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Art Education as Imaginative Cognition

Arthur D. Efland
The Ohio State University

Imagination is more important than knowledge.
—Albert Einstein.

INTRODUCTION

Imagination is no stranger to art education. Like creative self-expression it was one of those labels used by Progressive educators of the 20th century to characterize their vision of school reform. Allowing the child’s imagination to unfold in unforeseen ways was the goal, and the method consisted of freeing children from the constraints of the traditional school with its demand for social conformity, obedience to rules, and silence. With the removal of external coercion, imagination was thought to unfold spontaneously if parents and teachers would but allow it. The child by nature was imaginative, though this quality of mind could be thwarted by the designs of an insensitive pedagogy. Indeed, in the heyday of Progressivism the best teaching was the least teaching.

Harold Rugg and Ann Shumaker’s Child-Centered School was based on the child—is–artist metaphor, and the struggle of artists to emancipate themselves from the strictures of academic convention was adopted to characterize progress. The “lid of restraint is being lifted from the child of the common man in order that he might come to his own best self-fulfillment” (Rugg & Shumaker, 1928, pp. 62–63). And the proof of success was not to be found in the parroting of facts read in books but in the child’s production of original products including works of art. Teaching art was synonymous with freeing the imagination.

1This chapter is based on Chapter Six of my book Art and Cognition (Efland, 2002), which is based on the theoretical and empirical work by George Lakoff and Mark Robertson. I have reworked the original text to bring it into conformity with their more recent writing, especially their recent book, Philosophy in the Flesh. (Lakoff & Johnson, 1999). I first encountered the term imaginative cognition in Rudolf Steiner’s book The Philosophy of Freedom.
From the 1920s through the 1950s, a number of gifted teachers of art based their pedagogy on their understanding of artistic imagination, with particular emphasis on the originality of artistic accomplishments as the mark of authenticity. These include Franz Cizek in Vienna Austria; Marion Richardson in England; and Florence Cane, Victor D’Amico and Viktor Lowenfeld in the United States (Efland, 1990). Though insightful, their pedagogical activities were not grounded in an understanding of imagination as a cognitive endeavor (Efland, 2002, pp. 42–43).

Throughout most of the 20th century, educational practice was guided by behavioral psychology and had little use for imagination. Its program of research was largely limited to investigations of stimulus and response conditions, conditioning, habit formation, and the effects of reinforcement. Intelligence was characterized quantitatively by the IQ that was set at birth, whereas achievement was measured by the number of facts recalled in testing. Mind and imagination were outside the bounds of legitimate science. Cognition was narrowly conceived in terms of literacy and numeracy, and the arts by default were identified as noncognitive studies, relegated to the “affective domain,” to educational romanticism. In limiting itself to S–R bonds as the unit of analysis, behavioral science never adequately explained how higher cognitive processes like abstract thinking could emerge from these simple units of behavior. With the appearance of the cognitive sciences in the latter half of the 20th century, questions about the role of imagery in thinking rekindled interest in the imagination. “Work in a number of fields is converging toward a rehabilitation of imagination as a fundamental scientific topic...” (Fauconnier & Turner, 2002, p. 15).

Aside from its use as an honorific what does cognitive science have to say about imagination? Does it arise spontaneously when the proverbial lid of restraint has been lifted, or does it have to be cultivated in particular ways? Does the imagination have a role in helping individuals understand their world and communicate about it, or does it lead to day-dreaming and escape? And the key question: Can current conceptions of cognition offer art educators a basis for reshaping itself into a domain hospitable to the imagination and creativity? I begin by identifying several factors affecting the current understanding of cognition to identify where imagination fits into the story.

The Cognitive Revolutions

The Mind as a Computer

Six major developments had to transpire before cognitive explanations of learning could arise. The first was the cognitive revolution, itself, which got under way in the late 1950s which offered an alternative explanation of learning from the behaviorism that dominated research and practice throughout the first half of the last century. In its initial phases this revolution was centered on ideas about symbolic computation (Gardner, 1987). With its software and hardware divisions, the computer became a fitting metaphor for the mind. It investigated such topics as pattern recognition, problem solving, artificial intelligence, the operation of symbol systems in thinking and information processing, areas where the mind is most like a computer. George Lakoff and Mark Johnson (1999) refer to such developments as belonging to a first generation of cognitive science:

The mind, from this “functionalist” perspective, was seen metaphorically as a kind of abstract computer program that could be run on any appropriate hardware. A consequence of the metaphor

2Many were practicing artists in their own right.

3Imagination was a topic of investigation throughout the 18th and 19th centuries, and appeared in the epistemologies of Hume and Kant.
was that the hardware... [the body] was seen as determining nothing at all about the nature of the program. (pp. 75–76)

Howard Gardner’s multiple intelligence theory was one of the more fruitful outcomes of the symbol systems approach in that he conceived of the mind as an ability to devise multiple symbol systems. This expanded the conception of cognition by describing a variety of symbolic forms including music, numbers, and verbal competence. Each of the intelligences had its unique assemblage of symbols. But explanations of cognition, based on a symbol systems approach, were plagued by a dualism where the mind was characterized in terms of its formal operations unconstrained by the body. Thinking occurred in the brain and entailed the use of these symbol systems. As in computer languages, the symbols were meaningless in themselves, and thinking was defined as the manipulation of such symbols according to formal rules.

The Body in the Mind

In the late 1970s, a second generation of cognitive theories offered alternatives to symbol systems approaches. Evidence began mounting demonstrating that abstract concepts and reason were far more dependent on bodily and sensory encounters than was initially thought to be the case. Lakoff and Johnson refer to this second generation as “the cognitive science of the embodied mind” (1999, p. 77). In particular their investigations in cognitive linguistics studied the construction of metaphors and categories in human thought and demonstrated the interconnectedness of body and mind.

Changes in Theories of Language

Additional revolutionary developments also occurred within cognitive linguistics itself. One is the change from the formalist perspective of Noam Chomksy, where language is thought by him to be an autonomous faculty of mind with its innate universal grammar and syntax independent of aspects external to the body. Supplanting this view is one where language is studied more broadly to provide a fuller description of how symbols and concepts get their meaning.

According to Andrew Ortony (1993), ordinary language was traditionally characterized as a literal affair, without figures of speech or ornamental embellishment. The language of science represented this use of communication in its purest form. Privileged by logical positivism, scientific explanation rested on the foundational assumption that reality could be represented objectively in symbolic form and that other uses of language such as figurative speech and metaphor either were essentially meaningless or had to be reduced to literal terms before understanding could take place. Literal language reigned supreme in education, and, to an extent, this is still the case. By the 1980s and 1990s, constructivist views of knowledge and representation called into question the basis for a rigid differentiation between the literal and the figurative uses of language. In short, the gulf between the objective language of the scientist and the figurative language of the poet was no longer as wide as it once was thought to be. It is now possible to see metaphor “as an essential characteristic of the creativity of language” rather than “as deviant and parasitic upon normal usage” (Ortony, 1993, p. 2).

Constructivist Views of Learning

Recent cognitive explanations of learning are characterized as constructivist views. Accordingly, individuals construct their understanding of reality guided by their knowledge-seeking...
purposes. Emphasis is placed on human agency where meaning-making is guided by the dispositions and purposes of the learner. Constructivism also characterizes learning as a process where new knowledge is understood through its integration into one’s base of prior knowledge. Hence, knowledge constantly undergoes reconstruction. This classical view of constructivism is largely derived from Piaget’s late writings. Recent views of constructivism still retain the broad outlines of the Piagetian view but differ in one important aspect in recognizing the social context of learning. The progress individuals make in their learning is not undertaken in isolation. Individuals make use of the “cultural tools,” and these include specific knowledge domains through which inquiries are addressed.

Domains of knowledge are cultural communities in their own right, each with distinctive practices. This emphasis on cultural practices does not necessarily deny the possibility of independent discovery learning perse, but recognizes that various fields of knowledge such as the sciences or the arts have their social dimension, and that teaching within these domains enculturates learners into the specific discourses of each field. For example, the tools of science include such conceptual tools as atoms, ions, and genes as well as particular metaphors that enable understanding of these entities to occur. For example, my understanding of the structure of the atom came about through its analogy with the solar system, though current views have abandoned this.

Similarly, works of art are understood through the metaphor of living organisms, as integrated wholes greater than the sum of its parts.

**Metaphors as Mappings**

In describing his contemporary theory of metaphor, Lakoff (1993) argues that metaphorical expressions are, in a sense, not matters of language but forms of thought based on underlying conceptualizations of reality. He describes metaphors as involving a mapping across conceptual domains, and these exist in many forms: in ordinary or everyday language, in the practice of creative writers and poets, in the image making of visual artists, and in the language of science. An example of the latter is provided by M. Mitchell Waldrop, who describes certain changes in current scientific thinking as shifting away from “the Newtonian metaphor of clockwork predictability...[toward] metaphors more closely akin to the growth of a plant...” (1992, p. 329).

Metaphor involves the way we conceptualize one mental domain in terms of another. The words of the poet or the images of the visual artist are surface indicators of these deeper conceptual metaphors through which we organize our understanding. To make this point, Lakoff (1993) illustrates the systematic character of the conceptual metaphor he calls “LOVE-IS-A-JOURNEY”.5 “The metaphor involves understanding one domain of experience, love in terms of a very different domain, namely journeys.” It involves a mapping from a source domain, in this case, a knowledge of journeys, to a target domain, in this case, love (1993, pp. 206–207). He asks us to consider these expressions:

Our relationship has hit a dead-end street.
We may have to go our separate ways.
We’re spinning our wheels.
Our relationship is off the track.
The marriage is on the rocks.
We may have to bail out of this relationship. (p. 206)

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5Here I use Lakoff and Johnson’s system of naming metaphors by using capital letters and hyphens. This system is used throughout this essay.
He explains:

The metaphor is not just a matter of language but of thought and reason. The language is secondary. The mapping is primary, in that it sanctions the use of source domain language and inference patterns for target domain concepts. . . This view of metaphor is thoroughly at odds with the view that metaphors are linguistic expressions. If metaphors were merely linguistic expressions, we would expect different linguistic expressions to be different metaphors. Thus “we’ve hit a dead-end street” would constitute one metaphor. “We can’t turn back now” would constitute another, entirely different metaphor . . . Yet we don’t seem to have dozens of metaphors here. We have one metaphor in which love is conceptualized as a journey. And this unified way of conceptualizing love metaphorically is realized in many linguistic expressions.” (p. 208)

And later he adds,

The fact that the love-is-a-journey mapping is a fixed part of our conceptual system explains why new and imaginative uses of the mapping can be understood instantly, given the ontological correspondences and other knowledge about journeys. Take the song lyric, “we’re driving in the fast lane on the freeway of love.” The travelling knowledge called upon is this: when you drive in the fast lane, you go a long way in a short time and it can be exciting and dangerous. (p. 210)

Lakoff lists five false assumptions regarding the distinction between the literal and the figurative uses of language:

1. All everyday language is literal, and none is metaphorical.
2. All subject matter can be comprehended literally, without metaphor.
3. Only literal language can be contingently true or false.
4. All definitions in the lexicon of a language are literal not metaphorical.
5. The concepts used in the grammar of a language are all literal; none are metaphorical (Lakoff, 1993, p. 204).

Visual Metaphors

This concern for metaphor would certainly apply to the literary arts, but does it apply to the visual arts? Are there such things as visual metaphors whose meaning is conveyed directly by images rather than by words, and if so, how do they differ from verbal metaphors? Noel Carroll (2001) raised this question and answered by noting that images differ from words in being recognized “simply by looking” without having to be decoded (Carroll, 2001, p. 348). Images can be symbolic like the dove on the flag of the United Nations, though not all images are necessarily metaphoric. The family photographs taken on my last vacation are not visual metaphors.

However, a work like Man Ray’s photomontage entitled Violin d’Ingres (1924)\(^6\) qualifies as a visual metaphor. In the Man Ray, the bare back of a female nude model is shown reminiscent of the odalisques of Ingres from the early 19th century. However, he placed two black f-shaped holes such as those found in violins or cellos on the back of the model. This realization suggests something quite shocking: that this woman is no longer a person but an instrument, that is, something to be played with—perhaps an instrument of sexual desire! This interpretation is reinforced by the turban on the model’s head which brings to mind Ingre’s paintings of harem odalisques. The image plus the title gives rise to the metaphorical insight that Ingre’s odalisques are violins, or conversely that violins are odalisques. Lakoff’s view that conceptual metaphors are not matters of words but matters of thought lends credence to the idea that visual images are also forms of thought, and that thought is not restricted to the literary arts. They are cognitive.

\(^6\)The Man Ray example was used by Carroll.
Again, the primary condition for the formation of the metaphor is the mapping of one domain onto another, in this case the odalisque as a violin.

Implications for Art Education

This traditional dichotomy between the literal and the figurative uses of language is akin to the gulf separating “cognitive” from “noncognitive” subjects in the school curriculum. This distinction is being repudiated by recent explanations of learning, especially the constructivist view, which holds that individuals construct their views of reality guided by their own knowledge-seeking purposes. As noted previously, emphasis is placed on human agency where meaning-making is guided as much by personal interest and effort as by the phenomenon singled out for educational attention. And the implications for general education are plain to see. Cognition involves more than the acquisition of knowledge found in books and lectures compiled and organized by scholars. It also involves the construction of meaning by the learner. If the purpose of education is to enhance the cognitive capabilities of individuals, it must offer experiences within domains calling for an array of abilities, and differing domains have differing structures requiring differing approaches in instruction.

What Makes Certain Domains Complex and Ill Structured?

The domains of the sciences exemplify what Rand Spiro and his colleagues have called “well-structured domains,” because they are organized around laws and generalizations that cover numerous cases. In such domains, learning involves the task of retrieving appropriate generalizations or principles. However, many domains are “ill structured” including the arts. Learning in such domains often must proceed without the guidance of broad generalizations or principles. Instruction in law and medicine is also based on cases rather than on generalizations. In ill-structured domains, learners are forced to organize their understanding by assembling knowledge from individual cases (Spiro, Vispoel, Schmitz, Samarpungavan, & Boerger, 1987, p. 2). By seeing multiple cases, the learner comes to understand the relative influence of various contexts in which each case is embedded. The learner must do more than take in knowledge; she must engage in a constructive process where experience with a large number of cases is assembled. A well-educated person is one who can function in both well–structured and ill–structured learning situations. Cognitive flexibility is the attribute of having an array of strategies, but it also includes the ability to select and match the appropriate strategy for knowledge acquisition for use in domains with differing structural properties.

There is an additional factor that adds complexity to the domain of the arts, namely, that artworks are themselves metaphoric structures—“cross-domain mappings” to use Lakoff’s term. Such mappings exist wherever metaphor occurs, and metaphor occurs throughout what Lakoff and Johnson call “the cognitive unconscious” (1999, pp. 11–12). It is not exclusive to the arts, but the arts are domains where metaphoric forms of thought serve as principal objects of inquiry. The arts are places where the structure of metaphors and their meanings are actively explored, including such aesthetic attributes as freshness and evocative power. By contrast the conceptual metaphors that are built into our cognitive unconscious largely go unnoticed.

The current understanding of cognition is more complex than was heretofore thought. And cognitive ability, which traditionally has been limited to the acquisition of propositional or literal forms of thought, needs to be broadened to include conceptual activities that entail nonpropositional forms of thought including the arts. In what follows, I discuss the role that imagination plays both in propositional and in nonpropositional forms of thought.
33. ART EDUCATION AS IMAGINATIVE COGNITION

IMAGINATION IN COGNITION

After offering definitions of imagination, I describe three kinds of research including anecdotal studies of mental imagery, empirical studies of mental images, and cognitive linguistic studies. It is mainly within the latter type of study that the nature of metaphor is revealed as a major function of the imaginative in cognition.

Defining Imagination

Imagination is the act or power of forming mental images of what is not actually present to the senses, or what has not actually been experienced. It is also the act or power of creating new ideas or images through the combination and reorganization of previous experiences. This latter power “is often regarded as the more seriously and deeply creative faculty which perceives the basic resemblances between things . . .” (Webster’s New World Dictionary, College Edition, 1964, p. 725). We have a tendency to dismiss or discount ideas if they exist “only in the imagination,” as when we say that someone’s imaginary notions or ideas lie “beyond belief.” and we tend to be wary of individuals having “an overactive imagination.” Yet, in many contexts, imagination and imaginative are used as honorifics, as when we discuss the creative talent of an artist or the achievements of scientists.

As used here, imagination refers to the cognitive processes that enable individuals to organize or reorganize images, to combine or recombine symbols as in the creation of metaphors, or narrative productions. The honorific associations of the term also imply that the products of imagination differ from everyday, ordinary thinking by being more innovative and less concerned with typical or conventional communication. The term imaginative can refer to innovation in formal arrangement, meaning, or both. It adds novelty to the cultural landscape, and terms like imaginative or imaginary also carry social designations about particular objects or events, rather than about a specific class of cognitive operations. It is not any one specific cognitive operation or faculty in the Kantian sense but the result of cognitive acts that enable individuals to construct meanings that are generally less dependent on conventional, rule-governed, or propositional forms of thinking and communication. The creation of a fresh metaphor in spoken or written expression would be one example, whereas the juxtaposition of images in a collage to generate a new image would be another (Efland, 2002, p. 134).

Imagination in Education

As long as poets, musicians, and visual artists employed devices that transcended those needed for daily communication in the individual’s lifeworld, their elimination from schooling was seen as having minimal impact on the cultivation of the individual’s cognitive abilities. Education in the arts was seen as an indulgence, fine for those having the leisure and the means to engage in its obscure enchantments, but not essential for the development of the learner’s mental powers. The metaphors one encounters in daily speech are sufficient to produce and convey meaning; thus, one could argue that for everyday purposes, high levels of metaphoric competence rarely become necessary to create meanings and understandings. Indeed, quite the opposite is the case. Being plainspoken is itself a virtue. Such a view is shortsighted, because processes like metaphor, which operate by the mapping of one domain onto another, enable the mind to go beyond what is known, to reach what has yet to be learned. This happens in all domains, to be sure, and each domain of knowledge (each discipline if you will) has its rules and constraints, including the arts.

As used in the arts, metaphor creates a space in human cognition where individuals are free to rehearse new ideas of expression and form and to express personal visions, social issues, and
moral ideals. This assumes a level of autonomy for the arts as with other domains, yet the arts do not exist for the sake of their own purity but for the freedom of the cultural life they enable. Works of art are also active agents in mediating the culture of which they are part (Wolff, 1995 p. 134). The work of art becomes an arena for the discursive production of meanings and values in society. Becoming conscious of the power of metaphor has the potential to extend the reach of human communication. The arts are not transcendental realms above and beyond daily experience, but a place where novel metaphors and images stand out in experience by their exceptionality and power. Indeed, art is the honorific we give to especially notable moments.  

Investigations of Imagery and Imagination

The paucity of psychological studies of imagination throughout the 20th century is not the result of oversight. It was widely discussed in literary and philosophical circles throughout the 18th and 19th centuries. Its neglect throughout most of the last century reflects the constraining influence of positivism, a legacy from which we have yet to shake ourselves free. With the rise of the cognitive science perspective, the cognitive character of imagery and imagination became a new candidate for psychological research, especially in work by Roger Shephard, Stephen Kosslyn, and others (Kosslyn, 1980; Shephard, 1978a; Shephard, 1978b). In raising the issue of how to explain the function of mental imagery in cognition, these psychologists also raised fundamental questions about the adequacy of computational models of mind which were generally restricted to the use of propositional symbol systems. In particular the models of mind advanced during the first generation of the cognitive revolution were unable to account for the role of mental imagery in cognitive functioning.

Anecdotal Studies of Mental Imagery

There have been three kinds of studies that have dealt with the topic of mental imagery: First, there have been compilations of anecdotal studies including self-reports of individuals whose significant scientific discoveries or artistic accomplishments were occasioned by strong acts of imaginative creativity. In particular, Shephard (1978a, 1978b) collected accounts of the imaginative activity of scientists. These provide dramatic portrayals of the role that mental imagery played in the thought processes that led these individuals to do their most important work or to make key discoveries. Shephard cited Albert Einstein, who reported that verbal processes did “not seem to play any role” in his processes of creative thought. In fact he maintained that his particular ability did not lie in mathematical calculation either, “but rather in visualizing . . . effects, consequences and possibilities.” He performed what he called his gedanken or thought experiment where he imagined himself traveling alongside a beam of light at speeds of 186,000 miles per second. What he mentally “saw” did not correspond to anything “that could be experienced perceptually as light nor to anything described by Maxwell’s equations, which specified in mathematical terms the relationships between the various forms of electromagnetic energy. It was these visualizations that prompted him to formulate the special theory of relativity” (Shephard, 1978a, 1978b).

Empirical Studies of Mental Images

A second approach involved empirical studies, where the utilization of mental imagery was compared with ordinary perceptual activity (Shephard & Metzler, 1971), or was contrasted with information presented in verbal, linguistic form (Kosslyn, 1983). Results obtained by Shephard

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7This opens the argument on behalf of aesthetic experience as the principal criterion marking the presence of a work of art. This paper does not address this issue.
and Metzler indicate that in many instances mental imagery is remarkably able to substitute for actual perception with subjects seemingly able to make the same judgments about mental objects as they do about real objects encountered in perception. Kosslyn and his colleagues have also devised a comprehensive theory of what they call a “quasi-pictorial form of mental representation called “imagery.” According to Gardner, “this form of mental representation is as important for an understanding of cognition as is the more usually invoked propositional form” (Gardner, 1987, p. 327). Gardner suggested, “the fact that computers can—and usually do—transmit information in only one symbolic form is no reason to assume that human beings do the same” (1987, p. 129) Indeed, his theory of multiple intelligences aggressively denies that limitation.

Cognitive Linguistic Studies

I already introduced the third approach to the study of imagination in referring earlier to the work of George Lakoff and Mark Johnson (1980, 1999), who collaborated to study the cognitive foundations of such seemingly abstract mental activities as categorization and metaphor as observed through empirical studies of linguistic behavior. They maintain that there is a growing body of evidence for the existence of what they call “an image-schematic level of cognitive operations.” Like the concept of schemata in Piaget’s theory, these exist at a level of generality and abstraction that allows them to serve repeatedly as identifying patterns in a variety of experiences similarly structured in relevant ways, but they differ from Piagetian schemata in some important ways to be discussed later (Johnson, 1987, pp. 26–28).

The image schemata postulated by Lakoff and Johnson begin with images that arise directly from bodily experiences, acquired directly in perception. These provide the foundation for categorization, abstract reason, propositional and nonpropositional forms of thinking, metaphor, and narrative. In Lakoff and Johnson’s recent writing, they introduce terms like “cognitive unconscious” and “conceptual metaphor” to refer to the larger and more inclusive structures of mind composed of these schemata. Image schemata should not be confused with the images we recall from prior perceptions like yesterday’s sunset. Rather they are cognitive structures that are conceptualized from a variety of images. Johnson exemplifies with one he calls “compulsive force.” He described a resemblance between a jet airplane being forced down the runway by the power of its engines, the geological forces acting on continental plates, and social pressures acting on his social conscience that obliged him to join the PTA. The meaning of compulsive force is embodied directly in the percepts acquired in experience and does not have to await additional actions put forth by the mind for comprehension.

Lakoff and Johnson’s image schemata initially resemble schemata in the cognitive developmental theories of Piaget, in that both begin as structures based on images derived from bodily and perceptual experiences. Piaget calls this early stage of development “sensimotor operations.” These schemata are abstract structures that summarize information from many different cases, but tied to these structures is the awareness of particular operations (actions to be undertaken by the mind) to understand what is given in perception. Piaget describes the development of these cognitive structures as becoming increasingly mentalistic, abstract, and less dependent on the senses. Their cognitive operations become less physical and more formal so that the development of schemata in his account is a narrative that details the development of human cognition as the progress we make toward disembodied mental life. Cognitive development thus proceeds through several stages marked by changes in these structures. In his “formal operations” stage, Piaget describes the mind’s power to organize symbolic structures in logical and scientific propositions that describe, explain, and reliably predict events in nature. His main work consisted of tracking the evolution of these structures from the first actions undertaken by the infant, like the grasping of objects, to the formation of abstract, formal
structures, comprised of numbers and letters which, though meaningless in themselves, are understood as representations of the actual world.

Piaget did not discuss the possibility that schemata might take the form of mental imagery resulting from perception. Indeed, he did not regard perception as a form of intelligence, but rather defined it in terms of the actions or operations the mind takes on its perceptions in order to understand them (Flavell, 1963, pp. 31–33). Piaget’s account also does not explain how metaphor happens. He left unanswered the question of why human beings apparently seem to develop an ability to conceptualize one mental domain in terms of another. By contrast, Lakoff and Johnson’s theory accounting for image schemata as nonpropositional structures of imagination does provide a basis for establishing such connections through such devices as metaphor.

THREE IMAGINATIVE PROCESSES

Image Schemata in Cognition

In what follows, three processes involving the imaginative in cognition are described. The first involves the development of image schemata and processes of metaphoric projection or elaboration as arising from such schemata. Image schemata derived from bodily and perceptual experiences are shown to form the foundation for abstract thinking.

The second offers a contemporary theory of categorization, which indicates that the power to develop category systems including their extensions also relies heavily on imaginative activity having its origins in bodily and perceptual experiences. The third describes cognition as resting on a vast system of conceptual metaphors essentially built up through cross-domain mappings. Each of these processes is heavily reliant on image schemata as bases for cognition. Moreover, each demonstrates that the abstract powers of the mind have their origins in bodily and perceptual experience and that the mind is not separate from the body.

As described by Lakoff and Johnson cognition begins with a preconceptual, bodily experience (Lakoff, 1987, p. 267). Johnson illustrates the concept of an image schema with one arising from the experience of balance. Initially, balance acquires meaning through experiences where we orient ourselves physically within our environment. We live in a gravitational field and resist the pull of gravity as we learn to maintain our equilibrium when learning to walk. He writes:

> It is crucially important that we see that balancing is an activity that we learn with our bodies and not by grasping a set of rules or concepts. First and foremost balancing is something we do. The baby stands, wobbles, and drops to the floor. It tries again, and again, until a new world opens up—the world of balanced erect posture. (Johnson, 1987, p. 74)

The image schema of balance is acquired by actions like learning to stand and walk, experiences which are learned in the course of development, often before there are words to name or describe them; hence, their nonpropositional character. Once established, they provide a basis for elaboration through metaphor. Thus, the attributes of balance get mapped onto to other entities, as in expressions like “a balanced personality.” Balance is also applied to the equation in mathematics and to the balance of justice in the workings of the legal system. Johnson explains how such schemata give rise to metaphor.

In the case of balance, for example, we saw how certain very abstract concepts, events, states, institutions, and principles (such as psychological states, arguments, moral rights, and mathematical operations) are metaphorically structured as entities or physical events. And it is by virtue of metaphorically imposed structure that we can understand and reason about the relevant abstract
entities. It is the projection of such structure that I am identifying as the creative function of metaphor, for it is one of the chief ways we can generate structure in our experience in a way we can comprehend. (Johnson, 1987, p. 98)

**Metaphoric Projection and Elaboration**

Lakoff and Johnson postulate that higher order, rational thinking can be accounted for through extensions of these image-schematic structures by *metaphoric projection*. To understand the nature of these structures and their actions, I summarize Lakoff’s account.

A metaphor has three parts: a source domain, a target domain, and a mapping function that enables the attributes of one domain to be applied to another (1987, p. 276). To understand the logic behind the metaphor, we have to see how the mapping function ties these elements together. In many of Lakoff and Johnson’s examples, the source domain is grounded in basic-level bodily experience as seen previously with balance.

Metaphors establish connections among objects and events that are seemingly unrelated, and they are encountered in all studies, the arts included. Metaphoric projection is thus a means through which abstract thought arises. This is important because it explains how abstract thinking in human cognition can emerge from bodily and sensory experience. Lakoff and Johnson’s main claim is that image schemata, which come about from bodily actions and perceptions, can reach the mental, epistemic, or logical domains in cognition. What is typically referred to as higher order thinking, the larger understandings that are called abstract and disembodied reason, has its beginnings with the formation of image schemata in bodily experience.

It is here where Lakoff and Johnson differ from Piaget, in that for Piaget *actions* are *operations of the mind* that work on the perceptions it receives as opposed to *actions of the body* like learning to walk. Piaget’s schemata are used to explain how the mind devises formal, propositional structures, whereas the image schemata of interest to Lakoff and Johnson, are *of the body*. However, in Johnson’s epistemology, body and mind are undivided.8 Piaget’s understanding of the cognitive was a journey from experience at the sensory level toward formal abstraction. Piaget conceived of the mind’s formal operations as being less dependent on, if not entirely separate from, the body.

By contrast, Lakoff and Johnson’s intellectual journey reveals a basic level of bodily and perceptual experience as the foundation of cognition and the source of meaning. Like Piaget, they sought to provide an alternative to the Kantian view that higher order logical structures emerge “a priori as the universal essence of rationality” (Johnson, 1987, p. 99), to argue that such higher order cognitive structures emerge from our embodied, concrete experience.

The Kantian conception of imagination was problematic because it divided the mind into a physical or material side governed by strict deterministic natural laws, which included our bodily being, including sensations and feelings; whereas on the other side of the mind was the formal realm of the understanding. This gulf separated understanding from perceptual experience, the mind from the body, in a dualism traceable to the rationalism of Descartes, and which survives in Piaget’s tendency to separate thinking from feeling and perception from understanding. However, the imagination as initially conceived by Kant had the potential to bridge this gap, as Johnson explains:

I would suggest that though Kant could never admit it, that his remarkable account of imagination actually undermines the rigid dichotomies that define his system, showing very powerfully that they are not absolute metaphysical and epistemological separations. Hence imagination is a pervasive

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8Both Lakoff and Johnson reject what they term the myths of objectivism and subjectivism in favor a metaphysics they call experiential realism. See Chapter 11 in Lakoff’s *Women, Fire and Dangerous Things*. See also Chapters 25 to 28 in Lakoff and Johnson’s *Metaphors We Live By.*
structuring activity by means of which we achieve coherent, patterned, and unified representations. The conclusion ought to be, therefore, that imagination is absolutely essential to rationality, that is, to our rational capacity to find significant connections, to draw inferences, and to solve problems. Kant, of course, pulls back from this conclusion because it would undermine the dichotomies that underlie his system. (Johnson, 1987, p. 168)

Kant’s problem disappears when we deny the alleged gap among understanding, imagination, and sensation. Johnson asks, “what if, following the consensus of contemporary analytic philosophy, we deny the strict separation of the formal realm from the material?” If we were to regard these as poles on a continuum, there would be no need to exclude imagination from the cognitive. Kant recognized a vast realm of shared meaning structure in imagination but could not bring himself to grant this dimension cognitive status.

Categories in Cognition

Classical Categories

Categories in the classical, formal sense are bound up with rules that define the conditions of membership or nonmembership of objects, events, or persons as the mind organizes and classifies things and actions into like groups. These rules form the basis for the logic used in the operation of propositional forms of thought, areas not commonly regarded as fertile ground for the development and cultivation of imagination. For example, romantic theories of imagination often characterized it as unconstrained thinking without rules.

Categorization also refers to how people group things in the world of everyday, commonsense experience. We learn about the natural world through our senses, through the multiple sensations of sights and sounds, warmth and coolness, roughness and smoothness, tastes and smells. We also learn within a social world through mediations with family members, peers, and the community at large. Our understanding emerges from these encounters. With experience, our world picture becomes increasingly diverse, and to control this vast enumeration of things, we organize it by categories, by samenesses and differences, friends and foes—even by likes and dislikes. It is the power to select—to include and exclude. We organize our world on the basis of common attributes. Categories are containers into which like things are grouped.

It is more efficient to learn about groups of things by their shared characteristics than by each in isolation. Categorization involves thinking about things in terms of commonalities, not about the uniqueness of individual cases. This action is mostly automatic and unconscious, giving rise to the view that objects and events in the world come in natural kinds, but categories also are cognitive achievements, not properties of the world as such. They emerge from the mind’s effort to organize what is given in perception in its effort to secure meaning. Were it not for the capacity to categorize, we would soon become “slaves to the particular.”

Categories are also used to group things and people and serve as a basis for social behavior. Jokes about women drivers or mother-in-laws assume that members of these groups share common (in these cases pejorative) characteristics. Such categories and their affective loadings are built into everyday language; they can disseminate sexist or racist stereotypes. These are negative applications of categorization. On the constructive side, the common-sense classification of birds, flowers, and fish into groups of like things provides the basis for organizing knowledge used in everyday affairs and in the school curriculum.

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9I attribute the expression to Jerome Bruner.
**Limitations of Classical Categories**

We tend to assume that the category groupings we form in our everyday affairs offer reliable representations of things as they are in the world, leading to a reliable view of reality, itself. Lakoff explains:

> From the time of Aristotle to the later Wittgenstein categories were thought to be well understood and unproblematic. They were assumed to be abstract containers with things either inside or outside the category. Things were assumed to be in the same category if, and only if, they had certain properties in common, and the properties they had in common were taken as defining the category. (Lakoff, 1987, p. 6)

**Wittgenstein’s Family Resemblance Categories**

According to Lakoff (1987, p. 16), Ludwig Wittgenstein realized that people do not necessarily organize experience by classical modes of categorization; that often they tend to devise alternative systems to circumvent the constraints imposed by such categories. He exemplified this with the concept of *game*. There is no single collection of properties that all games share; thus, it is impossible to devise a definition that includes all things called games that simultaneously excludes nongames. What unites games as a category is what Wittgenstein called *family resemblance*. According to Lakoff, “...games like family members are similar to one another in a wide variety of ways. That, and not a single, well-defined collection of common properties is what makes them a category” (p. 16). Moreover, people in everyday life are not troubled by this lack of a definition. We have no difficulty recognizing the objects and events called games.

**Art as a Category**

Morris Weitz (1956) argued that *art* as a concept also functions as a family-resemblance category, in that the existing definitions of art are unable to cover all cases of art. Art also has extendable boundaries as new media and styles come into being and as new works are created.10 When art was defined as formal order, the curriculum featured the study of formal principles stressing elements and principles of design, but when art was defined as the expression of the artist’s feelings, pedagogies based on creative self-expression were prevalent. When Weitz suggested that these definitions were, at best, argued for recommendations to view art from a particular vantage point, art educators began recognizing the possibility of multiple perspectives in the curriculum. This change from a traditional, classical conception of categorization to a family-resemblance system began surfacing in proposals for eclectic curricula open to various ideas about what can be art.11

**Prototype-Based Categories**

In classical theory, a category shares a collection of common properties possessed by all of its members, where these attributes define the category. Consequently, no member of a set would have any special status (Lakoff, 1987, p. 40). Yet in the early 1970s, Eleanor Rosch began identifying certain effects she called *prototype effects* within categories like *color*, *birds*, or *chairs*. When people were asked to group colors that seem to belong together, they would

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10 Answers to the question, “What is art?” were traditionally thought to be *true definitions*, in the sense that they were advanced as covering all cases of art. Weitz argued that “What is art?” is the wrong question, that a more appropriate one would ask “what sort of concept is art?” or how is it being applied in a given context?  
11 For example, Laura Chapman’s widely used text *Approaches to Art Education* adopted an eclectic stance. My “Conceptions of Teaching” paper traced a succession of orientations in art education that were prominent throughout the 20th century.
put all the reds together, all the blues, and so forth. But, if asked to select the best or most typical example of red or blue, most people could readily do that as well. These optimal color selections act like specific prototypes often based on family resemblance by which individuals mark their experiences of colors. Because prototypes suggest that some members of a group are more representative of the category than others, the idea of prototypes is at variance with classical theory where all cases should have the same standing as exemplars of the category.

**Prototypes in Art**

From the time of Weitz, philosophers of art have continued to struggle with the problem of defining art, especially as the category of what is admissible as art expands. Now it is quite common to include graphic communication, architecture, folk art, and the multiple forms of popular culture as well as many contemporary art forms such as installations. One can ask people to extend this list and most individuals can do this quite readily. Yet if we were to ask the same people to select from their list those forms they consider to be the most typical or most representative forms of art, they will very likely choose drawings, paintings, and sculpture rather than installations, political cartoons, or corporate logos.

**Basic-Level Categories**

Akin to prototype-based categories are what Roger Brown called “basic-level” categories (Brown, 1958, 1965, pp. 317–321). Like Rosch, he found that there are levels of membership within categories. To exemplify, when children learn about flowers as a category they may be involved in such actions as planting, picking, and smelling the blossoms. At the same time they learn that they are called flowers, mentally establishing them as a class of things. Later learning may add knowledge of more kinds of flowers, like roses, or the knowledge that flowering plants are members of a larger group called the plant kingdom. As a basic-level category, flowers occur in the midlevel of a larger system. The basic level is that which is learned first, and with increasing expertise, the category system extends outward to create subordinate and superordinate levels.

**Subordinate and Superordinate Levels of Categorization**

The basic-level categories that are learned first are attributed to physical bodily actions that are undertaken while the category is being established mentally (Lakoff, 1987, pp. 32–33; Lakoff & Johnson, 1999, p. 2). With additional learning, categories become more elaborate, thus forming a “superordinate level” made up of generic categories. Thus, the plant kingdom becomes an all-encompassing category that supersedes flowers. Categorization can also proceed downwards to form “subordinate” levels of categories, for example, the various varieties of roses. Categorization at the sub- and superlevels are less likely to be learned in conjunction with bodily actions, and for this reason these additional levels are what Brown called “achievements of the imagination.” These imaginative extensions, though initially the result of bodily and perceptual experience are sense free (Lakoff, 1987, pp. 32–33).

When our thinking occurs at the basic level of categories, our mind frequently gives rise to mental images for them. This is because they were first learned through the perception of images or through actions of the body, like sitting in chairs, smelling flowers, or riding in cars. We can mentally visualize a flower or a car, but we cannot call up a mental image of the plant kingdom as a whole, or an image of a generalized vehicle distinct from any particular vehicle like a train or a bicycle. We can visualize other vehicles like trains, but no generic image comes to mind that represents the vehicular domain as a totality (Lakoff & Johnson, 1999, p. 27).
Art as a Basic-Level Category

Earlier I made the point that there is a kinship between basic-level categories and prototypes. Art as a concept also has many of the qualities of a basic-level category. Ask a child in the primary grades what art is and he or she will describe activities like drawing, painting, or clay modeling, that is, actions undertaken when the category is being established mentally. Later he or she will learn that the things he or she calls art stand within more encompassing categories such as the “fine arts” or “visual culture” that include folk art, graphic design, and the various aspects of the popular culture as well as traditional fine art. Should he or she major in art as a young professional, he or she will develop subordinate levels of the concept of art that might include such cultural practices as art criticism, or he or she might specialize in the study of Chinese Jade carving.12

The Cognitive Unconscious as a Conceptual System

Primary Metaphors

As we have seen, an imaginative element in cognition appeared in the elaboration of category systems described previously, and earlier, in the explanation of image schemata. In their later writing, Lakoff and Johnson deepen their characterization of metaphor by introducing the notion of levels into their discussion. They discuss “primary” metaphor using the analogy of atoms joining together to form the more complex structures of molecules, or in this case “complex” metaphors. Examples of primary metaphors include “KNOWING-IS-SEEING” as exemplified in expressions like “I see what you mean,” or “PURPOSES-ARE-DESTINATIONS,” where the expression “He’ll ultimately be successful, but he is not there yet” serves as an illustration (Lakoff & Johnson, 1999, pp. 56–59). Primary metaphors are acquired automatically and unconsciously via the normal process of neural learning and we are generally unaware that we have them. They are part of the “cognitive unconscious” (pp. 11–12).

We have a system of primary metaphors simply because we have the bodies and brains we have because we live in the world we live in, where intimacy does tend to correlate significantly with proximity, affection with warmth, and achieving purposes with reaching destinations. (Lakoff & Johnson, 1999, p. 59)

Complex Metaphors

Complex metaphors emerge from combinations of primary metaphors. The LOVE-IS-A-JOURNEY metaphor referred to earlier is an instance of a complex metaphor. Lakoff and Johnson also describe the complex metaphor they call “A-PURPOSEFUL-LIFE-IS-A-JOURNEY.” Such a metaphor is comprised of the primary metaphors called PURPOSES-ARE-DESTINATIONS and ACTIONS-ARE-MOTIONS. This leads to a more complex mapping, where

A Purposeful Life Is A Journey.
A Person Living A Life Is A Traveler.
Life Goals Are Destinations.
A Life Plan Is An Itinerary.

12If my assertion is correct, the proposal to transform art into visual culture may be difficult to achieve since from a cognitive perspective, it exists as a concept at the superordinate level. If change is to take place in one’s understanding of art as a form of visual culture it will need to address the understandings one has constructed at the basic level.
Unlike primary metaphors, complex metaphors are not directly grounded in bodily experiences. Rather, the grounding occurs within the primary metaphors that make up the complex metaphor. Thus, A-PURPOSEFUL-LIFE-IS-A-JOURNEY is grounded through its constituent primary metaphors, namely, PURPOSES-ARE-DESTINATIONS and ACTIONS-ARE-MOTIONS. Indeed, our most important abstract concepts such as life, love, and morality are conceptualized via multiple complex metaphors, and though they are abstract, they are not disembodied. In the examples cited, love and life are conceptualized metaphorically as journeys. However, they can be conceptualized in other ways as well. Using love as an illustration, Lakoff and Johnson point out that

Love is conventionally conceptualized...in terms of...physical force, illness, magic, madness, union, closeness, nurturance, giving of oneself...and heat...Our most important abstract philosophical concepts, including time, causation, morality and the mind, are all conceptualized by multiple metaphors, sometimes as many as two dozen. (1999, p. 71)

In Marc Chagall’s painting The Birthday (1915) one sees a couple literally swept off their feet by the feeling of love. Is love in this portrayal a physical force, or a kind of magic which permits suspension of the laws of nature? Is it a union of opposites? Because love is so central in human experience, it is bound to be conceptualized metaphorically in complex ways. Understanding the painting is a task of seeing how the various primary metaphors that seem to be involved here give rise to a meaning that is greater and more complex than that provided by such metaphors in isolation. “The cognitive reality is that our concepts have multiple metaphorical structurings” (p. 71). And these are meanings constructed by the imagination.

Implications

The work on cognition reviewed in these last sections described three arenas where imagination comes to light as an emergent phenomenon, where the abstract or sense-free aspects of thinking and understanding are accounted for as having their origins in bodily and perceptual imagery.

First, they appear in metaphoric projections from image schemata. Here we saw how schemata for balance, which are acquired through such physical actions as learning to walk, ultimately give rise to structures of imagination that can be applied in a number of abstract domains like mathematics, or to describe the system of checks and balances in the organization of government, or to the personality of individuals.

The second appeared in the elaboration of category systems, with the emergence of superordinate and subordinate hierarchies of concepts within categories. The creation of such cognitive extensions was also identified as an achievement of the imagination.

Third, we saw that undergirding conscious thought is a vast network of conceptual metaphors that enable us to make connections among the things of the world in our understanding. In their book The Way We Think (2002), Gilles Fauconnier and Mark Turner offer a similar characterization of the mind by their term “conceptual blending” to refer to the mental processes that bind together and integrate these elements into complex ideas. Like Lakoff and Johnson, they make a compelling argument for the role of imagination in our conceptual lives.

Implications for Education

Cognition is not purely literal. It has metaphorical and imaginative attributes as well. The subjects in the school curriculum utilize multiple forms of cognition including thinking as a propositional process and nonpropositional thinking involving images, metaphor, and imagination. Propositional thought is more likely to be evidenced in philosophy, physics, and
mathematics than in the arts; whereas it is principally in the arts where one encounters the use of imagery, metaphor, and imagination. Yet conceptual metaphors do appear in the language of scientists, though they are likely to remain hidden as seen in the illustration that follows. Notice that in each of these statements, references to the physical attributes of buildings or processes of construction are mapped onto theories.

Is that the foundation for your theory?
You'll never construct a strong theory on those assumptions.
I haven’t figured out what form our theory will take.
Here are some more facts to shore up your theory.
Evolutionary theory won’t stand or fall on the strength of that argument.
So far we have only put together a framework of the theory.
He buttressed the theory with solid arguments. (Johnson, 1987, p. 104)

Each of these expressions is clear and unproblematic, underscoring the point that the THEORY-ARE-BUILDINGS metaphor is meaningful in the conventional communication forms of everyday life and within the scientific community. In fact, members of the scientific community would not likely recognize the metaphoric character of their speech. The discussion of Marc Chagall that follows demonstrates that metaphor plays quite a different role in the arts.

Chagall’s Clocks

In several of Chagall’s paintings done in the 1930s to 1940s, a recurrent image is the flying clock sometimes accompanied by images of other objects in flight. In one such work, Time Is a River Without Banks (1930–1939), the clock dominates the center of the composition, accompanied by a flying fish and a violin. In the lower right-hand corner one sees a pair of lovers. Another is entitled Clock with Blue Wing (1949). We know literally that clocks do not fly; nor do fish; nor do they have wings enabling them to do so. So a question for the viewer becomes, “What meaning do the flying clocks have in these works? Do these images refer to the folk metaphor that time flies? Does the pair of lovers have any special significance in a painting that seems to comment on the passage of time, perhaps the artist’s remembered youth in Russia, or a former love affair? Is the clock emblematic of the beating of the human heart or the ticking away of life; or is it a reference to the heart as a symbol of love? Numerous critics also refer to Chagall’s use of images of people in flight to represent the emotional ecstasy of the pair of lovers as referred to earlier in The Birthday (1915).

There is no way to be sure which of these interpretive conjectures is tenable. Each viewer will map the connections between things somewhat differently. Some will account for the flight of the clock using the primary metaphor TIME–IS–MOTION. Others might map time onto life with the ticking of the clock mapped onto the beating of the heart. For this reason, such works of art open what David Perkins calls a “reflective intelligence” (Perkins, 1994, p. 14). The clock has become an object for thought, for interpretation. The clock metaphor is active and can enliven the cognitive activity of the viewer; but the metaphor is complex, offering multiple meanings. It is active and enlivens cognitive activity. The point of these two illustrations is to show that metaphors are likely to work passively in scientific discussions, whereas in the arts they delve directly and deeply into what the work is about.

Toward a Theory of Imagination

Johnson suggested that “an adequate account of meaning and rationality (as well as that of understanding and communication) awaits a comprehensive theory of imagination. Such a
theory would complement and influence our present theories of conceptualization, propositional content, and speech acts. In its broadest sense, it would provide a comprehensive account of structure in human experience and cognition (1987, p. 171). He then listed several features of what a cognitive account of imagination would entail, some of which are listed in the following sections.

**Categorization**

By categorization, he means not the classical view of categorization but a view that describes the way human beings actually “break up their experience into comprehensible kinds.” Prototypical or basic-level categorization is preferred over one that seek sets of necessary and sufficient conditions. The power to elaborate and extend categories into superordinate and subordinate levels of classification is an achievement of the imagination (Johnson, 1987, p. 171).

**Schemata**

Johnson (1987) cites the need for a comprehensive theory of schemata, i.e., “general knowledge or event structures.” We need to survey the basic kinds of schemata to see how they can be developed metaphorically, to investigate their complex interrelations, and to explore their connections with propositional structures” (p. 171).

**Narrative Structure**

When it comes to explaining how humans make sense of their world “there must be a central place for the notion of narrative unity. Not only are we born into complex and communal narratives, we also experience, understand, and order our lives as stories we are living out” (pp. 171–172).

**Interpretations as Narratives**

Although Johnson identifies the structure of narrative as one of the components in a comprehensive theory of imagination (1987, pp. 171–172), he does not elaborate how the capacity for narrative is related to other features of imagination such as metaphor. But narrative structure does share certain common features with metaphoric structure, in that they have a source point in human experience where they originate with some kind of problem or situation. Jerome Bruner uses the term “trouble” to identify the starting points in many narratives (Bruner, 1996). A typical narrative will open with a phrase like:

“I was walking down the street, minding my own business when . . . ” The action unfolds leading to a breach, a violation of legitimate expectancy. What follows is either a restitution of initial legitimacy or a revolutionary change of affairs with a new order of legitimacy. (Bruner, 1996, p. 94)

There is also a target point (some kind of resolution, outcome, or moral of the story); and finally there are pathways that map the intervening connections.

Narrative in Bruner’s view is also a disciplined mode of thought for construing the present, past, and possible human conditions (Bruner, 1996, p. 100). Narratives do not provide explanations; rather, they lead to understanding, with understanding defined as “the outcome of organizing and contextualizing essentially contestable, incompletely verifiable propositions in a disciplined way (p. 90). The narrative mode of meaning-making tells us a story of what something is about. “Understanding, unlike explaining, is not preemptive. One way of construing the
fall of Rome narratively does not rule out other interpretations.” Some narratives about “what happened” are simply righter, not just because they are rooted in factuality, but because they are better contextualized, rhetorically more “fair minded” and so on” (pp. 90–91).

Bruner also identified the broad implications of narrative in education, decrying the tendency in schooling to treat them as mere decoration rather than as a way, perhaps the best way, for individuals to construct meaning.

It has been the convention of most schools to treat the arts of narrative—song, drama, fiction, theatre, whatever—as more “decoration” than necessity, something with which to grace leisure . . . Despite that, we frame the accounts of our cultural origins and our most cherished beliefs in story form . . . Our immediate experience, what happened yesterday or the day before, is framed in the same storied way. Even more striking, we represent our lives (to ourselves as well as to others) in the form of narrative. (p. 40)

The importance of narrative for the cohesion of culture is as great very likely, as it is in structuring an individual life. . . . “trouble narratives” appear again in mythic literature and contemporary novels, better contained in that form than in reasoned and logically coherent propositions. It seems evident, then, that skill in narrative construction and narrative understanding is crucial to constructing our lives and a “place” for ourselves in the possible world we will encounter. (p. 40)

Relevance to Art Education

For most people the term imagination “connotes artistic creativity, fantasy, scientific discovery, invention and novelty”—having little or no correspondence to the everyday world of occurrences. Such beliefs are holdovers from 19th-century romanticism. Lakoff and Johnson were intent to explain how categorization, image schemata, metaphor, and narrative, as components of the imaginative in cognition, operate across the whole gamut of human cognition and thus are not limited to the arts.

But because they so thoroughly implicate imagination as the quintessential component of higher forms of cognition including abstract reason, it has unmistakable implications for the arts as well, as places where metaphoric leaps of imagination are prized for their power and aesthetic excellence. Moreover, it is in the arts, where the structures of imagination should become the principle object of study. Typically this happens when one creates works of art, yet imagination also comes into play in the interpretation of works of art. Deepening the wellspring of the imagination and the role it can play in the creation of personal meaning and in the transmission of culture becomes the point and purpose for having the arts in education.

Making a place for the arts means giving oneself over to neither the ornamental fringes of knowledge nor to the abandonment of the hard facts of reality. Indeed, quite the reverse is true. For example, before a metaphor can become active in the learner’s mind—as a metaphor!—he or she must understand the underlying reality or context where the metaphorical nature of the image or expression is active.

Let me emphasize this point once more—that the arts are places where the constructions of the imagination can and should become the principle object of study, where it is necessary to understand that the visual image or verbal expression are not literal facts but embodiments of meanings to be taken in some other light. It is only in the arts where the imagination is encountered and explored in full consciousness—where it becomes the object of inquiry.

Having learners understand the imaginative as ornamental devices like metaphor, used mainly by artists and poets, is of secondary importance. I lean more toward activities where the learner comes to an understanding of the world referred to in works of art, and the role that the artist’s imagination plays in constructing that world and giving it meaning. Moreover, an
art education that fails to recognize the metaphoric character of meanings in the arts is without serious educational purpose.

Implications for General Education

Cognition entails more than meaning situated in propositional forms; it takes nonpropositional forms as well. Yet schooling for most students occurs within a curriculum where knowledge is experienced as a series of isolated, random facts. This compartmentalized curriculum reflects a long tradition in Western philosophy, which in large part is the consequence of a divided mind. On one side is cognition proper, the province of reason, conceptualization, logic, and formal propositional discourse. On the other hand is the bodily, perceptual, material, emotional, and imaginative side of our nature.

The most significant consequence of this split is that all meaning, logical connection, conceptualization and reasoning are aligned with the mental or rational dimension, while perception, imagination and feeling are aligned with the bodily dimension. As a result both non-propositional and figuratively elaborated structures of experience are regarded as having no place in meaning and the drawing of rational inferences. (Johnson, 1987, p. xxv)

These polarities have reified themselves into structures of consciousness. If thinking is cognitive, then its contrary (feeling) is noncognitive. If cognition involves the use of verbal and mathematical symbols to construct rational or formal propositions, then perceptual imagery is taken to be nonpropositional and hence noncognitive. This tendency has relegated half of mental life to the lesser realm of affect.

Moreover, this structure of belief has become the structure of the curriculum. The sciences were placed in the cognitive domain, whereas the arts were dispatched to the domain of feelings and emotions. To be sure, the arts were highly praised as sources of wonderment, amusement, delight, embellishment, or beautification (icing on the cake); but rarely were they taken to be active sources of insight, knowledge, or understanding. Education should have as its ultimate purpose the maximization of the cognitive potential of individuals, and this includes the use of the imagination—in all subjects to be sure but certainly in the arts.

The arts are educationally important when they equip individuals with the relevant tools to interpret their lifeworlds. The tools or cognitive strategies that are entailed in this learning process include imagination as a schematizing function and its extensions by metaphoric projection. Metaphor, in particular, constructs linkages that enable us to understand and structure one domain of knowledge in terms of the knowledge in a different domain; thus, it establishes connections among seemingly unrelated things. The subjects that give play to these aspects of cognition should lie at the core of the curriculum where they can become bases for understanding.

We may have multiple forms of cognizing (propositional vs. nonpropositional), but in my view these do not stand in opposition to each other. Rather, both emerge from the same common source, the basic level of experience originating in bodily and perceptual encounters with the environment including culture. The reason why the hunches of the scientist or the imagination of the artist can be intuitive is that their foundation is built on an undivided world, the world that the physicist David Bohm calls “the implicate order,” a world beyond dualisms that divide the body from the mind, thinking from feeling, or individuals from their social world. The building of lifeworlds requires access to such sources as represented and extended symbolically in thinking, feeling, and willed action. Such building is, in the final analysis, an “achievement of the imagination.”
33. ART EDUCATION AS IMAGINATIVE COGNITION

Teaching Art as Imaginative Cognition

Imagination is the act or power of forming mental images of what is not actually present to the senses, or what has not actually been experienced. It is also the power of creating new ideas or images through the combination and reorganization of images from previous experiences. Creative imagination through arbitrary combinations of images can be found in the notebooks of Leonardo DaVinci, who described his procedure for inventing fantastic creatures by combining the head of an animal such as a lion with the body of another, adding perhaps the wings of a bird. He also describes an exercise where he looks at cracks in the plaster of a wall, allowing the lines to suggest the shape of mountains and other details of landscapes. In both instances, Leonardo drew on imagery stored in memory. Fantastic animals can form the basis of an activity where students combine animal images cut from old magazines and newspapers to invent a new animal never seen before. To many experienced art teachers, such a lesson on fantastic animals is hardly a new idea. Other ideas invite the learner to suspend the everyday expectations that have become customary in our lives by asking “What if” types of questions. What if the sun will not rise tomorrow? What if there were time travel or teleportation?

Previously the point was made that imagination also consists of cognitive strategies that establish links among things enabling one’s understanding to move from the known to the unknown. I referred to Lakoff and Johnson’s term “cross-domain mapping” to characterize this process. The known is found in the learner’s source domains, the sensory knowledge obtained early in life that is in one’s cognitive unconscious. Teaching involves the kind of instructional prompts that bring the relevant schemata to consciousness because they are likely to be inert, or in a state of dormancy. The teacher must create the situation where such knowledge is called upon.

I will offer two examples: In the first, the teacher introduces the principle of balance as encountered in the teaching of design. It is common for teachers to refer to a composition as having symmetrical or asymmetrical balance or sometimes to the lack of balance in particular artworks. In pure design, with no reference to any particular expressive content, an activity might involve exercises where students manipulate compositional elements with differing visual weights. Two darkly colored rectangles on one side of a composition might offset a larger single rectangle, and so on. It is unlikely that such activities would activate balance as a source domain. Lessons in the abstract in all probability will not fully engage the learner.

In a second lesson, balance is used to characterize the moral attributes of different personalities. The expressive task is more complex because schemata learned many years earlier now have to be mapped onto the character of a given personality. The teacher might introduce a lesson with a discussion of different personalities, perhaps fictional characters like Batman and the Jester as prototypes of good and evil. Batman is portrayed as a morally upright hero with the backbone to stand up to evil. References to his moral stature are reinforced by his balanced, erect posture, not to mention his good looks. On the other hand, there is something sinister about his rival, the Jester, whose villainy demonstrates the opposing attributes. He is an unbalanced, underhanded character who has fallen from grace and who is disfigured.13

Think of how many times the references to posture and balance are brought into this discussion to characterize the differing identities of the hero and the villain? It is through such conversation that the teacher builds the scaffolding needed to help the student become conscious of the conceptual metaphors at work just below the threshold of consciousness. Once such connections are established, a vast bank of images is brought within reach that can be used to motivate studio activities or to open a critical conversation about a given portrait. Knowing that our concepts for moral goodness are physically correlated with upright posture may help

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13It also occurs to me that in this example both the hero and the villain are disguised.
us understand how advertisers present political candidates either positively or negatively in television commercials.

Balance might extend to color as when we talk of a person being green with envy, red with anger, a cowardly yellow, or feeling blue. Also such formal qualities of line have their origins in bodily experiences like the physiognomy of smiles and frowns. Straight, clean-cut features are for heroes, whereas crooked snarling features personify dishonesty and evil. Some of these associations are the result of cultural conditioning such as the pairing of green with envy or yellow with cowardice. This is knowledge very likely embedded in the cognitive unconscious.

When I offered some of these ideas to a graduate class of art teachers, mainly at the elementary and middle school levels, I learned that many had taught lessons on self-portraits or heroes and that what I was suggesting as lessons with an imaginative twist actually seemed quite familiar. This leads to the question asked at the outset; namely, “what can current conceptions of cognition offer art educators as a basis for reshaping itself into a domain hospitable to the cultivation of imagination?

To quite an extent, the new understanding of what cognition entails lends credence to much that art teachers presently offer. The change that is required must be at the level of purpose, where the constructions of the imagination become principle objects of study. This kind of exploration must be done consciously and can begin with conversations in the language and imagery of the lifeworld, and that undergo discussion in daily speech.

It is also important to recognize that awakening the imaginative aspect of cognition does not happen in a vacuum but must be actively cultivated. Freeing the child from the rigid structures of traditional subjects was thought to be sufficient generations earlier. It now appears that it also involves the intentional preparation of curriculum plans and resources. The content of the curriculum becomes the strategies one uses to cultivate the imaginative. One sees it in the superordinate levels of categorization, in the mapping of one domain on another as in metaphor, and finally in the ability to engage in the complex networks of meaning we call our world.

REFERENCES


