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The artist and the Bengalese finch

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Abstract

Anjan Chatterjee has promoted an analogy between the Bengalese finch and the human artist. With reduced selective pressure from females due to its domestication, the male finch's song has become more elaborate. Similarly, art's lack of a practical function facilitates the creative generativity shown by artists. I argue that this analogy is flawed on both sides. Only recently has some art been regarded as non-functional. And the elaboration of the finch's song is an effect of female selection under the conditions of domestication.

Keywords: artist; Bengalese finch; selective relaxation; domestication

The artist and the Bengalese finch

Anjan Chatterjee, a prominent neuroaesthete, has promoted an analogy between the Bengalese finch and the human artist (Chatterjee 2004, 2014). By doing so, he hopes to show how human artistic creativity is continuous with natural creativity, and that both flourish under conditions unharnessed from the demands of evolution. In this paper I will argue that the analogy he presents is flawed on both sides.

Here is how the idea is developed: the Bengalese finch is a domesticated variant of the White-rumped Munia (*Lonchura striata*). It was domesticated 240 years (or 500 generations) ago. The White-rumped Munia has a rather plain, stereotyped song that plays a role in mate attraction. Given its controlled circumstances, the song of the Bengalese finch cannot serve the same function in the normal way. The selective pressure to preserve the conservative song no longer applies. Freed from its biological function, the song has become more elaborate and beautiful, as well as louder. (The birds were not selectively bred for the song, but rather for their plumage (Okanoya 2004:727). Nevertheless, the song changed.)

Human art is characterized by a similar kind of creative generativity, and this is a result of the fact that art is appreciated for its own sake and is not the servant of some practical function. At its origins art may have served and been constrained by evolutionarily adaptive functions. But, in transcending these, it later paved the way for the free creativity that is its hallmark today.

Chatterjee writes: "The difference between the munia and the finch's song, by analogy, is that of music played in a prescribed manner versus music that is improvised. As genetic control over brain function got looser, instinctual constraints on the bird's song got less specific. The finch's brain became more flexible and its behavior more improvisational and responsive to local environmental conditions. ... Art is like the finch's song both in its biology and its intrinsic characteristics. ... Untethered from the adaptive advantages of beauty or of social cohesion, art can become more variable. Art makes use of its adaptive roots, but its current power comes from its flexible and ever-changing nature" (Chatterjee 2014: 174–5).

It was Kant (2000/1790), at the close of the eighteenth century, who cemented in place the doctrines that art is for disinterested contemplation, having no practical function, that it presents a form of beauty that is free in that it is indifferent to the conceptual classification and context of the item that is beautiful,¹ and that artistic geniuses are not constrained by rules.² He suggested that, viewed aesthetically, art displays "purposiveness without purpose" (2000/1790:§12); it provides an experience that satisfies our general cognitive aim of finding unity in the manifold of our experience of any object, but without subsuming it under a concept (Guyer 2009). Such ideas were reinforced a century later by the aestheticists, who were keen to stress the autonomy of art from practical and moral constraints. And in the twentieth century, they were promoted further by development of the idea of a distinctive aesthetic attitude involving psychical distance (Bullough 1912), by formalist theories of the nature of art (Bell 1914, Fry 1956/1928), and by aesthetic theorists (such as Ducasse 1929).

¹ The perception of free beauty is cognitively based, even while it does not involve conceptual categorization, because it rests on the free play of the understanding and the imagination. Kant distinguished free from dependent beauty. The dependent beauty of a thing is the beauty it has as a thing of a certain kind with a certain function. To recognize or assess something's dependent beauty, one must first classify it as falling within a kind and then consider the extent to which its function is achieved. Subsequent philosophers interpreted aesthetic judgments, including those made of artworks as well as of nature, as judgments of free, rather than dependent, beauty. I discuss the distinction between free and dependent beauty in Davies 2006 and footnote there many disputes between recent interpreters Kant's distinction between them.

² Kant's aesthetics has been analyzed and discussed countless times. Recent monographs include Allison 2001, Gasché 2003, Burnham 2004, Wenzel 2006, Zuckert 2007, Rogerson 2008, Berger 2009, and Hughes 2009. For the broader historical context of eighteenth-century writing in aesthetics, see Guyer 2014.

The idea that art is for contemplation for its own sake alone certainly is plausible for much Modernist Fine Art, I allow, but even here many of the Kantian strictures do not apply. To value an artwork as the artwork it is, its identifying kind and art-historical location must be considered.³ To appreciate the achievement represented by Beethoven's Fifth Symphony, the work must be considered as a symphony and not as a dance suite (and also not as a misshapen sonnet or poorly enunciated play), and it must be heard as stretching nearly to breaking point the formal patterns of an earlier classical style and as prefiguring the dramatic excesses of the Romanticism that was then dawning. Some art may be appreciated for its own sake alone, but that "it" must be recognized for the artistic kind that it exemplifies and must be situated within the artistic traditions by which it was influenced and to which it contributed. Rather than regarding such art as without a function, it might be better to say its function is to reward close attention to its artistic features.

In any case, when we survey art over its broader history and in its more popular forms, it is plain that it frequently is functional (Davies 2006, Parsons and Carlson 2008). It brings the group's narratives of history, religion, lore, and science to life and makes them memorable. It gives expression to the group's shared emotions and values. It entertains the people and placates the gods. According to the ethologist Ellen Dissanayake (1988), it is a form of *making special* that increases and reinforces the potency of ritual. It draws in and unifies the community. These are the "adaptive roots" to which Chatterjee refers; he identifies adaptive advantages in the creation of beauty or of social cohesion. But he also implies that these were transcended long ago. Whereas I suggest that only the most esoteric Modernist and Postmodernist forms of art are detached from them.

Meanwhile, the idea of the artist as a creative genius unfettered by rules is as much a product of Kant's time as is the idea of art being for disinterested contemplation. In the history of art, adherence to the tradition has regularly

³ Such matters are routinely ignored in neuroaesthetics, an exception being Bullot and Reber 2013. For a philosophical analysis of what is needed and why, see Walton 1970 and Gracyk 2009.

been more highly valued than innovation, and templates and formulae have always had a place in the production of art. And while art displays great imaginative variety in some contemporary traditions, to qualify as art deference to and contact with at least some of its artwork predecessors within its tradition is required.

Let us turn now to the birds. Charles Darwin (1880 pt. 1, ch. 3:92; pt. 2, ch. 11:329; pt. 3, ch. 21:616) thought the grounds on which females choose their mates—not only birds but also insects—are primarily aesthetic.⁴ But I contend that this projection of aesthetic taste onto the animal and insect realm rests on a misunderstanding of the cognitive sophistication and motivation of the aesthetic sense. Birds make choices, and in this they might be guided by perceptions they find pleasurable, but it does not follow, as is frequently assumed, that this entails that their response is aesthetic in nature. Their perceptions could be pleasurable not because they interest themselves in beauty recognized as such, but because they are based on comfort, familiarity, lust, or appropriateness, for instance.⁵

There is evidence for aural and visual discrimination in birds, of course, but it is only by assuming they have a taste for beauty that we would be tempted to describe those discriminations as aesthetically grounded.⁶ That we find the song attractive or beautiful does not mean that this is what informs the bird's perception or is what motivates it. My guess is that what crosses the peahen's mind as she admires the peacock's tail is equivalent to "he looks fit and my knees are trembling!", not "how beautiful!"

⁴ For a list of contemporary authors who attribute an aesthetic sense to birds, see Davies 2012:192. A few recent cases of over-the-top anthropomorphism in this regard are Rothenberg 2012 and Mandoki 2015.

⁵ A more closely argued version of this argument occurs in Davies 2012:12–15.

⁶ The cardinal, positive aesthetic qualities are identified traditionally as the beautiful and the sublime. Of course, many more fine-grained properties can also be recognized as aesthetic, though they might be classed as falling roughly under these two headings. For detailed discussions, see Sibley 1959, Goldman 1990, Shelley 2013.

Now, Chatterjee does not suggest that the finch's "improvising" is guided by aesthetic decisions. But he follows Terrence Deacon (2010) in his use of the example of the Bengalese finch and, like Darwin, Deacon (2006) regards birds as making (proto?) aesthetic choices. The mistaken assumption of aesthetic motivations in birds makes the analogy with human art more compelling than it should be.

If not on aesthetic grounds, why does the finch sing more elaborate songs? Plainly it would be silly to argue that it reasons its way to a more improvisatory style of song making. It is not as if it recognizes that it is incarcerated and thereby controlled in the birds it will be introduced to and infers from this that its song cannot fulfill the mate-attracting function in the usual way.

Some other explanation is needed to account for the increased complexity of the song of domesticated Bengalese finches. According to Kazuo Okanoya, "mutations in the song control nuclei have occurred that enabled complex song syntax and became fixed into the population of domesticated Bengalese finches through a process of indirect sexual selection" (Okanoya 2004:724). In other words, a change in the brains of male domesticated birds led to a complexification of their song that made them more attractive to females.⁷

Experimentally induced lesions in a higher order song control nucleus in the bird's brain resulted in simplification of the song syntax; the complex "domesticated" song changed into the simple "wild" one (Okanoya 2004:730–731). So, it was changes to this part of the brain that facilitated the song's alteration. Meanwhile, females exposed to the complex, "domesticated" song both produced more serum estradiol, which stimulates egg production, and collected more strings used in building nests than did females exposed to the simpler, "wild" song (Okanoya 2004:730). But how does this come into play where birds are paired artificially? "Although active choice on female's side might not function directly, indirect female choice will result in reproductive efficiency in the female who was coupled with desirable mate" (Okanoya

⁷ Both the learning and maintenance of this complexity depends as usual on exposure to other singing males (Wooley 2004).

2004:729). In other words, females who are paired with good singers are incited to produce more young than those who are not. As a result, the mutation was passed on and spread through the male population.

Meanwhile, either the relevant mutations did not occur in the wild population of White-rumped Munias or the mutation had attendant disadvantages in the wild that were not there in the domesticated environment. "We suspect the song characteristics (amplitude and complexity) enhanced in Bengalese finches are both traits that can be a handicap in the wild. That is, louder song would be easier to be located by predators and elaborated song syntax would require more cognitive cost, which would also result in predation" (Okanoya 2004:728–729). And again, "syntactically complex songs impose a greater cognitive load and singing such songs might increase predation in a natural environment. Upon domestication, however, such mutation is not eliminated from the population because cognitively demanding song would do no harm. Rather, since the females' perceptual system evolved under such predation pressure, females would prefer song complexity because an individual's ability to sing a complex song yet survive in a harsh environment would guarantee that individuals with these songs should have a reproductive advantage" (Okanoya 2004:732).

This explanation should not be congenial to Chatterjee (or to Deacon). The analogy between birdsong and art is supposed to depend on the effects of relaxation of evolutionarily driven selection in both cases: because the evolutionarily adaptive function of the behavior is transcended or drops out of play, the behavior is freed up to become more varied and elaborate. By contrast, Okanoya's explanation emphasizes that sexually based selective pressure is as much the driver of the Bengalese finches' singing behavior as it is of the White-rumped Munias', though the finches' song takes place under the conditions of domestication and is affected by a neural mutation.

This is not to say, however, that the success of the change occurred simply by chance. In general, more complex, demanding birdsongs are suggestive of higher biological fitness (Nowicki and Searcy 2004; Williams 2004). As signals of comparatively higher biological fitness, they should be preferred by females. Had the domestic mutation made the song less complex than the munia's, it might not

have spread because the females might have found it less attractive. It was the direction of change, as much or more than the fact of domestication, that made the difference.

So, the analogy fails to the extent that it mischaracterizes the predominant nature of art behaviors, appreciation as much as production, and to the extent that it regards change in the finch's song as a consequence of the artificial control over mating that resulted from the birds' domestication.

It remains to be seen, then, whether the nature of art is better explained by reference to its most esoteric recent versions or by consideration of its more general, humble manifestations. As well, it remains to be seen whether the nature of art is better explained by reference to its serving functions that may have had origins in evolutionary selection or by its having ultimately freed itself from such constraints. The search for continuities between *Homo sapiens'* creative behaviors and the seemingly similar behaviors of other species certainly is worth exploring, but it is no less important to bear in mind the underlying differences in the forces that direct such behaviors. Meanwhile, the useful contribution of neuroaesthetics to such debates might require more than naïve reliance on folk intuitions about art and aesthetic experience, or on philosophical doctrines that are peculiar to the Western view of Fine Art and that do not apply even there without qualification.

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