

# BIOLOGICAL FUNCTION WITHOUT NATURAL DESIGN

Darwinians tend to believe that the theory of evolution by natural selection with its simple mechanism has expelled from evolutionary biology the views that require an intelligent designer or undetectable progressive forces. Nevertheless the notion of teleology seems to creep into some of the interpretations of the Darwinian theory by the ideas of adaptation, design (without designer), goals, and purposes. It is surprising that the ideas implying or related with such psychological notions as goals and purposes can have any place in evolutionary biology that is supposed to be materialist and mechanistic. Most Darwinians, however, do not see any problem with employing such notions in their explanations because they believe these are perfectly compatible with the theory of evolution by natural selection. They resist the elimination of the notions of design, purposes and goals from biology because they think that these notions are explicable by natural selection, without recourse to any intentions or intentional agents.

I agree that the explanation of purposeful behavior requires intentions. This is an undeniable fact about, at least, some higher mammals. However, describing non-intentional activities of organisms and of their parts in teleological terms seems controversial. I think this issue stems from our tendency to think that organisms are some kind of artifacts. This artifact model, in turn, leads to views that biological teleology understood as explanation of functions in terms of goals and purposes can be justified by the notion of design. In other words, it is expected that as the notion of artifact design explains artifact function the notion of natural design can account for biological function. But whereas the concept of artifact design is relatively intuitively clear the idea of natural design, or design without designer, is a counterintuitive notion. Furthermore, although the apparent similarities between organisms and artifacts are undeniable, and organisms do look design-like it is not so clear that organisms and their parts are in fact naturally designed.

In this essay, I argue that in some special cases, artifacts and natural entities may have mere functions, that is, functions without design. In such cases,

such artifacts (and natural entities) are intentionally *used* for a purpose that determines their function. For instance, I use my TV remote control as a paperweight, which becomes its function, though it is not designed for this function. Then I argue that the idea of function without design (or use function) has also significant implications regarding biological function, for it becomes possible to establish biological function without appeal to natural design. I also maintain that the attempts to account for natural design on the basis of biological function, or arguing that they are coextensive is fruitless, since the sole contribution of natural design can be its role in determining biological function, as it is the only relation between artifact design and function.

#### ARTIFACT DESIGN

The notion of natural or biological design seems to be an extension of ordinary uses of design. Hence it is useful to clarify this notion in its ordinary usage and then to utilize this insight in examining the idea of natural design. Allen and Bekoff argue that the term “design” is not clear even in psychological contexts and “has at least two different but related senses”.<sup>1</sup> The first sense, goal-driven design, “coincides with detailed planning before or during a sequence of behaviors geared to a specific goal. ... Products of goal-driven design are properly called artifacts”.<sup>2</sup> The second, intent design, refers to those actions that “may be intentional even when little thought has been given to the action’s consequences”.<sup>3</sup> They suggest that “natural objects [used] for decorating rooms and buildings ... are clearly not designed for that purpose (although they are presumably placed in strategic locations by design, in the sense of intent design)”.<sup>4</sup> I agree that arrangements of natural objects are not cases of goal-driven design, for an arrangement may come into existence even if an agent has no intention to bring about a design by intentionally placing each piece where it is. Such an arrangement only *appears* designed. But an arrangement is not a design unless it is a goal-driven design because decorating rooms requires elaborate planning. Thus the difference between the so-called goal-driven and intent designs should be something else. In the case of Allen and Bekoff’s goal-driven design, an agent designs both the parts (that are modified or constructed) and the whole, whereas in the case of intent design an agent *uses* objects (natural entities as well as parts of other artifacts) to design a whole. I think both are goal-driven designs with respect to the whole arrangement. As regards the parts, however, if the parts are modified they are designed, if not, they are not designed, even if they are parts of a design.