Chapter 5

Art and Evolution

CONTEMPORARY THEORIES

Lately, discussions of art, like discussions of communication, have paid more attention to the evolutionary side of the story. Researchers have wondered how art fits into the larger evolutionary picture and whether art might have emerged as a form of adaptation via natural selection. Philosophers and biologists have been split on this issue. Some have argued that art is *not* a fitness-enhancing adaptation. Others have argued that it *is*. Others still have suggested that perhaps different evolutionary stories might apply to different art forms—so, for example, that the drive to produce music might have evolved separately from the drive to produce paintings or statues, each art form having its own distinctive contribution to evolutionary success.

Some researchers have strived to develop *general* theories about art's emergence or place in the evolutionary picture. American anthropologist Ellen Dissanayake has argued, for example, that the key to art's place in evolution is its role in "making things special."[1]

Others, like Canadian-American psychologist Steven Pinker, have tried to explain art away as a *spandrel*. In evolutionary biology, a spandrel is a trait that exists not because it was selected *for* by natural selection but rather because it is a by-product of some *other* trait or traits that were selected for. The spandrel trait continues to exist not because it is advantageous in its own right but simply because it isn't *dis*advantageous. Think about fur being advantageous in a cold environment. A species might evolve fur, and that fur also just happens to be gray. If the gray coloring of the fur isn't disadvantageous to the species, then that coloring will stick around and get passed on to future generations; otherwise, fur of a different, more advantageous coloring might appear and become more common instead. The gray coloring in this story continuing on in future generations is not a result of it being selected *for*. Rather, from an evolutionary point of view, gray coloring existing is simply a happy accident. When talking about art as a spandrel, Pinker explains art this way:

> art is a by-product of three other adaptations: the hunger for status, the aesthetic pleasure of experiencing adaptive objects and environments, and the ability to design artifacts to achieve desired ends. On this view art is a pleasure technology, like drugs, erotica, or fine cuisine—a way to create purified and concentrated pleasurable stimuli and deliver them to our senses.[2]

Pinker's view has sometimes been summed up by his claim that "music is auditory cheesecake."[3] The idea seems to be that we create and consume art, and art keeps being created and consumed, not because it adds any direct evolutionary advantage to our lives but because it tickles our already evolved aesthetic senses and functions as yet another outlet for our evolved inclination to engage in status seeking. Yet, upon little reflection, a view like this won't work. Think back to

the paintings of Bosch and Dix. These artworks don't seem to be connected to aesthetic *pleasure* in the form of *adaptive objects* and *environments* in the way Pinker intends here. They also hardly seem to be cases of paintings serving as cheesecake—instead, they seem more like intentionally rotten or moldy cheesecake. I can see how some people might derive pleasure from works such as these. We all know that there are people out there who enjoy the macabre and other things typically deemed unpleasant. But then, this pleasure still doesn't seem to be derived from the works depicting adaptive objects or environments. Hell or a World War I battlefield, for example, just doesn't seem like that sort of environment. It's also intuitively not the case that all art is made for the purpose of increasing one's social status—for example, there is private art, art made anonymously, and even art made with the intention or knowledge that it will *degrade* one's social standing.

Pinker later updated his view. Now, art is supposedly the by-product of *two* traits: (1) motivational systems that give us pleasure when we experience stimuli that correlate with our evolutionary interests, and (2) the technological know-how to create purified and concentrated doses of these stimuli.[4] And yet, this updated version of Pinker's view also won't do. This version of the view also seems unable to handle the Bosch and Dix paintings—these do not seem to involve stimuli that "correlate with our evolutionary interests." The view also seems to suggest that art functions more like a pill or like the wine from chapter 2—that it's not so much the content of a work that has an effect on audiences as much as its physical properties.

That's enough backstory. In this chapter, I'll look at theories of art and its evolution. In the first half of the chapter, I'll focus on two theories of art in particular: (1) the view that art might be a sort of *fitness signal* in sexual selection, and (2) the theory that art might be beneficial at the *group*-level. Both theories of art's evolution see art as a form of communication and see art's communicative nature as key to its evolutionary picture. I won't focus on theories proposing individualized evolutionary stories for particular forms of art. Those investigations, though interesting, would take us down too many side roads. What's more, before pursuing any individualized theories with vigor, it would be nice to know first that a more general theory isn't possible.

In the second half of this chapter, I'll return to a question that we left hanging in the last chapter. It's been thought by many researchers that the creation and consumption of art might be one of the features that distinguish humans from other animals. As we saw in chapter 2, some thinkers have held similar views about communication and language. Of course, it now turns out that we're not the only living creatures that engage in communication, even some complex forms of it. And so, we might wonder: do animals create art too?

These are the issues that we'll consider in this chapter: whether art might function as a *fitness signal*; whether art might serve some sort of *group*-level biological function; and whether art might be created by non-human *animals*.

Art as Fitness Signal

The first theory of art that we'll look at is the view that art is really something more akin to the peacock's tail. The idea is that art is primarily a tool for *mate attraction* and *sexual selection*. Art broadcasts a sender's fitness to mates, and this is the reason that art came about—or at least, why it has stuck around. This view has been popular lately. American evolutionary psychologist Geoffrey Miller is an example of a researcher who holds a version of this view. Another researcher in this tradition is Denis Dutton, who defends the thesis in his 2009 book *The Art Instinct*. Consider rock stars, the thought goes, why else do they make music if not for fame and access to potential mates?

Different bits of evidence and different arguments have been given in support of the fitness theory. According to Miller, one bit of evidence sup- porting the view is that the vast majority of artwork is created by males. Miller takes this fact as rather obvious.[5] And yet, whether the vast majority of artwork has been created by males is an empirical question, and its answer depends quite a bit on what exactly we count as art. I would tend to lean in the other direction on this matter. Throughout much of history, plenty of art-making has been primarily the province of females—think of beadwork, jewelry making, basket making, and blanket weaving. Depending on what one counts as art, Miller might very plausibly be wrong here. And with respect to more males making art in modern times (if this is even true), it seems plausible this could simply be an artifact of our modern social structure rather than some ancient evolutionary origin. Males were simply the ones *allowed* and *encouraged* by modern society to make art in recent centuries—note that for quite some time, women were not even allowed into art schools. Perhaps more women would have created art if simply given the same opportunities. It's worth noting that Miller also tends to focus on modern music for his examples—on rock music and jazz. But there are plenty of famous and successful female artists in music today too—plenty of Madonnas, Lady Gagas, and Beyoncés.

Another bit often put forward in defense of the fitness view is that males are active in competition for females because females are choosy (due to the high investment involved on their side in child production and rearing), and males who are promiscuous are able to make more babies than promiscuous women (because on the female side, a baby takes 9 months to produce whereas a male can produce many more children by different females in that same time). Thus, the thought goes, males have more incentive to create art for attraction purposes than females. One problem with this view is that the data just doesn't seem to support it. New Zealand philosopher Stephen Davies points out in his 2012 book *The Artful Species* that a study of 207 European male composers from the fourteenth through twentieth centuries shows these composers produced significantly fewer children than the general European population.[6] One could instead insist that the fitness advantage from art is to be found not in the form of production of more children but in the form of artistic talent bringing in higher-quality mates and that talent and attractiveness being reliably passed down to few offspring. But this too isn't supported by the data. As Davies puts it, "artistic talent of the highest order is only modestly inheritable."[7] Think of how few famous artists have children that have followed as successfully in their footsteps.

American anthropologist Kathryn Coe points out that the fitness theory doesn't seem to cover some of the cave art of the Upper Paleolithic, which appears, because of its placement in high up and obscure parts of caves, to have been made with no intention of subsequent viewing.[8] I think this is a good, plausible counterexample to Miller's view, but there does also seem to be an explanation that would instead support it. One suggestion for the placement that I haven't seen in the literature is that perhaps this was something akin to graffiti done in difficult-to-reach places. The importance is in the *placement* due to the *difficulty* involved in making the artwork—compare putting graffiti on the side of a house to putting it on a town's water tower. The difficult placement is what (or part of what) makes it impressive and attractive to mates. But for this to be true, the piece would have to have been made with some intention of subsequent viewing by others, otherwise, no one could verify the accomplishment. If this interpretation were correct, the art could fit the Miller model of mate attraction. But more work would need to be done to see what the truth is here, why the art was really put in these hard-to-reach places.

There are other worries for a general fitness theory of art. A fitness theory of art doesn't seem to make sense of private art or anonymous art. Such art won't be capable of being experienced by a mate, or won't be attributable to the artist, and so won't be able to directly attract a mate or communicate to a mate the sender's fitness. The missing cat case and expedition art also seem to provide examples of how possibly something that at least looks like art—I'm willing to call it art—could come about for purposes *other than* mate attraction. And then consider that children and adults often make art for loved ones like siblings and grandparents. Davies points out mothers singing to their babies. This art doesn't seem to have anything to do with mate attraction and seems to run counter to Miller's version of the theory.

For Dutton, sexual selection offers the hope of a "complete theory of the origin of the arts."[9] And as he sees it, art's main role in sexual selection is supported by its role as a display of fitness, a function it performs thanks to its connection to real survival-enhancing traits such as intelligence, creativity, fine motor coordination, and so on. But Dutton also thinks that art accomplishes this task thanks to the *beauty* of the object and the intense experience we get from viewing such beautiful things. Dutton sees beautiful things as attractors, like magnets. We find certain landscapes beautiful because being attracted to those ones tended to result in survival. Similarly, Dutton thinks people are attracted to the beautiful in people and their art. That's how art helps one gain mates and have one's genes passed on.

Dutton's view is tough to take apart because there are many subtle parts, and because, at times, it's not exactly clear what his actual bare-bones view is. One thing worth focusing on is this idea that art is a fitness signal because of its manifesting some sort of beauty and inducing experiences of beauty in others. The first thing to say is that this is not necessarily a communicative view of art. It could be more of a physical effects case—though there is a sliding scale there, and it is possible to send a signal that is beautiful, causes experiences of beauty in receivers, and functions as a signal. But a more fundamental problem for Dutton's view should be readily gleaned from much of our previous discussion of art and beauty. Not all art is beautiful or about beauty in any way—in fact, much art seems to be the opposite, or purely for religious purposes, or ceremony, or fun. Undoubtedly, beauty does play a role in art and has played a major one. But to make it a key defining feature seems a bit too far.

The view that art *sometimes*, maybe even often, plays a role in sexual selection is not unrealistic on the other hand. A work of art can act as a sort of *natural sign* of cognitive ability, dexterity, leisure time, attention to detail, personality, interests, and resources. The list goes on. This allows it to have a role in mate attraction since these attributes might be important to potential mates and works of art can act as indicators of these attributes. But notice that, as described, this is quite *passive*—like passive style but in this case, a *passive* mate attraction. The art is being used as a natural sign, index, or cue, not a signal. At least, that's one reading. Senders could, of course, notice that receivers pay attention to this cue-like information and so produce art or art of a certain kind for its mate-attracting qualities. Then we get *active* mate attraction via art. This sort of use would better fit the sender-receiver model and would seem to count as a signal rather than a cue. And yet, to say that most art generally functions as active mate attraction or that it came about primarily due to its functioning that way seems overly ambitious. Information about things like cognitive ability, dexterity, personality, and so on are easily gathered in a passive or active way from *other* readily observable features, behaviors, and products—things like athletic feats, technical accomplishments, and economic, political, or social success. The production of beautiful works of art is also not a completely reliable indicator of the presence of attractive attributes that such works are usually thought to indicate. Famous musicians, for example, have been blind or deaf. Other noted artists have had various mental illnesses. As we saw, Monet had vision problems. Art may play a mate-selection role sometimes, and may indicate fitness, but it doesn't always, and it doesn't primarily.

Art and Group-Level Selection

In a recent paper, Noël Carroll argues that perhaps art has a role in *group*-level fitness. Populations of humans who engaged in artistic behavior, suggests Carroll, tended to outperform groups who did not.[10] Dissanayake has also seemed to suggest a sort of group-benefit view of the arts, seeing art as helpful in uniting a community emotionally.[11]

Stephen Davies, on the other hand, is an example of someone who has doubted the possibility of a group-level evolutionary story for art, seeing any group-level explanation as a rather weak one. In *The Artful Species*, Davies writes:

> Many claim that aesthetic or art practices are evolutionarily significant because they benefit the group. That is, these theories adopt a commitment to multilevel selection theory and depart from the classical Darwinian model of evolutionary explanation that focuses on individuals or their genes. This . . . account is thereby weakened in explanatory power. This is because genetic inheritance provides a strong explanation of the faithful replication of beneficial traits over the long term, assuming the environment is stable; whereas the preservation of group benefits relies on cultural transmission, which is less accurate and reliable.[12]

As Godfrey-Smith points out, however, there are many kinds of multilevel evolutionary models. Some even involve a mixture of genetic and cultural transmission.[13] Godfrey-Smith states further, and I follow him on this: "even if group-level transmission processes are less 'accurate' than genetic inheritance between individuals, this does not show that those group-level processes

are thereby 'weakened in explanatory power'—or, at least, that they must be weak causal factors. The cultural inheritance of languages and norms can be enormously important."[14]

Another problem with Davies' view of art and group selection is that his discussion of group selection and art focuses on versions that involve *altruism*—often defined as someone helping others at their own expense or with no benefit to themselves. Godfrey-Smith rightly points out that there are other options here. *Mutualism* is one of those. Godfrey-Smith goes on to defend the possibility of group-level selection of artistic behavior by focusing on the free-rider version of the mutualism problem, but there is another way to look at it. Mutualism is sometimes defined simply as behaviors that benefit both others *and* oneself.[15] I think this way of looking at the group-level selection of art is the most helpful.

Consider art that tells a story—dances, songs, paintings, films. As we've seen, these forms of art can serve to communicate historical or moral lessons, to communicate certain values, and to enculturate current and future generations. Again, Carroll thinks that art perhaps does this better than any other tool. Mexican painter Diego Rivera once suggested something along these lines as well, pointing out that art can often be understood by even the illiterate in a community and understood across cultures.[16] If this is right, it seems possible that when artistic works are made available or disseminated to the wider community—as many are—they might work partly to help bring about a sort of informational and behavioral *cohesion* within the group, arguably something that would help the group better cooperate and coordinate on a larger scale, something that seems helpful for maintaining the group's continuation and success as a whole, something that would benefit both receivers *and* senders. Consider the famous Smokey Bear posters in the United States reading, "Only You Can Prevent Forest Fires." Even something like this can play this sort of societal cohesion-inducing role. If the members of the group adhere to the lesson of the poster, if they all do a better job of tending to make sure that their campfires are out, then the group has a better chance of protecting its forests—its natural resources— and so a better chance of survival. In this case, *everyone* in the group wins. Examples of art that function this way and don't involve written language would be things like the monument art that we discussed earlier.

This brings up a good point. Some unifying art can also be *divisive* in a sense. Art that glorifies the South and its old values or propagates false "Lost Cause" narratives, for example, seems to have led to separation within the *wider* community of the United States despite unifying a certain subgroup, namely white Southerners. Children raised in the South and exposed to art glorifying the South—the Confederate flag, monuments to Confederate heroes, songs celebrating the "Old South"—are raised in an environment promoting and normalizing different values and beliefs than children raised in the North. The result of this is not the promotion of coordination and cooperation between peoples of the North and South, and better social cohesion in the United States as a *whole*, but instead an us-vs-them mentality and the disintegration of group togetherness on the broader scale.

Mutualism of a sort can have a place in a story like this too. White South- ern senders and receivers both plausibly benefited from Confederate monuments. Such monuments helped white senders *and* receivers maintain their relative social and political power over non-white citizens in the United States—it didn't benefit just one side of the signaling equation. But white Southerners

are a subgroup of the larger group, which is the United States. If we look at the issue from the *national* level, such monuments also plausibly had a *negative* effect, namely the destabilization of the country and the holding back of progress on civil rights. And so, despite producing a short-term mutual benefit for white Southerners, such monuments also likely produced a long-term mutual detriment to the larger group, the nation—white Southerners included.[17]

As we saw in the beginning of this text, Plato also worried that some works of art might have a negative impact on society. Rivera, who pointed out the good that art could do for the working class, also saw the pain that art could cause when used for untoward capitalist motives. Rivera's case and the Confederate case both involve art having an impact at the group level via factions. However, art could plausibly have a negative impact at the group level through more *individual* level effects. Some pieces of public art might, for example, promote an individual-level norm of lying, cheating, or stealing. Having such norms pervasive at the individual level might not create factions, but it hardly seems a recipe for group-level unity and cohesion.

What we've just seen is that public art doesn't clearly provide a group- level advantage, *no matter what*. It seems possible for art to be detrimental. It might indeed be worth it for communities to consider what values their *public* art is promoting, for it may be promoting values that engender division and hate more than cooperation and comity. And yet, cases of public art that are an extreme danger or detriment to society as a whole—much stronger than the Confederate cases—I wager, will be rare. It's hard to imagine a case where public artworks more divisive than Confederate monuments would get off the ground and be *maintained*—at least, long term without some sort of vandalism or sabotage occurring. It's hard to maintain a signaling system when the senders and receivers have opposing preferences, which is what these sorts of works would presumably involve. I can imagine one-off examples of these sorts of signals going up. But it's hard to see how any significant sort of mutualism could be involved.

There's another way I can see communicative art playing a role at the group level. Think back to our discussion in chapter 4 about style. In battle and in contested territories, wearing dress, costume, or makeup that helps distinguish one's group affiliation can mean the difference between living to see another day and an early appointment with the undertaker. Tribes in which members mark their identity in some way are likely to have fewer cases of accidental fratricide during battle or in contested border territories. They will also likely have an advantage in gaining help from teammates during battle, since those who see them in trouble will be able to recognize them more readily as part of their team. It seems likely that identity marking might have advantages in other non-conflict-related situations too.

A closely related form of signaling that might be helpful at the group level is *territory* marking—which we talked a bit about in chapter 4. Groups that mark their territory can plausibly prevent more accidental incursions into their territory and so expend less energy defending their borders. Such a strategy also plausibly gives receivers a chance to lower their own risk of harm by knowing which lines not to cross. In a way, this is a sort of stationary snake rattle case, though with a bit more information added to the signal.

For a final example of how communicative art might have an advantage at the group level, think back to Carroll's suggestion that public monuments play a role in bereavement.

Public recognition of tragedies matters to us. Shared grieving seems to be important to us too. Public monuments that address collective tragedies remind the bereaved that they are part of a com- munity, that they have standing and recognition in that community, and that what happened to them won't be forgotten. If it's true that such memorials help groups better heal after tragedies and reaffirm their bonds, then it's not hard to imagine that groups that create public monuments might fare better than those that do not.

The views presented so far leave room for the possibility of a combination of functions in the signals involved. Thinking about the mate attraction hypothesis, a piece of art might, for example, benefit the public or some subgroup in one of the ways listed above *and* increase the artist's reproductive fitness. This would be a form of mutualism—different than just a purely selfish endeavor. Something like this could take shape in several forms. If a piece of art successfully helps the community, it might also draw attention to the artist, including the attention of potential mates. A work of art might be made primarily to attract mates (and do so) but also inadvertently help the wider community. A piece might even accomplish both tasks at the same time but independently rather than one through the other. There are a number of ways things might go here. Other roles could get mixed in too. A public artwork that works as a territory marker might benefit me, my group, *and*, in some way, my potential enemies. A statue might help a community grieve but might also promote problematic values.

Animal Art

That art is a ubiquitous part of human life is obvious. Yet that art is a part of *non*-human animal life has been doubted by a number of researchers. This is despite the many apparent cases of animal art out there—things like bird songs, mating dances, and other seemingly aesthetic creations. Writers who doubt that animals produce genuine art often point to the idea that the creation of art seems to require intentions, and non-human animals, they'll argue, just don't have the right kind, if any. Griceans will often say this when I discuss art with them. Frank Boardman develops a view of art along these lines: x is a work of art if and only if: (a) x is presented to a public audience for the purpose of their appreciation or contemplation of x and (b) a proper under- standing of x requires recognition of (a)."[18] But as we've seen, communication can arise even in agents without intentions—or at least agents without complicated mental states like those found in humans.[19]

If art is sometimes communicative, is it sometimes produced at the non- human level? Richard Prum thinks that some animals make art. Recall that, on his view, art is something that is *evaluated*. More precisely, for Prum, a work of art is evaluated for its *beauty*, where for authors like Miller the beauty of a work serves as a reliable indicator of an artist's sexual fitness, that is, their having "good genes." Would something produced by an animal that fits Prum's account really count as art? As we saw just a moment ago, sexual fitness also seems to be what's evaluated in certain human works of art—the active mate attraction cases—and we still considered those products artworks. If that's right, then it seems hard to draw a line and say that animals that make art for an evaluative purpose are not making art too. We'd seemingly have to rule out art made by humans primarily for active mate attraction purposes, and that just seems like the wrong move.

In *The Artful Species*, Davies stakes out a position similar to Prum's and is generally pessimistic about the possibility of art made by animals—hence the book's title. Like Prum, Davies takes an evaluative aspect to be crucial to art. On Davies' account, what's key for art is the presence in senders and receivers of an "aesthetic sense," where an aesthetic sense is described roughly as our cognitively unsophisticated recognition of, and attraction to, *beauty*.[20] In other places, Davies describes having an aesthetic sense as being able to experience a work's "awesomeness."[21] However, other aesthetic evaluations seem possible, especially *negative* ones such as revulsion and disgust. Humans, Davies believes, evolved an aesthetic sense early on. Non-human animals, on the other hand, aside from perhaps some higher primates and whales, did not evolve an aesthetic sense, and so do not and cannot create art.

Davies' provides a few reasons for thinking that an aesthetic sense of sorts does not exist in lower animals. One reason seems to be that he has a hard time *imagining* that such a capacity exists in other species; he suggests instead that lower animals might experience some lesser form of "perceptual pleasure" or a "that looks good to me" type of experience.[22] He also mentions that other researchers have doubted that any aesthetic sense exists in non-human animals. And he points out that only higher animals seem to share some of the more complex emotions found in humans, seemingly suggesting that such emotions might be necessary for the creation of art.

And yet, a lack of imagination is not an argument; neither is pointing to the doubts of others. That so-called higher emotions are needed to create art also isn't clear, and respected researchers have thought that animals might create art, or at least that they might have an aesthetic sense to some degree. Charles Darwin is someone who falls into this more optimistic camp. Musing about birds, in *The Descent of Man*, Darwin writes:

> When we behold a male bird elaborately displaying his graceful plumes or splendid colours before the female, whilst other birds, not thus decorated, make no such display, it is impossible to doubt that she admires the beauty of her male partner.[23]

We see precursors to Darwin's view in the works of other thinkers. Scottish philosopher Thomas Reid, for example, wrote in 1785 about the "instinctive sense of beauty" found in different animal species.[24] Davies, on the other hand, takes it for granted that an aesthetic sense does not extend to lower animals, and he sees the burden of proof for thinking that one does on those who think otherwise. In a way, we're left at a stalemate. Interestingly, Davies grants that "proto-aesthetic" responses and the "precursors of human aesthetic taste" might exist in lower animals, but he simply doubts that non- human animals respond to beauty and other aesthetic qualities in any more sophisticated way.[25]

Let's set aside theory for a moment. I'd like to look now at some purported cases of art made by animals. We'll work through theoretical issues as we go through the details. Do animals create art? If so, in what forms and for what purpose?

Two cases of purported animal art that seem to fit an evaluative mate attraction account of artistic communication are the structures built by bowerbirds (*Ptilonorhynchidae*)—in

particular, the satin bowerbird (*Ptilonorhynchus violaceus*) of East Australia and the Vogelkop gardener bowerbird (*Amblyornis inornata*) of West Papua (figure 5.1)—and the nests created by male white-spotted pufferfish (*Torquigener albomaculosus*) in the oceans around Japan (figure 5.2).

Figure 5.1. The bower of the Vogelkop gardener bowerbird. (2014, April). [Photograph]. *Ingo Arnd.*

Figure 5.2. Male pufferfish nest. [Photograph]. *Yoji, Okata. (2012).*

These structures are produced with great effort by their little animal creators, and their purpose seems to be primarily mate attraction.[26] Darwin also put the bowerbird structures forward as possible examples of animal art.[27] The bowerbirds build and decorate their structures in elaborate

ways, creating a sort of canopy and assorting collected items by color. Arrangement of the parts seems to matter to some extent in these cases as well as the general design of the structures.[28] However, there don't seem to be any obvious systematic mappings involved. An interesting difference between these cases of art and art made by humans appears to be that the works made by bowerbirds and pufferfish all look roughly the same—they all make nests of roughly the same shape, design, and materials. Humans, on the other hand, engage in many different forms of artistic creation and use many mediums. This is another one of Davies's reasons for thinking that most animals do not make art—the lack of *creativity* in their choices. Davies discusses the bowerbird as well and denies that they make art. He notes that the male bowerbirds seem to have inherited their species' basic structure-building scheme with little room for creative embellishment.[29] And yet, I can see how one might argue that the range of human artistic behavior is also somewhat more limited than it appears. For example, there are many different kinds of visual works that humans make, but many bear certain core similarities—the use of a flat surface, the use of a street-level point of view, the use of certain materials. Many songs follow the same basic chord patterns. Of course, what Davies is really getting at is that for the human and animal cases to be similar, it must be that in the human case, the impetus to make aesthetic products with a certain basic pattern or structure is also *inherited*, as he believes that that is largely how aesthetic creation in animal cases works. Davies's point is that if it turns out that we can explain why some purported work of art—a song, a dance, a visual design—was created by some organism a certain way, mostly by pointing to some story of evolutionary inheritance—as opposed to, say, any intentions or creativity on the part of the organism—then the purported work of art isn't really a work of art at all.[30]

I disagree with this sort of analysis for several reasons. First, it's not clear how much room for creative choice is required on the part of an agent for something to count as a real work of art. Davies doesn't provide a solid answer to this. One might think that at least some conscious agential choice should be part of the picture, but there's also reason for doubting that move. Suppose that we discovered that much human singing and its core features, or some other human artistic activity, was largely explainable the way Davies supposes bowerbird structures and most other aesthetic animal behavior to be. It seems unlikely that we'd turn around and stop considering those human-made songs or other creations works of art. Rather, it seems that we'd say that it just turns out that human works of art can also sometimes have other explanations—explanations like those of the bowerbird structures. But another reason for rejecting a position like Davies' is our earlier rejection of a hard distinction between various forms of communication—communication via intention, via reinforcement learning, via natural selection, etc. It's all art, just as it's all communication. If we want to get specific, we can simply say that there are cases of art that have an intentional explanation, cases that have a learning explanation, cases that have an evolutionary explanation, and cases that have a mix. There is no need to say that art includes only those aesthetic objects created by more intentional processes.

Some aesthetically interesting products created by animals, of course, will *not* count as works of art, at least not intuitively, and that's despite their impressive beauty or detail. Spider webs, for example, even though often public and intricate, will not appear to count as works of art if their purpose is simply a practical one—to catch flies—and there is no evaluative function. This will also be the case, it seems, for something like the sophisticated-looking "log homes" of the bagworm moth (*Lepidoptera: Psychidae*), which appear to serve a primarily protective role.

What matters for art is that the work has something like an evaluative aspect to it. Otherwise, we just don't really have a work of art, no matter how beautiful it might be from our perspective.

Aside from creating structures, there are other things that animals do that seem to count as art. First, there are dances. Obviously, some "dances" won't count as art. The waggle dance of the honeybee, for example, doesn't seem to count as art, as it seems to be used purely for providing directions. Similarly, the "thermal dance" of the desert-dwelling shovel-snouted lizard (*Meroles anchietae*), which involves balancing on its tail & lifting two of its feet every few seconds, won't count as art since it appears to serve merely to keep the lizard cool on hot sand. However, consider the dances of the superb bird-of-paradise (*Lophorina superba*) and the red-capped manakin (*Ceratopipra mentalis*) of South America. The red-capped manakin's dance is often described as a sort of "moonwalk," usually performed along a specially selected and prepared branch (called a "leck") for better viewing.[31] The dance of the superb bird-of-paradise involves the male hopping from side to side while fanning out its "cape" feathers to form a black oval highlighted by neon-blue feathers near its eyes and breast. There is a basic sort of pattern to these dances. In the case of the Superb bird, the arrangement of the bird's feathers seems to matter as well.[32] The purpose of these dances appears to be to court females, and the basic structure and details of these dances seem to have evolved over time. And the birds go to great lengths to prepare and keep tidy their dance floors. By all appearances, these dances have an evaluative function and are being assessed for their beauty or quality. They seem to do more than just signal "Mate with me" or "I'm available" to potential partners, and they seem to function as more than mere sources of stimulation for the females. I would consider these dances to be examples of communicative art even though their underlying motivation appears to being primarily sexual. Davies would probably disagree with me on these cases, primarily because he thinks that birds aren't the kind of things that can be responsive to something like beauty. And yet, the birds in these cases seem to behave as though they are responsive to aesthetic properties.

Some researchers point to the sounds produced by various animals as prime examples of animal art. Consider that many bird species have elaborate songs or large song repertoires. The common nightingale (*Luscinia megarhynchos*) is a good example. The only nightingales that sing appear to be males without partners. Researchers at Freie Universitat Berlin discovered that the better a nightingale was at singing—the more complex the song and more ordered it was—the more likely singers were to be in good physical condition and to support their mates and offspring in the form of feeding and defense.33 Here we seem to have a case of a mating call that is potentially composite and organized; though, as with the other examples, there doesn't seem to be any obvious sort of systematic mapping going on. What's more, the call doesn't just seem to say "Mate with me" but is also meant to be evaluated by an audience. What we get is a vocalization produced by an animal that seems to be a case of artistic communication.[34]

The most plausible case of an animal artist, according to Davies, is the humpback whale (*Megaptera novaeangliae*). The structure of the songs of humpback whales appears rather complex, involving repeated patterns of vocalizations often described as "themes" and "verses."[35] The songs are often long, sometimes up to thirty minutes. Given that the calls are primarily performed by males and performed during the mating season, they seem to be good candidates for mating calls with a sort of evaluative function. This interpretation of whale songs appears to be bolstered by the observation that the details of the songs vary from whale

population to whale population and end up changing over the course of a mating season, seemingly creatively.[36] The songs seem to be organized and composite, but there's no evidence yet of any systematic encoding or combinatorial structure.

Of course, some animal vocalizations or sound-making won't count as art. For example, the rattling sound of a rattlesnake doesn't appear to be art, as it appears to be used primarily as a warning signal, not something meant to be aesthetically evaluated. Similarly, the song of the black-capped chickadee, despite its apparent complexity, will not count as art as it appears to be used primarily for call and alarm purposes.[37]

What about *displays* such as the peacock's (*Pavo cristatus*) tail? Are these cases of art in the animal world? These are interesting because displays tend to be evolved traits rather than learned or chosen behaviors—though, as mentioned a moment ago, some animal dances, songs, and structure- building might be primarily inherited too. I think the answer in this case is a bit tricky. I said that if we discovered that our instinct to dance, paint, or sing for evaluative purposes evolved, we'd probably keep calling it art. But now suppose that beards in men are for mate attraction, as Darwin and others have suggested, much like the peacock's tail.[38] Then beards have an evaluative aspect to them. Would we feel comfortable calling a beard art? Probably not. Evolved displays or physical attributes meant to be evaluated for qual- ity, though they may be beautiful, do not seem to count as art—at least, not by the common use of the word. What seems to matter is the *creation* of the piece by an agent, either in some performative way or some other constructive manner. Of course, "creation" can come in degrees. Something evaluated but not normally constructed could *become* constructed to some extent. For example, beard transplants are a thing now, and some men dye, braid, or otherwise groom their beards. In these cases, we have something more like art, something created or altered for the purpose of being evaluated.

There are other ways that something like artistic display could come in degrees. Displays can be more permanent or less permanent. A peacock can- not choose the natural color of its tail at any given time, but it can choose to display its tail or not. The peacock spider (*Maratus volans*) is in a similar position. Octopuses, cuttlefish, squid, and chameleons engage in display behaviors by temporarily changing the color of their skin. This involves even more flexibility. And then consider bearded vultures (*Gypaetus barbatus*). These vultures will rub their plumage in orange or reddish dirt or water in order to color their feathers with it.[39] Some research has suggested that this is for dominance signaling and mate attraction purposes.[40] Though, other research has suggested it has a prophylactic function.[41] Another option is that it serves both purposes. But supposing the first case is true, then it seems we might have a good example of *active* decoration or display meant to be evaluated. This would bring us closer to a case of communicative art, but it is a very primitive version of it—the decoration is not at all complicated or intricate.

Another case talked about recently is that of a female chimpanzee named Julie who began repeatedly placing a blade of grass into her ear.[42] After Julie started doing it, other chimps in the group eventually joined in on the fad. What role the blade of grass plays is not clear. If it is a form of self-expression or a way to attract mates, then we get something like communicative display. Unfortunately, it's just not obvious from the data what is going on in Julie's case. There

are, of course, some animals that actively alter their appearance in some way but do not seem to be doing so for any artistic purpose. This is the case when the alteration or decoration is done merely for some protective or camouflaging purpose. Decorator crabs in the brachyuran superfamily *Majoidea* might be an example of this sort of "decoration." Their placement of sponges and anemones on their bodies appears to be primarily for camouflage and protection purposes.[43] There doesn't seem to be any sort of evaluative aspect to the crab's décor—rather, it's merely utilitarian.

Another case worth looking at is that of elephants making paintings. There have been a few cases of this. Elephants have even painted paintings that depict an elephant (figure 5.3).

Figure 5.3. Elephant show in Chiang Mai, Thailand. By Deror Avi (2012). [Photograph]. *Licensed under CC BY-SA 3.0 Deed Attribution-ShareAlike 3.0 Unported.*

Is this art in a communicative sense? I think these cases are difficult. The paintings do seem to depict an elephant. And the elephants are the ones painting on the canvases. However, there doesn't seem to be a back and forth in the sense typically relevant for signaling. The elephants do not test their works with their audiences or revise their art in light of audience reactions. What's more, elephants are plausibly making these paintings for reasons other than attempts on their own part to communicate or make something aesthetic. Elephants, in these cases, are *taught* this painting behavior through reinforcement or punishment by trainers and are often forced to paint the exact same image, line for line, over and over again.[44] There is a back and forth of sorts in these cases. When the elephant doesn't paint the way the trainer wants, it is punished or not positively reinforced; when it does paint the way the trainer wants, it is positively reinforced or not punished. However, this back and forth does not give us a work of art or a signal created by an animal. Though audiences might get a message from the painting or find it beautiful, the message or aesthetic of the work is really dictated by the trainer, who is, in effect, using the elephant as a *tool* or *instrument* for their own artistic creation. There is no real room for creativity on the side of the elephant—the trainer calls all the shots. This, to me, does

not seem to fit a case of *non-human* artistic communication. Instead, it seems closer to an odd form of human communication involving the use of an animal.

Of course, I've been assuming that there was absolutely no room for creativity on the part of the elephant. If, on the other hand, there were some room—even just enough to get a signaling system of the simplest sort off the ground—then, yes, this could turn into a case where the elephant is somehow the sender or at least partly the sender of the painting. Probably, in real life, there is at least some wiggle room. But then, who is the audience providing feedback to the elephant? Perhaps in some cases it is the humans outside the cage; other times it is probably the trainer. Conceivably, we might even encounter a soliloquy case involving an elephant. Each case must be deter- mined on a case-by-case basis. One last interesting thing to note about the elephant cases is that, given that they appear to be attempts at realistic depiction, this is a case that could potentially get us closer to something like an artwork involving a basic sort of structure or syntax. Human-made depicting paintings can meet that mark—it's at least possible within the medium.

In chapters 3 and 4, we talked about group or collective art. If animals are capable of group communication and they can create art, are they also capable of creating collective art in some significant sense? I think that the answer is yes, and I think that there is a plausible non-human example. Go back to the manakin birds, but this time instead of the red-capped manakin, consider the blue manakin (*Chiroxiphia caudata*). Male blue manakins will form groups, often of three or more, who will then practice a rather elaborate song-and- dance routine to later be performed in front of prospective females.[45] The practice is detailed and dutiful. The group hones their routine—it involves learning and not just genetics. Flaws in the performance are challenged by a dominant or "lead" male of the group. Sometimes one of the juvenile males will even stand in as a mock female audience member during practice. Even though usually only the "lead" male mates after a performance, there is a pay-off for the group on some level: the genes of the species are passed on. Other males in the group, however, also have a non-zero probability of catching a break and getting a chance to mate—a probability that is higher if one is part of such a group than not. Furthermore, if the lead bird for whatever reason, vacates his position, one of the group members will assume the lead role.[46]

Assuming that the practiced performances of the blue manakins do not have their effect on females purely via some physical effect, and that there is some actual evaluation going on, some aesthetic or content working its magic, then it seems we might indeed have a case of collective artistic communication in animals, or at the least something a bit removed on the sliding scale from the sovereign side of the equation. It doesn't appear to be a purely democratic case, of course, given that there is such an influential group leader involved. How much influence the lead bird has, and how much say the other members of the group have is—like the case of wolf choruses from chapter 3—still a bit unknown. However, that non-human animals can possibly engage in communicative artistic behavior, and even do so at the group level, seems possible.

Of course, some group cases of communication that we saw earlier will *not* apparently count as art. The chorus howls of wolves, for example, though called "choruses," do not seem to

have any obvious aesthetic component to them. This also seems to be the case for the impressive shimmering waves created by honeybees.

SUMMARY

We've now looked at a fuller picture of the evolutionary side of art and communication. We've looked at how artistic communication might have come about and whether art is ever created by non-human animals. Sexual selection, it seems, might be a good explanation for some cases of art, but it doesn't seem to be a good general explanation for art's origins—it also doesn't seem to make sense of many everyday instances of artistic creation. We saw that art seems to have a possible role in group-level evolutionary theories. Communities that embrace certain forms of public art plausibly fare better than those that don't, and it turns out that there are a number of ways that a group-level story might go. Finally, we looked at whether non-human animals might engage in artistic communication. Not all cases of purported animal art turn out to be instances of genuine aesthetic production, but a good many of them do. It even seems possible that animals might engage in artistic communication on a collective level.

NOTES

1. Ellen Dissanayake, *What is Art for?* (University of Washington Press, 1988).
2. Steven Pinker, *The Blank Slate: The Modern Denial of Human Nature* (Penguin Books, 2002), 405.
3. Steven Pinker, *How the Mind Works* (Norton, 1997), 534.
4. Steven Pinker, "Toward a Consilient Study of Literature," *Philosophy and Literature* 31 (2007): 171.
5. For the classic overview of Miller's position on this see, Geoffrey Miller, "Sexual Selection for Cultural Displays." In *The Evolution of Culture*, edited by R. Dunbar, C. Knight, and C. Power, 71–91 (Edinburgh, UK: Edinburgh University Press. 1999).
6. Stephen Davies, *The Artful Species: Aesthetics, Art, and Evolution* (Oxford University Press, 2012), 126.
7. *Ibid,* 124.
8. See Kathryn Coe, "Art: The Replicable Unit—An Inquiry into the Possible Origins of Art as a Social Behavior," *Journal of Social and Evolutionary Systems* 15, no. 2 (1992): 217–234 and Kathryn Coe, *The Ancestress Hypothesis: Visual Art as Adaptation* (Rutgers University Press, 2003).
9. Dutton, *The Art Instinct*, 152.
10. Noël Carroll, "The Arts, Emotion, and Evolution." In *Aesthetics and the Sciences of Mind*, edited by Greg Currie et al., 159–180 (Oxford University Press, 2014).
11. See especially, Dissanayake, Ellen. *Homo Aestheticus: Where Art Comes From and Why* (University of Washington Press, 1995), 45–50.
12. Davies, *The Artful Species,* 43–44.
13. For discussion, see Samuel Bowles and Herbert Gintis, *A Cooperative Species: Human Reciprocity and its Evolution* (Princeton: Princeton University Press, 2013).

14. See Godfrey-Smith, 2013a.

15. Stuart A. West, Ashleigh S. Griffin, and Andy Gardner, "Social Semantics: Altruism, Cooperation, Mutualism, Strong Reciprocity and Group Selection," *Journal of Evolutionary Biology* 20, no. 2 (2007): 415–432.

16. Diego Rivera, "The Revolutionary Spirit in Modern Art," *Modern Quarterly* 6, no. 3 (1932): 53.

17. It's worth noting that even Confederate general Robert E. Lee argued against the construction of Confederate monuments and for apparently similar reasons. See Robert E. Lee, "Letter to David McConaughy," *GettDigital: Civil War Era Collection*, Special Collections and College Archives, Gettysburg College, Gettysburg, Pennsylvania, 1869, accessed December 22, 2020, https://gettysburg.contentdm.oclc .org/digital/collection/p4016coll2/id/841/. Also see Robert E. Lee, "Letter to Thomas L. Rosser," *Lee Papers*, Lee Family Digital Archive, University of Virginia, 1866, accessed December 22, 2020, https://leefamilyarchive.org/papers/letters/transcripts -UV A/v076.html.

18. Frank Boardman, *Art as Display*. Doctoral thesis, The Graduate Center, the City University of New York, 2016. Accessed February 25, 2024. http://academicworks.cuny.edu/gc_etds/1222.

19. Boardman's view seems to have other potential problems. First, it seems to rule out private art. It also seems that a couple could decide to have a child for the purposes stated in Boardman's definition: to show them to the public for appreciation, etc. Another problematic example for Boardman appears to be art with a practical function—for example, a knife made to cut *and* be aesthetically appreciated. Must an object be made *only* with the purpose of public admiration, or is it OK for the object to have an additional purpose?

20. Davies, *The Artful Species*, 10.

21. *Ibid*, 1.

22. *Ibid,* 15.

23. Darwin, *The Descent of Man*, Pt 1, Ch 3:92.

24. See Thomas Reid, "Of Beauty," Chapter 4 of Essay 8 (Of Taste), in *Essays on the Intellectual and Active Powers of Man* (Dublin: P. Byrne, and J. Milliken, 1790), Vol 2, 456.

25. Davies, *The Artful Species,* 11–14.

26. Hiroshi Kawase, Yoji Okata, and Kimiaki Ito, "Role of Huge Geometric Circular Structures in the Reproduction of a Marine Pufferfish," *Scientific Reports* 3, no. 1 (2013): 2106.

27. See Darwin, *The Descent of Man*, Pt 2, Ch 13:381–2.

28. J.A. Uy and G.B orgia,"Sexual selection drives rapid divergence in bowerbird display traits. Evolution," *International Journal of Organic Evolution*, 54, 1 (2000): 273–278.

29. Davies, *The Artful Species,* 32. However, for evidence that there is quite a bit of flexibility, see Mike Hansell and Graeme D Ruxton, "Setting Tool Use within the Context of Animal Construction Behaviour," *Trends in Ecology & Evolution* 23, no. 2 (2008): 73–78.

30. Dennett similarly suggests that bower cases are better thought of as examples of "extended phenotypes." See Daniel C. Dennett, *Consciousness Explained* (London: Penguin Books, 1991), 13 and 415.

31. Richard Prum, "Phylogenetic Analysis of the Evolution of Display Behaviour in the Neotropical Manakins (*Aves: Pipridae*)," *Ethology* 84 (1990): 202–231.

32. See, Edwin Scholes and Timothy G. Laman, "Distinctive Courtship Phenotype of the Vogelkop Superb Bird-of-Paradise Lophorina niedda Mayr, 1930 Confirms New Species Status," *PeerJ* 6 (2018): e4621.

33. Conny Bartsch, Michael Weiss, and Silke Kipper, "Multiple Song Features are Related to Paternal Effort in Common Nightingales," *BMC Evolutionary Biology* 15, no. 1 (2015): 115–122.

34. It's noteworthy that the researchers claim in their article that the female receiver birds were not interested in the beauty of the song but instead in the song's complexity and what cue-like information signals carried about the quality of the sender. They don't give an explanation, however, for how they determined that beauty wasn't also factor. I can see, though, how even in a human case, what receivers might care about is not how beautiful a work of art is but how detailed, complex, or difficult it was to make. Is something like that still art? I think so, what matters is that it was meant to be evaluated for some aesthetic quality. And as we've seen, beauty need not be the one involved in every work.

35. Eduardo Mercado III, "The Humpback's New Songs: Diverse and Convergent Evidence Against Vocal Culture via Copying in Humpback Whales," *Animal Behavior and Cognition* 9, no. 2 (2022): 196–206.

36. See Nina Eriksen, Lee A. Miller, et al., "Cultural Change in the Songs of Humpback Whales (*Megaptera novaeangliae*) from Tonga," *Behaviour* 142, no. 3 (2005): 305–328 and M. J. Noad, D. H. Cato, et al., "Cultural Revolution in Whale Songs," *Nature* 408, no. 6812 (2000): 537–537.

37. See M. S. Ficken, Robert W. Ficken, and Stanley R. Witkin, "Vocal Repertoire of the Black-capped Chickadee," *The Auk* 95, no. 1 (1978): 34–48 and Christopher N. Templeton, Erick Greene, and Kate Davis, "Allometry of Alarm Calls: Black-capped Chickadees Encode Information about Predator Size," *Science* 308, no. 5730 (2005): 1934–1937.

38. Darwin, *The Descent of Man,* 192–267.

39. Jean Baptiste Jaubert and Charles Joseph Barthelemy-Lappomeraye. *Richesses Ornithologiques du Midi de la France* (Presses du Sud, 1859); Peter Berthold, "Über Haftfarben bei Vögeln: Rostfärbung durch Eisenoxid beim Bartgeier (*Gypaetus bara- tus*) und bei anderen Arten." Zoologische Jahrbücher Systematik 93 (1967): 507–595; C. J. Brown and A. G. Bruton, "Plumage Colour and Feather Structure of the Bearded Vulture (*Gypaetus barbatus*)," *Journal of Zoology* 223, no. 4 (1991): 627–640; David C. Houston, A. Hall, and H. Frey, "The Characteristics of the Cosmetic Soils Used by Bearded Vultures *Gypaetus barbatus,*" *Bulletin of the British Ornithologists' Club* 113, no. 4 (1993): 260– 263; Hans Frey and Nina Roth-Callies, "Zur Genese der Haft- farbe (Rostfarbung durch Eisenoxid) beim Bartgeier, Gypaetus barbatus," *Egretta* 37 (1994): 1–22; A. Margalida and R. Pelayo, "Observation of a Pyrenean Bearded Vulture (*Gypaetus barbatus*) Bathing in a Ferruginous Spring," in *Bearded Vulture, Annual Report* 1998, Ed. by G. Schaden Frey and M. Bijleveld, 89–90 (Wassenaar, The Netherlands: International Foundation for the Conservation of the Bearded Vul- ture, 1999).

40. Juan J. Negro, Antoni Margalida, Fernando Hiraldo, and Rafael Heredia, "The Function of Cosmetic Coloration of Bearded Vultures: When Art Imitates Life," *Animal Behaviour* 58, no. 5 (1999): F14–F17.

41. Raphael Arlettaz, Philippe Christe, Peter F. Surai, and Anders Pape Møller, "Deliberate Rusty Staining of Plumage in the Bearded Vulture: Does Function Precede Art?" *Animal Beha*vior 64, no. 3 (2002): F1–F3.

42. Edwin J. van Leeuwen, Kathrine A. Cronin, and Daniel B. M. Haun, "A Group-specific Arbitrary Tradition in Chimpanzees (*Pan troglodytes*)," *Animal Cognition* 17, no. 6 (2014): 1421–25.

43. K. M. Hultgren and J. J. Stachowicz, “Camouflage in Decorator Crabs: Integrating Ecological, Behavioural and Evolutionary Approaches.” In *Animal Camouflage: Mechanisms and Function*, edited by M. Stevens and S. Merilaita, 212–236 (Cambridge: Cambridge University Press, 2011).

44. Megan English, Gisela Kaplan, & Lesley J. Rogers, “Is painting by elephants in zoos as enriching as we are led to believe?” PeerJ 2 (2014): e471. https://doi.org /10.7717/peerj.471.

45. See Emily H. DuVal, “Cooperative display and lekking behavior of the lance- tailed manakin (*Chiroxiphia lanceolata*),” *The Auk* 124, no. 4 (2007b): 1168–1185 and Emily H. DuVal, “Social organization and variation in cooperative alliances among male lance-tailed manakins,” *Animal Behaviour* 73, no. 3 (2007c): 391–401.

46. Emily H. DuVal, “Adaptive advantages of cooperative courtship for subordinate male lance-tailed manakins,” *The American Naturalist* 169, no. 4 (2007a): 423–432.