Jellyfish on the Ceiling and Deer in the Den: The Biology of Interior Decoration

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The 19th-century German biologist Ernst Haeckel is probably best remembered today for his illustrated work *Art Forms in Nature* [1], which is still in print. Haeckel, who was an accomplished artist as well as a scientist, intended this as a sourcebook of ideas for artists. Some of the most memorable images are those of jellyfish, or medusae. This is in part because these organisms were the objects of Haeckel’s own research. In fact, he was so taken with them that he took a leaf out of his own book and used its images as sources for decoration in his home. He had cups and saucers and ceiling designs featuring jellyfish as well as several pieces of furniture with burnt-wood images of medusae.

Haeckel’s case may seem extreme, but I doubt that anyone reading this article is without some representation of an organism in his or her home, and most of us have many. In some cases, we also have the real thing in the form of pets and plants, and perhaps remnants of organisms as well—such as feathers, shells or fossils. For many of us, such items are so ubiquitous that we hardly give them a thought or stop to consider why we choose to surround ourselves with so much of the living world.

Decoration and Biology

I first want to examine just how prevalent organisms and images of organisms are in our surroundings by considering the biology of interior decoration, of how homes and workplaces are planned and furnished. I will look at the work of professional interior designers as well as the more informal processes we all use in making spaces comfortable. My interest in this topic began with a book about Bernard Palissy, a 16th-century French ceramicist who created elaborate platters heavily encrusted with 3D representations of snakes, lizards, fish and frogs, as well as seaweed and other plants [2]. The organisms appear so lifelike because Palissy borrowed a technique from goldsmiths of his day by making casts of freshly killed animals, thus capturing shell, scale and skin textures. Though visually arresting, these plates are so crowded with life that it would be impossible to eat off them. They were obviously intended solely for decoration. But why would anyone want such realistic representations of creatures that at least some would consider loathsome? It was this question that got me started.

The first answer came when I recalled E.O. Wilson’s book *Biophilia* [3]. He defines this term as an innate human urge to be in contact with other species. In a chapter on snakes, Wilson writes of evidence for what appears to be an inborn fear of snakes that is paired with a fascination with these creatures. Fear and fascination are two forms of a heightened interest in snakes that would have had an adaptive advantage, helping humans to avoid being bitten by venomous snakes. Perhaps it is this fascination that is at the core of the attraction to Palissy’s plates, and a continuing attraction there has been. In the 19th and again in the early 20th centuries, there were several well-known ceramicists producing organism-filled platters and other objects based on Palissy designs [4].

From this initial interest in Palissy, I began to collect examples of the way humans surround themselves with representations of organisms and also with the real thing. For many of us, our homes are sources of pleasure, yet we usually tend to take our surroundings for granted. As Ernst Gombrich notes, “Usually we walk through life without paying much attention to the infinite variety of patterns and decorative motifs which we encounter all around us, on fabrics, wallpaper, etc.” [5]. Gombrich sees decoration as the “unregarded art,” and argues that in many cases it is purposefully designed this way to create an atmosphere without intruding too forcefully on our consciousness. This may be one reason interior decoration has been virtually ignored in work on biophilia. While my focus here will be primarily on representations of living things, I do not want to completely ignore the fact that many of us also choose to surround ourselves with living plants and animals. I see this as strengthening my case for the biophilic urge. Through selective breeding, humans have shaped domesticated animals and plants in part to make them more pleasant and attractive to live with.

While animals are not usually considered interior decoration, plants frequently are. No matter where they live, most people have at least one plant sitting on a windowsill in some room. Many people are devoted to their plants and find caring for them and being surrounded by them to be sources of

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comfort. For those who find tending plants too taxing, there are always dried flowers or—more steps removed from the real thing—silk flowers and botanical prints. In the 19th century, flowers were so often the subject of decorative needlework for the home that the word “floralizing” was synonymous with embroidery [6]. This desire to, in a sense, bring the garden inside is an ancient one. There are remains of Roman villas in Pompeii with elaborate murals filled with plants very accurately rendered to provide occupants with a reminder of flowers in bloom at times of the year when the garden was less than perfect [7]. In Persia, garden flowers were portrayed on rugs, which often served as substitutes for the real thing among nomads who in this way could carry their gardens with them [8]. Gardens themselves are often considered extensions of interiors, and the fact that so much time and energy is put into the care and planning of ornamental gardens indicates their importance to many people.

FROM CAVES TO FLUORESCENT FISH

Cave paintings suggest that early humans wanted some visual reminder of other species, though whether these were related to hunting rituals or other rites is only a matter of speculation. It is difficult to find a culture that does not use some plant or animal motifs in its decorations. Ancient Persian and Egyptian murals and other artifacts are filled with images of plants and animals. In the East, plants and animals grace Japanese screens, Burmese ceramics and Chinese scrolls [9]. Mogul art has some of the most haunting renderings of plants and animals to be found anywhere. While Jack Goody makes the point that African art is almost devoid of representations of plants, animal images are commonplace, particularly in carvings [10].

In Europe, renderings of plants and animals are found on ancient Greek and Roman vases and frescoes. In the late Middle Ages and into the Renaissance, renewed interest in the natural world manifested itself in organic themes in decoration, with tapestries full of carefully designed representations of a great variety of plants and animals. From the time of the Renaissance onward, there is a persistent use of organic images in ceramics, decorative fabrics and furniture. In Victorian times, there was great interest in bringing the organic home as technological advances had coupled with an interest in natural theology—the belief that learning about God’s creatures brought one closer to God. The Wardian case, a glass-enclosed tank for growing plants and housing tiny animals such as snails, was popular when mass production of glass became possible and metal frameworks also could be mass-produced. These advances led to the construction of aquariums, which allowed a whole different ecosystem into the home. D’Arcy Thompson [11] has a wonderful essay on a sea anemone called “Granny” that lived in such a tank for 60 years. Available glass and ironwork also made conservatories and greenhouses more common adjuncts of houses, allowing Victorians to fill their homes with huge potted plants.

In the late 19th century, William Morris brought plant and animal designs to everything from draperies and wallpaper to furniture and tile work. Art Nouveau continued in this tradition, though in a more stylized way. Haeckel’s work was one of the later influences on Art Nouveau, where jellyfish are commonly seen forms, as are dragonflies and peacock feathers. Art Nouveau also absorbed microscopic imagery as the better microscopes of the 19th century made images of microbes clearer and more detailed, creating a new interest among artists in these forms [12].

The Art Nouveau movement led to Art Deco, in which designs are more stylized, often to the point where resemblance to organic forms is difficult to decipher. For example, Gombrich has traced the development of the acanthus leaf design from representations found in ancient Greek artifacts to stylized border prints of the Victorian era and beyond, to the point where the relationship between organism and pattern is not at all obvious [13].

The late 19th century was seemingly the heyday of organic interior decoration, but it was hardly the end of it. The ecology movement of the 1970s created a new interest in surrounding ourselves with the organic. There was an upsurge in the use of houseplants and then, in the 1980s, enterprises such as the Nature Company made many nature-related images and products available. As Jennifer Price notes: “Distant landscapes and wild animals become ever more shadowy realities. And what better place to see these abstractions of Nature and the Last Places than in the placeless vacuum of the mall?” [14]. While in the 19th century decorating with organisms was considered a good thing to do for religious reasons, in the 20th century it was considered good for ethical reasons, as a symbol of interest in preserving nature and bettering the environment. As in the past, certain organisms have an iconic significance today. Cows in the kitchen signify our rural past, bears in the den our hunger for wilderness, and pink flamingos—on the lawn and indoors as well—our awareness of the irony of all such representations [15]. Besides these rather common interior decorations, there are some decidedly uncommon ones as well, such as the wing cases of a million Asian jewel beetles used to adorn the Hall of Mirrors in the Brussels Royal Palace [16].

In some cases an ecological approach seems appropriate for describing the biological content of homes. In many U.S. homes, one is most likely to find chicken and cow designs in the kitchen and sea creatures in the bathroom. While large cabbage rose prints are fitting for the bedroom, it is more common to have fir trees and deer adorning fabric in the den. Home ecology also varies with geography. A cabin in the Adirondacks may contain images of bears and furniture made from roughly hewn logs, while in the southwestern United States homes are more likely to have cacti and images of lizards. This approach to interior decoration seems to extend around the world, with Japanese homes, for example, having images of such native species as cranes. In Southeast Asia, native tigers and elephants are found embellishing decorative pieces. Australian aborigine designs are partial to representations of kangaroos, while in Africa, lions and antelopes are commonly represented.

Though modernist design seems to eschew representation, a look at even the most starkly minimalist interiors usually reveals one large plant or vase of flowers; often these rooms look out on rich landscapes through huge windows that almost bring the outside indoors. Those whose tastes are not quite so austere are likely to have more organically rich interiors. Presently fish tanks are considered trendy and are sometimes made a room’s focal point [17]. Even the fish themselves are decorative—with genetic engineering there may soon be fluorescent fish swimming in some living rooms [18].

Many people use the remains of living things to grace their homes. There is a fascination for displaying insects in glass specimen cases; this is not to everyone’s taste, but if one looks at them closely, some insects can be seen to have both beautiful forms and colors [19]. Butterflies are the most obvious examples, but many other types of insects can be equally striking,
including beetles, the most species-rich insect group. Also, fossils are becoming so popular there is a real fear that, as the market values of specimens soar, scientific work will be hampered as specimens are siphoned off into black markets [20]. Illegal sales of endangered plants, especially rare orchids and cacti, are also rife. So interior decoration, although a seemingly innocuous pastime, can have serious biological repercussions.

In some instances the natural and the human-made are combined; among the most beautiful examples are metal-encrusted seashells. The ecologist George Evelyn Hutchinson notes that these decorations, many of them created in the 16th and 17th centuries, are good examples of the melding of art and science, of decoration and natural history [21]. For Hutchinson, they represent the time before a divide formed between art and science, before there were art museums and science museums, when there were cabinets of curiosities that housed objects from both realms, and in the case of these seashells, examples that combined the two realms. While modern homes usually do not have these cabinets, in one sense we still have such objects, though they tend not to be localized in one room or area. A carving made out of a coconut shell or a wood burl may sit on a shelf in the living room, and there may be a picture made of dried flowers in the bedroom.

**THE HUMAN PRESENCE**

I should note that in this survey I have omitted one species: *Homo sapiens*. A good case can be made that humans themselves, either in the flesh or in representations, are important elements in interior decoration. However, since I want to argue that interior decoration can be a manifestation of biophilia, and since biophilia involves association with other species, I do not want to cloud the picture by bringing in too much about humans. On the other hand, I should note that while Wilson is responsible for coining the word biophilia with its present-day meaning, the word was used 20 years earlier by Eric Fromm [22]. Fromm’s definition is somewhat similar but more inclusive; he saw biophilia as the passionate love of life and of all that is alive. This is less specific than Wilson’s definition and therefore less helpful in terms of using biophilia, as Wilson does, to support efforts to save biodiversity. But Fromm’s definition has the advantage of reminding us that we are part of the life of the earth; it does not set us apart as Wilson’s view does by focusing on attraction to other species.

John Berger contends that the most serious separation between humans and animals began with industrialization, which led to the movement of people into cities as well as the mechanization of transportation and agriculture [23]. Fewer people were in close and constant contact with animals. Because humans had so long identified themselves with animals, Berger sees this distancing as leading to a dehumanization: humans need animals in order to define themselves. Akira Lippit takes up this theme of how basic it is for humans to characterize themselves in terms of animals and how this characteristic intensifies as separation from nature increases [24]. A need for connection manifests itself in the way many technological devices are designed with animal forms or are described with animal metaphors: sewing machines decorated with plants and animals, a car called a Jaguar, a computer called an Apple.

As Gary Nabhan and Sara St. Antoine note in an article on the loss of awareness of flora and fauna among younger Native Americans: “Our genes for biophilia now have fewer environmental triggers to stimulate their full expression among contemporary cultures compared to those in the past” [25]. This is leading to the disappearance of important reservoirs of knowledge about native plants and animals, reservoirs that in the past were replenished with each new generation. It is also leading to a withering of the biophilic urge in that there is so little nurturing of it through contact with live organisms. A city dweller can easily get up, go to work and return home at night without ever seeing more than a couple of street trees.

**BIOPHILIA AND INTERIOR DECORATION**

Wilson published his book on biophilia in 1984, almost a decade after his controversial book on sociobiology [26]. By training, Wilson is an entomologist, a student of insects, and his primary area of research is on the social organization of ant colonies. Since the human species, too, is social, it is not surprising that Wilson, like other biologists before him, sees a relationship between human and insect behavior. While he is intelligent enough to appreciate the evolutionary distance between the two and not to directly extrapolate from one to the other, he does argue that, as in insects and many other species, some human behavior is at least partially genetically determined. This idea can be problematic, since it seems to reduce the importance of learning and environment in human behavioral development. I will touch on this below. Here I only want to give enough background to highlight why Wilson came up with the idea of biophilia: an innate, and therefore genetically influenced, trait.

Since Wilson’s book on biophilia, a number of researchers have collected substantiating data, and some of their work is relevant to my theme. Stephen Kellert, a Yale ecologist, is foremost among these scientists and has published a book on biophilia, *Kinship to Mastery* [27]. While he does not touch on interior decoration as such, Kellert notes some evidence that how we decorate our interiors is a manifestation of biophilia. For example, he cites studies showing that people who have offices without windows tend to be more likely to hang up nature posters than are those in offices with a view. He mentions that a large number of workers have plants in their offices, again showing a desire to be in touch with other species.

Robert Ulrich, another proponent of biophilia, cites a study on hospitalized patients indicating that those in rooms with a window view or with a landscape painting on the wall recovered more rapidly than did those without some nature scene to focus upon [28]. A study on dental patients reveals that those who gazed at fish swimming in an aquarium during dental procedures experienced less pain and distress than those who looked at a painting or a blank wall. These studies are hardly definitive but do suggest that natural scenes or depictions of such scenes are somehow calming or comforting.

More familiar are the studies on preferences for particular types of natural landscapes. Gordon Orians argues that humans are especially attracted to a savanna-like landscape as the optimum human environment because it is similar to the most advantageous landscapes available to early humans—that is, similar to the African savannas where early human evolution is likely to have occurred [29]. In *Biophilia*, Wilson contends that humans try to re-create such landscapes where they do not naturally exist; this urge explains our penchant for lawns and trees surrounding our homes and our attraction to landscape paintings with these elements [30].

There is also the matter of human at-
traction to bright colors in flowers, birds and butterflies. Bright colors can be a signal to keep away, as with poisonous insects, or a sign to come closer, as in the bright colors of many fruits. In either case, it would be of adaptive advantage to pay attention. This motivation may explain why we like bright flowers in our homes and enjoy prints of such flowers and of brightly colored birds and butterflies. Alexander Skutch argues for the adaptive advantage of an aesthetic sense in that it is found in other animals, particularly in birds, for which color and form are important behavioral cues [31]. Ellen Dissanayake also sees an evolutionary aspect to the aesthetic experience and views this experience of pleasure in creating objects, sounds and movements as related to the origin of human art [32].

I should note here that not all biologists are convinced of the existence of biophilia. In *The Biophilia Hypothesis*, not surprisingly, most contributors support the hypothesis to a greater or lesser extent. There is one dissenting voice, however, and it is a significant one, that of Jared Diamond, a geographer who has written extensively on the evolution of human behavior [33]. To marshal a case against the hypothesis, he draws on his experiences with indigenous peoples in New Guinea. He sees no great interest there in living things, except insofar as they are useful, and there is no real fear of snakes or biophobia [34]. Of course, the fact that organisms are useful and are experienced as such may in fact be a manifestation of biophilia. Since most people today do not now, and deal with organisms in the same way as they do in Papua New Guinea, our innate urge manifests itself more as an aesthetic attraction.

**HUMAN DEVELOPMENT**

Paul Shepard ties together human biology and behavior, but with a different emphasis from that of Wilson, a more developmental one [35]. He contends that, since humans evolved in a world rich in other organisms and had constant contact with animals and plants, this has shaped human biology, and therefore such contact is necessary for normal human development, both physical and, perhaps even more importantly, psychological. For millions of years our ancestors functioned in close contact with many organisms, and so the few thousand years since our species has taken up agriculture and other forms of civilized behavior are too short to have had much effect on human evolution. Therefore, since most of us now live in a human-made world and often have little contact with other forms of life, this not only is stressful for our psyches but also makes it difficult to achieve psychological maturity.

In *Nature and Madness*, Shepard sees contact with nature as a necessity for normal psychological maturation. He makes the strong claim that, without an intimate relationship with living things during our formative years, humans reach physical adulthood in a psychologically infantilized state. As a result, such individuals do not feel fulfilled and may experience rage, thus forming the root of much of the violence of the 20th century [36]. Shepard points out that humans evolved as hunter-gatherers, giving them close contact with both animals and plants, and each of these kingdoms provided different experiences. Careful observation was necessary for hunting, and there was a need to identify with the prey in order to track it and anticipate its movements. Shepard’s view—that hunting was an important formative agent in human evolution and that therefore something is missing from our lives if we no longer have that kind of contact—is obviously controversial. Even he admits that it would be difficult to provide such experiences for the billions of people on the planet. However, he argues that a mosaic of experiences, including perhaps a brief exposure to hunting, could go a long way toward providing enriching experiences for young people to ensure psychological health.

Shepard also points to images of animals as useful reminders of the living world, though they are not substitutes for exposure to life. In addition, he contends that plants function in a similar way to enrich the maturation of the human mind. Plants offer tactile contact and require patience and close observation. Obviously, the plant-human encounter is different from the animal-human encounter, and this makes it all the more important, since it fosters the development of different mental responses. In *Green Nature/Human Nature: The Meaning of Plants in Our Lives*, Charles Lewis writes about the many ways in which plants influence our emotional lives, from their therapeutic value in hospitals to their recreational value in parks, backyards and homes [37]. Lewis contends that gardening is good for both mental and physical health and that even indoor gardening—taking care of houseplants—is valuable. Working with plants provides the kind of contact that Shepard sees as significant to mental well-being. In a study of what objects in their homes are most important to them, many respondents put plants as one of their top three choices, which gives some indication of the significance of greenery in people’s lives [38].

**DAMAGING AND SAVING NATURE**

Arguably, as we have become more separated from the natural world, the value of what contact we do have, minimal though it may be and often in the form of representations, becomes more important. Nature indoors becomes more significant as nature outdoors becomes more distant. But what impact does this have on nature itself? As I mentioned earlier, the impact definitely can be negative if the nature brought indoors depletes what is left outdoors, as in having wild animals as pets or collecting rare plants and carved ivory figurines. There is also the danger that in being separated from nature we have less of an emotional commitment to it and therefore are less likely to want to preserve it.

There is, however, another way of looking at this. Wilson argues that any encouragement of biophilia can make it more likely that we will be induced to preserve other species. In contrast to Shepard, he and Kellert both admit that this innate human urge to associate with other species is not very strong. Kellert writes,

> The human affinity for nature represents a collection of relatively weak tendencies [including aesthetic appeal and the satisfaction of our desire for kinship and affection—M.F.]. All the various strains of biophilia depend on adequate learning and experience. Without repeated experience, the various strands of biophilia lie dormant and frustrated. Thus the different aspects of biophilia are best viewed as products of “biocultural” evolution—inborn tendencies shaped by the mediating influence of learning, culture, and experience [39].

Kellert is less interested in whether or not biophilia is gene-driven than in how this affinity can be developed; no matter how slight the genetic tendency is, it is better than nothing in terms of encouraging a respect and affection for the natural world. The biophilic urge needs to be nurtured through education and the development of an environmental ethic along the lines proposed by the ecologist Aldo Leopold over 50 years ago [40]. This ethic must value not only such crea-
tures as grizzly bears and whales but the whole spectrum of life.

By disregarding the issue of the relationship between biophilia and interior decoration, Kellett and Wilson help to create the situation they are trying to avoid. As mentioned earlier, some manifestations of biophilia in decorating are dangerous in the sense that the use of organisms or their remains can lead to extinctions. If Kellett and Wilson at least admitted that these uses of plants and animals, no matter how misguided, could be seen as manifestations of biophilia, then they would be in a better position to deal with these perversions of the biophilic urge. Secondly, others use the relationship between biophilia and interior decoration to tout virtual reality experiences of nature or other artificial environments as being as psychologically beneficial as the experience of nature itself. It behoves Kellett and Wilson at least to acknowledge that such ploys can be considered manifestations of biophilia and then go on to explore the flaws in equating them with experiences in natural environments.

Shying away from dealing with the artificial also prevents use of a good argument for the existence of biophilia, one that would strike a chord with many more people than some of the more subtle ones that require familiarity with evolutionary biology and developmental psychology. Since so many people have images of plants, animals, and landscapes in their homes, the idea that these are expressions of biophilia would make a lot of sense to them. This argument involves things with which people are familiar: if they then consider the comforts these things provide, the idea of biophilia could become more plausible.

Admittedly, the link between biophilia and interior decoration can be overplayed. There are many other reasons people surround themselves with living things and representations of the same: some people have pets for protection; a landscape painting may cover a crack on the wall; a figure of a lamb or a fish may give us a greater appreciation for our links to nature and thus help to achieve a future rich with biodiversity. With the severity of our current environmental problems, we must use every approach possible to make people more sensitive to these problems and more willing to do something about them. Biophilia, in whatever manifestation, is not going to save the world, but it is an approach to these problems worth investigating, and interior decoration is one manifestation of biophilia that deserves a second look.

References and Notes


10. See Goody [8]. Animals in African Art: From the Familiar to the Marvelous was an exhibit that provided many examples of animal representations, particularly from Western and Central Africa. This 1998 exhibit was held at the Mint Museum in Charlotte, North Carolina.


13. See Goonich [5].


15. See Price [14].


30. See Wilson [3].


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