

# The Function Argument for Ascribing Interests

Parisa Moosavi

[pmoosavi@yorku.ca](mailto:pmoosavi@yorku.ca)

**Abstract:** In the debate over the moral status of nonsentient organisms, biocentrists argue that all living things, including nonsentient ones, have interests of their own. They often defend this claim by arguing that living organisms are goal-directed, functionally organized systems. This argument for ascribing interests has faced a serious challenge that is sometimes called the Problem of Scope. Critics have argued that ascribing interests on the basis of functional organization would have implausible implications regarding the scope of the argument, such as ascribing interests to inanimate artifacts and machines. In this paper, I argue that much of the recent discussion on the Problem of Scope is based on an uncharitable interpretation of the argument for ascribing interests, which presupposes a reductionist account of functions. I assess this version of the argument, and explain why it cannot succeed. I then consider an alternative interpretation of the argument, which starts from a non-reductionist account of functions. I argue that this version of the argument avoids the Problem of Scope, while acknowledging that it has limitations of its own.

**Keywords:** Biocentrism | Nonsentient Organisms | Interests | Functions | Artifacts

## 1. Introduction

According to *biocentrism* in environmental ethics, all living things are morally considerable in their own right, because all living things have interests, or *a good of their own*, that we should consider in our moral deliberation (Goodpaster, 1978; Attfield, 1981; Taylor, 1986). Biocentrists thus maintain that even nonsentient organisms like trees and fungi have interests of their own: they can be benefited or harmed, and things can be good or bad *for* them.<sup>1</sup> Biocentrism is often contrasted

---

<sup>1</sup> I use the terms “interests” and “a good of one’s own” interchangeably throughout the paper. What I mean by an entity’s having interests or a good of its own is merely that it can be benefited or harmed, or that

with *sentientism*, according to which only sentient beings can be morally considerable, because only sentient beings have interests of their own (Feinberg, 1974; Regan, 1976; Sapontzis, 1987; Singer, 1993). Sentientists argue that the capacity for suffering and enjoyment is a prerequisite for having interests at all, and there is no basis for ascribing interests to organisms that lack this capacity.

Although we sometimes think or speak in terms of what is ‘good’ or ‘bad’ for a tree or a fungus, it is not obvious that these thoughts and statements are literally true. When we say that “watering a tree is good for it” or “pouring acid on a fungus harms it”, it could very well be that we are speaking metaphorically, or projecting our own interests onto these organisms. To argue that such statements can in fact be true in the case of nonsentient organisms, biocentrists need to show that the ascription of interests to these organisms is not arbitrary or without basis. The primary line of argument offered by biocentrists involves pointing out that living organisms are goal-directed, functionally organized systems. This argument, which I will call *the Function Argument*, roughly goes as follows. Regardless of whether they are sentient or nonsentient, living things are different from non-living things in that they have natural purposes and ends of their own. They are teleological entities that are directed toward maintaining and reproducing themselves, and are functionally organized in a way that enables them to reach these ends. These natural ends and functions give us a basis for making evaluative judgments about what is good or bad for an organism *independently* of our own interests. For example, we can see that the roots of a tree have the function of absorbing and transporting water and nutrients from the soil; and the spores of a fungus have the function of enabling it to reproduce by landing on soil and growing into new individuals. It is on the basis of these function ascriptions that we can say “watering a tree is good for it”, or “pouring acid on a fungus harms it”. What is good for the organism provides

---

things can be good or bad for it. In this minimal sense, having interests does not in itself presuppose that entity has a mind or the capacity to consciously *take* an interest in things. It is worth noting that some biocentrists (e.g., Paul Taylor) use the term “having interests” to mean “taking an interest in”, and thus distinguish between “having interests” and “having a good of one’s own”.

suitable conditions for the functioning of its parts, whereas what is bad for it frustrates these functions by creating adverse conditions.

The Function Argument for ascribing interests is faced with a serious challenge, which is sometimes called “the Problem of Scope” (Holm, 2017; McShane, 2019; Hoffmann, 2022). Critics have argued that ascribing interests to an entity based on the fact that it has a functional organization would have implausible implications regarding the scope of the argument. Some have argued, for instance, that if being functionally organized qualifies as a basis for ascribing a good of one’s own, then the scope of entities with a good of their own will include inanimate artifacts and machines, which also have a functional organization (Feinberg, 1974; Sapontzis, 1987; Basl and Sandler, 2013a; Basl, 2019).<sup>2</sup>

In response to this objection, many biocentrists have tried to identify a relevant difference in the teleology of living things and artifacts that can justify drawing different conclusions with respect to having interests. Most notably, they have argued that the ends and functions that are ascribed to living things are *their own*, whereas as the ends and functions that are ascribed to artifacts and machines are somehow derivative of *our* goals, intentions, and interests (Arbor, 1986; Goodpaster, 1978; Taylor, 1986). This line of response, however, is criticized for not clarifying what makes the teleology of artifacts and machines derivative, and why that should make a difference to whether they can have interests of their own. John Basl (2019; together with Ronald Sandler, 2013a; 2013a) appeals to the case of synthetic living organisms—organisms that are the product of human design and engineering—to argue that there is no sense of derivativeness that applies to the teleology of artifacts but not to the teleology of organisms. Perhaps surprisingly, rather than concluding that we cannot ascribe interests to nonsentient organisms based on their

---

<sup>2</sup> Other authors have argued that the scope of entities with a good of their own would include self-maintaining systems like flames and hurricanes (Holm, 2017; Hoffmann, 2022) or ecological wholes like species and ecosystems (Basl, 2019). In this paper, I will focus on the first version of the Problem of Scope, i.e., whether the scope of the Function Argument would include inanimate artifacts and machines. But I believe that the response I offer to this version of the problem (in §5 and §6) will equally address other versions of the problem.

functional organization, Basl concludes that we should *also* ascribe such a good to artifacts and machines. Various other authors, however, have considered this implication unacceptable and effectively a *reductio* of the view that nonsentient organisms have interests of their own (Feinberg, 1974; Sapontzis, 1987; see also Holm, 2017; and McShane, 2019). Overall, it seems fair to say that the Problem of Scope for the Function Argument has not been resolved.

The aim of this paper is not to settle the debate between biocentrists and sentientists, but more specifically to examine the Function Argument and its prospects of addressing the Problem of Scope. In other words, I am not concerned with whether nonsentient organisms in fact qualify for moral considerability, but rather with the more modest question of whether they can be attributed a good of their own based on their functional organization. Note that having interests or good of one's own is at best a necessary condition for moral considerability: even if we establish that nonsentient organisms do in fact have interests of their own, there is a further question whether we should consider these interests in our moral deliberation. That said, the question of whether we can attribute interests on the basis of functions matters in its own right. And the Function Argument has recently received renewed attention in the literature independently of its moral implications. I will argue that much of the recent discussion on the Problem of Scope is focused on an uncharitable interpretation of the Function Argument, which presupposes a reductionist account of biological functions. I will present and defend what I take to be a more promising version of the argument, which appeals to a non-reductionist account of functions. I will then examine the prospects of this version of the argument. I explain how my preferred version of the argument can address the Problem of Scope, while acknowledging that it is more limited in its ambition and reach.

## **2. The Function Argument**

As we saw earlier, biocentrists need to explain how something can be good or bad for a nonsentient organism despite the fact that such an organism is not the kind of thing that can subjectively value or care about states of the world. Some biocentrists have tried to do this by making what I have called the Function Argument. This argument has various forms. But all forms of the argument

implicitly or explicitly appeal to the claim that living things are naturally directed toward certain goals and functions. Kenneth Goodpaster, for instance, appeals to the plants' "obvious tendencies to maintain and heal themselves", and argues that such tendencies make it difficult to reject that they have interests (Goodpaster, 1978: 319). Paul Taylor claims that a living organism is "a teleological (goal-directed) centre of life, pursuing its own good in its own unique way." (Taylor, 1986: 45) And Jay Kantor argues that plants have "self-regulating and homeostatic functions, which serve to preserve the 'integrity' of the organism" and enable them to *thrive* or *do well* (Kantor, 1980: 169).

The argument thus has the following general structure:

(P1) All living organisms are goal-directed, functionally organized systems.

(C) Therefore, all living organisms have a good of their own.

The idea is that, whether sentient or nonsentient, all living organisms are functionally organized toward achieving their natural purposes. And this functional organization gives us a non-arbitrary basis for making judgments about what is good or bad for them: what is conducive to the realization of these functions is good for the organism, and what is detrimental to their realization is bad for the organism. The fact that an organism is functionally organized thus allows us to infer that it has a good of its own.

The Function Argument might raise an immediate concern: the argument appeals to a teleological conception of living things that appears to be outdated and problematically essentialistic. The idea that living organisms have a *telos*, or a 'natural' path of growth and development such that any divergence from it would constitute a 'failure' or a 'malfunction', does not seem to fit with modern evolutionary biology and genetics. The attribution of function and purpose to living things is an ancient practice with roots in creationism and theology, and it has been contested by scientists and philosophers since the rise of the Modern Synthesis theory of evolution.<sup>3</sup>

---

<sup>3</sup> See Allen and Bekoff (1995) for a discussion of the controversy on teleological notions in biology.

However, despite the initial suspicion and opposition toward teleological notions in biology, contemporary philosophy of biology has been a lot more open to giving teleology and function ascriptions a place in a naturalistic account of living things. Many philosophers of biology acknowledge the importance of teleological notions and consider them indispensable to explanations in biology.<sup>4</sup> There is a wide range of naturalistic accounts of biological function in the recent literature.<sup>5</sup> And even biological essentialism has received renewed attention and support.<sup>6</sup> So, it is not at all obvious that the mere appeal to biological teleology is enough to discredit the Function Argument. And many biocentrists have claimed that the argument can be made using a naturalistically acceptable conception of biological function.

A common strategy in defending the Function Argument has been appealing to the *etiological* account of biological functions. The etiological account, which goes back to Larry Wright (1983), takes the *causal-explanatory role* of functions seriously and interprets function statements as causal explanations for the existence of function-bearers. The most prominent version of this account is the *selected-effect* theory, which grounds function statements in the historical causal process of natural selection or some comparable selection process. According to the selected-effect theory of biological functions (Millikan, 1989; Neander, 1991; Godfrey-Smith, 1994), the function of a trait or an aspect of a biological organism is, roughly, the contribution for which it has been preserved under the past operation of natural selection. In other words, it is the effect that historically explains the trait's current presence or prevalence in the population. To use the classic example of the heart, on the selected-effect account, the function of a human heart is to pump blood, because pumping blood has contributed to the natural selection of humans with a heart, and thus explains the current presence of human hearts. In this way, the selected-effect account captures the explanatory role of functions by appealing to the historical role of functional

---

<sup>4</sup> See, e.g., Nagel (1961); Mayr (1961); Millikan (1989); Neander (1991).

<sup>5</sup> See Cummins (1975), Wright (1973), Millikan (1989), McLaughlin (2001), and Moreno and Mossio (2015) for a few examples.

<sup>6</sup> See, e.g., Walsh (2006), Boulter (2012), and Austin (2017).

traits in natural selection. It specifies a sense in which we can say, e.g., “the heart is there *because* it pumps blood” or “it is there *for* pumping blood”.

Many proponents of the Function Argument either explicitly appeal to the selected-effect account of function or implicitly try to ground their teleological claims in natural selection (Varner, 1998; Stone, 1972; Agar, 2001; Basl, 2014; 2019; Basl and Sandler, 2013a). Among them, John Basl’s argument is the most well-developed, and the one that I will focus on throughout the paper. That said, it’s worth noting that the selected-effect theory is not the only theory of function that falls under the broad category of the etiological approach, and not the only theory that has been discussed in relation to the Function Argument. Another prominent example of an etiological account is the organizational theory (Mossio et al. 2009; Moreno and Mossio 2015; Mossio and Saborido 2016), which grounds the causal-explanatory role of functions in the causal organization of a self-maintaining system.<sup>7</sup> Although Basl and most other contemporary versions of the Function Argument appeal to the selected-effect theory, some authors (Holm 2017; Hoffman 2022) have also considered a version of the argument that relies on the organizational theory. Here I will mainly focus on Basl’s version of the argument as a representative example, but as I will explain in §5, my criticism of Basl’s argument also applies to the organizational version of the Function Argument.

Basl—sometimes writing with Sandler—acknowledges that there are other accounts of biological function that are consistent with naturalism and a scientific worldview. But he considers the selected-effect account to be the only account of function that can be used in defending biocentrism.<sup>8</sup> That is because he believes the selected-effect account to be the only account of function that can capture the “teleological nature” of function ascriptions, i.e., the sense in which

---

<sup>7</sup> See also de Prado and Saborido (2023).

<sup>8</sup> Basl refers to this account as “the etiological account of biological function” (Basl 2019: 74), but the specific kind of etiological theory he has in mind is the selected-effect theory. He does not take note of the fact that the etiological approach is broader than the selected-effect theory and also includes the organizational theory. In fact, he characterizes the organizational theory as a “nonetiological” account (2019: 91). Here I will be diverging from his terminology to avoid confusion.

a function-bearer is *supposed to* perform its function, such that falling short of that would amount to a *malfunction* (Basl, 2019: 74-76).<sup>9</sup> Basl thus relies on the selected-effect account and the role of natural selection to argue that organisms can be ascribed natural purposes and ends. He offers a teleological account of the interests, or “welfare”, of a functionally organized entity as “at least partly defined, grounded, or constituted by” its ends, where the entity’s ends are defined in terms of its history of natural selection (Basl, 2019: 64). According to this account:

Something, X, is good for nonsentient organism O if and only if it promotes one of O’s ends. X is bad for O if and only if it frustrates one of O’s ends.

O has E as an end if and only if there was selection for E at the level of individual organisms in the ancestral population of which O is a descendant (Basl, 2019: 81).<sup>10</sup>

Basl argues that this account meets what he considers to be the conditions of adequacy for a theory of interests. Firstly, it determines the interests of nonsentient organisms in a way that is not arbitrary or anthropomorphizing, but rather objectively specifiable and determined by the organism’s ends. Secondly, the goods that are specified for a nonsentient organism cannot be reduced to the interests of human beings or other organisms. And lastly, the account captures the subject-relativity of interests, i.e., the sense in which they are good *for* the welfare subject.<sup>11</sup> That is because the ends whose promotion constitute the goods are *the organism’s* ends, which is why

---

<sup>9</sup> This claim is actually contested by philosophers who discuss the organizational version of the Function Argument. Holm (2012; 2017) and Hoffmann (2020) argue that the organizational account of function may be more promising in offering a teleological account of interests that can address the Problem of Scope.

<sup>10</sup> Basl clarifies that his account defines ends directly in terms of the entity’s selection history rather than making reference to functions, because he wishes to bypass debates on whether the selected-effects account offers the correct account of the concept of *function*. He also explains that the requirement about there being selection at the level of individual organism is included to avoid questions about whether the organism as a whole can be said to have the ends of its parts and aspects (see Basl, 2019: 77-82).

<sup>11</sup> See Sumner (1996: 21-22) on the subject-relativity of welfare.

it is the organism that benefits from their promotion (Basl, 2019: 68). Basl thus concludes that even nonsentient organisms can be ascribed interests based on their functional organization.

### 3. The Problem of Scope

Let's now turn to the question about the scope of the Function Argument for ascribing interests. We saw that critics of biocentrism have argued that if being functionally organized was a basis for ascribing interests, then the scope of entities with interests of their own would extend to include inanimate artifacts and machines, which also have a functional organization (Feinberg, 1974; Sapontzis, 1987; see also Basl and Sandler, 2013a; Basl, 2019). A chef's knife, for example, is an artifact that is designed for the purpose of cutting, chopping, and dicing. It is functionally organized with parts that are each designed to perform a specific function, e.g., a curved blade enabling it to rock back and forth, and an edge that is sharp enough to make fine cuts. Thus, it seems to follow the knife can also be ascribed interests of its own. This implication of the Function Argument is often considered problematic, because we do not normally think that a knife really has interests or can genuinely receive benefit or harm from our treatment.<sup>12</sup> Although we sometimes talk about what is 'good' or 'bad' for a knife—e.g., when we say that handwashing a knife is good for it—what we typically mean is that doing so is good for the *functioning* of the knife, not the knife itself. The critics of biocentrism thus tend to consider the extension of interests to artifacts to amount to a *reductio* of the argument.<sup>13</sup>

Most biocentrists have tried to address this Problem of Scope by identifying a relevant difference in the functional organization of living things and artifacts that can exclude artifacts from the scope of the argument. In my view, some of these efforts are clearly unsuccessful. Gary Varner, for instance, argues that what distinguishes organisms from artifacts is that the former but

---

<sup>12</sup> A notable exception is Basl (2019; 2014), who considers the implication that artifacts have interests of their own counterintuitive but ultimately palatable. On Basl's view, this is an implication of the teleological account of interests that we should be prepared to accept (see Basl, 2019: 130-161).

<sup>13</sup> Dussault (2018: 190) has aptly called this objection "*reductio ad artificium*".

not the latter are products of natural selection. Biological functions are therefore distinct in that they are grounded in a history of natural selection, unlike artifactual functions which are grounded in the intentions of their human designers (Varner, 1998: 68-69). Varner, however, does not explain why this difference between biological and artifactual functions matters to the question at hand. The problem is that whether an entity is the product of natural or artificial selection seems *irrelevant* to whether it has a good of its own. Even if we can draw a distinction between biological and artifactual functions on this basis, it is not clear why only natural selection should qualify as a basis for ascribing a good. Moreover, it is not clear that Varner's account successfully distinguishes between organisms and artifacts. As Basl and Sandler (2013b; see also Basl, 2019) have argued, there are living organisms that are designed and engineered by synthetic biologists in a manner similar to designing artifacts.<sup>14</sup> Varner's account has the implausible implication that these *synthetic organisms* do not have interests of their own because they are not products of natural selection. Furthermore, as Holm (2017: 1077) has argued in response to Varner, the conditions of *natural* selection can be realized for some naturally occurring, non-biological entities that no one thinks have interests of their own. Bedau (1991), for example has argued that a populations of relatively simple replicating molecules such as the crystals that form clay can meet the necessary conditions for natural selection.<sup>15</sup> So, the distinction between natural and artificial selection does not really help to limit the scope of the argument to cases where ascribing interests is plausible.

A more promising approach is taken by biocentrists who argue that the ends of living things is *their own*, whereas as the ends of artifacts is somehow *borrowed* from us (Arbor, 1986; Goodpaster, 1978; Taylor, 1986). Here I will focus on Taylor's version of the argument, which is the most explicit. Taylor argues that the difference between the teleology of organisms and artifacts lies in the fact that the functions of artifact and machines are derived from the purposes of human

---

<sup>14</sup> See Endy (2005) and Andrianantoandro et al. (2006).

<sup>15</sup> See also Rosenberg (2012: Chapter 3).

agents, whereas biological functions are not so derived. As he puts it, “the goals of a machine are derivative, whereas the goals of a living thing are original” (Taylor, 1986: 124). The idea is that only original, non-derivative teleology can underwrite the ascription of a good of one’s own, which is why only biological teleology qualifies as a basis for ascribing such a good.

This response to the Problem of Scope is also criticized for not cleanly distinguishing between organisms and artifacts, and not explaining why the proposed distinction should make a difference to whether they can be ascribed interests. Basl and Sandler (2013a: 703-704; 2013b: 98-99) have argued that it is not exactly clear what Taylor means by *derivativeness*, and why it should be an obstacle to an entity’s having genuine ends or a good of its own (see also Basl, 2014; 2019). They consider two different notions of derivativeness giving rise to two different versions of Taylor’s response, and argue that both versions of the response fail. One notion is what they call *use-derivativeness*, which captures the idea that artifacts only exist because they serve a purpose for other entities. The other notion is what they call *explanatory-derivativeness*, which captures the idea that the ends of an artifact can only be adequately explained by reference to the ends and intentions of other entities. Basl and Sandler argue that both senses of derivativeness can also apply in the case of living organisms, and neither sense of derivativeness is *relevant* to whether the ends of an entity are *its own* and thus can ground interests. With respect to use-derivativeness, they appeal to the case of synthetic organisms to argue that being created to serve a purpose for another entity is not an obstacle to having interests. They argue that although synthetic organisms like crops or farm animals are created for our use, there is no reason to think that they have no ends or interests of their own. It would be bad for a selectively bred sheep, for instance, to have its legs broken, regardless of whether we take an interest in how the sheep is affected by that. Similarly, with respect to explanatory-derivativeness, Basl and Sandler argue that the fact that we must appeal to another being’s intentions to explain the teleology of an entity does not mean that the ends are not the entity’s own or cannot ground interests. Again, the case of synthetic organisms illustrates that the ends of an entity with interests of its own can be explanatory-derivative. In fact, this can be even true of the ends of human agents. The explanation of how a person comes to have

the ends that they have can involve to the intentions of other people, e.g., their parents who influenced their choices. But, clearly, this does not prevent their ends from being genuine ends or the person's own.

It is worth noting that unlike many other authors (e.g., Feinberg, 1974; Sapontzis, 1987), Basl and Sandler do not view the implication that artifacts also have interests of their own as a problem for the Function Argument. Basl argues that this is an implication of his teleological account of interests that we can embrace without having to accept the additional claim that we need to extend moral considerations to artifacts, because having interests is not a sufficient condition for being morally considerable (Basl, 2019: 161-182). In fact, Basl maintains that “teleo-interests”—the interests that we attribute to an entity on the basis of its teleological organization—are generally not morally significant. An implication of this, which Basl also accepts, is that the interests of nonsentient organisms are not morally significant either, which means that biocentrists are wrong to think that all living things are morally considerable.

Of course, Basl is right that not all interests are necessarily morally important. Even if we attribute interests to artifacts, it is a further question whether this makes artifacts morally considerable. Note, however, that attributing interests to artifacts is counterintuitive regardless of whether we take it to mean that these interests are morally considerable. Moreover, Basl does not offer a convincing account of *why* the supposed interests of artifacts are not morally important. He appeals to intuitions in a number of thought experiments involving artifacts to argue that we do not have any moral obligations toward them (Basl, 2019:169-180), which seems plausible enough.<sup>16</sup> These thought experiments, however, leave it open whether our lack of moral obligations toward artifacts is because their interests are not morally important or because they do

---

<sup>16</sup> Basl's cases are modeled after the famous “Last Man” thought experiment in environmental ethics. In Last Man, we are to imagine the last man on Earth trying to decide whether to wipe out all non-sentient life that remains before he dies. In Basl's version of the thought experiment, the last woman on Earth is trying to decide whether to shut down or destroy the remaining artifacts in her life before she dies (Basl, 2019:169-180). Basl appeals to our intuitions to show that the last woman has no moral obligation to refrain from shutting down or destroying her artifacts before she dies.

not have interests to begin with. For Basl to claim that artifacts do have interests of their own and at the same time insist that their interests are never morally significant seems to at least require an explanation of what makes these interests insignificant.<sup>17</sup> In the absence of such an explanation, and given how counterintuitive it is to attribute interests to artifacts in the first place, the Problem of Scope for the Function Argument seems to remain in force.

In the rest of this paper, I will revisit the Function Argument to examine its prospects for addressing this problem. I will argue that much of the contemporary discussion of the argument focuses on an interpretation of the argument that mischaracterizes the relation between being functionally organized and having interests. The next section offers a closer look at this interpretation of the argument, of which Basl's account presented in §2 is a representative example. I explain why this version the argument cannot succeed, and ultimately present an alternative interpretation that I argue is more promising.

#### **4. Revisiting Basl's Interpretation of the Function Argument**

According to the Function Argument for ascribing interests, an organism's being functionally organized licenses us to infer that it has interests of its own. In this section, we will look closer into why exactly this inference is supposed to go through in the case of organisms. So, we will ask: what is the relation between the fact that the parts and operations of an organism can be ascribed functions and the fact—if it is a fact—that it has interests? How is one supposed to support the other?

Basl's reconstruction of the Function Argument provides us with an answer to this question. As we saw earlier, on Basl's account, the functional organization of an organism implies that it

---

<sup>17</sup> In his earlier work, Basl does attempt to offer such an explanation by arguing that we do not have to worry about the interests of machines because (a) we normally already treat machines in accordance with their teleological interests (i.e., their intended function), and (b) our psychological interests always take precedence over the teleological interests of a machine (see Basl, 2014: 92-93). However, it is easy to see that this explanation is not very convincing. There are certainly cases where we consider treating machines for purposes other than their intended function, and it is not clear why even our weakest psychological whims should take precedence over the supposed interests of a machine.

has ends, and the fact that the organism has ends in turn implies that it has interests of its own. Basl's account thus had two steps: the inference from functions to ends, and the inference from ends to interests. To support the first step, Basl appeals to the teleological character of function ascriptions. He argues that to ascribe function F to a trait X implies that X is *supposed to* perform F, or that it is there *in order to* perform F. So, the fact that X has F as a function implies that it is directed toward F as an end. To support the second step, Basl offers a teleological account of interests, which grounds the interests of a goal-directed entity in its ends. So, he argues that the fact that an organism O has an end E implies that it has an interest in achieving E.

I believe Basl is right in thinking that function ascriptions to the parts and aspects of organisms have a teleological character, which supports the ascription of ends to those parts and aspects as well as the organism itself. To ascribe the function of absorbing nutrients to the roots of a tree is not just to say that it is something that the roots of a tree happen to do, or do regularly. It implies that absorbing nutrients is something that the roots are *supposed to* do, in service of the tree's development, survival, or other ends. I also find it plausible that the ascription of ends to organisms can support the ascription of interests. To say that a tree has the end of growing leaves or a sufficiently thick bark does seem to imply that the tree somehow benefits or is made better off by the attainment of these ends. That said, I do not think that Basl's explanation of why these inferences go through in the case of organisms is exactly right. To see this, let's examine each step of his explanation further.

Basl's defence of the inference from functions to ends is explicitly based on the selected-effect account of function.<sup>18</sup> He argues that the selected-effect account captures the teleological character of function ascriptions by grounding functions in a selection process. The idea, roughly, is that what grounds the ascription of functions to a trait—i.e., its natural selection history—can also ground the ascription of ends. That is because the fact that trait X has been selected due to

---

<sup>18</sup> As mentioned earlier in note 8, Basl refers to this account as “the etiological account of biological function” (Basl 2019: 74), but the specific kind of etiological theory he has in mind is the selected-effect theory.

having performed F means that it is there because of performing F, or *for* performing F. On Basl's view, since performing F explains *why* the trait is there, we can say that the trait has F as an end. So, for instance, the fact that an organism's heart is selected for circulating blood means that circulating blood explains why the heart is there, which grounds the claim that the heart has the end of circulating blood. Basl thus argues that the selected-effect account provides us with a basis for ascribing ends.<sup>19</sup> He offers what he calls "an etiological account of teleology", which defines the ends of a functionally organized entity in terms of its selection history. On this account, an entity has an end E if there was selection for E at the level of that entity in its selection history (see Basl, 2019: 81).<sup>20</sup>

To be sure, by focusing on the contribution of a trait that causally explains why the trait is there, the selected-effect account of function specifies a non-arbitrary basis for defining functions that is explanatorily significant, especially in evolutionary biology. It is, however, less clear that this account adequately captures the teleological character of function ascriptions, or that it can ground ascription of *ends*. Note that there is no agential choice involved in natural selection, and a trait's being naturally selected just means that the differential survival and reproduction of organisms with different traits has resulted in its proliferation. The contribution of the trait that is responsible for this result thus *causally* explains why the trait is still there or is the way it is. But this causal-explanatory role is hardly a basis for viewing that contribution as an *end*. To see this, consider the following two examples from Mark Bedau. Suppose there is a stick floating down a river that brushes against a rock and comes to be pinned there by the backwash it creates. The stick's being there contributes to creating the backwash, and creating the backwash causally explains why the stick continues to stay pinned there; but we would not say that the stick is there

---

<sup>19</sup> As mentioned earlier in note 10, Basl maintains that this is the case regardless of whether the selected-effect account offers the correct analysis of the concept of *function*.

<sup>20</sup> Basl's account is specifically focused on a case of a nonsentient organism, and specifies that something is an end for a nonsentient organism if and only if there is selection at the level of individual organism. But there is no reason to think that his account would say anything different about other types of functionally organized entity with a selection history.

*in order to* create the backwash, or that it has the *end* of creating the backwash (Bedau, 1991: 648). The other example, which more closely resembles the biological case, is the earlier-mentioned case of populations of clay crystals and polymers (Bedau, 1991: 651). As Bedau has argued, these relatively simple replicating molecules meet the conditions of natural selection, but we do not consider this to be grounds for ascribing ends to them.<sup>21</sup> Of course, we can stipulate a technical notion of ‘end’ that is defined exactly according to Basl’s etiological account, in which case the inference from functions to ends follows. But it is not clear how ascribing an ‘end’ in that specific sense could be grounds for making the second inference, i.e., the inference from ends to *interests*. Even if we were to grant that the stick or the crystals in Bedau’s examples, in some sense, have ‘ends’, it would be a further question whether the attainment of these ‘ends’ constitutes a benefit for them. And ultimately a stick just does not seem like the kind of thing that benefits from being pinned in a river, regardless of its causal history and how exactly it got to be pinned there.

What about Basl’s defence of the second inference, i.e., the inference from ends to interests? Basl offers a teleological account of interests, according to which a teleological entity’s interests are at least in part grounded or constituted by its ends. On this account, if an entity has E as an end, then it benefits from attaining E. Basl argues that this account specifies what is good or bad for a nonsentient organism in a non-arbitrary way that is objectively specifiable and independent of the interests of human beings or other organisms. He also claims that it makes sense of the subject-relativity of interests—i.e., the idea that they are good *for* the subject to which they are ascribed—in a way that is “intuitively motivated”. After all, “realizing ends seems, quite intuitively, good for the thing that has them.” (Basl, 2019: 68).

---

<sup>21</sup> It is worth noting that Bedau and other philosophers who offer similar counterexamples (e.g., Boorse, 1976: 72; Schaffner, 1993: 383) ultimately argue that the selected-effect account does not offer an adequate account of the concept of function. As we saw earlier, Basl is careful not to claim that the selected-effect account offers the right analysis of the concept of *function*, and focuses on the concept of *end* instead. However, the examples offered against the selected-effect account of function are just as problematic for Basl’s account of teleology, especially if the account is meant to ultimately support conclusion of the Function Argument, i.e., the ascription of *interests*.

Basl's general claim about the connection between ends and interests seems plausible. The attainment of an end does seem to involve a benefit for someone, and the ascription of an end does seem to support the ascription of an interest. There is, however, a question about who exactly benefits from the attainment of an end, which Basl's account does not acknowledge. The issue is that, depending on what exactly we mean by ascribing an end to an entity, the entity that benefits from the attainment of an end might be different from the entity to which the end is ascribed. I can say, for example, that my eyes are *for* seeing, or *have* the end of seeing, without meaning or implying that the eyes themselves stand to benefit from the attainment of this end. Or I can ascribe an end to an activity that I undertake, e.g., when I say that my exercise routine has the purpose of making me fitter, without meaning that the exercise routine itself benefits from attaining the end. In both cases, it is not the entity to which the end is ascribed that benefits from its attainment; *I* am. Basl's explanation is focused on the case of the individual organisms, for which the inference from ascriptions of ends to ascriptions of interests does intuitively make sense. But the inference is much less intuitive in many other cases, including the ascriptions of ends to the sub-organismic parts and processes. We can say, for instance, that the heart pumps blood *in order to* send oxygen and nutrient to all parts of the body, without implying that the heart itself genuinely benefits from doing this. Note that even if sending oxygen and nutrients to the body in turn contributes to the heart itself being sustained, it is a further question whether that should be considered a *benefit* for the heart, or whether the heart should qualify as an entity that has *interests* of its own on that basis. At least intuitively, it is not obvious that this much follows from ascribing that end to the heart. So, Basl's claim that his teleological account of interests makes sense of the subject-relativity of interests in an intuitive way only seems to hold in certain cases and not others. The problem is that there are two different senses in which something can be said to *have an end*, only one of which implies that it has interests of its own. As I will argue below, what is at issue is precisely the distinction between derivative and non-derivative ends, and any plausible interpretation of the Function Argument needs to make sense of this distinction.

What I have argued in this section is that Basl's interpretation of the Function Argument fails to offer a convincing defence of the two inferences involved in the argument. In the next section, I will present a diagnosis of why Basl's version of the argument fails. I will then propose an alternative interpretation of the Function Argument that avoids the problems faced by Basl's version.

## 5. A Diagnosis and an Alternative

In my view, the reason Basl's version of the argument fails is that it presupposes a form of reductionism, according to which the criteria for ascribing functions and ends can be reduced to purely non-normative properties and facts. The selected-effect account specifies the necessary and sufficient conditions for ascribing functions solely in terms of descriptive facts about selection history. But it is just not clear how such a reductionist conception of teleology can support the inference from the ascription of functions to the ascription of a good of one's own. Regardless of whether the selected-effect account is successful in accounting for function ascriptions in biology, it just does not capture a notion of function that can support the inference to a normative claim about something being *good* for a beneficiary. As we have seen, if being functionally organized is viewed as purely a matter of having a particular causal history, then neither the inference from functions to ends nor the inference from ends to interests follows. And that is not surprising: just because performing a particular task in the past has caused an entity to exist today, it does not follow that performing that task is good for that entity or anyone else.<sup>22</sup> Without *assuming* that the current existence of the entity or its persistence in the future is somehow a good thing, we cannot infer that a trait's continuing to make the contribution that has led to its current existence amounts to something good or beneficial.

It is easy to see that this problem is not unique to the version of the argument that relies on the selected-effect account of function, and appealing to other reductionist accounts of function

---

<sup>22</sup> See also McShane (2021: 3505-3506) on this point.

would lead to a similar problem for the Function Argument. For example, another contemporary version of the Function Argument (Holm 2017; Hoffmann 2022), which relies on the organizational account of function, faces the same problem. As mentioned earlier, the organizational account is a different etiological theory which grounds the causal-explanatory role of functions in the causal organization of a self-maintaining system. It's worth a brief detour to consider the organizational account in some detail and see why the organizational notion of function cannot support the normative inference at the core of the Function Argument either.

On the organizational account (Mossio et al., 2009; Moreno and Mossio, 2015), functions are defined as contributions to self-maintenance. Roughly, a trait's function is whatever it does that helps it continue to maintain itself. Consider the example of the heart again. The beating of the heart pumps blood, which carries nutrients to the cells and eliminates waste. In doing so, it helps to repair and regenerate the cells of the body, including the heart's own cells. Thus, the heart contributes to the maintenance of the whole organism, which in turn contributes to the persistence of the heart itself. On the organizational account, this causal feedback loop connecting the heart's pumping blood to its own continued persistence is what grounds ascribing a function to the heart: the function of the heart is to pump blood, because pumping blood causally explains why the heart persists.<sup>23</sup>

As an etiological theory, however, the organizational account faces a similar difficulty in capturing the teleological character of function ascriptions. By reducing function statements to causal explanations for the existence of function-bearers, it specifies a non-arbitrary and explanatorily significant basis for defining functions. But it's not clear why the causal feedback loop underlying organizational function ascription should be considered a basis for ascribing ends

---

<sup>23</sup> Note that although both the selected-effect account and the organizational account identify pumping blood as the function of the heart, they ground this function ascription differently. On the selected-effect account, what grounds the function ascription is the contribution of heart tokens to the *intergenerational* reproduction of their *type*, whereas on the organizational account, what grounds the function ascription is the contribution of heart tokens to their own *intragenerational* persistence as *tokens*.

or interests. Without presupposing that the maintenance of a self-maintaining system is a good thing, we cannot infer that a trait's continuing to contributing to this maintenance is an end or a beneficial outcome. Note that Bedau's example of a stick floating down a stream, which is meant as a counterexample to the general structure of Wright's etiological approach, equally applies to the organizational account. The fact that the backwash created by the stick explains why it is there does not imply that we should view it as a function. Critics have thus argued that any purely causal characterization of the conditions for ascribing organizational functions overgeneralizes to physical systems such as hurricanes and flames where the ascription of a teleology seems unwarranted. Organizational theorists have tried to address this problem by supplementing their core idea of functions as contributions to self-maintenance with additional restrictive conditions such as organizational closure and organizational differentiation.<sup>24</sup> However, as critics like Garson (2017; 2019) have argued, counterintuitive examples can be generated for even these more complex versions of the account.<sup>25</sup>

---

<sup>24</sup> According to the most well-developed version of the organizational account (Mossio et al., 2009; Moreno and Mossio, 2015; Mossio and Saborido 2016), the function of a trait is the contribution it makes to the maintenance of a self-maintaining system, where a self-maintaining system is characterized in terms of two causal conditions: *organizational closure* and *organizational differentiation*. *Organizational closure* is a circular causal relation between some macroscopic (higher-level) pattern or structure and the microscopic (lower-level) dynamics and reactions within the system. This circular causality makes the activity of the system a necessary condition for the continuous existence of the system itself. *Organizational differentiation* involves realizing organizational closure in a particularly complex way. An organizationally differentiated system generates different and localizable patterns and structures, each making a distinct contribution to the whole organization.

<sup>25</sup> Garson (2017: 1096-1098) argues that there are structures that meet the conditions of organizational closure and differentiation, but do not underwrite the relevant kind of function ascription. To demonstrate this, he offers the example of panic disorder. He argues that panic attacks, which result from catastrophizing misinterpretations of bodily sensations, involve various mechanisms that set the stage for their own recurrence. These are psychological states and behavioral dispositions that are caused by the disorder and that each make distinct contributions to its persistence. For instance, a single attack makes the person worried about having another and thus more vigilant to future bodily sensations. On the other hand, the person tends to avoid the particular situation that brought on the attack, which results in having fewer chances for disconfirming false beliefs about the experience. This, however, does not mean that we should

The source of the problem with a reductionist interpretation of the Function Argument, then, is the inference from the obtaining of certain purely descriptive, causal conditions to a teleological claim about ends, which is then supposed to ground a normative claim about value. The background assumption seems to be that the descriptive causal conditions that purportedly ground function ascriptions somehow give rise to, or generate, ends and ultimately a good of one's own for the functional entity. But as we have seen, unless the notion of end or interest is given a stipulative definition in terms of the obtaining of certain causal conditions, there is no reason to think that this inference from fact to value goes through.

The good news for the proponents of the Function Argument is that reductionism about functions and teleology is not the only game in town. In fact, many philosophers of biology argue that reductionist accounts cannot adequately capture the concept of function and its use in biological sciences. Philosophers such as Bedau (1992a; 1992b) and McLaughlin (2001; 2009) defend a non-reductionist, *value-based* approach to understanding function ascriptions. They argue that accounting for the inherently teleological character of function ascriptions requires including an irreducibly normative criterion in the conditions for ascribing functions. This normative condition minimally requires that the function involves a *good* outcome for someone or something. To ascribe the function of pumping blood to the human heart, for example, requires conceiving of the effects of the heart's pumping blood (e.g., human survival) as somehow good or valuable. In the absence of this background assumption about value, Bedau and McLaughlin argue, we simply cannot view the operation of the heart as *functional* and its breakdown as a *malfunction*. They demonstrate this by arguing that reductionist accounts of function, which try to eliminate or reduce this reference to value face an overgeneralization problem. Bedau's counterexamples of the stick and clay crystals mentioned earlier are meant to illustrate this point.

---

ascribe organizational functions to these mechanisms in virtue of their contribution to the persistence of panic disorder. As Garson points out, normal medical practice almost universally characterizes panic disorder as involving cognitive or biological *dysfunctions*.

Admittedly, the non-reductionist view of functions and teleology is far from universally accepted. Many philosophers of biology insist that the reference to value is not compatible with a naturalistic or scientifically respectable worldview, and continue to defend reductionist approaches to understanding the use of teleological notions in biology. However, there is also a growing number of philosophers who embrace a value-based theory of function (see, e.g., Sorabji, 1964; Woodfield, 1976: 122; Fulford, 1999: 416; McLaughlin, 2001: 212; Moosavi, 2019: 11). In fact, Larry Wright—who originally proposed the etiological approach—has also recently come to accept a value-based view (see Wright, 2013: 237). Proponents of the value-based view argue that at least some function explanations in biology presuppose a value-based conception of teleology. As McLaughlin (2001: 212) has argued, despite the prevalence of the idea that we must somehow sanitize functions by removing any reference to value, we cannot simply assume that the mere reference to value is necessarily problematic, or that value cannot be an objective feature of the natural world. While philosophers can analyze the concept of function in biology and identify its underlying metaphysical commitments, it is ultimately up to the explanations offered by empirical scientists to determine whether this is a commitment that we should embrace. If accounting for functional explanations in biology turns out to involve a commitment to an irreducible notion of value, then we should be open to accepting such a commitment as part of our scientific understanding of the world. Of course, the jury is still out on whether a reductionist or non-reductionist conception of function best captures all or some uses of the concept of function in biology.<sup>26</sup> But my aim here is not to defend the non-reductionist account of functions, but to argue that the Function Argument for ascribing interests cannot succeed without appealing to such an account.

Now, if we start with a non-reductionist, value-based understanding of biological functions, we end up with a very different picture of how the Function Argument is supposed to work. On

---

<sup>26</sup> Note that many philosophers of biology now embrace pluralism about functions, according to which there are multiple notions of function in biology which play different explanatory roles in different context.

this interpretation, the inference from function ascriptions to the ascription of ends and interests is not based on the idea that functions, or the causal conditions that purportedly ground them, somehow generate or give rise to ends and interests. Rather, the ascription of a function *already* presupposes the normative assumption that the performance of the function contributes to an end, the attainment of which amounts to a good or beneficial outcome. The relation between facts about functions and facts about interests is, thus, not causal or generative, but rather merely evidential. The fact that something has a function allows us to infer that an entity with a good of its own is already present. In other words, the fact that there is a beneficiary entity is explanatorily *prior* to the fact that there is a function. The underlying idea is that the ascription of functions already involves viewing the function as an end, which implies that there is a beneficiary whose interests are served by the attainment of that end. There is no attempt to derive a value from a purely descriptive fact. The argument merely notes that our commitment to the function ascription already involves the commitment to there being an entity with a good of its own.

It may be objected that appealing to a value-based account of functions would make the Function Argument circular: the argument only supports the conclusion that nonsentient organisms have interests by presupposing a conception of function that is committed to this claim. This objection is not entirely off base. The argument does rely on a conception of biological functions that brings in such a commitment and, as we have seen earlier, is not at all uncontroversial. This, however, does not mean that the argument is circular or that it has no convincing power. The non-reductionist account of biological functions, no matter how controversial, can be motivated and defended on independent grounds. The debate over the philosophical accounts of function in philosophy of biology is carried out largely independently of the debate over the status of nonsentient organisms in environmental ethics. The opponents of biocentrism typically reject the claim that nonsentient organisms have a good of their own based on considerations that have nothing to do with their stance on the debate between reductionism and non-reductionism regarding biological functions. So, noting that the non-reductionist account of functions presents a case for ascribing interests to nonsentient organisms would not be begging the question against

them. Moreover, what the value-based account of functions brings to the table is the general claim that all function ascriptions presuppose the existence of *a* beneficiary entity, not the more specific claim that organisms are the beneficiary of biological functions. In other words, the value-based account of functions leaves it open who or what the beneficiary of a given function ascription is. So, the more specific claim that organisms themselves benefit from the functioning of their parts and aspects needs further support. In the next section, I will explain how this claim can be supported and why a similar conclusion cannot be drawn in the case of artifacts.

## **5. The Solution to the Problem of Scope**

We saw that on Basl's interpretation, not only did the Function Argument extend interests to artifacts, it also included sub-organismic parts and activities of organisms among entities that have interests of their own. I believe the root of the problem is the same in both cases, and involves misidentifying the beneficiary of functions and ends. Here I will address the case of sub-organismic ends first, and then argue that the case of artifacts can be given the same treatment.

As we saw in section 4, Basl's account of interests simply identified the beneficiary of an end with the entity to which the end is ascribed, which resulted in the problematic implication that each of the functional parts and processes of an organism have interests of their own. Solely relying on descriptive facts about the causal history of the organism and its parts, Basl's account did not have the resources to differentiate between organismic and sub-organismic ends, as they are equally products of a history of natural selection. In contrast, the non-reductionist view of teleology is not restricted to purely descriptive facts for drawing the distinction. On this view, the basis for ascribing functions and ends includes a criterion that is not reducible to descriptive facts, namely the presupposition that there is an entity with interests of its own which benefits from the success of the ascribed function or end. Moreover, there is no requirement that this beneficiary must be the same as the entity to which the function or end is ascribed. And this allows for explaining why ascribing functions to sub-organismic parts and activities does not imply that these sub-organismic entities have interests of their own: we can easily see that the presupposed

beneficiary of their functions is the individual organism of which they are a part. To ascribe the function of pumping blood to a heart, for example, relies on the presupposition that the organism containing the heart has ends such as self-maintenance and development, which are served by the pumping of blood. Note that the parts and activities of the organism that do not characteristically contribute to any of the ends of the organism are typically not ascribed functions. We do not, for instance, attribute the function of making a thumping sound to an organism's heart, because that does not benefit or promote the ends of the containing organism.

Thus, to the extent that the parts and activities of an organism can be ascribed ends, these sub-organismic ends ultimately owe their end-status to their instrumental relation to the ends of the whole organism. In other words, they are merely intermediate or relative ends. This is the sense in which sub-organismic ends are *derivative*: their end-status is borrowed from their relation to the ends of another entity (in this case, the organism of which they are a part). In contrast, the ends that we typically ascribe to an organism are not derivative in this sense, as their end-status does not depend on whether they serve the ends of any other entity. To the extent that we are justified in ascribing ends to individual organisms, our justification for ascribing these ends is independent of assumptions about the ends or interests of other entities. Ascribing the end of survival to a dog, for instance, does not depend on whether humans or any other organisms rely on or benefit from the dog's survival.

The articulated notion of derivativeness, thus, explains why the beneficiary of sub-organismic functions and ends is not the sub-organismic entities themselves, but the organism of which they are a part. What ultimately anchors the derivative ends that we ascribe to sub-organismic entities is the non-derivative ends of the organism itself. So, the beneficiary that benefits from the attainment of these ends is also the organism itself.

The same notion of derivativeness can explain why the ascription of functions and ends to artifacts does not imply that they have interests of their own. In a nutshell, the explanation is that the beneficiary that is presupposed in the ascription of artifact functions and ends is an entity other than the artifact itself, namely us humans. So, the ends that are ascribed to artifacts are derivative

in much the same way that sub-organismic ends are derivative: the basis for ascribing them is in part their instrumental relation to another entity's ends. In the case of artifacts, there is no containing organism, but it is the fact that they serve—or are intended or expected to serve—*our* ends that underwrites the ascription of artifact functions and ends. To see this, note that artifacts typically have various causal capacities in addition to the capacity that is considered their function. A car, for instance, has the capacity to make noise and pollute the air in addition to its capacity to transport people. But these additional capacities are not considered among the car's functions. It seems straightforward that part of what singles out transporting people as the car's function is the fact that *we* find this capacity useful, and *we* conceptualize the car as an artifact that is supposed to serve this purpose. In other words, the ascription of a function to the car is contingent upon its relation to our ends, which suggests that their teleology is derivative upon our ends.

The relevant sense of derivativeness that applies to artifacts, then, is not about their *causal* dependence, but rather about their *constitutive* dependence, on us. What makes their ends derivative is not—as Basl and Sandler (2013a; 2013b) envisioned—the fact that they would not exist without our causal contribution or that they would not have the capacities that they do, though that may very well be the case. It is rather that without a connection to our ends, their causal capacities would not amount to *functions*, and they would not be ascribed *ends*. Without us, even if an artifact were to somehow pop into existence and have the same parts and capacities, there would be no basis for viewing it as having any functions or ends at all. Even if it was able to perform various tasks, there would be no sense in which we can say it is *supposed to* do those tasks, and no sense in which not doing them would amount to a failure for it. This is the sense in which the teleology of artifacts is derivative: it is only in the context of human ends and interests that they can be ascribed a teleology at all.<sup>27</sup>

---

<sup>27</sup> Of course, to say that the functions of an artifact depend on us is not to say that just any end of ours served by an artifact can be correctly described as *its* function. A driver's using their car to intimidate cyclists on the road, for example, does not make that *the function of* the car, even if in that instance the car may serve as an intimidation device for the driver. In that sense, it can be said that there is something

In contrast, the teleology of organisms is independent of the ends and interests of other beneficiaries. Even when organisms are implicated in the context of the ends and interests of other beings, we can see that the end-status of at least some of their ends does not depend on their instrumental relation to others. Removing humans from the scene, for example, does not change our conception of a lion or a tree as a goal-directed entity. And it is easy to see that this is not any different with synthetic organisms. Although our ends and intentions are *causally* implicated in how synthetic organisms are created and designed, they still have many ends whose status as ends is independent of their relation to us. Of course, to the extent that synthetic organisms are simultaneously organisms *and* artifacts that we have created with certain purposes in mind, they *also* serve our ends, and can be ascribed derivative ends on that basis. But this does not mean that *all* of their ends owe their end-status to their instrumental relation to our ends. Consider, for instance, a sheep that we have artificially bred to have long wool best suited to creating textile. This sheep can be ascribed a derivative end—the end of producing wool—on that basis, and its long wool can be ascribed the function of creating textile. This, however, doesn't change the fact that the sheep has many other ends—e.g., self-maintenance, development, and reproduction—that are non-derivative and independent of our ends and interests. Note that many of the sheep's other parts, e.g., its legs or its heart, will still have functions that are independent of the sheep's relation to us.

Thus, the alternative interpretation of the Function Argument presented here can offer a solution to the Problem of Scope. We can see how the argument supports the inference from functions to interests in the case of organisms—including nonsentient organisms, but not artifacts. The argument for attributing interests to organisms can be reconstructed as follows:

(P1) Living organisms are goal-directed, functionally organized systems.

---

objective or at least robust about what an artifact is supposed to do and what constitutes working well for it: it is not entirely up to the specific person perceiving or using the artifact to decide what its functions are. That said, whether it is the designer's or maker's intentions, or the widespread actual or perceived use of the artifact in society that determines its functions, they are not entirely independent of human ends.

- (P2) Function ascriptions presuppose the existence of a beneficiary entity with a good of its own, which benefits from the success of the functions.
- (P3) At least some of the functions ascribed to the parts and aspects of a living organisms are independent of the ends and interests of potential external beneficiaries.
- (P4) The beneficiary of these functions cannot be located outside the organism, and must be the organism itself.
- (C) Therefore, all living organisms have a good of their own.

(P1) is the starting point of the Function Argument in all its versions, and (P2) is the value-based account of functions, which I am proposing to recognize as a premise of the argument. Note that (P2) states that all function ascriptions presuppose the existence of a beneficiary, while leaving it open what or who this beneficiary consists in. Then, (P3) suggests that in the case of organisms at least some of our function ascriptions are independent of the ends and interests of external beneficiaries. This supports (P4), which notes that the beneficiary of these functions must be the organism itself. In contrast, as we have seen, a similar argument cannot be made in the case of artifacts. Since artifact functions do ultimately depend on the relation of artifacts to *our* ends and interests, their beneficiary can be located outside them, which means that there is no reason to view them as the beneficiary of their functions. In other words, there is no reason to ascribe interests to artifacts on the basis of their functional organization.

Thus, the Function Argument presents a case for the biocentrist claim that nonsentient organisms have interests of their own, without drawing the same conclusion in the case of artifacts. The difference between organisms and artifacts turns out to be what biocentrists such as Arbor (1986), Goodpaster (1978), and Taylor (1986) had suggested all along: the teleology of artifacts is merely derivative, while the teleology of organisms is not. But recognizing the place of the value-based account of functions in the argument has enabled us to make sense of the relevant notion of derivativeness, i.e., having an external beneficiary. As Nicholson (2013: 671) has argued, the difference between internal and external teleology also explains a crucial dissimilarity between organisms and artifact when it comes to ascription of functions. Artifacts are ascribed functions,

but organisms are not—unless they are also artifacts. It is only parts of organisms that are ascribed functions, whereas in artifacts, both parts and wholes are ascribed functions. According to Nicholson, this is because ascribing a function to an entity implies that the beneficiary of its operation is another entity.<sup>28</sup> An artifact is ascribed functions, because its operation is viewed as benefitting an external entity. The parts and aspects of an organism are also ascribed functions, because their operation is viewed as benefitting the organism of which they are a part. But the operation of an organism is not viewed as benefitting anything outside the organism, so it is not ascribed a function.

That said, it is important not to overstate the ambitions or the reach of the Function Argument. On the interpretation of the argument advanced here, the success and failure of the argument is tied to the fate of the non-reductionist view of functions. Neither the argument for ascribing interests to nonsentient organisms nor the explanation of why we can't draw the same conclusion in the case of artifacts can go through without appealing to the value-based account of functions. The argument does not ground interests in purely descriptive facts or offer an account that can be used to independently establish which entities can have interests or what their interests can consist of. It rather aims to reveal and clarify the commitments that we may already have, or be willing to accept, with regards to functionally organized entities. Plausibly, in the case of both organisms and artifacts, we are already committed to viewing them as functionally organized. The Function Argument suggests that in the case of organisms—whether sentient or nonsentient—this commitment further commits us to viewing them as having interests of their own, because there is no external beneficiary that can adequately explain our functional commitments regarding organisms. In the case of artifacts, however, the further analysis of our functional commitments reveals a beneficiary other than the artifact itself, which suggests that the inference from functions to interests cannot be drawn.

---

<sup>28</sup> See also McLaughlin (2001: 140-161).

## Acknowledgements

I would like to thank Antoine C. Dussault for inspiration and discussion of the ideas leading to this paper. I am also grateful to two anonymous reviewers of this journal whose comments improved the clarity and strength of the arguments presented here.

## References

- Agar, N. (2001). *Life's intrinsic value: Science, ethics and nature*. Columbia University Press.
- Allen, C., & Bekoff, M. (1995). Biological function, adaptation, and natural design. *Philosophy of Science*, 62, 609–622.
- Andrianantoandro, E., Basu, S., Karig, D. K., & Weiss, R. (2006). Synthetic biology: New engineering rules for an emerging discipline. *Molecular Systems Biology*, 2, 1–14.
- Arbor, J. L. (1986). Animal chauvinism, plant-regarding ethics and the torture of trees. *Australasian Journal of Philosophy*, 64(3), 335-339.
- Attfield, R. (1981). The good of trees. *Journal of Value Inquiry*, 15(1), 35-54.
- Austin, C. (2017). 'Aristotelian essentialism: Essence in the age of evolution. *Synthese* 194(7), 2539–2556.
- Basl, J., & Sandler, R. (2013a). The good of non-sentient entities: Organisms, artifacts, and synthetic biology. *Studies in the History and Philosophy of Biological and Biomedical Science*, 44, 697–705.
- Basl, J., & Sandler, R. (2013b). Three puzzles regarding the moral status of synthetic organisms. In G. E. Kaebnick & T. H. Murray (Eds.), *Synthetic biology and morality: Artificial life and the bounds of nature* (pp. 89–106). MIT Press.
- Basl, J. (2014). Machines as moral patients we shouldn't care about (yet): The interests and welfare of current machines. *Philosophy & Technology*, 27(1), 79-96.
- Basl, J. (2019). *The Death of the Ethic of Life*. Oxford University Press.
- Boulter, S. (2012). Can evolutionary biology do without Aristotelian essentialism?, *Royal Institute of Philosophy Supplements* 70, 83–103.
- Bedau, M. (1991). Can biological teleology be naturalized? *The Journal of Philosophy*, 88, 647–655.

- Bedau, M. (1992a). Where's the good in teleology? *Philosophy and Phenomenological Research*, 52, 781–806.
- Bedau, M. (1992b). Goal-directed systems and the good. *The Monist*, 75(1), 34-51.
- Boorse, C. (1976). Wright on functions. *The Philosophical Review*, 85(1), 70-86.
- Cummins, R. (1975). Functional analysis. *Journal of Philosophy*, 72, 741-65.
- Dussault, A. C. (2018). Welfare, health, and the moral considerability of nonsentient biological entities. *Les ateliers de l'éthique*, 13(1), 184-209.
- Endy, D. (2005). Foundations for engineering biology. *Nature*, 438, 449–453.
- Feinberg, J. (1974). The Rights of Animals and Unborn Generations. In W. T. Blackstone (Ed.), *Philosophy and Environmental Crisis* (pp. 43–68). University of Georgia Press.
- Fulford, K. W. M. (1999). Nine variations and a coda on the theme of an evolutionary definition of dysfunction. *Journal of Abnormal Psychology*, 108, 412–420.
- Garson, J. (2017). Against organizational functions. *Philosophy of Science*, 84, 1093–1103.
- Garson, J. (2019). *What biological functions are and why they matter*. Cambridge University Press.
- Godfrey-Smith, P. (1994). A modern history theory of functions. *Noûs*, 28(3), 344–362.
- Goodpaster, K. (1978). On being morally considerable. *Journal of Philosophy*, 75, 308–325.
- Hoffmann, S. (2022). An evaluation of the autopoietic account of interests. *Synthese*, 200(3), 1-18.
- Holm, S. (2012). Biological interests, normative functions, and synthetic biology. *Philosophy & Technology* 25(4), 525-541.
- Holm, S. (2017). Teleology and biocentrism. *Synthese* 194(4), 1075-1087.
- Kantor, J. E. (1980). The “Interests” of natural objects. *Environmental Ethics*, 2(2), 163-171.
- Mayr, E. (1961). Cause and Effect in Biology. *Science* 134 (3489), 1501–6.
- McLaughlin, P. (2001). *What Functions Explain: Functional Explanation and Self-Reproducing Systems*. Cambridge University Press.
- McLaughlin, P. (2009). Functions and norms. In M. A. Perlman, F. Longy, & B. Preston (Eds.), *Functions in biological and artificial worlds: comparative philosophical perspectives* (pp. 93-102). MIT Press.

- McShane, K. (2021). Against etiological function accounts of interests. *Synthese*, 198(4), 3499-3517.
- Millikan, R. G. (1989). In defense of proper functions. *Philosophy of Science*, 56(2), 288–302.
- Moosavi, Parisa (2019). From Biological Functions to Natural Goodness. *Philosophers' Imprint*, 19, 1-20.
- Nicholson, D. (2013). Organisms  $\neq$  machines. *Studies in the History and Philosophy of Biological and Biomedical Sciences* 44, 669–678.
- González de Prado, J., & Saborido, C. (2023). Biological Purposes Beyond Natural Selection: Self-Regulation as a Source of Teleology<sup>1</sup>. *Erkenntnis*, 1-20.
- Moreno, A., and Mossio, M. (2015). *Biological Autonomy*. Springer.
- Mossio, M., & Bich, L. (2017). What makes biological organisation teleological?. *Synthese* 194, 1089–1114.
- Mossio, M., Saborido, C., & Moreno, A. (2009). An organizational account of biological functions. *The British Journal for the Philosophy of Science*, 60(4), 813-841.
- Mossio, M., & Saborido, C. (2016). Functions, organization and etiology: a reply to Artiga and Martinez. *Acta Biotheoretica*, 64, 263-275.
- Nagel, E. (1961). *The structure of science*. Harcourt Brace and Jovanovich.
- Neander, K. (1991). Functions as selected effects: the conceptual analyst's defense. *Philosophy of Science*, 58, 168–84.
- Regan, T. (1976). Feinberg on what sorts of beings can have rights. *Southern Journal of Philosophy* 14(4), 485-498.
- Rosenberg, A. (2012). *The atheist's guide to reality*. W. W. Norton & Company.
- Sapontzis, S. (1987). *Morals, reason, and animals*. Temple University Press.
- Schaffner, K. F. (1993). *Discovery and explanation in biology and medicine*. University of Chicago press.
- Singer, P. (1993). *Practical Ethics*. Cambridge University Press.
- Sorabji, R. (1964). Function. *Philosophical Quarterly*, 14, 289–302.
- Stone, C. D. (1972). Should trees have standing? Toward legal rights for natural objects. *Southern California Law Review* 45 (2), 450–501.

- Sumner, L. W. (1996). *Welfare, happiness, and ethics*. Oxford University Press.
- Taylor, P. W. (1986). *Respect for nature: A theory of environmental ethics*. Princeton University Press.
- Varner, G. (1998). *In nature's interest? Interests, animal rights, and environmental ethics*. Oxford University Press.
- Walsh, D. (2006). Evolutionary essentialism. *British Journal of the Philosophy of Science* 57, 425–448.
- Woodfield, A. (1976). *Teleology*. Cambridge University Press.
- Wright, L. (1973). Functions. *The Philosophical Review*, 82(2), 139-168.
- Wright, L. (2013). Epilogue. In P. Huneman (Ed.), *Function: Selection and Mechanisms* (pp. 233-243). Springer.