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Form and Meaning in Art

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I distinguish two styles of perception: one is pragmatic and action-oriented, the other is aesthetic and affect-oriented. I outline a cognitive-semiotic theory of conceptual organization and semantic integration in general. Both the meaning structures found in art and the surplus meanings of things, their "connotations," are based on nonintegrated structures that tend to be integrated on higher levels of mental architecture. The emphatic splitting of experienced situational meaning into two mutually mapping mental spaces—a content space and an expression space—which is characteristic of the phenomenology of works of art and other aesthetically perceived objects, is due to this phenomenon of unintegrated surplus structures. I discuss examples from art criticism and from paintings by Monet and Magritte. I propose an epistemological view of the relationship between the cognitive approach to art and the art-historical approach and show their complementary status. In fact, autonomous art must be historical—it must elaborate ever-changing styles—because pragmatic conceptualizations would otherwise absorb the authority it necessarily generates.

Aesthetic vs. Pragmatic Perception: The Phenomenology
of Form

Most people probably know the strange and involuntary shift in everyday experience of things, problems, and scenarios that can

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suddenly make even the most trivial and ordinary “contents of consciousness” appear to us as unique and rare phenomena, as autonomous *formal* objects. Our experiences of *form*, unfolding in abstract space and time, are distinct from our experiences of concerns and states of affairs in the ordinary world and associated with various special aspects of subjectivity: religious affect, extreme mental stress or mild depression, erotic arousal, or perceptions of art. In all of these cases, we experience a sensorily achieved presence of “beauty”—in fact, an “aesthetic” presence, although the frame is widely variable. In the specific case of perceptions of art, the experience is intentionally enhanced by the aesthetic artifact—an object elaborated under special conditions as a sign of the artist’s formal attention. Artists are able to voluntarily achieve, and intentionally communicate, formal perceptions. This is what they are trying to do when they are “at work,” configuring the sharply framed expressions—poems, dramas, musical performances, paintings, and so on—that we call works of art. These objects are given special treatment by our cognitive system. The mind of our species allows us both an ordinary, *pragmatic* register of extensive, unbounded (weakly framed), content-oriented perception and conceptualization, and, additionally and occasionally, this extraordinary, *aesthetic* register of intensive, bounded (strongly framed), and form-oriented hyper-perception that we experience par excellence in art.

In art, and perhaps even in some nonartistic experiences of beauty, the shift from pragmatic to formal perception has a series of immediate effects:

1. It endows the expressive source with a hyper-concrete mode of sensory presence, even as it creates a hyper-abstract mode of conceptual processing. This combination makes the expressive act an instance of *symbolization*.¹
2. It converts the reception of the expressive source into an intensely active (or interactive) *construction* or “close reading”—a search for a “symbolic” meaning, an abstract message of some sort, supposedly built into and therefore present in the sensorily accessible source. Because this meaning is experienced as inherent in form as such, it is in principle experienced as accessible to the constructive interpreter of form.
3. It creates a transcendent, affective communal atmosphere, an intersubjective feeling of unity, intentionally oriented toward the shared unique instant in which the *epiphanic* presence of this meaning occurs. Again, this meaning (of each work of art or performance) is conveyed by the formal structure of the source, and in its presence we are touched and moved, as if by some “spirit.”

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4. Finally, the perceptual shift affects the “self” of performers and perceivers, momentarily creating a euphoric, even ecstatic, feeling of *disembodiment* or fading of the personal “I.”

These four phenomenological aspects of formal perception—*symbolization*, *construction*, *epiphany*, and *disembodiment*—are all relevant as we seek to understand the role of art in human cognition and cultural evolution. This essay will outline some basic aspects of a theoretical and analytical approach to the issue, operating within the framework of a naturalistic project of research on meaning and human cognition.

A Neuro-Semantic “Economy” of Aesthetic Perception

When consciousness is awake and aware, our organization of what we will call *meaning* is a process that occurs on many levels simultaneously. On a scale extending from the most dense, massive, and “concrete” sensations to the most transparent and “abstract” notional conceptualizations, we may distinguish a series of strata interrelated by subprocesses of integration. There are at least five such strata that the “mind’s eye” can focus on, beginning with sensory inputs and proceeding “upward” toward abstract thinking and feeling (cf. Brandt 2003, chap. 10).

Thus, we may stipulate that (1) ongoing *sensation of forms* in different modalities (the visual, the auditory, the tactile, the proprioceptive) feeds (2) ongoing *perception* of “gestalted” and categorized *objects*, and that these feed into (3) an ongoing *apperception* of *situations*. The latter further informs (4) our trans-situational thinking, or what we may call *evaluative reflection*. And beyond this stratum, informed by it, lies (5) a rather contemplative and always affective last level of “abstraction,” which is also—paradoxically, since it re-concretizes—an embodied and *action-oriented* translation of antecedent contents that constitutes our general *feeling*, including our emotional and thymic background states (“moods”). The general dynamics of this mental architecture, or of similar architectural models that we might discuss, appear to be based on two principles:

- All strata are simultaneously active, both neurally and mentally. This is not to say that they depend on one another in a hierarchical or vertical fashion; rather, they “run in parallel,” so to speak, and can be either connected or disconnected. Since our attention can focus on any level of activity, we can deliberately “pay attention to” more concrete or more abstract contents (meanings), or even to both simultaneously, as in aesthetic perception.

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When we communicate, our pathways of shared focus, or styles of attention, are the central concerns of our intersubjective attunement.²

- In this model, there is no linear “assembly line” of integration from one stratum to another.³ Instead, there is a dynamic process of subsumption which is directly related to attention.⁴ “Paying attention” to some ongoing sensation, perception, and so on, on stratum n causes it to be subsumed “under” a new integrative event on stratum $n + 1$.

The nonstrict overlaying of attentional foci by which semantic integration occurs means that our minds are capable of attuning plastically to each other, attending jointly to a single event, on some (but not necessarily all) strata. It also means that our multi-attentional minds can hold “private” ideas and understandings and “public” (socially shared) conceptions at the same time, or hold multiple versions of an event, idea, situation, side by side. This is why, on the stratum of apperceptions, our minds can even hold entire networks of *mental spaces* (Fauconnier and Turner 2002; Brandt 2004) simultaneously and can creatively achieve and share operations of mapping, blending, and compression between these local imaginary wholes.

Even more important, the overlaying of attentional foci means that the process of integrating input material does not entirely consume it. A basic *binding*—a Gestalt process integrating sensations into a perception of “something” present—makes the input material momentarily unavailable for alternative integrations or “readings”: such qualia will then “belong to” the

A MODEL OF MENTAL ARCHITECTURE

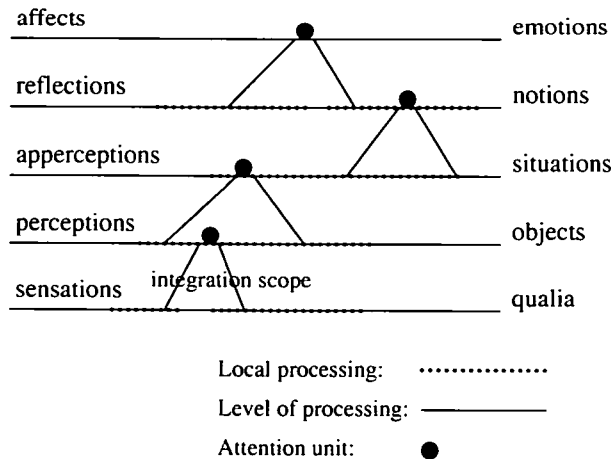


FIGURE 9.1. The semiotics of mental architecture.

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things they are perceived as properties of ("orange" belongs to oranges, etc.). But even when the material is thus neutralized, it is in principle not entirely absorbed and erased by the integration. It stays "re-readable." The same principle may be at work on the next level, in the integration, or binding, of perceptions into situational-episodic apperceptions, and again at the level of evaluative reflections—for example, narrative, descriptive, and argumentative constructions. The latter are selected and reinforced as the imaginative contents of our feelings—the component that determines the *meaning* of our emotional states. All of these results of integration tend to stay flexible, "negotiable," revisable, open to change, unless the subject suffers from the *rigor mentis* characteristic of certain mental illnesses.⁵

The economy of mental construction is one of casual, short-term consumption and production, counteracted by long-term memory. It is furthermore, in this view, a "sloppy" economy, in which many early products are never used on later strata at all. Material that is processed and organized on one stratum may thus exceed or escape further integrative processing altogether. Such material may just be left here and there in the architecture, abandoned wherever it happens to be, in a state of complexity corresponding to the stratum on which it was processed. On any level, there may be a certain amount of surplus material, an *excess* of structured contents that the mental brain leaves unsubsumed, uninterpreted. This material may subsist on its own, and then either vanish or be recuperated by new integrating bindings. Or it may migrate from one construction to another, without ever "belonging to" any particular superordinate construction.⁶

My phenomenological point, then, is the following. Excess structure is experienced as

1. particularly salient and challenging, enigmatic or intriguing, calling for completion and determination: ambiguous, interrogative, even obsessive;
2. *aesthetically* relevant—that is, associated with a particular value called "beauty."

Excess structure is experienced in nature (from sunset skies and sand grooves to the ribs of leaves, the "songs" of birds, and other patterns of layered symmetries) and culturally in two predominant forms of human behavior: eroticism and expressive communication. Both of the latter can be experienced as variably "graceful"; and this aesthetic dimension is always relevant to our everyday evaluation of their manifestations.

Excess structure on level n is by definition uninterpreted on the $n + 1$ 'th level, but may then activate recuperative integration on levels $n + 2$, $n + 3$...

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In the work of art, excess structure is intentionally built into the input and is therefore likely to occur in sensory perception, from which it triggers partial sketches of higher-order integration—not on the next step, in categorial perception, but in apperception, in reflection, and most prominently in feeling. This is what we might take to be the fundamental occurrence in art and artful behavior. Art is any expressive or instrumental doing that deliberately creates excess structure. While “beauty” otherwise happens spontaneously in human life, it is intentionally *made* to happen in this genre of communication, which seems coextensive with the entire time and space of human civilization. Art is omnipresent in the human life-world, as is its contrary, the smooth functional integration of forms into useful objects, serving pragmatic purposes in our common life.

Excess structure that is stably recuperated on higher levels constitutes what we call *signs*.⁷ Insofar as it stays unrecuperated, or unstably recuperated, it remains instead what we call *form*. The experience of art is therefore and by definition formal.

In the scale and scope of human cultural evolution, the semiotic recuperation of artistic form as significant may even be the main origin of *symbolization*.⁸ However that may be, I would like to illustrate the neuro-phenomenological views presented here by some examples from painting and critical discourse on pictorial art.

The Cognitive Construction of Painting

On Colors, Brushstrokes, and Meaning

The American art critic Jed Perl writes the following in an article on painters Barnett Newman, Joan Mitchell, and Edwin Dickinson: “In *Vir Heroicus Sublimis*, the heat of the red is curiously counteracted or cooled by the smoothness of the paint-handling. Each quality or characteristic that Newman brings to the painting takes on an animistic power: the power of roughness or smoothness or thickness or thinness or brownness or redness or whiteness or orangeness” (Perl 2002, 28). Here, the events on the canvas are reportedly experienced as “taking on,” and as either controlling or being controlled by, states or events in a noncanvas reality: “heat,” “animistic power.” The text continues:

We respond to the orange and brown in *Onement I*, to the reds in *Vir Heroicus Sublimis*, and to the grayish-blue and off-white stripes on black in *The Promise* not as color orchestrations but as existential situations, as the inescapable nature of the painting, in much the way

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that we think of a certain person as being blue-eyed or brown-eyed, a blond or a brunette. These paintings have a meaning that is encased in their most immediate and evident characteristics. (Perl 2002, 28)

Perceptions are reportedly processed in terms of "existential situations," and percepts are personalized. Likewise:

Mitchell's brushstrokes, both early and late, have a turning-back-on-themselves kind of stinging rococo power, and her finest paintings, composed of what can seem to be the infinite variety of such brushstrokes, are all elaborate flourish and steely accent. In the early work, this animated and elegant tracery sometimes has a sooty grayness that suggests a certain New York state of mind, a mentality that is at once excitable, pleasure-seeking, and world-weary. (Perl 2002, 29)

The brushstrokes, again, have "power" and can suggest a certain geographically determined "state of mind." "In Mitchell's paintings, each separate part, each stroke or group of strokes, functions with the vigor of muscle and bone and nerve, and together they give the work of art its pushing-out-from-within sense of well-being" (Perl 2002, 30). Strokes evoke concrete bodily "vigor," and they convey a "sense of well-being" that seems to proceed from within. Finally:

When Dickinson goes from working very tightly to working very loosely, I am left feeling that it is the *very*, the hyperbole itself, that really matters to him. In his drawings, which are among the high points of his art, he is carried along by the weight of the lines, whether they are the knife-edge ones or the soft, barely there ones. Dickinson is a remarkable renderer of the truths of this world, but people and places also seem to recede under the elegance of that line. (Perl 2002, 31)

There are Dickinson's lines, and there are the "people and places" that they make recede: two connected mental spaces, sometimes apparently merging phenomenologically into a strange space of strokes and ocean: "Dickinson can be at his most unruly and hyperbolic in those casual seascapes of his, in which the foaming Atlantic is reduced to a howl or growl of painterly strokes" (Perl 2002, 31). In this discourse, the strokes apparently *are* what they show, and can therefore "howl or growl."

Another critic, Peter Schjeldahl, writing on Lucian Freud, notes the following:

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Hardly a painterly prodigy, as his clotted early canvases confirm, Freud taught himself to break up planes of faces and bodies into patches of color, Cézanne fashion, and to knit them together with close-toned hues and continuous textures of juicy brushwork. He achieved a distinctive, notably tactile way of modelling. It's as if his figures were brought into being by cumulative soft and rough touches—a caress here, a grab there. (Schjeldahl 2002, 72)

The Freudian brush can do amazing things to the figurative imagery involved:

No painter alive is more exciting in areas a few inches square, where Freud's brush may nuzzle into the hollow of a hip or cradle the exact weight of a sagging breast. This is more than a matter of skill, because the action symbolically unites hand, eye, mind, and sexual feeling. Too grossly frank to be conventionally erotic, the nakedness of Freud's subjects nonetheless evokes states of crude, indiscriminate arousal: mere lust. (Schjeldahl 2002, 72)

The nuzzling of the brush is an event effortlessly taking place in two realities or spaces at once—in the painting of the canvas and in a sexual situation.

In a comment on an exhibition at the National Gallery, "Fabric of Vision: Dress and Drapery in Painting," the critic Peter Campbell writes:

Drapery provides a good opportunity for a one-to-one relationship between brush strokes and the thing represented: the painter is never more free from constraint—and never more in danger of being flash—than when using a single stroke to show the crease in a sleeve or a rumpled twist of bedspread. In Fragonard's *A Young Girl on Her Bed, Making Her Dog Dance* it is not just the naughtiness of the subject, but the bustle of the brushwork that makes you smile. (Campbell 2002, 28)

The bustle of the brushwork—its indiscreet, daring caresses of the lovely subject—makes the critic smile: the blending of two realities, where one represents the other, triggers the humoristic affects of his mind.

We could easily go on, but these examples of the critical sensibility will suffice for our purpose. Meaning is manifestly assigned to what is happening on the canvas as much as it is drawn from what is being represented by the same canvas, and these two aspects tend to merge into a paradoxical experience of two-dimensional (2-D) expression and three-dimensional (3-D) content as aspects of one and the same event. To paint is to *touch* the things you see and show. Pictorial vision is tactile. A semantic miracle.

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A Mental Space Network for Painting: Monet

In each of our examples,⁹ two mental spaces blend. In one of them, the critic imagines a painter applying strokes on his canvas as intentional signs of something which is thereafter to be presented to someone. In the other space, there is a scene, a landscape, a motif or subject of some sort, and no painter.

Strictly speaking, there is, of course, a critic writing about such a “painting”; we are his readers and can go to the exhibitions he is commenting on. In terms of semiotic networks of mental spaces, this situation—where we have an exhibition, some critics, ourselves, and the physical objects called paintings—is our *base space*, from which we and the critics are now setting up the *presentation space* (painter, canvas, brushes, strokes on a two-dimensional surface) and the *reference space* (three-dimensional motif: scene, view, landscape, figure). The strokes in the presentation space are *mapped* onto the figurative events in the reference space—some strokes thereby becoming particularly fascinating. Furthermore, we have noticed the semantic existence of a *blended space* where strokes can “nuzzle” the motif, and where presentative events can thus paradoxically and humorously “be” other, referentially present events that they are not. The critic knows, of course, and knows that we know, that this blending occurs in an imaginary *as-if* mode, as a counterfactual experience. Something other than factuality must therefore make it relevant; and we know from general cultural education that the appearances of this counterfactual mode in the critic’s discourse are the insignia of the work’s aesthetic value. Aesthetic quality is the mode in which the viewer’s attention is made to travel effortlessly between the contents of two mental spaces, the presentation space and the reference space. It is, further, the mode in which these contents are selectively brought together in a counterfactual blend and (almost) fused, in such a way that the *proximal* presence of the canvas establishes an almost bodily contact with the *distal* motif. (I am speaking here in terms of the rhetorical figure *hypotyposis*.) The vividness, the energy, and the intensity experienced through this process appear to be decisive for the subsequent aesthetic verdict. The blend must therefore additionally be somehow stabilized, independently cognized, and schematized by the relevance-making dynamics of attention. In our examples, the idea of a desiring painter whose feelings of love or something of that sort make *him* interpret a stroke as a caress, make *him* (the Model Author, as Umberto Eco would say) fuse the distal and the proximal in his erotic hallucination, transfigures the painting and produces the strong impact of an “intense thing,” so to speak, a *res intensa*.¹⁰

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Let us consider a classic instance of this universal semantic network of pictorial art: Claude Monet's early modernist paintings of reflected light—for example, his *Sunrise (Marine)*, 1873; and later his vast Giverny project, including the famous series of water lilies floating on his pond. The Orangerie set (Paris, 1916–1923) of very late works is a particularly clear case. (See <http://theartfulmind.stanford.edu> for images of these works.)

The vertical (distal) figures of *Sunrise* contrast with the horizontal (proximal) reflections on the water, especially at the bottom of the picture; the strokes are much more “stroky” in the horizontal dimension than in the vertical. Strokes and reflections in the water, though they are given in separate mental spaces, locally map and match rather directly. Thus, the two surfaces, canvas and water level, are juxtaposed (or, rather, mentally superimposed), and the two dimensions meet phenomenologically in a blended representation where the surface of the water and that of the painting itself tend to fuse into an unrestful, tilting plane. The viewer is drawn toward a horizontal conceptualization both by the water motif and by the reflective strokes, but simultaneously toward a vertical conceptualization by the standard representational “window” in which the shown objects, the boats and their masts, would rise parallel to the “opening”—that is, the canvas. The phenomenological result is that the shimmering light is rendered tactile, in a sort of *photo-haptic synesthesia*.¹¹

In the *Water Lilies* series, the horizontal flowers float on the invisible surface of the pond and contrast with the vertical reflections of the surrounding vegetation. This, again, creates a crossing of lines; but also, and more importantly, a conflict in the stroke qualities referring to the two properties of the smooth, transparent water, whose surface both reflects the vegetation and bears the lilies. The superposition and the crossing of vertical vegetation and horizontal water lilies are all we know (see, cognize) of this surface. The result is that the motif appears to fall forward onto the canvas and then to tilt back into its windowed space. We get once more the intensely vivid impression of standing in front of a “pond of paint” tilting between 2-D and 3-D. The physical dimensions of the *Water Lilies* canvases (cf. the reconstruction of the Orangerie walls at the Museum of Modern Art in New York) contribute to the vertiginous feeling of spatial dissolution that these paintings can produce.

A “cool” version of the same semantic mystery is given by René Magritte in his well-known *Tentative de l'impossible* (1928), showing a scene of painting: the nude stands in front of the painter, who touches her shoulder with the brush precisely where her left arm is going to be when he finishes his brushwork.¹² (See <http://theartfulmind.stanford.edu> for an image of this

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work.) The general structure of this network of mental spaces is summarized by figure 9.2.

The assumption, then, would be that all artistic painting, regardless of what else it achieves, offers this tension between its presentation and its reference, thereby creating the blend that our aesthetic sensitivity captures in its desire-based schema of attentional dynamics. Or, to put the matter differently, we are momentarily captured by the tilting fusion of our input spaces, and then experience an expression counterfactually coinciding with its content, a form merging with its meaning. The impact of this *res intensa* on the human mind is emotional. Art is crucial to emotional communication in the human world, and all celebrations and rituals make use of it, publicly as well as privately, from ceremonies of warfare to declarations of love. We may gain some clues to the production of this effect if we combine the outlined mental space analysis with the model of mental architecture proposed above.

Theoretically, our mental-space phenomenology unfolds on the apperceptual stratum of the architecture.¹³ Consequently, the content of the input spaces is situational. One of these input spaces draws our attention to *form*, since it contains the imagined artistic activity that created the expressive events on the canvas.¹⁴ In this input space, we focus our attention (supposedly following the artist's own intentional direction¹⁵) on sensory information of

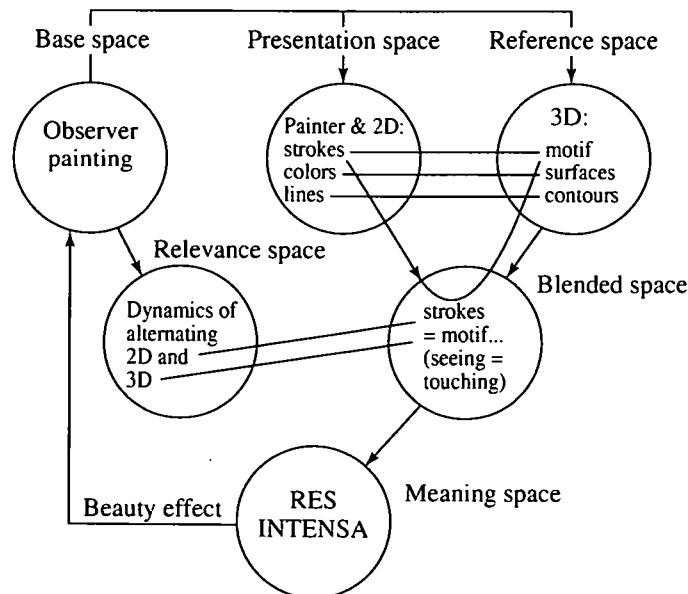


FIGURE 9.2. Mental space network.

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every accessible kind. The other input space shows the scene, the landscape, the configuration of things that moved the painter's representational hand and mind. The theme of the caressing brush points to a possible determinant of this content (the "motif"). Not only is there a "mapping" going on, connecting structures in presentation space and in reference space; there is also a hyper-intentional relation of *passion* linking presentation to reference. To *paint* something is also in principle, according to human minds' cognitive schematization, to *love* it, and motifs are selected as objects of erotic passion and as the circumstances of such passion.¹⁶ This erotic attitude toward the content of the referential input, built into the network as what foregrounds its presentation, directs our attention to the *idealization* of the content. So, while one input (presentation) orients our attention "downward," toward form, the other (reference) lets it wander "upward," toward "feeling," so that we obtain an attentional split—comparable to what happens cognitively in a real erotic experience, which is as highly "sensual" as it is highly "spiritual." The blend then overcomes or "resolves" this split by offering us a unified artful thing, the personlike, vivid, animated object, the work of art, a symbolic version of a beloved being: the opus, *res intensa*.

So What?

In this view, beauty resides in the tension between two mental spaces, a presentation and a reference, a tension maintained by the phenomenological impossibility of subordinating one of these to the other. When this conjuncture is obtained, it triggers an acute awareness both of the sensory forms of things and of their emotional meaning—a momentary polarization of attention, a split or crisis that can affect our relations to things, persons, and thoughts very deeply.

In the scope of human evolution, the early cultural presence of artistry in the visual register, and apparently also in the auditory (cf. the early appearance of musical instruments) and the motor registers (dance), may have been of great importance to the emergence of symbolization and abstraction in general. The artistic version of the iconic double-input space network leads our minds toward intentional 2-D graphics as a "scriptural" possibility—that is, the idea of intentionally and systematically producing formal events, thereby calling upon abstract forces to accomplish tasks (cf. spelling and spell-casting) in relation to the idealized referential contents.

If this hypothesis is true, then mental space semantics is an archaic semantic format which gave rise to art—and, through aesthetic semantics, perhaps to primitive mathematics (metrics, numbering, set orderings, clas-

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sification, calculus) and eventually to verbal language. In the latter, pairings of form and meaning, supported only by a gestural syntax—the “shadow” image of the situational scenario, with its acts, agents, and case morphology—constitute grammars and build up wildly unrealistic, delirious, or poetic utterances as easily as they do concrete accounts of states of affairs.

But if the millennia of human cultural evolution provide the basic temporal perspective necessary to understand what art is about, what would be the role of art history, the historical development of dramatically distinct styles in painting? At a minimum, we will have to consider the dynamic historicity of manners, styles, norms, preferences, and critical discourses intimately related to art, and try to understand their “ontology”: if beauty itself is trans-historical, what is it that makes artists modify their ways of pursuing it?

One factor that apparently drives artists unrelentingly is what we might call *stabilization*: any singular, beautiful, beautifully unstable work of art must inspire imitators, create epigonism, and thus give rise to a host of copies and still more predictable variations. Since forms are immaterial and can be repeated (assuming a certain level of skill), any successful formal manifestation will *spread* and create conformity, at least in the fields framed by expressive genres (stabilized as form types “for” certain meaning types). When a formal whole produces this cultural effect, it must at the end *signify* this effect. It then comes to signify and mean its own field of pragmatic influence and can no longer confine the viewer’s attention to the pure, dynamic immanence of its singular aesthetic operation. Only outside of its dense history—typically centuries later, or continents away—can it again operate in this manner, and thus become “timeless” and “universal.” The acclaimed and revered work and its author can never circumvent this process; they can never avoid the semiotic consumption caused by the stylistic radiation of beautiful forms and its unavoidable social effects: authority, influence, power. The only possible means of escape is *change*. Invention of new, risky concepts and forms is necessary in order to keep forms “power-free.” Interestingly, this inventive necessity is extremely demanding. Invention will almost never occur unless the artist, having scrutinized his world of meaning (including his own cognitive functionings), knows the events and discourses of his time, all sorts of extreme states of mind, all available sources of sensory variations and spiritual specialties, and the sensitivities displayed in the work of his colleagues and ancestors. It takes learning, curiosity, intelligence, ambition, creative maladaptation, stubbornness, perhaps even contempt, and probably a borderline personality, to be a creative artist in this historical sense. Without such persons, we would simply not have art. We must therefore be charitable with their sometimes (in fact, mostly) discomfiting personae. Artists are cognitive

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researchers in the wild. It would perhaps be a scientific advantage if cognitive researchers were also artists themselves. Anyway, the study of the psychology of aesthetic sensibility, or “psycho-aesthetics,” is a dimension of cognitive science that future research will need to look closely into.

A Brief Epistemology of Neuroaesthetic Research

What, Why, How?

In neuroaesthetics, as in cognitive research more generally, we have to work out and coordinate three parallel accounts¹⁷ in order to obtain a genuine understanding. In short, we have to answer three questions: *what* are we talking about, *how* does it function, and *why* is it there? Although we seldom know enough to accomplish this triple task in a definitive way, it is a reasonable “regulatory idea,” to borrow Emmanuel Kant’s phrase, to consider at least these three basic dimensions of the reality we wish to explore (and, thus, three epistemological dimensions of the knowledge we hope to obtain). Indeed, we will not really have obtained any knowledge of the phenomenon at all unless we have acknowledged and at least tentatively answered the three questions. I would like, finally, to elaborate on this particular triad.

The English philosopher Barry Smith reminds us that humans live in a *mesoscopic* spatial world, the one that language is apparently made for, but above which there is a *macroscopic* world and below which we find a *microscopic* world. The two latter worlds are accessible to us only through special symbolic devices, observational prostheses, and notional hypotheses. By contrast, the mesoscopic world is our life-world, our natural one-to-one phenomenology. The other two are “constructed” worlds referred to by our abstract, mythological, and occasionally scientific knowledge, and things taking place there are understood to cause and influence—and to be caused and influenced by—most of what is going on in the mesoscopic province of reality.

We may, then, find it equally interesting to say that we live in a “mesoscopic”¹⁸ *time*, in which narrative structures are inherently relevant and crucial to experiential reality. The “historical” time scale is mesoscopic in this sense. Art *history* is thus a huge narrative account of art, artists, institutions, conflicts, debates, markets, dramas, and intrigues running through centuries and sometimes even millennia. Historical art is our “what.” But above historical time there is a macroscopic time—namely, *evolutionary* time—which we can access only indirectly by using prostheses and hypotheses. The evolution of art is a slow process running for perhaps 100,000 years; we are

trying to understand its causes. This is the macroscopic “why” of the mesoscopic “what.” And below it there is a microscopic time scale, corresponding to the millisecond-short neural processes of perception and mental organization of cognition in art (as of everything else in human behavior). This is the microscopic “how” of the “what.” The discipline of art *critique* that elaborates particular studies and analyses of single works of art—examining the micro-compositional relations of form and meaning in *singular* works of art as objects perceived and conceived (in short, experienced)—operates in this microscopic time scale, as does the neuroaesthetic analysis of, or theorizing about, the on-line processes of perceptual and mental structuring involved in art perception. But, as before, we may assume that the macro-facts of cultural evolution and the micro-facts of neural processing may explain some basic aspects, at least, of what is going on in the historical “mesoscopy” of art. Finally, the evolutionary causes should, of course, be related to the neuro-cognitive organizations. The “why” and the “how,” the macro- and the micro-scopy of the matter, should be and remain in contact.¹⁹

For instance, the cultural *macro*-evolution of neural *micro*-capacities for intense hyper-perception or hesitant, inconclusive²⁰ hypo-perception—for conceiving objects (especially artifacts) both as things and as signs—may be the over- and underlying condition that makes interpretation and social appreciation of works of art, and then of other social creations, possible in general.

Transcendence

Although causal-physical stimuli and intentional information are both apparently processed by the same sensory neurons, the latter is precategorized as expressive. This means that it prepares the experiencer (stratum 1) for *redundant* occurrences and *elliptic* patterns that the perceiver (stratum 2) attempts to compensate for by re-equilibrating, through processes of reduction and completion. The cognizer (stratum 3) must then interact intentionally with the source. Aesthetic communication in a broad sense—arts and crafts, design, advertisement, humor, politeness—is based on such interaction, a collaboration in which the sender (the “maker,” the “crafter”) is deliberately both redundant and elliptic, and the receiver (experiencer, interpreter, user) is constantly exposed to both hyper- and hypo-perception to some extent and is supposed to respond to the sender by suggestions leading to re-equilibration. But in the genre of communication we call artistic, the exposure to redundancy and ellipsis is *maximized* and impossible to neutralize by re-equilibration. This condition creates in the perceiver the affective state from which art

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derives its status—namely, the impression of being momentarily in contact with things outside the triviality of spatial and temporal mesoscopy.

Accounts of the meaning of works of art universally refer to such “transcendent” perspectives. This is why we easily come to feel, and artists and even critics often claim, that art is sacred and should not be touched by profane science at all. Beauty should stay “intact,” and we should not even attempt to understand it. I have two main counterarguments to this claim. First, it turns out, experimentally, that analysis does not destroy the aesthetic force of a work of art, and that, if an analysis is solid, it even enhances it; neither does weak critical work harm its object, as much as it harms the critic. Second, if one day humans abandoned all explicit attempts at understanding and evaluating art, generically and in its singularities, in order only to admire and revere its manifestations, then both the theory and history of art would soon cease to exist, and art itself would eventually disappear from the human reality. But such an eventuality is difficult to imagine.

NOTES

1. The process connects distinct levels of meaning, letting one provide mental access to the other. So, one can be said to *express* or *signify* the other. But the mental distance between signifier and signified is greater than in the case of images and indices, since the signifying item is typically a form perceived in only one sensory modality, whereas the signified item is a multimodal semantic formation of a kind which is difficult to describe: an “attitude to existence,” a “metaphysical” style of thinking and feeling, etc. The resulting sign relation is of the order of symbols, and its process can be called an act of symbolization: an experiential “relation” between a hyper-concrete signifier and a hyper-abstract signified. In the aesthetic experience, this relation is still ephemeral, unstable, momentary, but when stabilization (stable coding) occurs, we get genuinely typical symbols—as in gesture, sign language, writing, numerical symbolization, etc.

2. We might say that rhetorics and the engineering of shared experience in general are essentially a matter of “grammar of attention”—I take this expression from the title of a forthcoming volume by Todd Oakley.

3. This absence of a univocal “assembly line” of informational integration is only possible because there are distinct strata and because these are relatively autonomous. Note that stratification is not modularity; it is not assumed that a stratum is a separately instantiated neuronal “plant.”

4. Cf. Donald (2001, chap. 7.3), “The cultural relevance of a multifocal, multi-layered consciousness.”

5. People spontaneously evaluate each other’s mental health by checking the plasticity of bindings: this is probably one of the important functions of humor—the lack of which is always an alarm signal.

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6. Maybe Sigmund Freud's analysis could be reassessed as such an "excess logic."

7. Again: the constitutive gap between signifiers and signifieds arises because signifiers are recuperated excess structure; gestures are thus bodily movements that exceed immediate functional acts.

8. This hypothesis opposes the view of symbolization as based mainly upon verbal language; it considers symbolic activity—such as games and all sorts of calculus—as a type of cognition *sui generis*.

9. The artist and any beholder will in principle, I claim, cognize the painting in exactly the same way as these critics.

10. In Cartesian terms, the content of the reference space could be seen as belonging to *res extensa*—namely, the physically existing or possible motif—and the content of the presentation space as belonging to *res cogitans* (the painter intending his strokes, and the strokes as intentional signs). The blended representation then activates an attentional dynamics of "figural animation," so to speak, that (in base space) lets us experience the work as matter loaded with spirit, an "inspired" thing, *res intensa*.

11. The relation between art and synesthesia is being examined by current neuroaesthetics; cf. Ramachandran and Hubbard (2001). However, the semantic phenomenon I am describing appears to me as far too abstract to be likely to directly rely on neural cross-wirings of the kind suggested by these authors.

12. Cf. Everaert-Desmedt 1999, 228, and my text in this volume, "Magritte: le théâtre robuste de la variation imaginaire."

13. Since forms and objects are not situations, they cannot constitute mental spaces on their own.

14. The formal events on the canvas must be apperceived as traces of intentional work and the display of skill. They cannot be understood as simple effects of accidental causes, because the base space determines the input spaces as built for decoding a pictorial sign. If we erased base space determinations from our theoretical horizon, the present analysis would fall apart entirely.

15. Our individual attention irresistibly follows the other's attention, as manifested by forms that express it.

16. The founder of the neuroaesthetic project, the neuroscientist Semir Zeki, insists rightly on this erotic dimension of art (Zeki 2002). But what about critical art, showing scenes of horror? The late Goya? Picasso's *Guernica*? We might need to extend the notion of "passion" to include the negative side of awe, the "awful," the terrible, and the feelings of despair and rage.

17. This is also, as I understand it, V. S. Ramachandran's "neuro-epistemological" claim (presentation and discussion, Center for Advanced Study in the Behavioral Sciences, Stanford, 2002).

19. Discourses in which the macro- and the micro-scopies do not establish any contact are typically mythological, nonscientific, arbitrary creations; here is probably a sound epistemological criterion of scientificity in discourse.

20. Cf. Semir Zeki's emphasis (this volume) on ambivalence and inconclusiveness in art.

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