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Making Sense of the Senses: The Body the Brain and Modern Art

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Making Sense of the Senses: The Body, the Brain and Modern Art
The barking of dogs
Is deepening the yellow
Of the sunflowers.
—Richard Wright (1908-1960)

Imagine, as so many artists, musicians, writers, poets and dreamers have tried to do so many times in so many ways, a universal language—one that could be understood by anyone in any place at any time. However implausible such a language may seem, however romantic, naïve, or flatly impossible, its creation in visual terms was a common pursuit of early modern painters, those working in the first decades of the 20th century. At the beginning of this new millennium, we may ask afresh if all these past imaginings and pursuits were but elegant and finely wrought pipe dreams, or if in some way modern art actually did and still does communicate to the human mind—any human mind anywhere—fundamental stimuli that may be commonly understood. Recent thinking in studies of the mind suggest that perhaps at least some of it does, and that those images that achieve universality do so by way of an elemental, physiologically-based phenomenon of the human mind: natural metaphor.

A metaphor is commonly understood to be a figure of speech in which a word or phrase that literally denotes one thing is used to denote and describe another; for example, “time is a jet plane.” Time, the comparison tells us, moves away from us quickly. A common way to think of metaphor is that it merely decorates speech—that it makes language, whether written or oral, more interesting or even entertaining. Consider Raymond Chandler’s colorful use of metaphor in his novel, *The Long Goodbye*, wherein Chandler describes a character as having “a face like a collapsed lung.” Now, that is vivid. But perhaps a reasonable person could do without metaphor altogether in thought and speech and give a more accurate description of that same character’s face: As opposed to looking like a collapsed lung, the face in question could be described as misshapen, deeply wrinkled and pervasively splotched. This might be more accurate, especially as none of us actually ever sees a collapsed lung. Yet, all of us, including the most reasonable among us, use metaphor constantly.

And, apparently for good, unavoidable and wholly natural reasons. What both contemporary linguists and cognitive neuroscientists are now telling us about the brain is that metaphors are not dispensable decorations. They are central to the process of perception, and thus to how the mind makes sense of what we call reality. The mind is nothing like the computers it designs we are told by certain neuroscientists, despite the fact that computational terminology is used all the time to describe the workings of the brain. Instead, in the words of scientist John J. Ratey, the brain “works by analogy and metaphor. It relates whole concepts to one another and looks for similarities, differences or relationships between them.” Seconding the centrality of metaphor to brain function are linguist George Lakoff and philosopher Mark Johnson with their conclusion that “metaphor is as much a part of our functioning as our sense of touch.”

A “natural metaphor” is a metaphor derived from our having the bodies we have and interacting with the environment as we encounter it. That is, we have bodies that allow us to experience “up” versus “down” within the context of our physical world. How we as a culture have come to speak routinely of goodness as being “up” and of badness or evil being “down” is explained by scientist Richard Cytowic, author of the in-depth study on synesthesia, *The Man Who Tasted Shapes*:

The physical bases for these metaphors are that most mammals sleep lying down and stand up when awake. Well-being, control, and things characterized as good are all up. Since we control our physical environment, animals, and sometimes even other people, and since our ability...
to reason is what gives us this control, control is up implies human is up and therefore rational is up....

Spatial orientations like up-down, front-back, and center-periphery are the most common ones in our system of concepts, but given the variety of ways we interact with the world, there are others.4

Yale University Professor Lawrence E. Marks is another who tells us that these metaphorical relationships may be inherent to perception and that “In this regard, intersensory and physiognomic metaphors reflect ‘natural’ rather than ‘conventional’ symbols or signs.”5 Thus, such perceptions, inherent to the body and physiologically based, are not culturally learned—they are natural, derived from the nature of our own bodies existing in a physical world. The brain itself, not just language or our use of it, is a metaphorical entity. The pervasiveness of natural metaphor in our thinking is cited by Marks:

That dark and saturated colors are physiognomically stronger than light, pale colors is also evident in results obtained by D’Andrade and Egan (1974) and Valdez and Mehrabian (1994) using simpler color stimuli. D’Andrade and Egan presented to two groups of participants—one native speakers of English and the other native speaker of Tzeltal (a language of Mexico)—a series of words (in their native language) denoting various emotions, the task being to select for each emotion word the most appropriate color chip from a large array. Multidimensional scaling revealed striking similarities in the responses obtained from the two groups, especially with regard to the colors associated with “good,” “bad,” “strong,” and “weak.” To speakers of both English and Tzeltal, dark and highly saturated colors were good and strong, and light and palely saturated colors were weak. Negative emotions such as “sadness” and “fright,” tended to be connected with purplish and yellow-red colors, and positive emotions such as “happy” were connected with blue-greens.6

A common example of natural metaphor and one germane to the present essay is that up-tempo music in major scales may equal bright color and happiness; slow music in a minor scale may equal dark colors and sadness. What could form the physical basis of this phenomenon? In our experience of life, we slow down when ill, and we see others as completely still when they are dead. Slow equals unhealthy, which equals sadness. By contrast, fast equals healthy, happy, control and ultimately “up.”

In old models of the mind, information derived from the senses (sight, sound, hearing, smell and touch) came in and went to one place where it was then processed and understood: sight was one place and hearing another.7 Likewise, language had its own location in the brain, so did memory. In new models of the mind, information of all kinds is shared in varying degrees and locations throughout the brain—it is scattered—thus visual information is shared to some degree with other sensory modes—hearing, taste, touch, smell. This sharing among sensory modes is called “cross-modality,” and cross-modality is basic to brain function.

So, when Susie walks into the party in a yellow dress spotted with red roses and it is perceived by the guests as “loud,” their understanding is not wholly a cultural convention, that is, a matter of shared tastes based on communal definition, but rather it stems in part from the brain seeing bright color and associating it with loud sounds. Loudness is more sound, thus lots of color is the visual equivalent of more sound. The brain will add to that perception an emotional quality (for many the emotional experience will be happy because in the mind ‘more is up’)8 and mix it in with personal memories, current hopes and desires, and, in extremely complicated ways, layers of cultural data (loud is “rude”) and language (where metaphor is manifest in abundance—her dress is “brassy”). In short, even the seemingly most insignificant or casual perception connects in the brain with many other associations and/or perceptions.

Interest among early American modern artists in visually representing sensory perceptions, including time as a dimension of experience, was pervasive though the sound/color analogy aroused the greatest interest and generated the most hope for new forms of expression. Robert Henri (1865-
1929), one of 20th century America’s most formidable exponents of independence and individuality in art, nonetheless became fascinated with the idea of a fixed system for finding color harmonies that evoked sound. In 1909, he began studying in earnest the theories put forth by Hardesty Gillmore Maratta, a Chicago painter all but forgotten today. Maratta, whom Henri interviewed personally, set forth the idea that the 12 musical notes of the Western diatonic scale could be matched to the twelve notes of the conventional color wheel (a system closely paralleled to one developed in France by the Americans Stanton Macdonald-Wright and Morgan Russell, discussed later in this essay).

Not only did Robert Henri enthusiastically embrace the idea of an inherent analogy between music and color, so did his colleagues George Bellows, John Sloan, Randall Davey, Charles Winter and A. F. Levinson. These artists joined together in their study of Maratta in the hopes of devising a rational and mathematical way of arriving at color harmonies as well as compositional harmonies. Henri himself made a series of color notes over the years 1911 to 1916—an incredible chapter in early modernism deserving of more study. Maratta’s system was, in the end, too unwieldy for a painter of Henri’s temperament, or perhaps for any painter of any temperament. It required a maze of overlays and “webs” to organize a painting, and, most unfortunately, led to assigning colors to subjects before the actual painting began. Henri eventually moved away from the system, perhaps because the system left little room for intuition—the very force that led Henri to experiment with the color/sound analogy in the first place.

Henri’s own sense of color is demonstrated in Night, Fourteenth of July, of about 1897 (fig. 1) with its startling reds overlying dark, somber greens and browns. His methods grew out of 19th century color traditions, out of Velázquez, Goya, Impressionism and especially the emotional and psychological power of James McNeill Whistler. In discussing Night, Fourteenth of July, art historian William Innes Homer identified Henri’s additional stylistic debt to the French symbolist tradition:

His [Henri’s] Fourteenth of July—“La Place” borrows the conventions of the Bonnard-Vuillard style: the surface of the canvas is respected as a flat, inherently decorative entity, the result of being divided by horizontals and verticals rather than by space-creating diagonals; figures and architecture are stacked vertically, according to the convention, inspired by Japanese art, that “above means behind” (again, a means of denying the illusion of deep space); and the people who inhabit the picture are treated not in terms of mass but as areas of nearly flat pattern in a carefully considered decorative relationship to each other. Henri used color in a summary yet descriptive way to both describe things and to express emotional states and stimulate the senses. His experimentation with the Maratta system was an attempt to take that descriptive and evocative use of color and make it even more expressive, powerful and communicative. What Henri intuited, as had so many artists, was that such an expansion of color’s potential by way of quasi-musical methodology was or at least should be possible.

Fig. 1. Robert Henri (1865-1929), Night, Fourteenth of July, about 1897, oil on canvas, 32 x 25 3/4”. Nebraska Art Association, Nelle Cochrane Woods Memorial.
Henri’s peer, friend and colleague, Edward Steichen (1879-1973) made photographs in the manner of Whistler’s paintings. His images such as Shrouded Figure in Moonlight, 1905 (fig. 2), were limited in color and grayed in tone, representing nineteenth-century ideas regarding the quiet, mysterious, and deeply poetic power of a limited, muted palette. Like Henri, Whistler and others (the extraordinary American landscapist, George Inness, among them), Steichen assumed and believed in psychological parallels among color, sound and emotion, a belief that was, again, rooted in intuition. Steichen’s great compatriot, Alfred Stieglitz, likewise shared a deep belief in intuition and printed an excerpt in Camera Work from philosopher Henri Bergson’s essay on Creative Evolution in which intuition was defined as that which leads us “to the very inwardness of life.”

The commonality and strength of the belief in intuition as a valid source for information and experience preceded and fed into the first systematic modern art movement, Synchromism, based on the possibility of a sound/color analogy.

Founded by Morgan Russell (1886-1953) and Stanton Macdonald-Wright (1890-1973) in 1913, Synchromism was a method of painting in color scales analogous in structure to musical scales. In 1911, Russell introduced Macdonald-Wright to Percival Tudor-Hart (1873-1954), a Canadian painter and color theorist then teaching in Paris and experimenting in the field of color/sound equivalents. The two artists became lab assistants for Tudor-Hart, and during the years 1911-12 they began their researches and struggle to find a method in painting where the orchestration of color would be akin to the orchestration of musical notes.

For Tudor-Hart, colors, just like individual musical notes, could form the basis of a “scale.” Yellow could form the basis of a scale just as easily as blue-violet. The important factor in creating the scales was that the intervals between the colors be kept consistent from whatever point of departure one chose. Tudor-Hart used a system that was endlessly complex (in a manner not unrelated to the complexity of the Maratta system) and that required hundreds of separate calculations. Macdonald-Wright and Russell believed it was their great discovery to simply treat the traditional color wheel (with its 12 colors) like a traditional Western musical scale (with its 12-note range) to create scales. In short, a musician creates a scale by keeping the intervals consistent (everyone knows when a note goes flat or sharp), so they set out to move around the color wheel as if the colors were piano keys. Russell and Macdonald-Wright named their method “Synchromism” to mirror the word “symphony,” meaning “with sound,” and Synchromism meaning “with color.”

The Synchromists believed that the principal of weight shift (known as contrapposto) observed in classical figures, especially Greek sculpture, presented itself as a basic visual rhythm, like the “one-two, one-two” beat of walking or “common time” in music. Understood as a visual formula, contrapposto looks much like two curves in opposition to one another: ( ). Morgan Russell painted one of the clearest examples of Synchromist theory in his Synchromy No. 2, To Light From Symphony Blue-Violet.
Quartet of 1912 (cover).\textsuperscript{14} In this Synchromy, Russell summarized his objectives with the new method, one of which was to reduce the figural reference to a basic rhythmic suggestion of contrapposto. One sees here how one curve rests over and opposite another curve of equal size.

Russell filled out this principal rhythm, the two simple opposing lines, in broad patches of unmixed color. For his scale, Russell chose blue-violet, which is not without a great deal of meaning.\textsuperscript{15} The scale of blue-violet is as follows: blue-violet, red-violet, red-orange, orange, yellow, green, and blue. According to Tudor-Hart, of the 12 essential colors of the spectrum, yellow is the most luminous, and blue-violet possesses the lowest luminosity. Therefore, yellow has the closest relationship to white light of all the colors, and blue-violet is the deepest possible shadow with color. By choosing the key of blue-violet, Russell tried to create the greatest visual contrast possible, that is, areas of yellow advancing and areas of blue-violet retreating. This high contrast would be in harmony with the contrast inherent in the principle rhythm (itself a dynamic of opposites) which formed the organizational basis of the composition. In a single image, the harmony of color and the balance of form (in a very classical sense) would be accomplished.

When looking at his Synchrony No. 2, Russell wished the viewer to have an experience akin to “the bursting of the central spectrum” on one’s consciousness, that is, an experience full of sound, color and dynamic movement.\textsuperscript{16} And, he believed he had achieved via his painting the means to attain that experience.

While Morgan Russell effectively abandoned Synchromism by 1916, Stanton Macdonald-Wright painted a series of his most effective color abstractions in New York between 1916 and 1918, the year he returned to California. In the artist’s Treatise on Color of 1924, Macdonald-Wright maintained that he was not a scientist, and that the analogy between music and color existed because “our own emotional reactions to them tell us that there exists a positive parallel.”\textsuperscript{17} Like Henri, Steichen and a host of others before him, Macdonald-Wright was relying on intuition, on a strong inner feeling that color and music could be understood in mutual, non-exclusive ways. Like those other artists, he was reacting intellectually to his own experience of natural metaphor—that is, he knew inherently, physically, that color and sound shared sensory information. Two years later, in 1926, he painted Dragon Forms (fig. 3).

Dragon Forms is loosely painted in the key of red-orange (the red-orange scale is: red-orange; yellow-orange; yellow-green; green; blue; violet; red). In the 1920s, Macdonald-Wright ceased painting in strict color scales, opting for a controlled and concentrated improvisation. With its flat planes of highly saturated hues constrained by hard edges, Dragon Forms represents one of Macdonald-Wright’s many attempts to express movement, emo-
tion and harmony simultaneously for the professed purpose of offering the opportunity of cerebral stimulation, the point of which, ultimately, was to increase an awareness (the artist’s as well as the viewer’s) of the broader world of sensation and possibility. He became increasingly influenced by Asian philosophy during the 1920s with its emphasis on the interconnectedness of all things, a philosophical view that supported and enhanced his continued striving after intersensory experiences in his own work.¹⁸

Though he was not a Synchromist, Patrick Henry Bruce’s (1881-1936) *Forms* (fig. 4) of 1918/19 is, with its clearly delineated, interlocking and brightly colored shapes, not at all dissimilar in conceptual approach to Macdonald-Wright’s *Dragon Forms*. The comparison is historically instructive as it evinces the shared interests of early modernists, and their shared sources as well. Bruce, like Morgan Russell before him, had worked with Robert Henri. According to William Agee: “He [Bruce] became a member of an entire generation who felt the tremendous impact of Henri’s teaching and example as an artist. Henri exhorted his students to approach their art through their intense observation and immediate personal experience of the world around them, and he persuaded Bruce to loosen his style in the manner of Velázquez, Manet and Whistler.”¹⁹ Relying on “immediate personal experience” meant, of course, exercising intuition—a process of relying on inner feelings (including a host of natural metaphors) as they arose, in order to arrive at judgments or assumptions.

In Paris in 1905, Bruce gravitated toward the Vanguard, as did so many Henri students. He developed a close relationship with the French modernist Robert Delaunay, a friendship that put him in a leading position among American artists experimenting with alternative usages of color. Delaunay, along with his wife, Sonia, was the great rival of Macdonald-Wright and Morgan Russell. Indeed, Sonia claimed to have invented Synchromism (a claim not disputed until recently in art history). Like the Synchromists, and most artists working in Paris in the years around the First World War, Bruce also benefited from the example of the Cubists Picasso and Braque; of Wassily Kandinsky; of Kupka, of Matisse. Emboldened at least in part from a personal willingness to search on his own, Bruce deviated from Delaunay’s *simultané* in rather bold ways: the severity of Bruce’s mathematical patterning portends color field painting of the post-World War II era and his use of intense color is far from nature-based (Delaunay’s often was).

*Forms* is a monument of early American modernism for its hyper-reductivity; its relentless classicism (sense of clarity, stage-like space) and precisionism. And, like the Synchromists, Bruce achieves an image that resounds cross-modally in our perception, that is, it is not at all constrained by cultural and historical meanings but rather strongly evokes physiognomic, natural metaphors. In terms of color, it is heavily saturated (not grayed, but characterized by the presence of nearly-pure to pure hues), and we feel that in terms of sound it is loud rather than quiet. In terms of emotion it is intense rather than calm.

We might ask ourselves at

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Fig. 4. Patrick Henry Bruce (1881-1936), *Forms*, about 1918, oil and graphite on canvas, 23 1/2 x 28 3/4”. University of Nebraska–Lincoln, Howard S. Wilson Memorial.
Fig. 5. Emanuel Leutze (1816-1868), Washington Crossing the Delaware, 1851, oil on canvas, 149 x 255". The Metropolitan Museum of Art, Gift of John Stewart Kennedy, 1897. (97.34). Photograph © 1992 The Metropolitan Museum of Art.

this juncture, and rightly so, if not every art object functions on some level in terms of the viewer’s physiognomic response, and the answer would most likely have to be “yes,” although the degree of intersensory, i.e., cross-modal, perception would be wildly variable. A quick comparative example here is illuminating.

Consider Emanuel Leutze’s well-known painting in New York’s Metropolitan Museum of Art, Washington Crossing the Delaware of 1851 (fig. 5). General Washington is depicted as tall and sturdy amid the crossing, the stable and confident future first President of the United States. He is the great hero of the American Revolution, perhaps our country’s most recognizable face. The painting, a museum docent informs small children, tells this story.

However, the painting tells no such story at all. The knowledge of who Washington is has to be given to the viewer from some other source: the painting does not provide his name, occupation, a description of the war or give the faintest idea what a president is. The uninformed viewer, from some distant time and place or from right across the water in New Jersey, has to learn all of this from a text or a lecture of some kind, and relate this learned information to the image. Narrative images always need additional narrative to make their stories at least partially clear. The simple fact is that in the absence of culturally specific knowledge provided from some other source, a viewer will not naturally or automatically “get” anything about America, democracy, heroism or anything else from looking at Leutze’s painting.

So, if you—a hypothetical person from some distant place and time from Revolutionary-era America—know nothing about Leutze, Washington, or the Delaware, what might you think of Crossing the Delaware without any historical/cultural information? Well, standing in front of it you could see it is a rather large painting of mostly gray tonalities, one depicting other human beings. You could guess there is some kind of story being told—perhaps a fishing expedition or a boating party in dress-up clothes. Beyond that, there would not be much to know with certainty. Without a knowledge of the event depicted let alone Washington’s culture and values (and Leutze’s!), we may only react to his image with our own cultural eyes, and we will, as nurture (one’s culture) is always present in us.

But so is nature. Continuing with our hypotheti-
cal: with your not knowing anything about Washington’s famous crossing, you still may identify human bodies, natural features of the landscape, and match those to your own models and experiences with your environment. You process the quality of the color, its brightness, dullness, variety, etc. You see a palette that is not overly stimulating to the senses. The shapes match known shapes in the natural world, and their familiarity is not exaggerated in any way to make them stand out as extraordinary in any way. If you are “bored” in front of this picture—a likely scenario without knowledge of the event represented—it is not surprising, as the penalty in biological terms for not seeking and receiving stimulation is boredom.

This last idea—that the brain penalizes us for not finding stimulation and, alternately, that it rewards us with pleasure for finding it—needs a concise explanation, as it is germane to current thinking about the brain. Let us say, as a number of scientists currently are, that the basic function of the brain is to generate behavior that is appropriate to our environmental circumstances. That is, the brain enables us to locate healthful environments and engage in healthful behavior. Why? So that our genes (and thus our species) survive into the next generation. For our brain to do this, it must process information constantly and make decisions constantly—many of which, because it operates so efficiently and instinctually, our conscious mind will not ever be aware of. In short, the brain seeks information and processes it, all for our benefit. No information is bad for our ultimate survival; lots of information is good. Our brain naturally recoils at the smell of dung, while it gives us a sense of pleasure upon eating fresh fruit. The reward for healthful behavior is pleasure.

The foregoing skeletal evaluation of Washington Crossing the Delaware is not to be confused with whether or not one should “like” or “dislike” Leutze’s masterpiece in terms of culturally generated and personally held value judgments. It is simply to say that there is less in Leutze’s painting to stimulate the human mind naturally, physiognomically, than in say Morgan Russell’s, Macdonald-Wright’s or Bruce’s, where in the work of all three artists brilliant color and dynamic shapes prevail and insinuate themselves cross-modally into the mind. Again, the reward for seeking and finding stimulation is pleasure. This biological dictum would seem to apply clearly in the realm of the arts, and why not? As in the words of neurologist Semir Zeki: “Art must, after all, obey the laws of the brain.”

Joseph Stella (1877-1946), a contemporary of Russell and Bruce and friend of Macdonald-Wright, likewise sought sensations of movement and speed and evocative color in his epic canvas, Battle of Lights, Coney Island, c. 1913-14 (fig. 6). As biographers and interpreters routinely note, Stella responded to the innovations of Cubism and Futurism, as well as to the cultural vitality of the city itself, New York. To capture in sensual terms the surge of energy that was and is New York, Stella fractured space into numerous small fragments. Simply put, speed and movement—having no physical color values—nonetheless “feel” like bright color and multiple, repeated shapes. This is due to the mind finding natural physical metaphors as it does its job of making sense of the sensible world.

Fig. 6. Joseph Stella (1877-1946), Battle of Lights, Coney Island, about 1913-14, oil on canvas, 39 x 29 1/2”. University of Nebraska–Lincoln, F. M. Hall Collection.
In contrast to the Stella, Joseph Albers’ *Study for the Homage to Square, Early Diary, 1954* (fig. 7), does not feel like movement. With fewer and far more muted colors and with far fewer and more geometric shapes, the Albers evokes stability as opposed to Stella’s chaos and an architectural stillness very different from Stella’s kaleidoscopic fragmentation. However, as different as Albers’ *Square* feels to us, he arrived at his color orchestrations in a way similar to that of Henri, Macdonald-Wright, Russell and Bruce, that is, he did not see himself as a scientist working with color but as an artist working intuitively. Albers wrote in his classic study, *The Interaction of Color*: “This book, therefore, does not follow an academic conception of ‘theory and practice.’ It reverses this order and places practice before theory, which, after all, is the conclusion of practice” and that seeing is coupled “with imagination.” In that same book, Albers created a schematic diagram that equated color combinations (or “chords”) with emotional states.

That Albers’ paintings appear highly controlled and emphatically intellectual (and thus perhaps hyper-rational) does not negate at all his own openness to intuition. In reference to his series on the *Square*, Albers called his use of color “automatic.”

Two years after the Sheldon Memorial Art Gallery’s *Square* was painted, one critic discussed the possible contradictions in Albers’ work: “And under the apparent coolness of Albers’ art lies a warm philosophy. His pictures play with two sets of supposed irreconcilables: order v. freedom and identity v. change. They demonstrate his abiding faith that these things are not irreconcilable at all.”

Lorser Feitelson (1898-1978) likewise did not find order and freedom to be incompatible visual concepts, nor less order and emotion. His *Space Situation—Four Directional Painting* (fig. 8) arranges large, simplified shapes into expressions of clarity and classicism in a manner similar to Albers, but his color expresses boldness and dynamism. Passion, his painting suggests, is not inconsistent with simple geometry. It is a mere and misguided cultural convention to think of math as passionless, or to think of painting as a realm of emotion only.
Fig. 9. Marsden Hartley (1877-1943), Painting Number One, 1913, 1913, oil on canvas 39 3/4 x 31 7/8". University of Nebraska–Lincoln, F. M. Hall Collection.

Marsden Hartley’s Painting Number One, 1913 (fig. 9), is a prime example of a work of art generated by both nature and nurture, that is, by both his own sensual instincts and the cultural milieu within which he worked. Hartley’s pre-World War I work is fraught with symbols relating to his personal life and pro-German sentiment; his familiarity with Kandinsky; and his various modernist enthusiasms. This same work also resounds with natural metaphor: Painting Number One, 1913 evinces both movement and sound beyond its more obvious narrative and symbolic constructions. Just how effective Hartley’s paintings were in evoking sound was evidenced in 1916 when the artist exhibited his Berlin paintings at Alfred Stieglitz’s famed 291 gallery; Georgia O’Keeffe recalled that the effect of the paintings was overwhelming, “like a brass band in a small closet.”

O’Keeffe’s Untitled (Leah), precisely because of its diminutive scale and limitation to one color, is not a particularly rich example of her other color/music paintings such as Blue and Green Music of 1919 (Art Institute of Chicago). However, those same formal qualities—small scale and single color—beg for interpretation by way of natural metaphor: What insights, if any, might be gained by recognizing the mind’s built-in propensity for metaphor? First

Pollitzer in 1917: “He [Alfred Steiglitz] has a new [Stanton Macdonald] Wright and I saw another one—both Synchromist things that are wonderful. Theory plus feeling—They are really great.” Her Untitled (Leah) of 1918 (fig. 10) eschews any type of naturalistic and detailed coloring in favor of a simple yet rhythmic interpretation of the figure as one color, an approach that allows for an immediate, focused and intense recognition of the human form. Picasso once said that he worked his whole life to be able to draw like a child; O’Keeffe arrived there rather quickly.

O’Keeffe’s Untitled (Leah), precisely because of its diminutive scale and limitation to one color, is not a particularly rich example of her other color/music paintings such as Blue and Green Music of 1919 (Art Institute of Chicago). However, those same formal qualities—small scale and single color—beg for interpretation by way of natural metaphor: What insights, if any, might be gained by recognizing the mind’s built-in propensity for metaphor? First

Fig. 10. Georgia O’Keeffe (1887-1986), Untitled (Leah), 1918, watercolor on paper, 15 x 11 1/8". University of Nebraska–Lincoln, gift of an anonymous donor.
and foremost, large size is equated with the ideas
“more” and “louder,” and these are equated funda­
mentally with “strength.” Small equals “less” and
“quiet” and is associated not necessarily with weak­
ness, but certainly not with dominance. We think
of fragility and intimacy. Thus, from the standpoint
of natural metaphor, it is no accident that smaller
images evoke intimacy since large-scale works of
art (think “pyramid”) evoke notions of the grand,
heroic and forceful.

In addition, one color as opposed to a manycolor­
colored canvas is also “quiet.” The combination of
small scale with the use of a single color gives us
the sense of the subdued and private, and this is
due in part to our applying our direct experiences
of sound and space to a work of art. Try this simple
thought experiment: without altering its shape at
all, enlarge O’Keeffe’s figure to a height of 10 feet
and change the soft blue to a mix of red and orange.
The point here is not to belabor the obvious argu­
ment that such changes would result in a different
work of art being created, but rather to show how
dramatic our understanding naturally shifts with
our perception of scale and color.

Numerous other examples of artwork seeking
a color/music analogy exist, again attesting to the
widespread appeal of finding and expressing this
relationship and, more importantly, suggesting that
cross-modality is more than partially-informed
cocktail party banter. Stuart Davis’s (1894-1964)
Study for “Swing Landscape” of 1936 (fig. 11) stems
from the well-documented fact that he was hugely
influenced by ragtime and Jazz and ideas of synco­
pation, improvisation and synesthesia. Like the vast
majority of his American modernist colleagues,
Davis intuited cross-modality as a natural phenom­

Stuart Davis was also a Henri student who
heeded the call to respond to immediate personal
experience. For subject matter, he delved into the
indigenous American scene—its bars, streets, musi­
cians—the stuff of life. Davis’s success in using
color to evoke movement and sound as he experi­
enced them in his environment was captured in a
tribute written upon his death: “To see his paint­
ings is to hear them. They screech and honk with
the aggressive dissonance of city traffic. They have
the staccato beat of a pneumatic drill. The strident
reds, blues, and yellows blare with neon. And the
stray words that seem squiggled from a toothpaste
tube onto his paintings are like the hip, harsh
expletives that slum kids spew into the summer air.
Davis had violence without anger, gaiety without
abandon, and his paintings swing and jump with
such durable joy that it is as if he had dipped his
brush in some eternal fountain of youth.”

Still another who followed on artistic precedence
from Whistler to Kandinsky in his belief in the
musical analogy was Arthur Dove (1880-1946).
On his boat, the “Mona,” he listened to jazz on the
radio or phonograph, looking for visual equiva­
lents to free himself from representation. He found
undulating lines and syncopated rhythms as well
as overlapping rings that mimic sound waves. From
Trees, 1937 (fig. 12), is an example of natural col­
ors and biomorphic shapes extracted from nature
and evidencing the primacy of intuition and emo­
tion leading to the selection of shape and color. As

Fig. 11. Stuart Davis (1892-1964), Study for “Swing Landscape” (Sketch for “Waterfront Forms”), 1936, gouache and traces of
pencil on paper, 19 3/8 x 22”. University of Nebraska—Lincoln, Allocation of the U.S. Government, Federal Art Project of the Works
Progress Administration.
Stephen Westfall wrote, “Dove had a New England Transcendentalist’s ecstatic response to nature.” 28

True enough, but Dove also maximized instinctual responses to nature. Dove indulged, recognized, and extended the energy, abundance and eroticism of nature onto his canvases; swimming around widely in natural metaphor without having to understand—let alone articulate—the phenomenon as such. Modern artists were quite right when they invoked the mystery of one’s inner life and its inscrutable workings—who could have any idea of the infinite complexity of the brain? Currently, scientists willingly admit that we do not know what it is to have a thought. 29 That ought to be a sobering realization to the non-specialist who takes such things for granted.

A final artist to consider here before leaving the sound/color analogy is Walt Kuhn (1877-1949). So prevalent was the recognition of and appreciation for a sound/color analogy, that an interpretive exhibition catalogue on Kuhn’s work was written entirely from this point of view. In his interesting 1927 essay, One Approach to the Art of Walt Kuhn, La Salle Piper recognized that understanding music and its emotional appeal expands our ability to understand Kuhn’s art, and thus art like it. 30 Piper writes intelligently in noting that these two art forms—painting and music—are not exactly the same, that is, paintings are experienced simultaneously while music unfolds in full meaning over time. Emotionally, however, they are analogous. Emotion, vision and hearing, he assumed (as neuroscientists now do, too) work together in information sharing.

Kuhn’s brilliantly colored Apples in Wooden Boat, 1938 (fig. 13), was not painted with any theoretical rules. Like other modernists, he arrived at his color harmonies intuitively. And, like the work of his peers, Kuhn’s still life resonates across sensory modes: it feels warm, it sounds loud, it looks bright and, while emotional responses would of course vary, we feel his Apples are far from sad, but rather are optimistic, perhaps even happy—definitely they register something positive. There is an abundance of information to process in Kuhn’s Apples, which again points out the critical and fundamental job of the brain: to process information and lots of it. Recognizing this function goes a long way in understanding not only cross-modality and natural metaphor, but why it is that bright, colorful and positive images are attractive to a broad audience.

Cognitive neuroscientist Steven Pinker helps us to understand this last point, that is, why it is a colorful and bold painting like Kuhn’s Apples might be more popular than, say, a blank canvas. Expanding on the idea that the mind rewards stimulation and penalizes boredom, Pinker provides us with the following useful thought experiment:

Imagine scooping out the entire scene in front of you, putting it in a giant blender set on LIQUEFY, and pouring the detritus back in front of you. The scene no longer contains any object of interest. Any food, predators, shelter,
hiding places, vantage points, tools, and raw materials have been ground into sludge. And what does it look like? It has no lines, no shapes, no symmetry, and no repetition. It is brown, just like the color you got when you mixed your paints together as a child. It has nothing to look at because it has nothing in it. The thought experiment shows that drabness comes from an environment with nothing to offer, and its opposite, visual pizzazz, comes from an environment that contains objects worth paying attention to. Thus we are designed to be dissatisfied by bleak, featureless scenes and attracted to colorful, patterned ones. We push that pleasure button with vivid artificial colors and patterns.  

In pointing out that the mind comes hard-wired to appreciate color and shape but not a semiotic analysis of the cartoon strip “Peanuts,” Pinker seeks in his studies to answer a simple question: “What is it about the mind that lets people take pleasure in shapes and colors and sounds and jokes and stories and myths?” This information should be of interest to every art historian, critic, connoisseur and collector as well as to the general public, as it may serve to alleviate the feelings of inadequacy felt by some who worry over their taste in art or music (if you like big, colorful motel paintings, it might be at least in part because your mind is prepared to reward your identification of stimulation) and to illuminate and expand the narrow theories of academics who can only discuss ideas and not the sensuous raw material that gave rise to them.  

Early moderns artists, whether in paintings of explosive, fragmented color or of hard-edged geometrical shapes, foregrounded color and shape in their work, and thus appealed directly to the mind’s ongoing search for stimulation. Their work gets our attention in a way not wholly dissimilar to why people like motel art: it presses pleasure buttons. Rich in color and shape, early modern art is ripe to be interpreted cross-modally.  

One might ask why, then, so many people rejected modern art in its time, and why they still do, if in fact modern art is both theoretically pleasurable and stimulating? Most of the answer to that question lies in the realm of nurture, that is, in the realm of culture. Art for most people in the Western world was (and perhaps continues to be) measured against the standard of Greek and Roman classical art, and art of the High Renaissance. Heroic themes presented in virtuosic displays of realism were the basis of “great Art.” However, those same dissenters admired and continue to admire the patterns of fashion design and the geometry of an English garden; the intricacy of an interface floor pattern or the sleek design of a brightly painted car. In one and the same cultural context, modern art was objected to as anti-classical (therefore as irrational) while colorful, pleasing and wholly abstract designs attached to just about anything you can think of were embraced. But physically, in terms of basic brain processing, early modern art and a plaid suit have much in common: they are stimulating and evoke cross-modality before we attach cultural judgements that are learned and not natural to the brain.  

Though an incalculable amount of work remains to be done, we know more now about how the mind works, and that knowledge more than ever seems to impinge on our understanding of art. Science is discovering how enormously metaphorical the mind is: it constantly compares stored models with new outside stimuli, mixing and matching and predicting; it shares outside stimuli among different brain areas yielding different, yet overlapping perceptions. Early modern art, with its emphasis on shape, line and color and the relative absence of narrative, is an ideal starting place to discuss art and how the mind works. Offered here is a hypothesis for continued testing: When viewing works of art, in the absence of cultural/historical information the mind’s processing of natural metaphor serves as the central locus of meaning. With no knowledge of the Revolutionary War, one may get bored in front of the Crossing of the Delaware, whereas no cultural data may be needed to feel jolted by Stella’s Battle of Lights.  

Many an early modern artist, and many a contemporary one, merely wished and wish today to stimulate themselves and the viewer into an awareness of the larger sensory world around them, of the infinite complexity of mind and emotion, of the mysteries of perception, and of the power of engag-
The metaphorical nature of the mind, and the intuitive nature of modern art, may help the average appreciator to realize that his or her innate, intuitive responses to images may in fact be of greater importance than any and all arcane theories of art ever written.

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8. In old models of the mind, reason was thought to be in control and decisions were all made in the cerebral cortex. Now, it seems emotion drives a great deal of the workings of the mind: all incoming stimuli to the brain seems to have some kind of emotional salience attached to them (our brains continually evaluate the environment around us for needs, wants, threats, etc.—indeed, we are never without emotion), even as that information is shared in high-speed, complex ways.
9. On ‘more is up,’ see Lakoff and Johnson, Metaphors: 15-16.
10. This aspect of Henri’s career was first studied in William Innes Homer’s Robert Henri and His Circle (Ithaca and London: Cornell University Press, 1969), pp. 184-189.
11. Homer, Henri: 220.
13. The details of this method were laid down by Macdonald-Wright in his privately printed Treatise on Color of 1924. For purposes of clarity, a brief summary follows. Using the color wheel, with its colors based on the spectrum itself, one chooses a “tonic” color, which will be the basis of that scale. If painting in a major (as opposed to minor) scale, the intervals used in Western music (whole step, whole step, half-step, whole step, whole step, half-step) are the basis of selecting the other colors that will comprise the scale: from the tonic color and moving to the right, skip one color and choose the next, skip another color and choose the next, take the next color, skip another color and choose the next one, repeat twice, then take the next one. So, if one began with red as the tonic color, the scale would be as follows: red, orange, yellow, yellow-green, blue-green, blue-violet and red-violet. These colors comprise the scale of red.
15. In her discussion of Synchromy in Blue-Violet, Marilyn Kushner refers to the “anchor points” as being simply “blue,” even though Russell himself identifies them as blue-violet and bases the title of his painting on this color. On the color wheel, as in nature, blue is not blue-violet. Color is all-important to the Synchromist project, and it is necessary to make distinctions which might seem trifling to a layman, but which were critical to the Synchromists. The scale of blue, that is, with all seven colors, would be substantially different from the scale of blue-violet. Its emotional and psychological meaning would be different, as would the position it would occupy in space: blue-violet being the deepest shadow possible.
20. One currently popular and persuasive school of thought on how the mind works is that of evolutionary psychology. This school rejects the notion that the mind is simply a blank slate written upon by experience alone. According to Leda Cosmides and John Tooby: “Evolutionary psychology provides an alternative framework that is beginning to replace [the ‘blank slate’ model]. On this view, all normal human minds reliably develop a standard collection of reasoning and regulatory circuits that are functionally specialized and, frequently, domain-specific. These circuits organize the way we interpret our experiences, inject certain recurrent concepts and motivation into our mental life, and provide universal frames of meaning that allow us to understand the actions and intentions of others. Beneath the level of surface variability, all humans share certain views and assumptions about the nature of the world and human action by virtue of these universal reasoning circuits.” From Leda Cosmides and John Tooby, “Evolutionary Psychology: A Primer,” 2000, a website locates at (http://www.psych.ucsb.edu/research/cep/primier.html).
29. See, for example, the Oxford Guide to the Mind on consciousness: “Consciousness is both the most obvious and the most mysterious feature of our minds. On the one hand, what could be more certain or manifest to each of us than that he or she is a subject of experience, an enjoyer of perceptions and sensations, a sufferer of pain, an entertainer of ideas, and a conscious deliberator? On the other hand, what in the world can consciousness be?” Daniel C. Dennett, “Consciousness,” in Geoffrey Underwood, ed., Oxford Guide to the Mind (Oxford: Oxford University Press, 2001): 103.
EXHIBITION CHECKLIST:

*Study for Homage to the Square, Early Diary*, 1954
oil on masonite, 15 1/2 x 15 1/2"
N-151, NAA-Thomas C. Woods Memorial

Patrick Henry Bruce (1881–1936)
*Forms*, about 1918
oil and graphite on canvas, 23 1/2 x 28 3/4"
U-510, UNL-Howard S. Wilson Memorial

Ralston Crawford (1906–1978)
*Easthampton Bridge (Bridge at Easthampton)*, 1940
oil on canvas, 16 x 22"
H-954, UNL-F. M. Hall Collection

Stuart Davis (1892–1964)
*Study for Swing Landscape (Sketch for Waterfront Forms)*, 1936
gouache and traces of pencil on paper, 19 3/8 x 22"
WPA-101, UNL-Allocation of the U.S. Government, Federal Art Project of the Works Progress Administration

Charles Demuth (1883–1935)
*Apples*, about 1925
watercolor on paper, 11 3/4 x 18"
H-244, UNL-F. M. Hall Collection

Burgoyne Diller (1906–1965)
*Third Theme Abstraction*, 1940-45
oil on canvas, 20 1/8 x 20 1/8"
N-585, NAA-Nelle Cochrane Woods Memorial

Arthur Dove (1880–1946)
*From Trees*, 1937
oil and tempera on canvas, 15 x 21"
H-395, UNL-F. M. Hall Collection

Lorser Feitelson (1898–1978)
*Black Lines on Red Field*, not dated, about 1949–50
oil on canvas on board, 24 x 30"
H-2864, UNL-Gift to the F. M. Hall Collection from Lorser Feitelson and Helen Lundberg Feitelson Arts Foundation
Marsden Hartley (1877–1943)
*Painting Number One, 1913, 1913*
oil on canvas, 39 3/4 x 31 7/8"
H-39, UNL- F. M. Hall Collection

Robert Henri (1865-1929)
*Night, Fourteenth of July,* about 1895–97
oil on canvas, 32 x 25 3/4"
N-120, NAA-Nelle Cochrane Woods Memorial

Hans Hofmann (American, born Germany, 1880–1966)
*Fruit Bowl,* 1950
oil on canvas, 29 7/8 x 38"
N-72, NAA-Nebraska Art Association Collection

Walt Kuhn (1877–1949)
*Apples in Wooden Boat,* 1938
oil on canvas, 25 x 30"
H-203, UNL- F. M. Hall Collection

Stanton Macdonald-Wright (1890–1973)
*Dragon Forms,* 1926
oil on panel, 26 1/4 x 15 1/4"
N-685, NAA-Bequest of Herbert Schmidt, Centennial Committee, the Art of Politics, and Joseph Chowning

George L. K. Morris (1905–1975)
*Indians Hunting #1,* 1934
oil on board, painted wood veneer, 16 x 19 7/8"
U-4318, UNL-Olga N. Sheldon Acquisition Trust

Georgia O'Keeffe (1887–1986)
*Blue Nude (Leah),* about 1917
watercolor on paper, 15 x 11 1/8"
U-4423, UNL-Anonymous donor

Morgan Russell (1886–1953)
*Synchromy No. 2, To Light from Synchromy in Blue-Violet Quartet,* 1912
oil on canvas mounted on board, 13 x 9 5/8"
U-4998, UNL-Gift of F. M. Hall, Alexander Liberman, Olga N. Sheldon, Lester A. Danielson, and Bertha Schaefer by exchange

Edward Steichen (American, born Luxembourg, 1879–1973)
*Shrouded Figure in Moonlight,* 1905
oil on canvas, 24 x 25 1/8"
H-1483, UNL- F. M. Hall Collection

Joseph Stella (American, born Italy, 1877–1946)
*Battle of Lights, Coney Island,* about 1913–14
oil on canvas, 39 x 29 1/2
H-639, UNL- F. M. Hall Collection
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Cover: Morgan Russell (1886-1953), Synchromy No. 2, To Light from Symphony in Blue Violet Quartet, 1912, oil on canvas mounted on board, 13 x 9 5/8". University of Nebraska–Lincoln, gift from F. M. Hall, Alexander Liberman, Olga N. Sheldon, Lester A. Danielson and Bertha Schaefer by exchange.