for particular information to be represented by a particular node. Rather, an idea or a concept is thought of as an association, where the sum of the activation of a number of nodes gives rise to the memory or idea that is being accessed. In this system, no meaning or interpretation can be assigned to a single node; rather the meaning resides in the pattern of activation of a number of nodes. The idea of parallel processing is a key component to this network theory, and in this way it differs from the more linear layout of a propositional network. Still, the theory is compatible with an important premise of the linguistic-cognitive parallel. Smaller pieces of information are held within the nodes (whatever that amount of information is), and it is through the relationships of these bits of information that meaning becomes available. The parallel between this network and the language network proposed above remains intact, and in fact may even be strengthened by the idea of connectionism. For the parallel distributed processing required of a connectionist network, and the manner in which different pieces of information are processed in parallel and emerge simultaneously (multiple constraint satisfaction), seems in some ways more representative of the way in which a linguistic proposition (a sentence, for example) might be employed. The single word gives some local representation of information *per se*. Yet it is through its associations, which are at first distributed fairly broadly (the boy, at first, represents all possible notions of a boy), that the particular meaning emerges and is focused. This happens via the addition of other

words (perhaps adjectives) or through context, but in the end a broadly distributed notion is pared down to its particular meaning – at that particular moment – by the consideration of all the words in the sentence at the same time. For this to work as well as it does, it seems, all the information available in any word at any given time must be thought to be available in the abstract. Again, it is in the putting together of all the ideas – the balance point related to simultaneous multiple constraint satisfaction (Reisberg, 2006) – that the meaning of the whole, and therefore also of the component parts, emerges.

Recognition and Description

While the network parallels at the highest levels of cognition and language are evident and important to my examination, it is also worth noting foundational similarities. First is the idea of feature nets in recognition (Selfridge, 1959, as cited in Reisberg). The feature net concept describes a series of detectors working in parallel to identify recognizably basic units of shape, direction, etc. In this net, feature detectors allow for letter detectors to be activated, which in turn permit words to be recognized. Similarly, a feature net building on the premise of geons (Biederman, 1985, as cited in Reisberg) supports the recognition of viewed objects, and it appears that the systems of recognition across the senses might be thought of in the same way. The smallest possible recognizable components (very *atomic*, in an ancient Greek sense) of the items in the world with which we are interacting stimulate these receptors or detectors, and these in turn begin to build from these bits the world as we experience it.

For language, the same sort of net might be considered, and in fact is strikingly similar when considered schematically. Building on phonemes, tiny units of sound, spoken

language yields morphemes, tiny units of meaning or function, which in turn may be synthesized into words. The words, of course, are combined into words, phrases, paragraphs or books, so that a very few sounds – perhaps 40 or so – might be built into magnificently complex and ranging descriptions. This linguistic net does not recognize stimuli *per se*, rather it creates them. Yet the premise of meaningless pieces of information (the sounds don't mean anything themselves, any more than the diagonal piece of line that is part of the Letter "N" does) being assembled into something that has meaning is the same in either case. On the one hand, in recognition nets the information comes to us through our senses, is detected at the levels of the smallest components, and meaning is created. On the other hand, via language we seem capable of taking basic components and combining them systematically into larger, conveyable meanings. It is interesting to note that those meanings, in being conveyed, are "packaged" in such a way that the feature nets of others – be they in reading our written words or hearing our spoken ones – are able to "un-package" and reassemble them into meanings of their own. This will prove an important notion later on in this paper.

Related to these nets are two important premises which we should further consider in exploring parallels in language and in cognition. The first of these, also referred to above, is the idea of parallel processing (Riesberg, 2006). Individual detectors, as described, do not function linearly, nor do individual phonemes or morphemes. Rather they are detected from their particular stimulant as it exists (recognition) or selected to induce stimulation as we would like it to exist (language), and the information is either built upon or eliminated from potential synthesis at the next level of detection. As at all levels of cognition, there are inhibiting forces that perhaps direct the development of activation

towards the most positive outcome (a recognition, for example, which is statistically most likely to lead to success). In this way, the strength of the base components, their "knowledge" about the information they represent, cannot be thought of as residing within them at the local level. Rather, there is a distributed knowledge across the entire net, just as there is in the connectionist conception of the memory network noted above. This means that the effectiveness of the net – that is, the usefulness of the meaning it permits us – is contained not within individual components, be they morphemes or features, but rather across the entire net itself. As a result of this, it appears that an infinite number of recognition possibilities may be anticipated from only a relatively few basic components. These nets, moreover, though functioning in a virtually limitless domain of possibilities, can work efficiently and quickly. This sort of processing, with meaning distributed across the entire system, exists both in language and in cognition, and the flexibility and fluidity it offers is truly amazing.

A further key premise, and one which must be noted, is in the way in which our cognitive abilities and our language abilities both rely on the larger framework of top-down or concept-driven processing (Reisberg, 2006). In either case, such forces as context, expectation (priming, for example), assumptions, etc. are at work in helping these nets to arrive at the most correct conclusion (recognition) or at the most precise intended meaning (language). Again, the efficiency of the systems can be at the expense of some accuracy, but the mistakes are fairly predictable and systematic. In general, though, the information with which we are working either linguistically or cognitively is partially derived from sources outside the net specifically. This is a premise worthy of in-depth study in its own right (and one of great interest to me), but for the purposes of this paper its simple

existence is most crucial. In recognition or expression, we are building from small to big in seeking meaning, but some – perhaps more than we know – of that meaning is locked up in the relationship between the information and ourselves. That meaning, it is clear, has as much to do with us subjectively as it does with the information we are receiving objectively.

An underlying implication of these parallels involves assessing the extent to which the similarities discussed might indicate more than simple parallelism. At what point, in other words, might we begin to think about these networks of information – morphemes, words, etc. on the one hand; features or forms, nodes or propositions on the other – as being part of a much larger and inter-related network of knowledge. In broad terms, this might simply be thought of as the workings of the mind in general. Still, it is intriguing to consider the ways in which we are constantly packaging information internally and cognitively (encoding, labeling, propositioning, rehearsing, etc.), but at the same time capable of building or constructing information (words, descriptions, discussions) for external projected or receptive linguistic use. Discerning the line between the two tasks is tricky, but the high level of parallelism between our linguistic skills and our cognitive skills might lead us to suppose that they are extensions of one another, rather than discrete systems. This premise is crucially important for the model I will later be proposing.

Saying, Seeing and Knowing, or *Getting the Picture*

UNDERSTANDING is SEEING

"I *see* what you are saying, but it *looks* different from my *point of view*."
"*Point it out* to me again. From where I'm standing, it just does not *look that way*."
"*Look*, why can't you *focus* on this? It couldn't be more *clear* or more *insightful*."
"It's still a little *murky*, but I *get the picture*."

This cognitive-linguistic parallel is crucial because it is a stepping-off point for considering that higher or richer thinking may be somewhat akin to more complex or richer use of language. It proposes, that is, that more challenging levels of thinking may have some of the same attributes or problems, or require some of the same strategies for use, that our more interesting uses of language do. In thinking terms, this means consideration for conceptual abstraction and connection-making, while in linguistic terms, I would argue, this means the use of metaphor (or metaphoric techniques – analogy, metonymy, personification, etc.). This connection at the "high ends" of language and cognition helps set the first foundations for the model I will eventually propose, but it gives way to another set of topics that must first be explored. First among these is the prevalence of what Lakoff and Johnson (1980) call metaphoric entailment (the specific visual details portrayed by all words, but especially of words or phrases being used metaphorically) in our speaking and thinking. We converse and think relatively freely and confidently about broad abstract topics, and we do so often enough to expect that the generalizations we make will be contextualized sensibly. There is, however, more to what we are saying than may meet the eye, and we should recognize that there are hints of our understanding in the details (entailments) of how we are looking at the concepts. We are

engaged, that is, in expressing a specific representation of a piece of information visually. Certainly, the issue of knowledge representation through linguistic labeling might be considered fairly simple for concrete, relatively non-complex objects such as chairs (Plato's desire to discover "forms" aside). Consideration, however, of how visual memory or knowledge might parallel or overlap with linguistic labeling is significantly more problematic for larger, more complex or abstract concepts. How might an office for example, which has countless objects in it, or love, which is multi-faceted, be conceptually represented in our thinking or fully expressed in our speaking? Further, how do the two types of representation – labeling on the one hand, visual representation on the other – support or enhance each other? Lastly, how do we navigate the different types of representation in our efforts to come to understand some of the more difficult of the concepts we seek to examine in a thinking or a learning sense?

That there is a critical correlation between our effective use of language and our convenient ability to label complex ideas or experiences with just one or a few words – a highly efficient variation of memory chunking – has tremendous implications for our higher thinking. As linguistic creatures (Reisberg, 2006), we use our language to convey the subtleties of our thoughts to one another, and we are able to do so with a richness of expression that virtually defies characterization. So much of what we say, however, is left to the interpretation of the hearer or reader, and it is evident in just a moment's consideration about it, that even the most precise word choices leave something of a penumbra of meaning surrounding them. This is not at all to say that our thoughts, as conveyed by the words we choose, are completely open to interpretation. Indeed, both by the precision of our choices and by the manner in which we combine our choices into more

complex units of information (sentences, paragraphs and the like), we do well to portray with relatively high accuracy the details of our thinking. However, there are embedded in our speech patterns visual details of our thinking that transmit important subtleties of which we might be unaware, or which we did not, perhaps, intend at all. This allows us tremendous richness of expression, of course, but it also means that some of what we are saying is not explicit in an understanding sense. It is left to be "unpackaged" by a listener. Managing what is implicit in our expression, then, might be thought of as an extremely important element of the conveyance of our ideas. It might further be said that managing the implicit subtleties of what others are saying to us is of equal importance in an understanding sense. For somewhere between two speakers, wrapped up in the implicit metaphoric details of what is being spoken, is a collaboratively new meaning for the object of the discussion. Folding this new meaning into our own, and in a usable way moving forward, will have much to do with the way we come to know what it is we have been speaking about.

Of these last few points, it is helpful to consider the specific impact that recognizing implicit detail – poorly or well – has on our understanding of complex concepts. For in doing so, we must partially accept, I think, that we may be talking as much about constructing meaning as about understanding it. It is, of course, difficult to ascertain whether the richness of our hidden metaphoric language is the result of our language representing our knowledge, or of our knowledge creating our language. It is likely not an either/or proposition, for sure, and it is probably not a topic I am fully prepared to unravel in my inexperience. Still, recognizing the vast amount of metaphoric detail implicit in our attempts to deal cognitively with complex abstractions will help us to

see that we are not always saying exactly what we mean. It also opens the door to the possibility that we don't know, fully, exactly what we mean, in that there are details we have cast out for consideration that are open to interpretation. In those details, new meanings and understandings likely arise, new pictures (so to speak) that must somehow be synthesized and assimilated into those we had previously.

Visual Knowledge and "Linguistic" Knowledge, or *Converging Paths*

PROBLEM SOLVING is as LABYRINTH

"I thought I had the answer, but it turned out to be a *dead end*."
"There is a *maze* of possibilities here, and many *twists and turns* to be faced in *solving* the problem."
"The student tried to *unravel* the mystery, but she hadn't a *clue*[1] how best to proceed."
"Perhaps we can *double-back* and figure out where we took the wrong *path*."

An interesting aside to all of this is the comparison of the roles in cognition of linguistic knowledge and visual knowledge. As we know, some pieces of information are storable and retrievable in ways that are related to language. Labels, exemplars, proto-types, categories and so on rely on the ability of many concepts to be encoded via linguistic labels. While this sounds in some ways simple enough (i.e. all or most of the information we know about birds in general can be accessed via the label *bird*), the complexity and variety of ways in which we do so is anything but simple. How that information is held within the label or category, what the particular characteristics are that place it within the right category, and the extent to which we can extrapolate specifics from

[1] An interesting example of an implicit metaphor that has been deeply embedded within the etymologies of the words: The words unravel and clue (from middle English – bolt of yarn) are reminiscent of the classical myth of Theseus, the Minotaur and the Labyrinth.

generalities (and the other way around) all point to the flexibility and overlap of our use of language with our use of memory or knowledge. The picture, however, is made more complex still by the recognition that many of these labels also elicit mental visual images (or auditory or olfactory ones, for that matter). It can be rightly said, therefore, that much of the information with which we deal is available to us in multiple formats of representation. We can often describe an object linguistically, while at the same time forming a mental representation of how it might look, smell, taste or feel. This memory duality, where it exists, is powerful in what it means for understanding. For while we may be better off in applying labels to complex scenes or concepts – as a function of efficient chunking – still there are characteristics of the information that may be better or more clearly understood via an image of the information (Paivio and Csapo, 1969, as cited in Reisberg). We benefit, in the end, from being often able to choose the format or representation that best suits the immediate need, so much so that our vacillation between the two is virtually seamless.

However, there are some labels that have meaning abstractly, but which partially resist linguistic explanation or definition, and wholly defy visualization. Though definable to a certain extent (**love** *n*. 1. "An intense affection for another person that is based on familial or personal ties."), our facility with the actual meaning of these – what the label *love* entails and encompasses – is somewhat more difficult. For such concepts, the label is powerful (holds lots of information), but inefficient (does not easily reveal specific meaning). Further, it evokes no specific visual knowledge, other than what can be pieced together from experience or by metaphor. In the end, we all have an understanding of what love is, and of what love means. Because we are not really capable of packaging the

information sensibly, however, this concept remains only vaguely definable. In its abstraction, it can neither be labeled precisely with a word, nor cognitively represented by a visual image.

Metaphor and Its Importance to Cognition – Parallels and Crossover

"Each thing is as it appears to me, and is to you as it appears to you" ~Plato, *Theaetetus*

In a truly breathtaking synthesis of philosophy, cognitive science and linguistics, George Lakoff and Mark Johnson (1980), considering metaphor as a crossover between linguistics and cognition, arrive at quite interesting conclusions related to the parallels I have been examining. Though they do not specifically address the similarities in our conceptions of language and cognition, their theories about metaphor and about embodiment within metaphors are powerful reminders of the high level of integration between language and thought. Certainly the parallels I have explained are not particularly earth-shattering in their structure. There is not much in creation, after all, that could not rightly be said to build larger wholes from smaller, simpler components. But it has not been my purpose to systematically compare the actual systems of language and cognition. Rather my attempt has been to show that our conceptions of the two are similar and parallel, that we describe either very much in terms of the other, and that this coherence can be of help to us.

While metaphor has often been considered a figurative or literary device (Rohrer, 2001), Lakoff and Johnson argue that it is a more crucial component of cognition than has been supposed. With systematic examples, they show how metaphor has been intrinsically

woven into our everyday speech and thinking, and how, as a result, we have been empowered (empowered ourselves…) to deal effectively with broad and elaborate abstractions. The *conceptual metaphor hypothesis* and the related *embodiment hypothesis* (Lakoff and Johnson, 1980) challenge directly the view of language as a literal purveyor of meaning (Rohrer, 2001). The first proposes that metaphor no longer be thought of in its traditional role as indirect "enricher" of meaning. Rather, the theory argues, metaphors – or what Lakoff and Johnson call conceptual metaphors – provide for us systematic and related meaning that is so enmeshed in our thinking and speaking as to be almost un-discernable. The embodiment hypothesis further contends that these systematic conceptions often draw on the body or on physical/spatial relationships for reference, meaning that there is some directionality or orientation to our metaphoric systems. As a result we come to understand much of what we deal with abstractly only via metaphoric systems, relationships and coherence:

> "…there is directionality in metaphor, that is, we understand one concept only in terms of another. Specifically, we tend to structure the less concrete and inherently vaguer concepts (like those for emotions) in terms of more concrete concepts, which are more clearly delineated in our experience." (Lakoff and Johnson, 1980, p. 112)

While the notion, once set forth by them and supported by innumerable examples, seems complex and does have some complex philosophic implications, the basic premise is remarkably simple. It asserts that to understand an abstraction such as *argument*, we must give it some cognitive substance. We do this in a number of ways and via a number of conceptual metaphors, though we do not overtly or explicitly choose to do so. We might

note from our use of language, for example, that we have a sense of the meaning of *argument* or *discussion* partially from their conceptually metaphoric relationship to our notion of a *journey* (the metaphor ARGUMENT is a JOURNEY):

> This is a *roundabout* argument.
> *So far*, we have not *covered much ground* in this discussion.

We might further note that we also assign some meaning to the concepts of *argument* or *discussion* by relating them metaphorically to our conception of a *building* (the metaphor ARGUMENT is a BUILDING):

> This argument has no *framework*, and it lacks a solid *foundation*.
> In writing your paper, *construct* a coherent argument.

Lastly, we could recognize that some portion of our understanding has been evolved from thinking of *argument* or *discussion* as if a *container* of some sort (the metaphor ARGUMENT is a CONTAINER):

> You have the right ideas *in your argument*, but it is still not *transparent*.
> The *contents* of your argument are weak, and there are a *number of holes in* what you are saying.

These metaphoric representations, which define the relatively abstract term *argument* in terms of a number of concrete concepts – *container*, *journey*, *building, war* – do not give us a single coherent picture of the concept argument, any more than the linguistic label *argument* does. However, the various entailments (pieces or details of the individual metaphors), and the ways in which they overlap and interrelate, do offer us a number of different concrete perspectives of the abstract concept *argument*. We may note that our understanding of *argument* is intimately related to our experience with the

concrete definers, and therefore that our understanding of the meaning (rather than the definition) of *argument* is somewhat as we perceive it (Lakoff and Johnson, 1980).

Because so much of our experience is necessarily involved in dealing with elaborate abstractions, our intuitive use of metaphor systems makes it possible for us to understand many different characteristics of the concepts we seek to understand. In looking at the concept *love*, for example, we can easily see that to understand so complex and multi-faceted an idea, we are required to employ multiple different metaphors. To utter the phrase, "Look *how far* we've come" to my wife, I must have some notion of LOVE as a JOURNEY. In the days when we were just dating, I might have said "She drives me *crazy*" (LOVE is MADNESS), or felt "*electricity*" or "*attraction*" between us (LOVE is a PHYSICAL FORCE). Perhaps she would have said that I was "*charming"* (LOVE is MAGIC). There could be phrases of war, in love gone wrong, or references to love as a patient (a *healthy* marriage, for example, or *getting back on our feet*). In the end, none of these can of themselves help us to define love, rather they can help us to have a sensible conception of the characteristics of love. There may well be some core essence of what it is to love, but this cannot really be known to us because of the range of experiences we have with the concept. The conceptual metaphor system surrounding love does, however, permit us to examine the aspects of it, by helping to create some coherence to the concept. The abstract, in this way, is made somewhat concrete to us (Lakoff and Johnson, 1980, page 108).

The fallout of this way of conceiving the world in terms of interrelated metaphors is that we gain access to a range of human experiences, which in turn we can define in terms of others. There are, according to Lakoff and Johnson, a number of experiential and

natural domains. Prime examples are our bodies (the way we are oriented and move ourselves) and our interactions with other people and with objects. In looking at the kind of abstractions that are likely to be described by conceptual metaphor – time, love, happiness, ideas, emotions, morality, etc. – we can see that they could not possibly be effectively delineated or labeled *per se*, but rather that they require more concrete definers. These, in turn, often are drawn from natural (but more concrete) domains themselves – containers, orientations, food, buildings, etc. – meaning that in the end the natural experiential world is being described and conceived by us, as a result of the relationships it contains, AND as a result of our relationship to it. The result is a sort of experiential gestalt (Lakoff and Johnson, 1980, p. 119), a level of meaning that is pervasive across multiple domains and multiple experiences. It is also a level of meaning that is highly reliant upon our interaction with it.

Before moving on to their discussion of the implications of their theory of metaphors (a look at objectivism versus subjectivism, which is extremely relevant to this paper), Lakoff and Johnson observe a crucial ability of these metaphor systems to create a certain level of meaning, rather than simply to delineate it. Their example of a foreign student's misuse (or perhaps better use!) of a *chemical* metaphor, where *solution* (as in the "solution of my problems") was misinterpreted to mean something into which problems might be dissolved chemically, raises an interesting and important component of the metaphor theory. Metaphor, they argue, can create certain or even new levels of meaning, precisely because of the way in which we must interact with them:

> "The idea that metaphor is just a matter of language and can at best only describe reality stems from the view that what is real is wholly external to, and independent of, how human beings conceptualize the world – as if the

> study of reality were just the study of the physical world. Such a view of reality – so-called objective reality – leaves out human aspects of reality, in particular the real perceptions, conceptualizations, motivations, and actions that constitute most of what we experience. But the human aspects of reality are what matter most to us." (Lakoff and Johnson, 1980, p. 146).

This idea of an in-objective but not wholly subjective view of reality, which Lakoff and Johnson call experientialist, represents the culmination of the theory of metaphor, and it is in fact at the heart of the argument of this paper. For this experientialist view is reminiscent of the *bottom-up* or *top-down* components of linguistic and cognitive systems or networks. Though more sensibly described in metaphoric terms such as *here-there* or *there-here,* still the result is the same. For the most important, complex and elaborate concepts in our existence, we not only come to know them by the way we speak about them (metaphorically), but we also speak about them in such a way that meaning might be created (individually). What is thought of as traditionally linguistic, the metaphor, turns out to be inherently cognitive. It is an extraordinary crossover from one parallel to another.

The Metaphor of Cognition and Language

The manner in which this crossover might actually exist and be representative of some essential truth about language or cognitive systems is difficult to say. I would argue, though, that our need to describe the one in terms of the other is not simply a result of their being subsidiary components of the larger system of the mind. While this may be to a certain extent the case, might the similarities, the coherence and apparent parallels in our conceptions of the two be the result of our metaphoric treatment of these systems of the mind? While language may not be concrete *in toto*, still it can be examined, manipulated,

changed, etc. as if a physical substance. While there may be systematic similarities between our use of language and our use of memory or perception, might we have come to understand the one only in terms of the other, as if by creating and developing the metaphor MEMORY SYSTEMS are LANGUAGE SYSTEMS? The actual metaphors would more likely be something like A NODE is a WORD, A PROPOSITION is a SENTENCE, PROPOSITIONS ARE IN SENTENCES (container metaphor), IDEAS are in PARAGRAPHS (container metaphor). Building upon these, it seems possible that our conception of cognition, which we cannot concretely examine or represent, derives partially from our understanding of language, which can be represented concretely. Certainly, we have all considered from time to time the MIND is a COMPUTER metaphor (which, by the way, also implies another language…), and a cadre of computer terms – mapping, hard-wired, network functions, etc. – have arisen from the comparison. But the computer metaphor, while perhaps extremely effective, can only be thought of as a new component of conceptual mind metaphors. Certainly, we have assimilated the metaphor into our growing understanding of cognition, and perhaps this metaphor (like the chemical solution one above) has started to create meaning for us, but the MIND is a COMPUTER concept is new and its coherence with other metaphors still developing. Other mind metaphors have helped us to earn a conception of thinking that is tangibly sensible to us:

THE THINKING MIND is a BUILDING

The *lights* are on, but nobody's *home*.

THE THINKING MIND is a TOOL

He's pretty *sharp*. His mind is a *steel trap*. He's just *wired* that way.

THE THINKING MIND is a PHYSICAL FORCE

What a *bright* and *engaging* scholar.

THE THINKING MIND is a CONTAINER

I can't get it *out of my head*. My brain is *full*.

THE THINKING MIND is a MAP or JOURNEY

My mind is *racing*. Think it *through to the end*. Retrieval *paths* are strong memory connections.

THE THINKING MIND is a SEEING PERSON

I'll *turn* my attention to it.
Let's *focus* on the concept.

These examples and others have coherence, when thought of as representative of the various aspects of the mind, and they do help us to think more concretely about our elaborate systems of cognition. Yet there is something about the language metaphor that seems more essential and more fundamental.

It is not entirely clear to me what all the details of this COGNITION is LANGUAGE metaphor might be, nor am I certain that what I propose could even have merit in the sense that it could fit neatly into Lakoff and Johnson's much more in depth look at metaphor and meaning. Still, my original intuition stays with me, and I am left feeling that we have to a certain extent structured our understanding of the abstract mind from our understanding of somewhat more tangible language. This is not to say that we are creating the systems themselves (that would be a little much), nor is it to suggest that our understanding is true in the objective sense. It is to propose, however, that we have sought meaning in some aspects of the workings of the mind via our understanding of language, and that the meaning, as we have experienced it, has as much to do with the actual truth of the mind as with our conception of it. It is to suggest, in the end and in an oddly unscientific way, that it may be the meaning of mind, rather than the definition of it, that matters most to us anyway. It is also to suggest that the coherence of the MIND is

LANGUAGE metaphor might strongly support the notion of using some specific processes of the latter to enhance our use of the former.

Thinking and Relating in Metaphors, or *Honing an Old Tool with a New One*

INTELLECT is a CUTTING TOOL

> "He has a rather *keen* mind. She, on the other hand, is quite *dull*."
> "Without too much effort, a *sharp* person will *cut that argument to shreds*."
> "His *incisive* comments revealed his ability to *dissect* the problem quickly."
> "Let's *cut to the heart* of the matter."

With our use of language so neatly connected to our use of visual knowledge, then, some consideration for the different ways we might speak to each other as teachers and learners become somewhat more important to consider. I turn to the phenomenon of Methodological Belief, as described by Peter Elbow (1986) and then to the principles of Dialogue Process, as developed and articulated by William Isaacs (1999) and David Bohm 1989). In addition, I will offer some thoughts on the importance of creativity as a component of visual knowledge representation. I raise these issues for a number of reasons, and in anticipation of pulling them together synthetically in Chapter 3 of this paper. Though these elements are in some ways disparate and wholly discrete components of a variety of thinking processes, it is my ultimate intention to show that the elements of high level, collaborative thinking, when taking place in atmospheres of belief and creativity, can be employed – even fused – together to maximize metaphoric abstract thinking. While some level of visual meaning might be generated by simple awareness of the linguistic-cognitive connections laid out above, it is my hope to build a more systematic process through which to examine metaphoric thinking and its implicit detail. In this regard, what follows is quite important, and I would push my reader to stay with me,

despite what might be a feeling that I have wandered off track. It is the inclusion of these processes – and some explanation of the thinking behind them – upon which my later proposals will build, and without which whatever possible thinking outcomes would be left to chance.

Belief and Doubt as Components of a Methodology of Critical Thought

The chapter from Peter Elbow's book Embracing Contraries (1986), entitled "Methodological Doubting and Believing: Contraries in Inquiry", is an extremely thought-provoking piece. It raises an interesting counter point to the traditional view that good thinking is at its core skeptical or doubting, by pointing out the possibility – indeed the attractiveness – of approaching critical thinking from an initial platform of belief. In delineating the process or methodology of doing so, he notes that the skills of belief and doubt are in conflict – opposite ends of the spectrum of thinking whose differences make the circumstance of agreement a rare and precious outcome of a shared thought process. As his article develops, though, and he reveals the details of his methodology of belief, the two extremes seem less in conflict, more subject to the relativism of perspective, and in general more understandable as key, but perhaps not truly separable, components of the larger skill of critical thinking. The metaphor for me is a see-saw, a lengthy plank of critical thought, with belief in one seat and doubt the other, resting precipitously on the fulcrum of "trustworthy knowledge" (Elbow, 1986). Either seat lacks form or function without the existence of the other end, and any "slide" towards the sought after trustworthy knowledge will be completely uphill (so to speak) with the un-countered weight of one seat or the other stuck on the ground.

Central to Elbow's essay is the notion of "assent," the point at which an effective critical thinker engages fully in the methodology of belief. While he talks about assent in terms of belief, he does not acknowledge the parallel moment of "dissent" that precedes doubt. The two are, in my opinion, really the same moment of decision, though couched as positive or negative, depending on the methodology to follow. Either way, it is in this moment that the broad processes of doubt and belief, which seem at odds, come somewhat into line. In a platform of belief (fairly hard to assume, it turns out!) the likelihood of "critical success" – the acquisition of a clear and understandable picture of the problem, issue, or concept – is heavily reliant upon the dispositional skill of detachment, just as in a platform of doubt. Belief or doubt, acceptance or denial, are at the outset and throughout the process of critical thinking functions of the ability of a thinker to suspend some portion of his or her involvement with or investment in the subject at hand. Without the detachment, there can likely be no clarity, and without clarity the process of assessing trustworthy knowledge – the stepping stone to effective critical and creative thinking and problem solving – is entered into at the peril of the thinker. Given a dispositional breakdown of similar inclinations (a motivation to have a good thought or judgment), sensitivities (to doubt or believe, to assent or dissent, each implies an engagement in thinking) and skill (detachment), what then differentiates belief from doubt as a methodology?

The detachment, it seems, is not the same in both cases, but rather employed differently depending on the methodology. In the methodology of doubt, there is what I would call "objective detachment," a separation through which the essence, clarity or potential truth of the issue before the observer is not carefully considered, because the "un-

truth" of it might more easily be discovered by testing it. Being objective in this sense may be an effective step in seeking the truth of the matter, but it is just as likely to be an impediment. It is clear, for example, that the loudest and most strident doubters are those who disagree with a premise, as it is evident that those who agree too rarely raise legitimate objections. Doubt yields more opportunities for truth (truth gleaned from un-truth), but it does so by distancing itself from the object of consideration. This distance can be helpful and effective in sorting through a thought problem, and the importance of skeptical, doubtful thinking is well-established, especially in areas where some truth might actually be uncovered. Certainly, it is the thinking habit of first choice for most of us, most of the time. Natural "believers" are rare and often misunderstood, but also often admired. Still, it seems odd to seek a better understanding of something by seeking distance from it.

At the other end of the teeter-totter, the detachment required in a methodology of belief is what I would term "subjective detachment," a separation of the observer from his or her own understanding in consideration of other possible (trustworthy) positions. Because the thinker's understanding of the issue at hand is necessarily intertwined with his or her own values, beliefs and feelings, this detachment is more difficult to engage in and significantly more uncomfortable to support. In that the distance puts the thinker "closer" to the object of consideration, though, it may also be a more sensible, more effective method of understanding. It does not, as Elbow points out, yield truth, rather it reveals trustworthy knowledge. In doing so, however, it seems a more flexible and reflective method for coming to understand complex issues, particularly those that lack an absolute answer.

Somewhere between the two positions of detachment is a methodology of thinking, then, that incorporates both doubt and belief. At the fulcrum (to return to my metaphor) of the balance is trustworthy knowledge, a broad understanding of a set of issues that seeks and requires some individual truths (or un-truths), but that also accepts multiple possibilities. Holding the balanced position, somewhere between doubt and belief and equally seeking both productively, is difficult and compels thinkers to flip back and forth from one to the other. They are not really at odds, though, if one could imagine an effective thinking position of detachment somewhere in between the thinker and the premise (the fulcrum, again), with each methodology – belief and doubt – attached to and supporting the other. A simple schematic for what, given the ease with which thinkers lapse into doubt, is obviously far more complex.

The answer to the challenge, it seems to me, lies in David Perkins' (2001) notion of social thinking, as described in his article "The Social Side of Thinking". It is clear from experience that group thinking (any group work, really) yields effective solutions by collecting disparate skills or abilities into one focused process. I would argue that the detachment balance point of a group exercise, while significantly more complex (imagine a see-saw with six seats), is also more open, more accommodating to fluctuations of balance (think about that same six-seater). In the end, the group thinking experience becomes a process of *super-thinking*, and is more effective because it promotes a *super-disposition*. While it may be more difficult to pull group members away from doubt to a position of belief, for example, it is also significantly more difficult for an individual to remain entrenched at either extreme. Perkins sensibly points out what can happen when the balance of a group exercise becomes egregiously destabilized (a "doctrine," for example),

but he points out, too, that such scenarios are not actually thinking methodologies at all. Rather, they are examples of non-thinking processes, where forces such as "authority" have replaced "evidence" (key to any definable thought process) in throwing the system out of balance. In the effective and balanced thinking methodology of a group, the fulcrum of trustworthy knowledge must be strong enough to support the tensions of multiple perspectives – some formed of belief, others of doubt, the best of both – and that strength of understanding is likely derived from the many perspectives from which it is comprised.

Interestingly, though helping to productively balance the methodologies of belief and doubt into one coherent methodology of thinking, social cognition does not necessarily yield a group outcome. In fact, once buffeted by all the forces at work within a group, it is just as likely that an effective-thinking individual – the beneficiary of the balanced super-disposition of the group – will synthesize all those forces into a single, connected understanding. The pieces are set out by the group, but the connections, if they are to be useful, must be discernable to the individual. For, an effective balanced thinking methodology of a group, as with that of an individual, is not necessarily aimed at an ultimate truth. Rather, in that it draws from belief and doubt, it seeks and is balanced on the premise of trustworthy knowledge. It is for the individual, beyond that process, to judge for him or herself, to "weigh" all the considerations, to ponder (ultimately from the Latin verb meaning *to hang, weigh or assign value to*) the position that is to be taken. The balance of understanding has been centered on delineating a picture of the issue or problem. It is at some higher plane of thinking, I am guessing, that value is determined and judgment made, or that the topic at hand becomes contextualized and useful.

Considerations in Creativity

A CREATIVE IDEA is a PLANT or FRUIT

"To make progress here, we'll need to get the *juices* flowing."
"There are the *seeds* of a good idea here. Letting them *incubate* might help them come to *fruition*."
"This new approach is an *offshoot* of more traditional way of doing things."
"The ideas, once *planted* in her *fertile* mind, *grew* and *spread* in her thoughts."

While methodologies of belief or doubt may be thought of as related to the critical part of metaphoric thinking, the expansive creative potential for thinking through metaphor cannot be short-changed. This may be even more true when creativity is considered as a potential further strand in the metaphoric language/cognition parallel. For much in the same way that language and cognition spread and activate further linguistic and mental connections, so creativity is at its best and most valuable when it is pushing for those types of connections, and forcing them into some sort of coherent unity. In linking separate elements into an integrated and creatively novel whole, there is a relational process in visual (metaphoric) composition that is somewhat "akin to the grammar of verbal sentences" (John-Steiner, 1987). Creation typically involves a significant change in perception or perspective, and a certain transformation of what was into what might be (Davis, 2004). It stands to reason, then, that an ability to approach metaphoric thinking creatively, which is all about perception and perspective, would be a helpful tool in unpacking the abstract knowledge represented by the metaphors we use.

For this reason, the dispositions, skills and traits of creativity must be thought of as crucial elements not just of our creative selves – painters, inventors, musicians, etc. – but also as critical components of our thinking selves. Aristotle (as cited in Davis, 2004) believed that, "The soul never thinks without mental pictures," linking in saying so our

perceptions (input), our thoughts (cognition) and even our actions (output). In considering creativity, then, not as artistry but as intellect, the need for it in thinking metaphorically becomes quite compelling. How, if not through some looseness or flexibility in perception, could our understanding of metaphorically represented abstraction change or be transformed into higher or better thinking? Moreover, how could true genius, where such abstractions are concerned, arise at all? Seeing things differently, having a vision, gaining an insight – these and other phrases are the one we use to describe a process of imagination (picture-making, that is) that we recognize to be essentially visual in nature. Beethoven was said to have possessed sound images of form and color (Davis, 2004). Eminent chemist Robert Woodward, who first "pictured" a double helix of growth and reproduction, and was able to manipulate his mental image of it to genius effect (Davis, 2004), summed it up quite well: "[Abstract] chemistry would not exist for me without the physical, tangible, visual, sensuous things [I perceive.]" That we should be pondering not just our use of metaphor as a thinking tool, in the end, but also our highly creative use of the metaphor as a thinking tool follows naturally. To think through metaphor, to visualize abstraction and to manipulate and understand it fluidly involves an ability to approach our mental imagery creatively.

And yet, this consideration for creativity must not be an impediment for taking on abstract metaphoric thinking in what we might think of as ordinary ways. Too often, the less creative among us stand aside in awe at what we think of as the unreachable creativity of true genius. We all possess more creativity than we suppose (Nickerson, 1999), and our use of it need not be aimed always at sweeping creative leaps. Quite the contrary. Be it in daily problem-solving, slight advances in personal perspective or in the empathy to

imagine fully what someone else is experiencing, the creative approach is a better and more optimistic (and probably healthier) approach to living than our generally critical society promotes. Even in working with metaphoric abstraction, it must be seen as true that anything other than a creative approach, with all that entails, is basically an intellectual dead end. It is not a thinking (present participle, happening now and into the future) life, but a life of thought (past participle, completed and unchanging act.). Harnessing the power of the metaphors embedded in our language, and recognizing the relationship between language, metaphoric cognition and creativity, we have a chance, I'd argue, to see – and therefore to think – at a significantly higher level than we are accustomed to. It is an opportunity for the ordinary among us to think and build meaning in extraordinary ways.

Dialogue and Dialogic Processes

> "Dialogue is about what we value and how we define it. It is about discovering what our true values are, about looking beyond the superficial and automatic answers to our questions. Dialogue is about expanding our capacity for attention, awareness and learning with and from each other. It is about exploring the frontiers of what it means to be human, in relationship to each other and to our world." (Ellinor and Gerard, 1998)

David Bohm (1989) says that the word dialogue derives from the Greek *dia+logos*, meaning literally "through meaning," and that the process creates a flow of meaning among and between group participants. In doing so, it seeks to move beyond individual understanding and perspective to a place of collective meaning, to a place where implicit meaning has been made explicit. As such, it might easily be contrasted with a term such as "discussion," (from the Latin, literally, to beat out), which implies the rough handling,

argumentative approach that many of us employ in environments of group work. The process does this primarily through a subtle slowing down of individual thinking processes, by asking participants to employ four key dialogic building blocks: suspension of judgment; identification of assumption; a keying-in on perception; and an adherence to inquiry and reflection. The use of these skills is supported by the creation of an "atmospheric" container of thinking that enfolds the participants, their thoughts and the thoughts of the group into one synthetic thinking environment. This container is, in many ways, aimed at promoting the most important dispositions (Tishman, 2001) of critical and creating thinking, and especially at fostering crucial elements recognized by Elbow's premise of belief. The process is not, it is important to note, outcome oriented, but rather "a foundational process leading directly to personal and organizational transformation" (Ellinor and Gerard, 1998).

My own first exposure to the concept of dialogue was truly transformative. The premise – that there could be conversations "without sides," where true collaborative learning and examination might thrive – was not an unconsidered one for me. Even the most novice observer, whatever the circumstance, might generally assert that collaboration of efforts is better and more effective than singular or independent application. At the most basic level it is the old adage that "two heads are better than one," and at the most advanced threshold it is the idea of the think tank. Our understanding of it, I'd argue, resides somewhere in our attraction to the basic mechanics of energy, effort and outcome, and it is difficult to think of too many progressive tasks that are best done alone. The concept, already familiar to me or to anyone thinking about it for a moment, that social, collaborative thinking would promote high level or even moral abstract thinking, has

academic weight (for me, anyway). David Perkin's (2001), citing Vygotsky along the way to arguing for the importance of social interaction in thinking, points out that, "Every function in […] cultural development appears twice: first, on the social level, and later on the individual level. All the higher functions originate as actual relationships between individuals." This is, perhaps, why so many ancient cultures incorporate dialogue into their social processes, and why even today we continue to think of meetings or other verbal interactions as key elements of our work. And yet, as clear as it is that this premise is fundamental and should work effectively, it is equally evident to anyone who has been frustrated by failed attempts at collaborative thinking that somewhere between the theory and practice of social thinking is a vast wasteland of untapped and frustratingly nearby potential (Isaacs, 1999).

At the root of the problem is the practical reality that "self-reference," the tendency for people to interpret reality from their own experiences and values, causes an extraordinarily high level of assumption, advocacy and judgment, even in circumstances where some shared vision might be articulated. Individuals act and behave one way on the surface, but those behaviors are driven by a broad and unconscious set of unspoken – perhaps misunderstood, likely unexamined – beliefs, habits and patterns. In the end, the hoped for dynamic of many thinkers acting as one, collaborative, super-dispositional or intellectually networked group yields to a virtually garrisoned set of individual thoughts and premises, the result of which may even be that the group is less powerful to move to higher understanding than the individual. This is somewhat counter-intuitive, but it indicates that much of the "thinking" going on in the group culture remains implicit and therefore inaccessible (useless, really) to the individual.

But dialogue, an opportunity for group work at its best and most effective offers a new way of approaching and looking at concepts, a novel and transformative perspective that is surprising in its simplicity. The process of dialogue, in what it seeks in collaborative learning and examination and in what it devalues in immediate outcome, answers directly and exquisitely the failings of collaborative learning as most of us know it in our daily lives. Unlike most group work, which is aimed at outcome, this process calls for closer and more empathic listening; it promotes the setting aside (or at least the helpful recognition of) assumptions and beliefs; it pushes for the suspension of judgment, the delay of "voting" on the subject at hand; it recognizes that the abandonment, at least for a short period of time, of our deepest beliefs might actually lead to deeper, more well-developed thoughts down the road; it asserts that thoughts are different from thinking; most intriguingly, it proposes that the nature of things is best revealed (made explicit) by an understanding of the ways in which they relate to each other and to those considering them. In the end, it makes preeminent in the work of the group the concept of relational thinking, a move to the intellectual middle ground of a meeting of minds from the unhelpful and unproductive periphery. It reminds us, in doing so, that true insight can only be earned by engagement in a process of thinking, a process enfolding an entire social interaction – the participants, the objects of examination and all the relational spaces between – into one synergic experience. In the end, it is a relatively simple idea, the application of which has myriad and complex potential outcomes. It is, to a certain extent, the realization of the many seated teeter-totter analogy I made in the sections above. It is also an entry, I propose, for working more effectively with the metaphors of our thinking and understanding.

CHAPTER 3

Metaphor, Collaboration, Creativity, and Belief: Visual Dialogue

"I don't know what I think until I see what I said." ~E. M. Forster

Teaching with Metaphor, or *the Heart of the Matter*

In recognizing the coherence of our thinking and speaking in a knowledge sense, especially when that knowledge concerns complex abstractions, questions of how best to capitalize on the connection educationally then arise. Students working with challenging abstractions, and adults hoping to teach them, realize early on in the teaching process that the topics being examined are somewhat elusive and open to many levels of interpretation. The attempt to view such concepts as education, truth, tolerance, leadership, or others objectively is difficult for a number of reasons, not the least of which is that the objects of scrutiny are simply not objects. Additionally, such topics are most likely to be brought into some helpful focus as a result of their absence; consider how relatively simple it can be to examine an act of dishonesty. In such cases, a natural second level of abstraction – absence – is introduced into the discussion. Often, we may observe students reacting appropriately to a particular contextual scenario, but the challenge to discuss these abstractions without immediate context – what we generally mean by leadership or truth, for example – is, as we know from experience, overt and frustrating. It is also counter-productive in many

ways, and most good teachers would not in good faith embark on a typical teaching plan with so little direct objective understanding of the topic to be examined.

And yet, there remain optimistic hopes at all levels of education that these higher elements – the virtues we'd like students to possess beyond their studies of history, math, Latin et al. – can be taught effectively and programmatically. Among these higher elements are critical and creative thinking skills, strategies and dispositions. Many of us believe, I know, that to teach those curricular subjects without rigorously pursuing examinations of the higher elements is to only partially teach our charges. Questions about the essential nature of concepts such as truth, virtue or happiness are, of course, as old as philosophy itself. The answers to the questions, however, have not really emerged in a practical or accessible way, it would seem, despite the long-standing discussion. I do not imagine that to explore the nature of these things is the same as instructing students in their importance. I do believe, however, that to help students to get a better picture of the concepts is a crucial and missing step along the way first to better understanding and later to better practice. Moreover, I am just about certain that doing so in ways that permit students to create some of their own meaning or understanding will lead to deeper and better ways of living and learning. I picture, and I choose this word purposefully, a teaching environment that builds on the metaphors we live by, in hopes that they can become the metaphors we will better learn and teach by.

Isaacs' (1999) excellent book on dialogue and its principles notes, in its very first pages that dialogue may be thought of as the "aperture" through which social reality might unfold. He means, I think, precisely what the word "aperture" means, namely an opening through which something – understanding, in this case – might pass. There is a more

specialized meaning for the word, however, and it is from this that my specific thoughts on how better to examine abstraction emerge. For the aperture I see is the aperture of a camera that is a group mind. The opening I imagine is one through which passes the reflections of the details of the metaphors we perceive and therefore use subjectively all the time to examine otherwise un-viewable abstractions. The resulting image I discern is a picture of the abstraction, not one that is entirely static (to move a little distance away from the photo analogy), but rather a depiction that is changing as the light entering changes angle, as the perspective of the seer is varied. It is at once focused enough to be inspected, and fluid enough to be considered and reconsidered. And in the same way that even a valued static picture changes meaning as the events change in their relevance over time (think of photographs of your children, now that they are older), there might be, I imagine, emergent meanings in these metaphors that we could employ to help guide us in our understanding. The concept itself sounds a bit abstract, I admit. But the possibility of working with high level abstractions productively and with clarity should be enticing to anyone who has struggled with such conversations in the past.

Adapting Dialogue to the Purpose

The traditional dialogue process builds on a variety of thinking skills and dispositions to compel the implicit individual knowledge of participants to emerge and become explicit. Those who have enjoyed positive experiences with it understand that a sort of flow of meaning evolves during the process, one that results in a sort of collective group thought hovering somewhere in the middle of the circle. My own experiences with dialogue have been transformative (shape- or perspective-changing, that is) in this regard,

and I propose that there is a certain visual-ness to the process, despite its fundamentally linguistic approach. I propose that the process, as I have known it, could be extremely well-suited to working with metaphor. With just a very few adjustments, in fact, the dialogue container might be turned into the group camera mentioned above. I would call this specialized type of dialogue visual dialogue or ideologue (spyalogue seemed just a little too gimmicky, though it certainly conveys the notion of close looking and gathering information!).

Visual Dialogue or Ideologue

Metaphoric or visual dialogue is a synthetically visuo-linguistic process through which a group can collaboratively depict and examine metaphoric abstraction, perhaps to such an extent that new meaning is constructed or emerges. By meaning, I do not suggest the right or correct answer or interpretation of an abstract concept (an objective IT), rather a plurally (WE, instead of I) subjective meaning that is, as the result of the forces that constructed it, more accessible and perhaps clearer to participants. Ultimately, it is my hope, the emergent meaning might also be more useful in a practical sense.

Issacs (1999) uses the example of riding a bike to explain the difficult process of dialogue, and the "tacit" knowledge required of both tasks. The example is even better suited as a jumping-off point to an explanation of visual dialogue. Isaacs points out that if you were asked about how to ride a bicycle you would likely not start with the physical laws of nature, nor with any reference to the principles of gyroscopic motion that permit you to balance on two wheels. Most of us, in fact, would simply indicate that you get on, balance yourself somehow and begin to pedal. We know tacitly and naturally, however,

that the pedaling and the movement are somehow related to the balance, and we know also that with confidence the rules of our balance (as defined by how often or how hard we fall) might be stretched. We may even recognize that some bikers – trick riders or motocross racers, for examples – have an apparent ability to suspend or change the rules. So it is with visual dialogue and metaphor. We know how to talk, though there are a variety of ways to do so, and we have some tacit understanding of the premises upon which our thinking and words are evolved. Getting participants in the dialogue to understand the metaphoric "rules" of our speaking, however, might help us to move away from the training wheel elements of our thinking about meaning. It is hard, I suppose, to equate bike-riding and thinking/talking, in this regard. At the same time, though, it seems pretty evident that we spend about the same amount of time in each case considering the tacit underpinnings of the processes. As tacit literally means unspoken, I'd point out, and as we've connected speaking to thinking…this would seem an unsatisfactory circumstance for any linguistic process aimed at better abstract thinking.

The Process of Visual Dialogue, or *Behold! Look*!

While metaphoric thinking and speaking may be highly habitual, our sense of how we do so well is anything but. Culturally, we tend to lean towards the critical side of our thinking, often (I argue) because of a general tendency to consider criticality as serious and productive. For a visual dialogue to be successful, however, some of our critical seriousness is necessarily to be set aside in favor of a more open, creative stance. There is play, in the sort of thinking we seek in visual dialogue, and the minds of participants need to be primed appropriately. Both the Greeks and the Romans had particular words to

indicate what we today might think of as a mental channel-changing. *Idou*, for the Greeks, from the root that gives us such words as video and idea, meant something like "look" or "behold", both commands to imagine. It precedes, for example, many of the parables in the Greek New Testament, as in "Look, there was a sower of seeds, who…," and is a call to recognize that a challenging abstract concept is to be analogically portrayed. Likewise for the Romans, *ecce*, extrapolated from the prefix *ex*-, literally "move from this place," was a sign that perspective or view needed changing. The start of the visual dialogue requires an *idou*- or *ecce*-type moment, one which clearly signals that vision is to be activated, the view tended to, and in ways that are not typical of our everyday thinking. Brief, 2-3 minute creativity exercises will function well in this regard, and should be employed as a type of check-in to the process of the visual dialogue.

Among the simplest of these sorts of creativity primers, but one that is symbolically relevant to the work to be undertaken by the participants in a visual dialogue, are See What's There-type scribble exercises. In these, people are asked to "see" pictures in relatively simple scribbles, and to fill in some of the details. The process of doing this well involves moving the paper around, so that the scribbles might be viewed from numerous different perspectives. The exercise feels like something of a children's game, which is desirable in terms of setting an appropriate tone of exploration for the dialogue to come, but the symbolic message in what it anticipates for the goal of the dialogue – to envision new pictures from old or even indescribable ones – is fairly substantial. The exercise may take only a minute or two, but sharing the results briefly as part of a check-in should help to set the tone of the container. Participants may see, too, that the exercise is in itself an analogy for the larger visual dialogue, a metaphoric trope for making the abstract concept

of the dialogue more accessible and ultimately more productive for the participants as learners and builders of meaning.

Defining the Container or Palette

What is called the container in dialogue refers to the atmosphere in which participants interact. The core requirements of the dialogic container relate mostly to the creation and support of a synthetic learning environment. It is meant to be a slower and more reflective sharing of ideas, rather than the promotion of static thoughts or opinions. Beyond all else, it is aimed at removing what Issacs (1999) calls the "pathology of certainty" from individuals in the group, in favor of an open, unfolding of perspectives. Elbow's proposed methodology of belief (1986) is an important element of this ideal, in that it proposes not thinking first of what is wrong about what a participant is saying or describing, but rather imagining what might be accurate, possible or trustworthy about it (high emphasis on the ex- in *ecce*, that is). In visual dialogue, of course, where expansive visual thinking is especially attractive as a starting point (because the topics with which it might concern itself lack essential delineation), there really can be little room within the container for behaviors or dispositions that are limiting. While we all have such behaviors, and in fact struggle with them in more typical discussions, to permit them to intrude upon the dialogic container – visual or otherwise – is anathema to the process and an impediment to creative flow.

Because the visual dialogue is aimed at the emergence of metaphors through the examination of the pictures they represent, then, it is helpful to think of the container as more of a palette or film. The flow of meaning, that is, is a sort of medium that is being

applied to a visual surface. This is not to say that the group is necessarily building details onto the pictures of one another, though that is an interesting way to think about it, too, and it could happen. Still the collaborative ability to view (*idou*!!) whatever the abstraction, much in the same way that those introductory scribbles were examined, requires something more than just the proper atmosphere. For some this may mean such things as closing eyes for visualization. For others, there may be a need to doodle or map on paper. For all, however, the exercise needs to proceed at a deliberate and reflective pace, one that is wholly different from regular discussion. First, participants must be encouraged to approach the topic from the perspective of learner and not authority. Only in this way will collective meaning be built, as assumption and opinions (already formed thoughts) are relegated to a secondary place in the interaction. There is no need, really, to agree or disagree to what is being said, and it is in fact unhelpful to do so. Instead, contributions to the flow may be better framed in visual terms, such as "I imagine," or "I see."

One trick in dialogue that is aimed at pace may also be helpful in reminding people that collective vision is the aim of the container or palette of the visual dialogue. Many dialogue groups make good use of a talking object, something that is to be retrieved from the center (or perhaps passed along) by a speaker, held while he or she speaks, and returned at the conclusion of the person's contributions. For pace, this is an excellent device, as it does slow down the natural tendency to react immediately and without reflection to what has been said. I have always felt, however, that there is significant symbolic meaning to the object, too, and that "returning to the center" again and again, as if the focal point of the dialogue actually resides there, is an important conveyance of the idea of the dialogue. Partially because I like the notion of such an object in a timing sense,

and partially because I recognize its potential symbolic value, I would suggest that an object of seeing is a helpful talking object. A magnifying glass, for example, might subtly suggest close visual examination, while a small kaleidoscope, with its patterns of color and shapes, might assert the magnificent patterns of visual meanings that can (and will hopefully) emerge from virtual flecks of thinking and imagining.

Ultimately, it is probably not reasonable to think that participants in these sorts of dialogues – students in a typical classroom setting, for example – will become experts in all of the principles of dialogue or of its necessary container. These are laid out in great detail in a variety of places, and in ways that could be intimidating to novices or occasional practitioners. However, the basic premises – that there be space for listening and learning, that assumption should be recognized, that belief can be starting a point, etc. – while supportive of a potentially very complex process, may be applied quite ordinarily so long as there is agreement in the group that it should be that way. While some of these behaviors are lacking in our daily lives and interactions, it is one of the peculiarly pleasing (and productive) elements of dialogue that this container or palette, once set, is so agreeable in a learning sense that participants are naturally drawn to it. For me, it was this change in approach that was so transformative in my dialogue experience. I left all of my earliest dialogue experiences wondering why things could not be more essentially dialogic in my daily interactions. I found it to be energizing and generative of optimism and reflection, unlike many other interactions. Participants, whatever the level of expertise or experience, will find the same, and be drawn fluidly forward in a way that is exciting, revealing and potentially deeply meaningful to them and to the group.

Visual Assumption: Seeing and Believing

Like a typical dialogue, which would be put into motion by a facilitator, a visual dialogue requires that a member of the group begin by identifying the abstraction at hand – *education*, for a relatively simple example. Following the guidelines for maintaining the container of the dialogue – again, a palette or a film – the group then enters into the process. Unlike the typical dialogue process, where thoughts and comments are aimed at establishing a thinking flow, this process is aimed at the creation of a visual or pictorial flow, one that permits the details of our mental images to be examined, questioned, focused upon, and perhaps even altered. The process might pass through a number of phases, but it is important to recognize that the phases are secondary to the process and should not be constraining in any significantly noticeable way.

The facilitator in this regard is quite important, and may need to play a more significant role at the outset than is typical of many dialogues, where too much input is to be avoided in favor of allowing the flow of the dialogue to develop. A key element is the assembling of the words or phrases with which the participants might be most apt to discuss the abstraction. A dialogue on *education* finds, in my experience, beginning comments like: Education is a right; I see education as a foundation for your life; Education is filling up your mind or your brain; Education is something that cannot be taken away from you; Being educated is part of becoming an adult. Related comments emerge as well: Learning is cramming facts into your head; You cannot get enough knowledge; Learning is sharing; The brain is like a blank page or an empty container. The mind is a terrible thing to waste. It is simple to get people talking about the abstraction, and

it is often clear at the outset that participants have a good sense of the concept, though their descriptions may seem vague or even a little surprising. It is in getting the participants to consider their descriptions, however, that the dialogue can begin to take off. For the comments, though revealing once examined, are most often made more habitually than thoughtfully. They also often made without recognition of the essential metaphoric or visual quality of the descriptions.

Writing down pieces of these comments, and in such a way that the group can see and return to them as they wish is important, though the momentary permanence of doing so grates a little with the hoped for fluidity of the process. The language, however, and especially the important details of the language, are a bit too fleeting, in their habitual and implicit nature, to be left hanging in the air. It is helpful to keep these first comments attached to the dialogue, even if at first they do not fully enter into it. Some may be more appropriate for another time, others may not become relevant to the group at all. Some, however, will take on meaning for participants as the dialogue progresses and the visual flow establishes itself, becoming connected in ways that could not have been anticipated. The writing down of the words (though I don't like the notion of requiring a recorder) is, in fact, the visual framing of the language, and it is helpful for it to be there for all to see.

With such comments gathered, the process of unpacking the metaphoric quality of the language can begin. Students are especially good at this, I imagine, because they are often involved in looking at literary metaphor in other areas of their education. Still, there is a common sense to this part of the process that, once pointed out, tends to move this next level of consideration forward quickly. To return to my original example, the question, simply, is something like: What do you really mean when you say (or see) that education is

a foundation for your life? In experienced groups, the question may not require an asker, but with students it probably will at first. Either way, the key metaphoric element, of course, is the word *foundation*, which speaks literal volumes about the visual representation of education as expressed by the person who made the comment. From this point forward in the dialogue, observations about the metaphor of education as a foundation of a life that is being thought of as a building can be the focus. What does the word foundation entail, imply or represent? What does a foundation do? Who puts it there, and who puts what goes on top of the foundation there?

The answers to the questions will probably not reveal any truth per se, but they certainly reveal some level of what we might recognize as the internal trustworthy knowledge of the participants on the subject of education. I don't know, for example, whether or not the foundation for a skyscraper is different from that of a regular city building. I have the sense from somewhere in my experience, however, that building a skyscraper involves pounding huge poles into the ground first. I assume the poles are there for stability, and that they will eventually support some sort of level platform atop which to build. I am no engineer, but I have some sense of what that sort of foundation is for and how it functions. I have a good idea, too, that the cinder blocks atop which sits my shed, while materially different, are similar in function. What I may have no sense of, however, is that if the foundation metaphor of education is prevalent in my speaking, it is probably prevalent in my thinking too. The implications of this connection, then, even if I don't actually have any expertise in the literal picture (i.e. an actual foundation), are abundantly clear and quite important to the way I perceive education and likewise with the way I interact with it conceptually. The ultimate trick of the dialogue is to start to reveal that

picture, in all its visual detail, to ourselves and to others, in hopes that the process of doing so will clarify, alter, perhaps even wholly remake the pictures in a knowledge sense.

In this phase, two competing cognitive elements might be found to be at work, and recognizing and dealing with the tension between them is important. Generally, our views or thoughts are pretty static (note, again, that the word "thought" is a past, completed action participle of the verb "to think"), and there is a certain level of experiential intransigence that is rolled up in our understanding of the world. This is, of course, especially true of abstract consequences, which only can be viewed through our own eyes in our typical thinking and conversations. In the visual dialogue, we are asked first to portray our view, and then to permit its alteration, or at least clarification, by examination (our own and that of others). There is trust in this, but there must also be fancy and imagination. For the visual dialogue to be meaningful, all connections must be open to examination, all elements subject to creative reconfiguring. It is not simply a question of what the picture is, rather it is a question of what the picture might be, of what details it might include, or of what other images might emerge from that first one. The creative spread of activation (I use a term of cognition purposefully, here, and in recognition of the connections I established early in the paper), to whatever extent it evolves, will determine in many ways how successful the visual dialogue will be in helping the abstraction to emerge meaningfully, and in helping some of what has been implicit in our understanding to become explicit and for all to see.

Imagine, for example, that the metaphoric term foundation, while being discussed as a building metaphor, activated in a participant a make-up or cosmetic metaphor (this came up in the education as an abstraction example I used in the forward). I don't know the

first thing about make-up, though I suspect that cosmetic foundation goes on first, just as the building foundation is constructed at the start. This does not matter, though. For as a member of the group begins to work through an emerging metaphor, either as he or she sees it at that moment or as it has been all along, there is new and interesting meaning added to the conversation. Where highly creative metaphors emerge and are visualized, this is all the more true. Seeing objects beyond their typical use, being sensitive to homonyms or analogies, recognizing ambiguity in some of the words we choose or in the meaning they evoke, etc. – these and other creative dispositions are crucially important because they support novel and different views. These views, of course, suggest different emergent perspectives and perhaps different emergent questions. The direction, it is important to see, is not really all that important. Rather it is the openness to the images as reflections of our beliefs that is key, and it must be supported by the prevailing tone of the container. The metaphors, that is, are not just images. They are real visual knowledge, they have details or entailments to be explored creatively and expansively, and the act of doing so is an act of discovery, learning and meaning-making.

Check-Out

The final element of a successful dialogue is a check-out that asks participants to consider or identify threads of meaning or connection that emerged from the process. This process is crucial, as it reveals to the group the actual collaborative nature of the work, and to some extent whether or not the process has been successful in forwarding understanding. In visual dialogue, attempting to ascertain how visual thinking spread from one image to the next, or from one key detail to another, might be especially important, as

is looking at the coherence of the various metaphors that have likely come up. Earlier in this paper, I referred to Bohm's traditional etymology of the word dialogue as indicating "through meaning." At this point in the dialogue process, however, I would suggest that the term might be thought of to mean something different and more subtle. For while the Greek *logos* does indicate meaning, it is a particular kind of meaning, one that has to do with the way things fit together, rather than what they are in essence. Dialogue in this sense, then, and at this point in the process means something more like "meaning through relationship." As a result, the check-out is not really an ending, rather it is the call to synthesize what has been said and "seen." In many cases, it may be thought of as the beginning of another internal dialogue, of sorts, one that will continue well after the group disbands. In whatever way it is conceived, however, the act of expressing and making explicit the understanding that has evolved via the process is the act of focusing the effort – not so much into a view that is to remain fixed, but rather a view in that moment, with those people, and in relation to all that has taken place.

Of particular note, here, is the way that participants begin to acknowledge subtle changes in perspective. These need not be earth-shattering or grand in their emergence. While small changes might seem ordinary or unremarkable, any sort of expanded view, we must remember, is expanded understanding. During the check-out, for example, it may become clear that the group has stepped one or more paces from the initial metaphors. The group may find itself, for example, thinking about connected metaphors and what they might mean. The relative coherence of the imagery may also be compelling to some. How, for example, could the metaphor LEARNING is a JOURNEY be compatible in a meaning

sense with the metaphor of LEARNING is a COMMODITY? What are the cross-over points, and are both (or more!) needed to help us to understand? Moreover, to what extent does that understanding support individual interactions with the abstraction itself? What part of the metaphor, that is, represents the people speaking about it?

CHAPTER 4

Conclusions, or *A Bigger than Expected Box*

Chapter 1 of this paper began with examples of the LEARNING is a JOURNEY metaphor, and as I have reached my goal of proposing a way to take advantage of our metaphoric habits I think back to the many twists and turns of the route I have taken. I hope my audience appreciates having been along for the proverbial ride, though I cannot claim to have offered much in the way of comforts. My thinking on this has been both extremely big…and widely abstract. Yet somehow I have arrived – on time, with most of my bags handy, and both wearied from travel and excited to look around and enjoy my destination.

But what of the trip? As is so often the case, the process itself of this work has shaped and re-shaped much of the thinking with which I entered into it. My starting premise – that metaphor could offer a window into our representational knowledge of abstractions, and perhaps even a doorway into creating some knowledge about them – once described, seemed to invite numerous other considerations. New questions have emerged constantly, even as the answers to others were resolved. I struggled at times not to go too far afield, though often I did. Yet I must even now confess to a certain amount of intellectual wanderlust. I see that I am likely at more of a way station than my final destination.

The Practical Side of Visual Dialogue

Even during my first experiences with traditional dialogue, I wondered about its actual practicality. The elements that make dialogue so appealing in a thinking sense – its openness, its suspension of judgment and advocacy, its expectation of inclusion, etc. – may not be so desirable in practical concerns that seek some sort of progress or outcome. At various times throughout my experience in thinking about visual dialogue I had similar worries. Just what is the use of thinking about conceptual abstractions in this way? Is approaching metaphoric thinking in the manner I have proposed more than a simple thinking luxury? As I approached and finally turned the final corner on my work with visual dialogue, the answers to these questions, and to my larger concerns, emerged quietly but forcefully.

First, I have come to believe that visual dialogue might be thought of as a critical foundational exercise along the way to more practical work with conceptual abstractions. In this way, it might be considered a different sort of philosophic thinking, one aimed at dealing with the tremendous ambiguities in such topics by helping them to become more emergent visually. Recognizing the coherence of the various metaphors for justice in general, and working through the implications of some of the details of our visual thinking about abstract justice, for example, might help us to deal more productively with the concept when it becomes the key element of an actual contextual event. If we are to argue an incident around the question of whether it is just, we ought to have the best possible sense of what the term means for us, and what it means for others involved in the debate.

Knowing the metaphors that are circling this conversation is, to me, the act of knowing the assumptions, biases, etc. of the group, and the implicit ambiguities within the concept itself.

Moreover, if a group looking at an actual application of the term "justice" has engaged in some visual dialogue about it ahead of time, there is the possibility that some emergent shared meaning, derived from the dialogue and the evolution of a group metaphor, could play a role in shaping the practical outcome or solution. Dialogue is not intended to promote answers, just understanding. Atop that understanding, however, answers – trustworthy ones, not necessarily correct ones – might be built. In this regard, visual dialogue might be framed as a transitional step in thinking about abstraction, one that moves a group from individual thinking, to group meaning-making, to group work and problem solving at a later, practical stage. I would argue that all the skills of creativity involved in visual dialogue in promoting an open and expansive examination of a topic, could later be turned to the practical process of seeking solutions to incidents that involve the topic. The visual dialogue group, in the end, would be productively primed for the "harder" work of applying abstract concepts to the real world in which they reside, because of the marshalling of the thinking skills and dispositions that the visual dialogue generates in practice.

It is well beyond the scope of this paper to determine what specific atmospheres could best build on the work of a visual dialogue, though I have found myself thinking that it could have interesting application in more traditional ethics courses (which are often contextual in nature). I do believe there is still work to be done in considering how to transition a visual dialogue group from the essentially divergent visual exercise of the

dialogue to a more convergent, focused application of the information. I could not be more sure, however, that my original concerns about the open-endedness of visual dialogue need not be thought of as arguments against its practical value or potential use in real, actual settings or contexts. I might even go so far as to suggest, as I near the end of my work, that this sort of thinking (there are obviously other ways to get at it besides visual dialogue) may too often have been left out of what needs to be a more synthetic, collaborative approach to abstract, often highly ambiguous topics. Perhaps, that is, we need to get the picture of what we are talking about generally before trying to apply it specifically. Or, as Forster points out, we need to know what we mean by seeing what we have said about it. It is pretty enticing to imagine what this means for vision or visionary problem solving in a forward-thinking sense.

Visual Dialogue and Finding Solutions

A second set of emergent questions and thoughts hangs off the idea of the metaphors that are related to the metaphors being considered in a visual dialogue. To what extent, that is, might spreading creativity, as promoted by the atmosphere and aims of dialogue, lead to consideration of other metaphors and the details of the knowledge therein? How, in addition, might these related metaphors be useful? It seems just about self-evident that the close examination of the details of a particular metaphor leads naturally to an examination of the natural parallels within the metaphor, as well as the implications of those connections. In the LEARNING is a CONTAINER metaphor, to return to my opening example, the conversation about the type of container evolved sensibly into a conversation about the type of filler/pourer, and about the type of substance

that was filling the container. That initial dialogue took a different direction in terms of meaning when the metaphoric filler turned out, in one student's imagery, not to be a person but a force of nature. In setting up this connection, a new metaphor emerges – the TEACHER as a NATURAL FORCE – one which might require a further look down the road. While the end result of such a conversation game might seem never-ending (which would be fine within the framework of the dialogue), still within those metaphors closest to those first considered (i.e. the teacher metaphor, which is closely related to the learning metaphor) is connected meaning that could be extremely valuable in thinking about the practical problems implicit within the metaphors. This seems to me an open and fertile opportunity for creative problem solving at its best, for it encourages metaphoric thinking about related outcomes or solutions. There is an opportunity, that is, for working backwards through the connected metaphors to conclusions or solutions that could be helpful in a practical sense.

For example, a visual dialogue on education could productively be followed by a conversation about problems in education. Those problems, abstractions in themselves, might then be considered in light of one or a number of the education metaphors already discussed. Perhaps the issue or problem of how best to teach students critical and creative thinking skills is on the table. Perhaps it is the notion of public versus private education. Special education, at either end of the spectrum, might be under scrutiny. Thinking about such problems as related metaphorically to the initial topic – education in this example – will necessarily begin to reveal quite a bit about the problems themselves. The EDUCATION is the FILLING OF A CONTAINER with a SUBTSTANCE metaphor has structural problems that must be dealt with, in thinking more specifically about special

education or the conveyance of particular skills. If the problem cannot somehow be reconciled with the metaphor, or at least one related metaphor, it would seem unlikely that real solutions could be imagined. How can a productive debate on private versus public education proceed, without some recognition that the EDUCATION is a COMMODITY that can be PURCHASED metaphor is deeply at work in the conversation, and that the real world issue of economics is struggling to reconcile itself with the visual economy of the education/commodity metaphor? I would strenuously argue that to make real progress in such problems, then, would be either to reconfigure the original metaphors or to imagine better or different ones that can encompass the problems themselves.

It is this element of visual dialogue that is so enticing to me. For it suggests a cognitive visual move from the metaphors we have to the building of metaphors that we could have in the future. This resonates deeply with me in a thinking sense, as it seems to conjure the exact definition we refer to when we talk about "having vision" in a cognitive, problem-solving, creative way. The vision we so admire, I'd say, or that amazes us when truly breathtaking advances or solutions emerge, is the vision of connection- making in a way that is fundamentally metaphoric. There is plenty of work to be done in figuring out how best to move from the visual dialogue to this deep application of the principles in a practical sense, but I could not be more certain that there is a connection to be made, and that a different and potentially satisfying way of approaching problems somehow resides within that connection. Another leg of a trip to be taken, I suppose.

Last Stop

The visual dialogue, as it has itself emerged as an idea via my work, turns out to be an appealingly tangible vehicle for looking at the way we think about and struggle with abstractions. I arrive at this point in my own thinking believing that it is a potentially visionary way of looking at high level, complex concepts through the lens of fairly regular experiences and circumstances. In a way, this makes the notion of visual dialogue also fundamentally optimistic and hopeful, because it suggests that from the ordinary ways we come to see things, a better picture can be conjured. True, for the more creative among us there might be more artful pictures, perhaps more variety of color, more subtlety of detail. Some of our pictures might become museum-worthy. One way or another, though, the pictures we have, and what these pictures represent of what we think, because they are our own original work, have extreme metaphoric (and therefore cognitive) value to ourselves and to those around us. A student's picture of tolerance, because he lacks experience, may be only of the magnet-on-the-refrigerator variety. My own picture may not be much better, despite my experience. We must know, however, that any conversation we have about the topic will be one that involves those metaphoric scribblings. If we hope to make progress in a learning sense, we will need to set aside our first natural instinct to point out the deficiencies of the pictures in favor of simply seeing what they represent. Within that representation is a good chunk of what we are thinking…and so the conversation might get productively underway, new pictures might be formed.

So often, in the end, we ask ourselves or others to "look differently" at things or to change "perspectives." We all understand *what* we mean when we ask this, and we recognize that we are envisioning a better moment, life or world when we do so. Yet we do not always seem to know *why* we have stated it this particular way. Why the particular emphasis on sight? The metaphor of UNDERSTANDING is SEEING is so embedded in our use of language that the two are virtually inseparable. Yet its coherence with the way we approach the world in a thinking sense should remind us that what we are in fact looking for is a better view, of a finer picture, from a more advantageous observation point. Simply, we want to get the picture. It is my hope that visual dialogue, as set forth here and as it might evolve via further work, might be relevant in helping us to do a better job getting and using the picture in a thinking sense.

EPILOGUE

A Few Last Considerations

As my work with metaphor and visual dialogue has evolved these past months, a number of interesting strands of thought have emerged. All are perhaps outside the scope of this paper, yet all deserve to be at least connected to the argument in favor of using visual dialogue as a learning or thinking tool. The first among these is my growing suspicion that a variety of different media could be enfolded into this process in different ways. In connecting cognition and language as a starting point for this paper, I have established metaphor as a primarily visual phenomenon. This is, of course, not entirely true; metaphors may suggest auditory, tactile or oral sensations or experiences as well. Further, while I have built solidly upon the idea of visualization or imagination in the process I propose, I can now easily envision a number of other windows into the creative process upon which the premise of visual dialogue rests. I have not been in a position to deeply consider the implications of this, nor the specific applications, but it seems likely that similar exercises could be conducted using music, applied or performing arts, or the other sounds or senses generated by metaphor of one sort or another.

Related to this is a sense I have that this process, though aimed at relatively high level abstract or even philosophic thinking, could be modified for use with any age learner

(Mathews, 1994). Clearly, the embedded metaphors that children use for understanding abstraction are less well evolved than for those of adults, because their language is less rich and their experiences less varied. That they have a picture from which to work metaphorically in dealing with abstractions, however, seems likely. It may be in the form of a story, with metaphoric visual representation embedded within, or in other sorts of visual or auditory media, or perhaps in simpler levels of analogic connection-making. It is my sense, though I have not examined this at all, that even the youngest of learners could benefit from working backwards through their metaphoric thinking, as they could in a modified visual dialogue, to a better understanding of difficult abstraction. Anyone with children knows that abstractions such as death, kindness, family, etc. are of concern to youngsters. Anyone with children knows, too, how difficult it can be to have meaningful conversations about such things. Might visual dialogue, modified to suit younger learners, be another mode of entry into helping kids to better levels of abstract thinking? I'd like to think so.

Lastly, is an area I would like to have examined, but one which remained on the periphery of this synthesis. It seems likely to me that atmospheres most supportive of the visual dialogues I propose will generate a type of thinking that is fun and playful. My strong guess is that those thinkers satisfied by this sort of approach will find themselves having a good time with it. While fun may not be an end in and of itself, I would suggest that it could be a key element in pushing good visual dialogues to greater heights, and consequently to higher levels of understanding and connection-making. Some level of fun will be great in making the potentially weighty work of thinking through complex

abstractions less so. But the infusion of fancy into this process may also be crucial to getting the most out of it.

As with just about any truly worthwhile intellectual endeavor, the work itself creates more work, more divergent directions, more connections and more questions. This has been the case for me in this synthesis. I conclude (or perhaps temporarily suspend) my work, grateful for what I have learned and for the luxury of having had the chance to think deeply and reflectively about a topic that has been in different ways present for me for many years. I am equally grateful to know that there is work still to be done.

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