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A very astute student from a nearby institution explained to me recently that neuroscience was not to be trusted—after all, phrenology was quite popular in its time. Some of us are skeptical about the contribution research from the behavioral sciences might make to our understanding of art and mind. When it comes to neuroscience, this skepticism can be blindingly strong. This always surprises me. The data of the sciences are, well, just that, data—information that may or may not stand as evidence in support of some theory or another.

Questions about the utility of neuroscience to discussions of art and aesthetics are just that—questions about its utility. I see no obvious principled reason to dismiss this class of evidence a priori. The range of concepts associated with our experience and understanding of art are notoriously slippery. If an understanding of the biological basis of our judgments and experiences could provide some leverage in pinning them down, this should be a welcome addition. John Anderson made a similar suggestion about the mental imagery debate—when behavioral evidence does not settle the matter among competing theories in psychology, one place to look for a solution is in constraints set by the biological structure of the system on the etiology of the target psychological processes (John R. Anderson, “Arguments Concerning Representations for Mental Imagery,” *Psychological Review*, 85[4] [1978]: 271).

Of course, this does not settle the matter of the meaningfulness of evidence from neuroscience for philosophy of art a priori (synthetic or otherwise). But no one would have expected this to be the case. Folks do not establish the relevance of experimental evidence in advance of collecting it. Rather, they carefully set out the rationale for a hypothesis by reviewing past theories, models, and results, and then venture forth to see how things turn out. Of course, folks are not quite the existentialists this story makes them out to be. A lot of time is spent beating the pavement before les jeux sont faits. Still, it is always an open question in any particular case whether the evidence collected will end up supporting the hypothesis.

Anjan Chatterjee’s book develops a two-stage hypothesis about the utility of neuroscience to our understanding of art and aesthetics: neuroscience can explain the how of aesthetics (the way that aesthetic judgments and preferences are embodied in the anatomy of mind), and evolution can explain the why of aesthetics (the reasons we have come to value the objects of our aesthetic preferences) (p. xv). The book is a clear, comprehensive, and readily accessible primer in empirical aesthetics. It provides a clear window on what neuroscientists interested in art and aesthetics are up to. It delivers a clear and accessible introduction to evolutionary theories of art.

And, perhaps most importantly, it establishes a clear distinction between experimental research in neuroscience of art and what has come to be known in the popular press as neuroaesthetics. Chatterjee defines the latter as a “descriptive science of art” that draws (often anecdotal) parallels between general models and results in neuroscience and artistic practices. Descriptive neuroscience can be suggestive, but it does not employ the hypothesis-testing form constitutive of the scientific method. “Experimental science of art,” in contrast, involves the careful testing of well worked-out hypotheses using large samples of experimental participants. Chatterjee’s treatment of this distinction in the book is even handed, but it is clear where his preferences lie (and he has argued elsewhere for the superior virtues of the experimental approach).

Chatterjee starts the reader off with an observation: when queried, the average folk are likely to identify art with aesthetics and aesthetics with the concept of beauty. So, setting aside the avant-garde artworks and practices that have come to take up the bulk of our theorizing about art in the last century and a half or so, he gives pride of place in the book to a discussion of beauty and aesthetic...
pleasure. He does not equate art with beauty or aesthetic pleasure. Rather, he argues that the aesthetic is most commonly associated with a shared, universal capacity for an experience of beauty and that the general folk concept of “art” is equated (at least anthropologically) with the pleasures of beauty. The implication is that we can learn something about art by studying the evolution of the neural underpinnings of our preferences for those objects, events, and abstract concepts we categorize as beautiful.

Chatterjee eloquently summarizes his position in the closing pages of the book, “If beauty is a mongrel, then art is a chimera. . . . When free, we relax into art. We are better off for it” (p. 185). Why is beauty a mongrel? Why is art a chimera? What does it mean to relax into art? We can begin with hoodoos. Hoodoos are tall spires of rock capped by a hard stone found in places like Bryce Canyon, Utah. Here’s the trick: the impossible, off-balance, cantilevered geometry of hoodoos appears to require some element of design. But in reality it is just an accident of erosion and blind luck. Nature selects the tough stuff of resistant materials as erosion culls its softer sedimentary cousins. Where the distribution of dense pockets of sedimentary rock and hard stones happened to correlate in the appropriate alignment, a hoodoo materialized. Likewise, selection pressure favors stouter traits and more rugged behaviors. Evolutionary erosion over the long play of generations culls genes that code for traits and behaviors that do not foster fitness. There is no principled rule that governs these processes. Rather, natural selection is driven by a complex interplay of organisms, their behaviors, and environmental contingencies.

Patterned behaviors drive organisms in different directions in the fitness landscape—or maximize/minimize their fitness relative to an environment. Preferences guide behaviors. The preferences we have inherited over time reflect the hodgepodge of behavioral strategies that happen to have sufficed for us to survive the environmental contingencies of our ancestral past. Chatterjee argues that this hodgepodge of preferences manifests itself as our concept of natural beauty. The ragtag class of objects and events that fall within its purview, I suppose we might call them beauty hoodoos, are not bound by any underlying formally unified structure. Beauty is a mongrel. By way of illustration, Chatterjee discusses the origins, composition, similarities, and differences among our beauty hoodoos for facial and bodily preferences, landscapes, and mathematical proportions.

We have an instinct for natural beauty—at least as Chatterjee defines it. An instinct is a behavioral adaptation that evolved because it gave ancestors an advantage when dealing with local aspects of their current environments. Judgments of beauty are grounded in preferences derived from adaptive instincts. Environments change, so these preferences need not any longer be so closely tied to fitness. Nonetheless they are reflections of adaptations that were. But Chatterjee does not think art is like this. There is no art instinct on his account. The story he wants to tell is loosely derived from Morris Weitz’s anti-essentialism: art is a by-product of revolutionary creativity within which a thousand flowers are given the opportunity to bloom. However, this kind of variance is not what we would expect to find in the natural evolutionary landscape. There dense rock and hard stones of hoodoos survive. Risky experiments and flights of fancy get washed away with the spring freshet. Variance is the engine that drives evolutionary progress. But selection pressure weeds out the genetic mutations, steering behaviors toward uniformity—a process evolutionary biologists call fixation. Nonetheless, when selection pressure relaxes, and behavioral restrictions on survival ease, genetic and phenotypic variety blossoms.

Chatterjee uses the case of the Bengalese finch to illustrate how the relaxation of selection pressure might allow the variety of art to emerge from a range of adaptations. The Bengalese finch is a Japanese domestic bird bred in captivity to produce offspring with a wide variety of colorful feathers. As domesticated birds, the songs of the of the Bengalese finch are no longer relevant to their reproductive success. However, interestingly, they have become more complex, variable, and unpredictable than the songs of the white-rumped munia from which they evolved. As selection pressures relax, behavior is free to drift and creativity thrives. Art, Chatterjee argues, is like birdsong. It is shaped by the dynamics of selection and relaxation, alternately sculpted by environmental pressures and social dynamics—here I take it that social dynamics refers to the reproductive success of novel behaviors in a less demanding environment. So, art is a chimera because, unlike the pleasure we take in the variety of beauty hoodoos, there is no evolutionary etiology we can point to to explain its emergence. Rather, art in all of its variety emerges from a grab bag of sources as an artifact of the relaxation of selection pressures in modern society.

There is an easy plausibility to the tale Chatterjee tells about art and beauty. However, I think there are some important questions that need to be asked. First and foremost is an issue that is already part of a hackneyed debate about neuroaesthetics. Chatterjee prioritizes the pleasures of beauty in his discussion. This is a stumbling block. This concept does not play a significant role in contemporary discussions of art and aesthetics. But, more importantly, Chatterjee argues that he has borrowed an eighteenth-century notion of disinterestedness that has been passed down to us from Leibniz through Kant. To be precise, this
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The notion of beauty is defined as the experience of uniformity amidst variety or as a direct intuition of the holistic form of a sensory manifold independent of any judgment—or conceptualization—of what it represents for the perceiver. But if this is the conception of beauty Chatterjee was aiming for, there is a step missing in his argument. How does the disparate range of unrelated, particular adaptive preferences he has identified morph into the universal formalist notion of natural beauty he claims to identify with? Then again, if beauty truly is a mongrel, perhaps this is not the definition he wants. There are hedonistic variants that might have served him better.

Chatterjee identifies his evolutionary discussion of art as a third way, as an alternative to approaches that treat art as either an instinct with adaptive value or a nonadaptive evolutionary by-product. He argues that we lack a single, unified art instinct. Rather, a grab bag of adaptive instincts collected over time—a messy collection of capacities and abilities we might call artish hoodoo—trigger art-like behaviors. When selection pressure relaxes, the tight control these instincts exert over behavior relaxes as well. Local environmental constraints then foster a creative explosion of potentially adaptive strategies that allow artistic propensities to be fully expressed (p. 185). So we do not have an art instinct. But art is not a free-floating nonadaptive evolutionary by-product either. Rather, it is the variable expression of an integrated set of adaptive instincts under the control of a particular type of local environmental conditions, e.g., the range of adaptive preferences around which our concept of beauty has accreted, our imaginative capacity to simulate the possible outcomes of behaviors and events, or the learned ability to use and manipulate symbols. Chatterjee cites no particular evidence from the anthropological record for this hypothesis. He offers it rather as an argument from analogy from Bengalese finches.

The trouble arises when Chatterjee applies this model to the development of particular artistic movements. Here he argues that highly constrained social contexts produce stylized artistic movements, for instance, medieval Christian religious paintings, while the relaxation of these restrictions produces the variety of revolutionary creativity, e.g., the art of the Arab Spring. Contemporary cultures function as ecological niches that shape behaviors within the local ontogenetic time scales of generations, much as evolution itself shapes the emergence of artistic behaviors across phenotypic time scales. This is an interesting claim. But surely it is a metaphorical extension of his model. The existence of art as a general, universal cultural practice belies the emergence of creativity as an expression of the grab bag of artistish hoodoo, not the local variance in social pressures that drive individual artistic movements. The variance found in Bengalese finches is the result of 500 generations. The shifting cycle that led from ideological realism to modernism to socialist realism in Russian painting across the time frame of the Russian revolution took place within a generation. If there is more here than a metaphor, more needs to be said to explain it.

This leads me to a final point. Whatever else one might say about the descriptive science of art literature, it draws a direct line from models and results in neuroscience and concrete elements of particular artworks to the formal, compositional strategies particular artists have developed over time to produce a range of particular perceptual, expressive, and aesthetic effects. Chatterjee’s treatment of neuroscience, evolutionary psychology, natural selection, and sexual selection is more general. This is part of what makes the book such a great introduction to empirical aesthetics. But it is a long step from our general adaptive preferences for facial symmetry and sexually dimorphic facial features to the aesthetics of portraiture. Chatterjee has opened the door to a productive rapprochement between neuroscientists and philosophers of art. The next step is to show us how to step through.

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