

Of Medicine and Rocket Science: Metaphors that Shape the Field of Literacy Education

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In this article, I focus on the potential for metaphors to reflect and construct our worldviews, especially those worldviews that pertain to literacy education. Ubiquitous in language, art, architecture, literature, advertisements, symbols, myths, and more (Kovecses, 2002), metaphors have the power to shape the way we define our realities and arguably form the foundation of our conceptual system (Lakoff & Johnson, 1980). Evident in the way we talk and the way we think, metaphors play an important role in understanding and organizing information in general, and this role is also evident in theoretical conceptualizations of academic fields. For example, dealing specifically with theories of intelligence, Sternberg (1990) argues that an appreciation of the metaphors that underlie theory can help move a field forward, and conversely that it is difficult to understand the interrelationships of different theories "unless one understands past and present theories in terms of their underlying metaphors" (p. 5). Thus, one purpose of this article is to address the metaphors that exist in the field of literacy education with a view toward understanding the role of metaphor in divergent realizations of theory-driven practice.

The article first provides core information central to understanding metaphor, including a description of its links to analogical processing and its use as a frame for generating worldviews. Metaphors germane to the field of literacy are then explored; specifically, the metaphor that provided the foundation for the work of an influential literacy group is critically examined and competing metaphors are introduced. Finally, a survey of literacy educators' responses to each metaphor are discussed in terms of dissonance, accordance, and implications for the field.

Metaphor and Analogical Processing

What do metaphors have to do with everyday life? If we think of metaphor use as only involving an interpretation of what Shakespeare meant when he wrote "life's but a walking shadow," then metaphors probably seem somewhat removed from our cognitive lives on a daily basis. But in fact metaphors shape our daily lives more than we realize.

Basic descriptions of metaphor often include any kind of non-literal, figurative language where one object or idea is described in terms of another, as Shakespeare does in the quotation above. That type of metaphor is common in literature when authors seek to make a description of an object more compelling through its comparison to something else; John Donne's "no man is an island," for example, illustrates the idea that humans are social beings. However, metaphors are also employed outside of literary venues for purposes of cognitive processing in general, and it is this type and use of metaphor that I focus on here. Specifically, metaphors that are understood through an *analogical process* are of interest in the present article. In the next section, the relationship between metaphor and analogy is described.

Metaphor and Analogical Processes

A core part of how we understand some types of metaphor is through an analogical process. Here, analogy is defined and described, followed by a description of its role in metaphor usage and understanding.

Definition of analogy. Analogies are more than the "A is to B as C is to D" part of a standardized test students endure; a common thread running through various definitions of analogy would include the identification of partial similarities between different objects or situations that support further inferences (Gentner, 1998). While the purpose, quality, type (e.g., attribute, relational, and system, see Holyoak & Thagard, 1995) and use of analogies vary greatly, in general, analogies are used to explain new concepts, to solve problems, and to understand new domains (Gentner, 1998). For example, in seeking to understand the acoustic properties of ancient Greek amphitheaters, the Roman architect Vitruvius constructed an analogy that included the behavior of water and the apparent behavior of sound. Just like waves in a pool of water will move outward until striking an object in the water and bouncing back, so too will sound move outward from the source, bouncing off of physical structures in its path (Holyoak & Thagard, 1995). The analogy between something known—properties of water—to something unknown—properties of sound—allows a greater understanding of the unknown. Thus, the analogical process is one of mapping similarities between a source analogue and a target analogue in order to better understand the latter (Holyoak & Thagard, 1997).

Analogical processes and general cognition. Analogical processes are commonly used to make sense of new information in general. Some scholars have argued that a great many aspects of thinking are analogical in nature (Gentner, 1998) and that thinking analogically is a core feature of human cognition (Kurtz, Miao, & Gentner, 2001). Similarly, Rene Descartes argued that "all knowledge whatsoever, other than that which consists in the simple and naked intuition of single independent objects, is a matter of the comparison of two things or more, with each other" (cited in Leary, 1990, p.39), clearly a description of an analogical process. More recently, and more explicitly, it has been asserted that "a concept is a package of analogies" (Hofstadter, 2001, p. 507). Indeed, analogy use may well be a naturally occurring process—one that does not need to be consciously or deliberately taught—since its use is evident by even our youngest thinkers. Infants are able to use basic analogical processes to figure out their world, and by the time children are 5 or 6 years old, they are able to use complex analogies for many purposes (Holyoak & Thagard, 1995). Analogical processes are thus natural and ubiquitous parts of our cognitive lives. This is directly related to the comprehension of a given metaphor, as I discuss in the next section.

Metaphor is comparable to analogy. When the purpose of a metaphor is to understand one thing through relating it to another, and the system of relations from the source holds in the target, then metaphor can be considered comparable to analogy (Gentner, Bowdle, Wolff, & Boronat, 2001). Of course, not all metaphors are understood through an analogical process; for example, what are sometimes called "dead metaphors" are metaphors like "the arm of a chair" or "the temperature is rising" that have been in use for so long that they are responded to literally instead of figuratively (see Deutscher, 2005). However, many metaphors are understood through the analogical process of mapping aspects of the source onto the target, as described above. For example, the popular quotation "Education is not the filling of a pail, but the lighting of a fire," attributed to William Butler Yeats, is a metaphorical re-consideration of the nature of education. The quotation includes two competing metaphors that are processed analogically; the first of

these is a comparison of the act of filling a pail with that of teaching, and what that implies about who the students are, what the teacher's role is, and so on. This is contrasted with the second metaphor, the act of lighting a fire and that of teaching, which implies a different role for the teacher and a different conceptualization of learning. Understanding the metaphor in this way thus entails an analogical process, where aspects related to the source (lighting a fire) are mapped onto the target (education) in order to learn something about the target. (Of course, what makes the quotation powerful is the comparison between the two competing metaphors.) In short, I consider novel metaphors as being processed analogically, an approach similar to Kovecses' (2002, 2005) and Lakoff's (Lakoff & Johnson, 1980) definition in cognitive linguistics of conceptual metaphors, where one conceptual domain is used to understand a second conceptual domain.

Metaphors understood through analogical processes. Linguistic metaphors are considered here as encapsulating the results of these analogical processes. This is a recursive relationship where metaphor is "constituted by a variety of parts, aspects, or components that interact with each other," and these aspects include source domains, target domains, metaphorical linguistic expressions, and mappings (Kovecses, 2005, p. 5). In this way, the metaphor both results in, and is a result of, sets of implicit and/or explicit analogies. These fundamental ties to general cognition make metaphor a powerful conceptual influence, as is discussed in the following section.

Metaphor as a Frame

Because of the ubiquitous nature of analogical processes, and because metaphor can be considered the linguistic substantiation of an analogical process, metaphors are commonly used as frames for how we perceive the world around us: as a lens through which we make sense of, and construct, our daily realities. This is especially evident in dialogue on a national scale where metaphors are often used both implicitly and explicitly for the purposes of shaping and understanding issues important to large groups of people. Lakoff (2004) provides a powerful argument that the metaphors a speaker uses act as frames that position listeners to accept the speaker's world view. He focuses on politicians' choices of words in prepared speeches, like the use of *tax relief* when discussing changes in income tax rates: "When the word *tax* is added to *relief*, the result is a metaphor: Taxation is an affliction. And the person who takes it away is a hero, and anyone who tries to stop him is a bad guy" (p. 4). Of course, choosing words to frame a debate is not limited to politicians; it is an everyday occurrence with all of us, even if it is often nondeliberate and the analogies are implicit, rather than explicit. And just as there are two sides to every story, there are often two metaphors (or more) for every action, situation, and approach; the metaphor used both reflects and shapes the user's reality. An example of competing metaphors for competing worldviews follows in the next section.

Metaphor as a Frame for Competing Worldviews

One example of a large national event that has competing metaphors—and thus competing worldviews on the event itself—is the Iraq War. In August, 2005, two competing metaphors were brought to the forefront within days of each other, illustrating—and shaping—a difference of opinion about the war.

Metaphor #1. In an episode of *The McLaughlin Group*, aired August 26, 2005, John McLaughlin referred to a recently viewed slogan when he asked the following question:

Issue four: Translate it as Vietnam. In the Cindy Sheehan demonstration near President Bush's Crawford ranch, a sign was held up which said, quote, "'Iraq' is Arabic for 'Vietnam,'" unquote. Question: Is Iraq Vietnam?" (Federal News Service, 2005, para 267)

The sign being referred to reads "'Iraq' is Arabic for 'Vietnam,'" a metaphor that references an explicit analogy relating the Iraq War to the Vietnam War. This comparison triggers a frame that invokes negative images of the conflict, possibly including (but not limited to) an understanding of the Vietnam War as an unjust, unwinnable quagmire, and transferring that understanding to the Iraq War. This is the overall frame, generated by implicit analogical processing. Subsequent to his question above, McLaughlin then delineated the specific analogical similarities between the two wars:

Iraq is a noble cause; Iraq is also a quagmire. The insurgency is resilient, as were the Viet Cong. The insurgency blends in with the people, as do both of the enemy forces. The insurgents draw strength, and they find safe haven and even now are importing munitions across the borders, as did the Viet Cong. (Federal News Service, 2005, para 270)

Thus the slogan carries with it implicit analogical connections between the two wars that evoke a certain frame through which an understanding of the Iraq War is constructed. In a similar way, a competing metaphor, below, shapes perspective on the Iraq War:

Metaphor #2. In a speech on August 30, 2005, President George W. Bush compared the Iraq War to World War II (WWII), as the following news story relates:

Reaching back into history, Bush repeatedly cited Roosevelt's steadfastness as the model for today's conflict, comparing the Japanese sneak assault on Pearl Harbor in 1941 to the al Qaeda terrorist attacks on New York and Washington on Sept. 11, 2001. Much as Roosevelt fought pre-Pearl Harbor isolationism, Bush urged against a return to what he called the "pre-9/11 mindset of isolation and retreat." (Baker & White, 2005, para 4)

World War II invokes a different frame than that of the Vietnam War since many view WWII as a just war, bravely fought and convincingly won. Connecting the Iraq War to WWII thus invokes a frame of a noble war of necessity. As McLaughlin did above, Bush makes explicit analogical connections between the Iraq War and another war in order to shape the listener's perception and worldview of that event.

The Power of Metaphor

In short, metaphors and analogical processing are both ubiquitous and powerful. Most readers of this article will identify with either the "Iraq=Vietnam" or the "Iraq=WWII" frame, but few if any will view both metaphors as having an equal truth value. This is the nature of competing metaphors. This raises another issue: if there is a powerful metaphor that has *no* competing metaphor, discourse about issues connected to that metaphor necessarily take place within the frame of that metaphor, a point that Lakoff (2004; Lakoff & Johnson, 1980) makes convincingly. In such cases that have only one metaphorical frame, the perspective of those engaged in understanding the issue is usually a foregone conclusion; that is, the analogically driven frame is so powerful that it evokes only one commonly accepted understanding of the situation. It follows, then, that a metaphor leading to a frame that is not worthwhile requires competing metaphors. One purpose of this article is to address the metaphors that exist in the field of literacy education, particularly where there are metaphors that require critical examination. The perspective taken here is this: if analogical processing is indeed a core part of

our cognitive processes (Hofstadter, 2001) that produces metaphorical frames which both reflect and construct our worldview, it is incumbent upon educators to explore the impact and role of metaphor in shaping the field of literacy.

A Powerful Metaphor in the Field of Literacy

Like their role in shaping our understanding of our everyday lives in general, metaphors play a role in how we frame the field of literacy. That is, metaphors provide a lens through which we understand different aspects of our field: theory, research, and practice are all affected by the implicit or explicit metaphors that we construct. One such metaphor influential in the field of literacy education is explored below.

The Guiding Metaphor of the National Reading Panel

In this section, I trace the development of a current, very powerful, view of literacy that has culminated in the Reading First Initiative of the educational law No Child Left Behind. I believe this current, federally mandated, literacy policy (including materials, assessment, and practice) is based on an extremely powerful metaphor. This metaphor, which I'll term the *Medical Model* of literacy, is not without competing metaphors, as latter parts of this article will address; however, the *Medical Model* currently holds sway. Its impact on the field of literacy is traced here—an impact that is not conducive to theoretically and pedagogically sound literacy research and practice.

The origin of the National Reading Panel. Some background: In 1997, Congress charged the National Institute for Child Health and Human Development (NICHD) with forming a panel to investigate the research base of reading research and how to teach reading. This panel became the National Reading Panel (NRP), which issued its report on reading research and practice in 1999 (NICHD, 2004a). So influential was this report that it formed the basis for the portion of the No Child Left Behind (NCLB) law that deals with reading, the Reading First Initiative (NCLB, 2001). To the casual observer, it might seem that such a powerful report might enjoy support from a majority of literacy professionals, but that is not the case. Several books and articles have since appeared that criticize the panel, its approach, and its findings (e.g., Allington, 2002; Coles, 2003; Garan, 2002). The vast majority of these criticisms are well-founded: the report of the NRP has a number of very serious flaws. These flaws resulted in conclusions that reflected the panel's view that reading is a process composed of many discrete subprocesses that can be measured and instructed individually and detached from other aspects of reading; that is, the report appears to promote a reductionist view of reading.

The purpose of this article is not to catalog those flaws—the reader is encouraged to read the above references for that purpose—but rather to investigate a rarely addressed cause of those flaws: that of the panel operating under what I feel is a wholly inappropriate metaphor during its tenure.

The core metaphor. It is my view that the principal reason for the outcome of the NRP report lies in the metaphor implicitly—and, at times, explicitly—guiding the panel. This is the *Medical Model* metaphor, where the lay understanding of medical research is that of testing cures of diseases: a sample of people who all have disease X will be split into random groups to

receive treatment. One group will get no treatment, one group will get a sugar pill, and one group will get the new miracle drug. The outcome is usually seen as being rock-solid; that is, the miracle drug either works or it does not. (Of course, real medical research is much more subtle, complicated, complex, sophisticated—and full of grey areas—than this lay understanding, but it is this lay understanding that forms the basis for the metaphor in many peoples' minds.) Below, I briefly trace the genesis of the methodological approach of the panel and link it to the *Medical Model*.

Methodological standards of the NRP. One of the first actions of the NRP was to "develop and adopt a set of rigorous research methodological standards" (NICHD, 2004b, para. 1). The methodology is important because it forms the basis for how the panel views what is useful and important in reading research approaches. The NRP provided the basis for its methodology in the addendum to its report, which reads in part:

The evidence-based methodological standards adopted by the Panel are essentially those normally used in research studies of the efficacy of interventions in psychological and medical research. These include behaviorally based interventions, medications, or medical procedures proposed for use in the fostering of robust health and psychological development and the prevention or treatment of disease. It is the view of the Panel that the efficacy of materials and methodologies used in the teaching of reading and in the prevention or treatment of reading disabilities should be tested no less rigorously. However, such standards have not been universally accepted or used in reading education research. (NICHD, 2004c, para 1)

The methodological standards adopted by the NRP for the examination of the body of literacy education research thus appear to be explicitly based on a medical research model.

The medical model and research valued. Using medical research as a guide created de facto parameters for the types of research that would be considered, and the NRP delineated those parameters as considering research that "used an experimental or quasi-experimental design with a control group or a multiple-baseline method" (NICHD, 2004b, para 4). Essentially, this means quantitative research designs. Case studies, thick description, correlative studies, and qualitative research in general were not considered for review by the panel for this reason. One unfortunate byproduct of this approach is that a vast amount of quality research was disregarded, resulting in very few studies actually being reviewed by the panel; although it is commonly stated that the NRP reviewed over 100,000 studies en route to writing its report (e.g., Department of Education, 2005), in reality the panel reviewed less than 1% of that number (see Coles, 2001). This dearth of studies actually reviewed by the panel is in itself problematic.

Of course, research quality is not defined by the type of research methodology it follows; there is good quantitative research and good qualitative research, just like there is bad quantitative research and bad qualitative research, and everything in between. However, like qualitative research *lends itself* to thick description of multiple-variable educational situations with an emphasis on context, quantitative research *lends itself* to single-variable, cause-effect, narrowly focused research designs. (These are only generalizations, of course; hence the *lends itself* caveat. The point is that one is more apt to find certain research designs associated with certain approaches to research, and this should not be interpreted as implying that one method of research is inherently better in all contexts than another.) It may not be surprising that, based on an approach that valued the review of quantitative, experimental research over qualitative research, studies focused on testing easily reduced segments of language would be foregrounded.

That is, an experiment on phonemic awareness training is more apt to fit into an experimental design than a study on the development of a child's uses of literacy at home and school over time. Thus, by choosing the methodology by which they would review studies, the panel essentially mandated what kind of results would show up in the final analysis. My contention is that this methodology was driven by the *Medical Model* metaphor.

Classroom Effect of the Medical Model Metaphor

Note also that this is not simply an ivory tower, academic argument. The NCLB law makes specific reference to the NRP report when it states that "the Reading First initiative builds upon these findings [the NRP report] by investing in scientifically-based reading instruction programs in the early grades" (NCLB, 2001, para 4). This is not solely at the district or school level, either. In the "Frequently Asked Questions" part of the NCLB website, it is noted that "Reading First specifies that teachers' classroom instructional decisions must be informed by scientifically based reading research" (Department of Education, 2004, #7, para 3). Clearly, there is a discernable attempt to align individual classroom teachers' instructional decisions with the *Medical Model*.

Not coincidentally, the *Medical Model* approach adopted by the NRP is reflected in larger, federal-level goals for education in general:

Unlike medicine, agriculture and industrial production, the field of education operates largely on the basis of ideology and professional consensus. As such, it is subject to fads and is incapable of the cumulative progress that follows from the application of the scientific method and from the systematic collection and use of objective information in policy making. We will change education to make it an evidence-based field. (Department of Education, 2002, p. 51)

That is, the *Medical Model* metaphor, adopted at the highest levels of government educational oversight, is driving educational research "reform," and this affects educators at all levels, in all disciplines within education. Put quite simply: the *Medical Model* metaphor is powerful and there is an unmistakable need for metaphors that compete with the view of literacy theory, research, and instruction inherent in that metaphor.

Competing Literacy Metaphors

Competing Metaphors

As an exploration of some of the current metaphors that guide our views on literacy research and practice, during the keynote at the American Reading Forum attendees had the opportunity to participate in a structured response session to eight metaphors that are currently active in the field of literacy. For each one, participants provided a Likert-type score from 1-10, with the higher the score indicating the more that metaphor reflected one's own beliefs and views about literacy. Each metaphor was also scored using a scale based on the popular "What's Hot/What's Not" system (Cassidy, Brozo, & Cassidy, 2000) featured regularly in the International Reading Association's newspaper, *Reading Today* (used here with the permission of Jack Cassidy). For each metaphor, respondents could rate the metaphor as being "Hot" or "Not Hot"—that is, being influential in the field or not being influential in the field at this time. They then rated that same metaphor in terms of "Should Be Hot" and "Should Not Be Hot"—whether the metaphor should be influential or should not be influential, in their opinion. Each metaphor had a brief description of the metaphor and a quotation from an educator who works within that frame. The metaphors, and the information given the conference attendees, follow:

Metaphor 1: The Medical Model

Brief Description: Casts literacy issues as "diseases" in need of a "cure." Medicine-based experimental (control group plus intervention group) model of research is the gold standard.

Quote: "The evidence-based methodological standards adopted by the Panel are essentially those normally used in research studies of the efficacy of interventions in psychological and medical research. These include behaviorally based interventions, medications, or medical procedures proposed for use in the fostering of robust health and psychological development and the prevention or treatment of disease. It is the view of the Panel that the efficacy of materials and methodologies used in the teaching of reading and in the prevention or treatment of reading disabilities should be tested no less rigorously. However, such standards have not been universally accepted or used in reading education research" (NICHD, 2004c, para 1).

Metaphor 2: Reading is Rocket Science

Brief Description: This metaphor stresses the complexity of the reading process and the resultant high degree of training needed by reading teachers; there is usually an emphasis on educators needing to be experts in linguistic aspects of the text.

Quote: "For best results, the teacher must instruct most students directly, systematically, and explicitly to decipher words in print, all the while keeping in mind the ultimate purpose of reading, which is to learn, enjoy, and understand (AFT, 1999, p. 11). To appreciate why reading is one of psychology's more mysterious phenomena, we must consider the nature of the linguistic communication that reading requires. Skilled reading happens too fast and is too automatic to detect its underlying processes through simple introspection. We read, but we cannot watch how our minds make sense out of print. The linkage of sounds and symbols occurs rapidly and unconsciously. The linguistic units that compose words, the single speech sounds (phonemes), syllables, and meaningful parts (morphemes), are automatically matched with writing symbols so that attention is available for comprehension." (AFT, 1999, p.12)

Metaphor 3: Balanced Reading Instruction

Brief Description: This metaphor strikes a midway point between two extremes and its educational usage is similar to its usage in fields like nutrition—balanced diet—where too much of one thing is bad for you.

Quote: "The balanced reading approach has been celebrated for offering an alternative to the extremes of pure phonics or whole language; for providing an effective combination of instructional approaches; and for accommodating various learning styles. Balanced reading instruction usually means a combination of whole language and phonics approaches" (Stoicheva, 1999, para 2).

Metaphor 4: Back-to-Basics Movement

Brief Description: Idea of a "Golden Age" in education where kids were taught what was needed and taught it in a way that resulted in them learning material without any nonsense. A return to "old-fashioned" teaching methods.

Quote: "The term 'basics' means different things to different people. It's used to describe

everything from calculator-free classes to the arrangement of classroom desks in straight rows for lecture-style teaching. But for Vukmir and her cohorts, basics means the use of phonics workbooks to teach reading and of classroom drills to teach addition, subtraction and multiplication tables" (Baily, 1997, para 3).

Metaphor 5: Children of the Code

Brief Description: This is the name of a large project which involves interviews with around 80 scientists, psychologists, and educators with an interest in reading. The viewpoint of the project—thus its name—is that the writing system is a code and children have to learn how to break the code, an unnatural act.

Quote: "Reading is not in their [children's] nature. Their lives are being shaped by how well their brains are able to develop these machine-like, code-processing abilities" (Boulton, 2003, para 25). "Reading is difficult for several reasons: One is that it's a code and the code is not transparent.... A second problem is that our brains are not really set up to deal with this code. It is not language.... Third problem is instructional confusion... teachers who don't understand what the code really is or how it needs to be conveyed." (Whitehurst, 2005, para 2-4).

Metaphor 6: The Literacy Club

Brief Description: This metaphor conveys the view that rather than mastering a set of skills, reading involves entrance into a social community of readers. This is an indirect learning of how reading and writing work by virtue of seeing, and being part of, authentic literacy practices in the home, school, and other environments.

Quote: "There are no kits of materials or systematic exercises for teaching children how the world uses written language. They learn—usually without anyone being aware that they are learning—by participating in literate activities with people who use written language. It can all be summed up in a metaphor: Children learn about reading and writing by "joining the literacy club." They are given demonstrations of what written language can be used for, and they receive collaboration when they become interested in using written language themselves....Children in the literacy club have opportunities to see what written language can do, they are encouraged and helped to do those things themselves, and they are not at risk of exclusion if they make mistakes or display a passing lack of interest. They learn to be like the other members of the club" (Smith, 1994, pp. 217-218).

Metaphor 7: Reading is Word Recognition

Brief Description: The perspective implied by word recognition models/metaphors of reading is that of primacy of textual sources, specifically at the unit of the word, as informative aspects of the reading process. While reader variables (background knowledge, schema, and so on) play a role, it is the reader's ability to rapidly and automatically decode words that is of primary importance in reading.

Quote: "The letters and words of the text are the basic data of reading. For skillful adult readers, meaningful text, regardless of its ease or difficulty, is read through what is essentially a left to right, line by line, word by word process. In general, skillful readers visually process virtually each individual letter of every word they read, translating print to speech as they go. They do so whether they are reading isolated words or meaningful

connected text. They do so regardless of the semantic, syntactic, or orthographic predictability of what they are reading" (Adams & Bruck, 1995, pp. 11-12).

Metaphor 8: Reading is Meaning Construction

Brief Description: A meaning-construction perspective is one that provides for multiple routes to understanding written text with a near-infinite variety of meanings possible. Meaning construction characterizes the reading process as involving many text-based cues that can interact with a variety of reading strategies in a variety of ways as needed by a reader in a given reading situation.

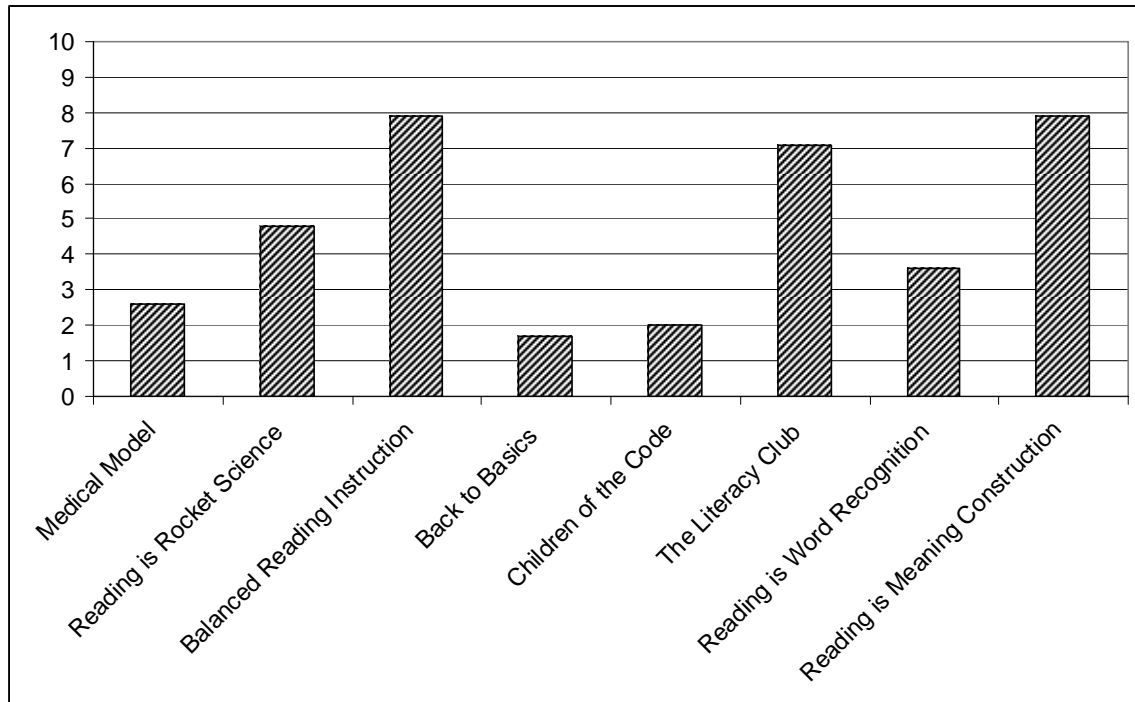
Quote: "Texts are constructed by authors to be comprehended by readers. The meaning is in the author and the reader. The text has a potential to evoke meaning but has no meaning in itself; meaning is not a characteristic of texts. This does not mean the characteristics of the text are unimportant or that either writer or reader are independent of them. How well the writer constructs the texts and how well the reader reconstructs it and constructs meaning will influence comprehension. But meaning does not pass between writer and reader. It is represented by a writer in a text and constructed from a text by a reader. Characteristics of writer, text, and reader will all influence the resultant meaning" (Goodman, 1994, p 1103).

A total of 51 attendees completed and returned the survey sheet that, as described previously, asked them to rate each of the above metaphors on a scale of 1-10 (with 1 being "I don't agree with the view of this metaphor at all" and 10 being "I completely agree with the view of this metaphor") and to judge whether each metaphor was "hot" or "not hot" currently, and whether each metaphor "should be hot" or "should not be hot."

Agreement with Metaphor

Chart 1 illustrates the extent to which respondents agreed with the view of literacy espoused by each metaphor, through the Likert-type scale from 1-10:

Figure 1. Agreement with Metaphor



Respondents rated five of the metaphors under the mid-point (5 on the 10-point scale): *Medical Model*, *Reading is Rocket Science*, *Back to Basics*, *Children of the Code*, and *Reading is Word Recognition*. Clearly, the view of literacy inherent in these five metaphors is not acceptable to these educators. *Reading is Rocket Science* scored just under the midpoint, and the ambivalence surrounding this metaphor is reflected in Table 1, below, as well. In contrast to those metaphors scoring under the midpoint, three of the metaphors received average scores between 7 and 8 on the scale: *Balanced Reading Instruction*, *The Literacy Club*, and *Reading is Meaning Construction*. There is an internal consistency to these results, as a review of the descriptions of each of the metaphors in the previous section demonstrates. In terms of literacy theory and pedagogical approach, the metaphors that were generally given low scores are in direct competition with the metaphors that were given high scores. In some cases—*Children of the Code* vs. *The Literacy Club*, for example—the metaphors may actually represent mutually exclusive understandings of how reading works and how reading is learned.

Which Metaphors Wield Power, and Which Should Wield Power

The Likert-scale responses to the metaphors above reveal only part of the issue of influence within the field of literacy. It is also necessary to examine which metaphors—whether espousing perspectives we agree with or not—wield power within the field. In addition, it is important to consider which metaphors *should* have more influence. Using Cassidy's (Cassidy, Brozo, & Cassidy, 2000) "what's hot/what's not" approach described previously, respondents were thus asked to think about which metaphors are currently powerful, and which are not; additionally, respondents considered which metaphors should be powerful and which should not be. The results are illustrated in Table 1, below:

Table 1
Currency of Literacy Metaphors

Metaphor	Responses	Hot	Not Hot	Should be Hot	Should Not be Hot
The Medical Model	88% said it was <u>hot</u> and 88% said it <u>should not be hot</u> .	•			•
Reading is Rocket Science	67% said it was <u>hot</u> and 55% said it <u>should be hot</u> .	•		•	
Balanced Reading Instruction	58% said it was <u>hot</u> and 94% said it <u>should be hot</u> .	•		•	
Back to Basics Movement	66% said it was <u>not hot</u> and 94% said it <u>should not be hot</u> .		•		•
Children of the Code	81% said it was <u>not hot</u> and 88% said it <u>should not be hot</u> .		•		•
The Literacy Club	76% said it was <u>not hot</u> and 69% said it <u>should be hot</u> .		•	•	
Reading is Word Recognition	76% said it was <u>hot</u> and 68% said it <u>should not be hot</u> .	•			•
Reading is Meaning Construction	61% said it was <u>not hot</u> and 98% said it <u>should be hot</u> .		•	•	

Dissonance

These results suggest a certain amount of dissonance among and within respondents where half of the analogies are considered: where what was considered "hot" was also considered "should not be hot." That is, some of the same trends that exert power in our field, respondents believe should not exert power, and vice-versa. The *Medical Model* and *Reading is Word Recognition* are two metaphors that this group saw as having power currently that should not have power. Similarly, *The Literacy Club* and *Reading is Meaning Construction* were both viewed as not being in favor in the field, but should be. Interestingly, those two pairings could be considered in direct contrast to each other on a spectrum of views of reading: they represent competing worldviews of literacy.

Accordance

In contrast to the dissonance of the above four metaphors, the remaining four show a degree of accordance: that powerful perspectives on the field are deserving of that power, and vice versa. *Balanced Reading Instruction* is viewed as an influential metaphor that is deserving of that influence. Similarly, the *Back to Basics* and *Children of the Code* metaphors were both rated as being out of favor and needing to stay out of favor. There could be a case made for accordance with the metaphor *Reading is Rocket Science*, since there were majorities for both "hot" and "should be hot" on this metaphor; however, *Reading is Rocket Science* tilted only slightly over 50% on the "should be hot" item so there may be dissonance there as well.

The "Hot" Medical Model

Overall, the metaphor that scored the highest on the "is it hot" item was the *Medical Model*. This reflects my own analysis of the influence of that metaphor as measured through the National Reading Panel report and subsequent influence on reading legislation, as I described above. This metaphor also tied with the strongest feelings for the "should not be hot" item; this,

too, reflects my own view that this metaphor is one that is ultimately damaging to the field of literacy and those it serves.

Conclusion: The Need for Competing Metaphors

The way we educators think about our profession—at all levels, from theory to practice—is reflected in the language we use. This is not a one-way street: the language we use in turn guides and shapes our understanding of our profession. We use analogical language when discussing our field and pedagogical practices, and metaphors shape our educational beliefs (see Cortazzi & Jin, 1999; de Guerrero & Villamil, 2002). How we characterize our field is extremely important: it impacts the perspective we hold, the theory we understand, and the pedagogy we implement.

At the beginning of this article, I used an example of a metaphor: "Education is not the filling of a pail, but the lighting of a fire." The message of this analogical pairing probably did not raise any eyebrows; the author makes a generally agreed-upon point that transmission models of education should take a back seat to models that emphasize student involvement and motivation. My hope is that if I had altered that metaphor to instead read "Education is not the filling of a pail, *but the injecting of a shot*," that the cognitive dissonance there would have set off alarm bells. Yet, that is exactly the analogy that the *Medical Model* emphasizes. It is time for us to construct and promote metaphors that compete with the *Medical Model* and to present literacy education in a way that reflects our evidence-based, theoretically sound perspectives on literacy theory, research, and practice. Our alarm bells should be ringing; let's heed their call.

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