

WHAT'S MAGIC GOT TO DO WITH IT? WHAT THE COMPUTATIONAL "NEW MIND" CAN LEARN FROM THE COMBINATORIAL "OLD MIND"

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Perhaps one of the most intriguing items for the new study of consciousness to consider is what, so far, appears not to have been considered. Why is this burgeoning interdisciplinary area of research, intent on discovering the relation of the brain to human awareness, not multidisciplinary enough? Or, to state the question another way, what light might a humanities-based imagist shed on the binding problem perplexing analytical philosophers, cognitive scientists, computer programmers, neurophysiologists or neuroanatomists, linguists, and both "strong" and "weak" AI proponents? In this paper, I want to wrestle with two conundrums. The first was identified by Francis Crick (among others) as central to providing a systematic account of higher-order consciousness. He spoke of the enigma of how different stimuli to different portions of the brain become married, as if by enchantment, to produce a single, unified somatic experience of an object within an existential subject. The second puzzle emerges from problems of assessing the role played by qualia in determining a sense of self.

Briefly, I want to recuperate the sophisticated workings of analogy as a cross-cortical model for mental combination, for the fitting of bits and pieces of experience together. In this postmodern age of difference, the subtle varieties of likeness and the delicate art of making connections bridging distant elements has been lost. The Cubist *portait-still-lives* of Braque, Gris, and Picasso, as Pierre Reverdy remarked, show how subjectivity exists in interaction with a world characterized by spatial flux not rigid geometries.¹ The enfolding of an inner self, the four walls of a room, and the outside world demonstrates the French poet's conviction that consciousness comes into being just as objects come into being : because of their relations. Just as a mental and bodily engagement moves detached things closer to one another, we become aware of awareness only in the drive toward attaining connectedness, during that expenditure of psychic and physical energy forcing disparate things to converge. The in-betweenness of assemblage, those body-object amalgams composed of tossed scraps and found objects, reveal the stunning spectrum of relo-

1. Jennifer Pap, "Entre quatre murs": Reverdy, Cubism, and the Space of Still Life," *Word & Image*. 12 (April-June 1996), 181.

catable patterns available to human subjectivity.

Collage, as the process of transforming ephemera by cutting and pasting it into momentarily stable configurations, is, therefore, a particularly effective technique for capturing the chimera of consciousness in action. Originating with the Cubists and expanded by the Dadaists and Surrealists, this "gluing" of transitory detritus extends into montage, film editing and, now, computer manipulation. Compounding incongruous parts and provisionally joining farfetched elements in space and time break duality-establishing boundaries, whether in art or in science.² Like the cross-kingdom fusions fabricated by Berkeley's David Ow, welding together the genetic substance of a firefly and tobacco to form phosphorescent plants, artists like Hannah Hoch merged, substituted, and mutated aspects of one species of imagery into another.

More recently, Suzanne Anker's installation piece, *Zoosemiotics* (1993), used a large glass vessel filled with water set in the middle of a room to magnify silvery sculptural simulations of animal chromosomes distributed on the wall in random, mostly circular order. The abstract mirroring performed by the beaker selectively coalesced the X-shape of the chromosomes (found in one specific cell), changing them into miniature bodies dancing on the curved sides of the globe and swimming within the transparent liquid. This optical compression, anthropomorphization, and transformation of linguistic grids and codes into cavorting figures offers a striking parallel to the selective fashioning of graffiti-like experience into a coherent self by the mind. Similarly, in Orshi Drozdik's process piece, *Erythrocytes* (1988), the stationing of a convex lens mounted on a rod and sited in front of a sea of sculptured cells invites individual viewers to unify, personalize, and internalize an anonymous body's microphenomena. I am suggesting, then, that the brain's "binding" capacity, no less than gene splicing or blood chemistry, can be externalized for scrutiny precisely in those aesthetic situations when it abruptly juxtaposes or tightly links variegated experiences.

Crick's formulation of the "binding problem" restates the great epistemological riddle of abstraction. Here, I must venture into a short excursus. In the second chapter of *Body Criticism*, called "Abstracting," argued that there were two major strands of cognitive compression or selective epitomization running through western thought : one, a purist, minimalist, so-to-speak Mies van der Rohean "modernist" view, that saw the mind as dissecting sensations to arrive at a geometric Absolute ; and a second, prismatic, synthetic, Frank Gehryean, if you will, "post-modernist" view, that envisioned the mind stitching chaotic appearances together, placing novel findings in contact with existing knowledge so that the old is simul-

2. Suzanne Anker, *Gene Culture : Molecular Metaphor in Visual Art*. exh. cat.(New York : Plaza Gallery, 1994), p.2.

taneously constructed and deconstructed by the new. It may help to imagine such mental sorting and combining of contrary visual information as a process akin to Henry James' differential refraction of uniquely marred personae through the translucent sides of a golden bowl. That beautiful, but subtly cracked, crystal goblet served the novelist as a single, but shattering, focalizing object capable of revealing his motley characters' more or less flawed temperaments, their healthy or unhealthy consciousness. This Janus-face of abstraction-as both quintessence and chromatics-captures the brain's preferential mechanism in action, able to eliminate some neuronal groups while strengthening others and so allowing us to learn over time.

Box art (from Marcel Duchamp's *Boîte-en-Valise* to Lucas Samaras' glass, fur, or needle-lined coffers and compartments), represents an intensification of collage practices. It, too, divides all physical existence into the hard-edged container and the always-escaping stream of the contained.³ Resembling the brain in the fact that an amazing, even paradoxical, variety of things can be stored, conserved, memorialized, but, above all, gathered and transmuted within its confines, the box is the epitome of a malleable universe finely adjusted to the contradictory emotions of its owner.

The enigmatic vitrine constructions of Joseph Cornell, in particular, capture the dream-like nature of human consciousness : ever present and ever in the past. In Cornell's phrase, these "toys for mathematicians" enshrining different levels of imagery, precipitate mental voyages flowing backward and forward in time and across space. At once deeply personal to the artist, these haunting environments also touch museum goers by provoking a flow of explicit and implicit memories.⁴ Indifferent or fleeting cast-offs-like vanishing sensations-are alchemically metamorphosed into cherished, enduring objects for every man and woman. These perishables preserved within a sheltering receptacle do for vision what the madeleine did for fragrance. We become aware of a transparent wine glass, an agate marble, a Victorian doll, a sky chart, or the blued-over engraving of a Medici portrait before we think it. One can say of these volatile, qualia-laden reliquaries what Proust claimed for his tea-steeped biscuit : "But when from a long-distant past nothing subsists still the smell and taste of things remain poised a long time, ready to remind us in the tiny and almost impalpable drop of their essence, of the vast structure of recollection."

The olfactory epithelium and the limbic system, that oldest part of the brain from an evolutionary standpoint, remind us that receptor cells fire messages which, in turn, transmit signals flooding us with love, desire, sorrow, joy, and rare. The

3. Walter Hopps, "Boxes," *Art International*. 6111/2 (March 20, 1964), 38.

4. Daniel Schacter, *Searching for Memory : The Brain, the Mind, and the Past* (New York : Basic Books, 1996).

confounding ways in which scents, savors, sights, and sounds manage, in Kipling's words, to make our "heart-strings crack," raises the other pressing question the new mind researchers, no matter their camp, agree requires resolution. How does the brain produce a cohesive consciousness from physical substances that waft, caress, vacillate, shimmer, or drift outside of us and yet touch and alter us internally? A key, and much-disputed, factor in the process of cognitive binding is precisely the mysterious role played by qualia.

No one demonstrated better than Joseph Cornell that molding the welter of the passions into manifestly organized compositions is one of the greatest and most haunting achievements of the visual arts. In Taglioni's *Jewel Casket* (1940), he created a blue velvet-lined wooden box which ceremonially presents a crystal necklace elegantly draped above a rising tide of glass cubes. One of a series of Homages to the Romantic Ballet, it bears an inscription in Cornell's hand affixed to the inside lid. "On a moonlit night in the winter of 1835 the carriage of Marie Taglioni was halted by a Russian highway man, and that enchanting creature commanded to dance for this audience of one on a panther's skin spread over the snow beneath the stars. From this actuality arose the legend that to keep alive the memory of this adventure so precious to her, Taglioni formed the habit of placing a piece of artificial ice in her jewel casket or dressing table where, melting among the sparking stones, there was evoked a hint of the atmosphere of the starlit heavens over the ice-covered landscape."⁵

By giving palpable shape to intense emotions, Cornell unforgettably turned indescribable intimacies into publicly shareable analogies. This age-old search for material equivalences to match the qualitative feel of elusive inner states fueled the pursuit of color correspondences (a peculiarly Romantic quest engaging Goethe to Delacroix). It continues to drive research into how people are affected by distinctive odors (an old question, underlying the development of the perfumer's blending skill as well as early-modern medical therapies directed against airborne contagion). It remains evident in the desire to find visual or verbal parallels for the gamut of tactile pressures the body can undergo (think of Diderot's struggle to inventory Chardin's veiling glazes and textured strokes or the Marquis de Sade's encyclopedic itemization of erotic palpations). And it lives on when we try to articulate the gustatory pleasures (famously classified by Brillat-Savarin) arising from rolling delicious flavors around the tongue and over the palate.

Historically, such hard-to-systematize sensations posed, and continue to pose, a major difficulty for many scientists and philosophers : spanning Isaac Newton, the

5. Alex Mogelon and Norman Laliberte, *Art in Boxes* (New York, Cincinnati, Toronto, London, Melbourne : Van Nostrand Reinhold Company, 1974), p.84.

British empiricists, up to and including Gerald Edelman. Presumably, since no two people experience these secondary qualities or characteristics (as Shaftesbury notably termed them) exactly alike, how do such variable subjective conditions fit into a general theory of consciousness? This isomorphist quandary-taking similarity to mean exact copy (and here, I think, an art historical perspective on the range of gradations possible between an original and a replica is especially pertinent)—has led Daniel Dennett, for one, to deny the existence of inner mental states altogether. His is a slightly softer version of Paul and Patricia Churchland's robotic model of the brain as computer or information processor, a position that reduces that organ to rapid-fire neuronal operations performed in parallel. Ironically, in spite of the reliance by numerous brain researchers on conspicuous connective metaphors such as "nets" and "maps" to describe perceptual categorization this computational theory does not satisfactorily explain how vision, anatomical structure, the nervous system, and a shifting external milieu interact to form a sustaining and sustained psychic architecture that is also fluidly developmental.

Modern philosophy from Descartes forward has quantified certainty, that discursive activity of mathematics asserting that nothing has been introduced by the actual operation of the intellect that it cannot fully identify. In other words, the claim is that nothing is being added or subtracted, equated or changed without the mind's active warrant that no mistake either has occurred or is possible. To ensure the maintenance of exact identity, mathematical vigilance of this sort admits only a small set of valid transformations. Discursive certainty, as opposed to the proportional adjustments typical of analogy, is a matter of stating specifically how things are staying the same and precisely how they are being altered.⁶ The Cartesian legacy to the computational philosophy of mind, I believe, is thus two-fold. First, it always raises doubts in the face of ambiguity, i.e., when things are not clear and distinct. This wariness, together with the application of an anatomizing method, continues even, when by their very nature (like synaesthetic qualia), the phenomena in question cannot be clear and distinct both because they are nuanced and because they permeate one another. Second, a debilitating Pyrrhonian skepticism accompanies the realization that the contents of the mind have somehow become transformed and that this shift cannot be completely identified and wholly articulated through measurement. To obviate the resulting corrosive doubt, the measurements became so fine-grained that they "nanotechnologize" the phenomena observed, dissecting complex, engulfing experiences into fragmented microminiatures.

I offer as a counter-example to such militant quantitative rationalism the

6. Carl Page, "Symbolic Mathematics and the Intellect Militant : Modern Philosophy's Revolutionary," *Journal of the History of Ideas*, 57 (April 1996), p.238.

recent work of Bill Viola. One of the leading artists working in video and sound installations, he uses innovative multimedia technologies to explore sense perception as an avenue to embodied self-awareness. Created in 1994, *Stations* comprises five channels of video projection accompanied by strangely unnerving underwater sounds. Five cloth screens are suspended from the ceiling of the unlit gallery. Large slabs of polished black granite are placed flat on the floor touching the screens. Five gently swaying figures, submerged head downward, have their vertical reflections individually righted on the highly polished, tombstone-like horizontal surfaces. At random intervals, the projected bodies glide out of the frame leaving the vacated space shadowy and silent. Suddenly the male and female figures take turns in plunging back into view with a brilliant splash of noise and flare of light that momentarily blazes in the gloom.

In describing *Stations*, the artist commented that "an initial surface appearance of eerie, serene beauty resides over a deeper disturbing aspect of muted violence and disorder, with the disrooted, isolated, free-floating bodies evoking an eternal state between dream and death."⁷ In an earlier piece, *Reflecting Pool* (1977-1980), various figures were not drowned, but hovered, in mid-air above the concentric ripples of a deep, mirroring spring concealed within a lush forest. Like the magical artifacts trapped within Cornell's nocturnal boxes, Viola's tranquil or agitated dark water contemplatively envelops the beholder, drawing her experientially downward into the normally unseen well of consciousness. Significantly, video plastically models mutable and nebulous sensations in a way that Artificial Intelligence systems or smart machines do not. As a "softer," unfurling technology, it constitutes a participatory medium coterminous with our own dissolving imaginings, wants, sensations of mortality and eternity. The monumental scale, wavy motion, and elemental rhythm of *Station's* nudes—spanning youth to age—fuse in uncanny synchronization with the growth, change, and endings of the viewer's inner life.

Not just the present but the past also offers an untapped repertory of sophisticated imaging strategies demonstrating the complexities of physically, mentally, emotionally, and spiritually connecting as we dive beneath our own and other's surfaces. This topic, as far as I can tell, remains largely unaddressed in the social scientific and scientific literature on consciousness with the exception of Lakoff and Johnson's richly suggestive work on categorization and metaphor. A fuller understanding of art's ability to create harmony out of life's discontinuities would help to account for those as yet non-computed characteristics of the mind: namely, how it is able to bring distant things into contiguity and the mutuality, not identity, of human feelings.

7. Bill Viola. *Stations* (1994), exh. handout (Los Angeles: Lannan Foundation, 10 July to 22 December, 1996).

I want to add three further reflections to current discussions about the new mind. First consciousness appears to be inherently visual. Fundamentally about representation, it involves developing a visualizable self-image over time, permitting us to see ourselves as both standing apart from and inside our surroundings. The coherence associated with self-awareness-lasting for longer or shorter periods-becomes evident not so much by invoking the Cartesian language of automata, pulleys, and now wiring, transistors, and software, but in the production of fugitive or lasting patterns of relations. In that sense, consciousness becomes real only insofar as consciousness is desired. The practical production of a unified and graspable display of self results from the selective correlation of many different representations distributed over wide-spread areas of the brain.

Appositely, this palpably connective neurological language has a symbolic counterpart in the talismanic thaumaturgy used by Greco-Egyptian temple priests to invoke the ineffable oneness of the divine presence through a divisible material object. What might appear an improbable comparison, in reality, embeds the enigma of not-so cerebral bonding within a Darwinian competitive universe of animal appetites and the carnal biology of natural selection. Simultaneously, the startling correlations made by the "new mind" can also be situated within an ancient procreative and sexualized system of divination, of antithetical powers and reproductive potencies springing from physical attraction.

I am conjuring up the neoplatonic and gnostic cosmos of magical correspondences, the oracular realm of spellbinding sympathies in which all things possess vertical and horizontal linkages arcing across the three kingdoms of nature. Synesius, Iamblichus, Proclus, and much of the late Roman world also looked for visible portents connecting the corporeal to the incorporeal domain. Mediating omens were thought to bring about liaisons between tangible objects-stone, a gem, a piece of bone-and a higher, intangible psychic dimension. Not surprisingly, since there is something mysterious about the art of healing. The alliance between magic and medicine has a long history in the West. During the Renaissance, Marsilio Ficino's (1433-1499) translation of the just-discovered *Corpus Hermeticum*, as well as works by Plotinus, propagated the view that the wise physician could control disease by directing astral influences into the sick body.⁸

Talismans, amulets, charms enhanced his receptivity of planetary influences and so helped uncover elaborate sympathies existing between the terrestrial and celestial zones. This interconnected universe of correspondences remained in place until severely compromised by the derision of the Enlightenment. Jaucourt, in his

8. Martha Baldwin, "Abracadabra or Magic in Medicine," in *Abracadabra: The Magic of Medicine*. exh. cat.(London : Wellcome Institute for the History of Medicine, 1996), pp.12-13.

medical articles written for Diderot's and D'Alembert's *Encyclopédie*, mocked the doctrine of pictorial signatures and its attendant belief in the binding capacity of incantatory artifacts joining the greater and lesser worlds, the exterior and the interior realms.

While easy to ridicule from a rationalist standpoint, the theory of sympathies and antipathies was fundamentally concerned to explain how dramatically different sensory phenomena could be collected, recollected, and internalized as part of one's own noetic substance. Finding or inventing a similar kinship between visible sign and invisible or remote meaning determined the abrupt juxtapositions typical of a Baroque cabinet of curiosities, the segmented, miniature-lined compartments of a Ching dynasty treasure chest, and the imaginative leaps from the ordinary to the extraordinary elicited by a Joseph Cornell cosmological box. Paradoxically, it also characterizes the computationalists' identification (not approximating resemblance) of brain with consciousness, their desire for a direct, unmediated link between an originating material organ and the epiphanic presence of an elusive, singular awareness.

This brings me to my second point. It seems more fruitful to situate the binding problem within the context of philosophical and rhetorical analogy than quantitative certainty. Alternately praised or vilified from Plato, to Aquinas, to Mill, and Wittgenstein, analogy seems a more apt concept for getting at the complexly designed ways in which first-person phenomena hang together than the computer-derived "interface." The fashionability of the latter term already presupposes that the brain functions like a special sort of apparatus. An interface has been defined as "the collection of components which connects the analogue and digital computers to each other and controls and converts the data." As early as 1837, however, the adjective "interfacial" emerged in crystallography texts to describe the surface energy, tension, polarization, and absorption occurring between two faces of a crystal.⁹ One may well ask, What is the appropriateness for brain research of importing a word, alluding either to the intercommunication between two or more pieces of dead equipment or between the several planes of inert minerals, into its organic precincts? Video plastically models mutable and nebulous primal sensations in a way that Artificial Intelligence systems or smart machines do not. As a "softer," unfurling technology, it constitutes a participatory medium that intersects with our own dissolving imaginings, wants, sensations of mortality and eternity. The monumental scale, undulating motion, and elemental rhythm of Station's nudes-spanning youth to age—fuse in uncanny synchronization with the ebbings and eddyings of the beholder's inner life.

9. Ivan Illich, "Guarding the Eye in the Age of Show," *Pes*, 23 (Autumn 1995), 47.

Not just the present but the past, too, offers an untapped repertory of sophisticated imaging strategies demonstrating the complexities of physically, mentally, emotionally, and spiritually connecting as we rise or sink beneath our own and other's surfaces. Image-schemas or Gestalts, according to George Lakoff, transcend the mere collection of their disparate parts. These structured wholes-like Viola's holistic installation pieces which are the joint products of the artist's and beholder's active configuration-arise from the fitting of a passing sensation to a categorizable representation.¹¹ A fuller understanding of art's perennial capacity to create junctures between automatic, unconscious perceptions and conscious thought could help account for the as yet non-computed subjective characteristics of the mind. a creative function akin to sexual reproduction in that a third, new and unifying individual arises from two distinct and separate beings. Ironically, then, this supposedly outmoded realm of corporeally-conceived liaisons in more biologically up-to-date that the current model of awareness that has it resulting from the asexual merger of cybernetic hardware. The joining of differences by discovering or generating similarities-whether at the macro-or micro-level-even coincides better with the fundamental premise of evolutionary theory that the earth's species, including Homo sapiens, arose through divergence from a common ancestor. Darwin's explanation that diversity was wrought by natural selection over millions of years is based not only on a principle for separating, but for assimilating very different kinds of organisms.

This emergent dimension of analogy prevents the "new mind" from being absolutely severed from the "old mind." Specifically, it succeeds in illuminating John Searle's view of sentience as a set of intricate interlocking sensations that almost pragmatically arise in the brain in response to the interactions of its many parts. It also lends support to Roger Penrose's thesis that our understanding exceeds any computer because a computer only uses algorithms (that is, sets of precise rules that specify a sequence of actions to be taken in order to solve a problem or prove a proposition). This position has been much attacked because, it is argued, computational cognitive science does not require that people comprehend the lengthy and incredibly complicated programs employed to solve cognitive problems. But the issue (and here I also differ with Penrose) is not whether we do or do not understand the rules we use to arrive at mathematical (his example) or other conclusions but, rather, how we can be made to see or become aware of the somatic operations we undergo while we are in the process of experiencing them. As I have been sug-

10. Elizabeth Legge, "Thirteen Ways of Looking at a Virgin : Frandis Picabia's La Sainte Vierge," *Word & Image*, 12 (April-June, 1996), 227. Also see excellent essay on early twentieth-century gendering of machines by Caroline A. Jones, "The Sex of the Machine : Mechanized Bodies in Early Modernism," from the conference *Histories of Science/Histories of Art*, Session on The Body (November 4, 1995).

gesting, making these intricate and intuitive procedures visible constitutes the entire history of art. Moreover, by taking us back up the Darwinian ladder of evolution to the associative origins of human thought, analogy offers a non-algorithmic technique for binding the known to the unknown, expressed in terms of similarities and antitheses. Learning, in this developmental scheme, does not arise from a chain of reasoning but from a dynamic back and forth motion among choices that embrace the entire universe in their scope.

The limitations of algorithms for ascertaining what and how we know leads to my third point, also concerning the operations of analogy and its pertinence for understanding brain functioning. It remains questionable whether scientists can simulate on computers, the way they simulate tornados, the suppleness of encompassing cognitive processes. Indeed, is the machine-ideal of replication, copy, and digital reproduction adequate for the mystery of self-imaging that goes on inside us? The joining impulses of analogy, on the other hand, enact in another medium and in an external space, those leaps and springs of the mind that elude computational modelling yet lie at the heart of human awareness. According to the analogical system, the mind acts like spreading fingers grasping and sweeping together various things. The aesthetic counterpart to this tangible reaching for affinities, while acknowledging divergences, is verisimilar illusion. Unlike the manufacture of delusively exact simulations, viewer-adjusted illusion arises from the painter's skill in juxtaposing the chromatic manifold. Seen from a specific vantage point or from a particular perspective, such approximating compositions momentarily persuade the beholder that different sorts of phenomena can physically coexist within an imaginative or mentalized realm.

Baroque poetics-steeped in the neoplatonic and gnostic doctrine of emanations, founded on a graduated descent from the macrocosm to the microcosm and sloping uninterruptedly downward from the One to the many-is characterized by just such a search for vertical and horizontal junctures suturing all portions of the cosmos. It is the Piranesian capriccio predicated on analogy, therefore, which most nearly resembles the unpredictable, stag-like jumps of neurons, leaping along global reentry pathways, darting in and out of memory, fleeing towards and away from categories.

Most recently, Umberto Eco satirized the early-modern "excess of wonder" that led an Agrippa of Nettesheim or an Athanasius Kircher into engaging in manic processes of Hermetic semiosis encouraging any similarity to be exploited.¹¹ But unlike the interpretive extremes typical of postmodern deconstructionism, the classical theory of analogy does not claim that, for the healthy mind, everything means

11. Umberto Eco, *The Limits of Interpretation* (Bloomington, Ind.: Indiana University Press, 1995).

almost anything or necessarily possesses a similarity to everything else. Besides, and contra Eco, analogy has something specific to add to the electronic computing revolution and to the so-called death of linear thinking.¹² The computer's non-sequential capacity to arrange data first in this way, and then in that, has an important precursor in Leibniz's *ars combinatoria*. This hieroglyphics of manipulatable characters was simultaneously an analogical method for spurring mental invention and a parallel processing model of abstracting powers of intelligence demonstrating that human beings can think about more than one thing at a time.

To conclude : my point has been two-fold. Historical examples showing the brain at work practically instantiate both the durable and mutable processes of human cognition in ways that the new computational philosophy of consciousness-couched in terms of classifier systems, algorithms, and neural networks-has rendered opaque to ordinary comprehension. More significantly, these elaborate compositions also reveal what the computer cannot, that is, the ongoing ritual of conscious and unconscious elaboration itself. Thus a Baroque cabinet of curiosities, like an English landscape garden, is not merely a secret museum and an idiosyncratic receptacle for seducing a private audience, but its sensory array of precious fragments, freestanding ruins, ceremonial devices, and cult artifacts concretely enacts the juxtapositive impulses of the intellect. While forging links always occurs within a given cultural milieu, it also transcends the limits of any particular environment to exhibit the designs by which the mind generally creates affinities. I have been proposing uses for the past, then so that people will not blindly trust hidden or automated manoeuvres they cannot possibly understand without the assistance of a commonsense analogy linking neurophysiology to life situations.

Far from positing an indeterminate and limitless relativism, appropriate analogy encourages us to accept the fit between two disparate things only if the second thing follows from the first based on prior experience. By establishing geometrical relations of proportionality, equivalency, and nuanced degrees of resemblance among heterogeneous objects, it permits the comparability of not just individual, but of human, patterns of awareness and action. Instead of insisting on a literal isomorphism between the brain's nanoproceses and anatomized qualia-which does not do justice to the larger, holistic intertwining of ideas with affect-analogy places these unlike phenomena (receptor cells and felt experiences) into relation. As currently defined, the heart of the problem of consciousness lies in the flagrant contrast or clash between organ and awareness. How does one satisfactorily reconcile the paradox of a disembodied brain as scientific instrument and conglomerate of dissected processes with the everyday ambiguities, unfixed meanings, enchainning and

12. James Bailey, *After Thought. The Computer Challenge to Intelligence* (New York : Basic Books, 1996).

mingling of displacements, transformations, compressions, and hidden affinities we somatically experience as sentience?

Art, I have been suggesting, assists in locating a point of contact between a juxtapositive mass of precisely firing neurons and our cloudy inner atmosphere. It pictures both the hardwiring in compositional action as well as the perplexing weather within, enabling us to visually analogize a concordance between matter and thought. Every work of art consists of parts that are modified or even inverted by the context into which they are placed. Collage, assemblage, and grotesques, especially, display contradictions in a kind of double exposure on their surfaces forcing us to see the arbitrariness of the copula and the magnitude of the required reconciliation. Revitalizing forgotten, or if remembered, despised analogy, then, might help us discover not only how the mind seeks out and connects linear with non-linear arrangements, or manages to synthesize the vast quantities of data with which we are increasingly inundated but how, time and again, it binds our shifting, compound selves into a single self in moments of consciousness.