Nothing in Ethics Makes Sense Except in the Light of Evolution? Natural Goodness, Normativity, and Naturalism

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Abstract

Philippa Foot (2001), Rosalind Hursthouse (1999), and Michael Thompson (2008), along with other philosophers, have argued for a metaethical position, the *natural goodness approach*, that claims moral judgments are, or are on a par with, teleological claims made in the biological sciences. Specifically, an organism's flourishing is characterized by how well they function as specified by the species to which they belong. In this essay, I first sketch the Neo-Aristotelian natural goodness approach. Second, I argue that critics who claim that this sort of approach is inconsistent with evolutionary biology due to its species essentialism are incorrect. Third, I contend that combining the natural goodness account of natural-historical judgments with our best account of natural normativity, the selected effects theory of function, leads to implausible moral judgments. This is so if selected effects function are understood in terms of evolution by natural selection, but also if they are characterized in terms of cultural evolution. Thus, I conclude that proponents of the natural goodness approach must either embrace non-naturalistic vitalism or troubling moral revisionism.

"If we try to paint normative life as a part of nature, crucial parts keep looking off shape." (Gibbard 1990, 23)

1 Introduction

One of the most challenging topics in contemporary philosophy is normativity. Specifically, the difficulty is making sense of normativity in a wholly natural world. The challenge of normativity can be introduced by considering J. L. Mackie's "argument from queerness" (Mackie 1990). If there are normative properties, then they would have an intrinisic "to-be-pursuedness" to them. By sincerely judging that something has such a property, we would be compelled to act in accordance. However, Mackie claims no such properties are described by the natural or social sciences. We only find properties like *mass*, *negative charge*, *carapace*, *polypeptide*, *species*, and so forth. If the only properties are natural properties (i.e. those described by the natural and social sciences) and there are no normative natural properties, then it follows that there are no normative properties. Of course, there are several ways of responding to Mackie's argument. One could deny that there are moral properties. Moral or epistemic judgments are expressions of attitudes or

commitments and are no more than minimally truth-apt (Blackburn 1984; Gibbard 1992). One could argue for the Humean position that what one should do is a function of beliefs *and* desires, and desires can be made sense of in a wholly natural world (Dretske 1988, Smith 1994, Schroeder 2004). One could argue there are natural, normative properties; namely, functional properties found in the biological sciences (Casebeer 2003; Post 2006). In biology, functional properties are understood in terms of evolution by natural selection. Consider your heart. It has the function of circulating blood through your body. This is what it is *supposed to do*. It has this function because it was this effect for which it was selected against other heritable variants. Insofar as your heart does not circulate blood properly, it is *malfunctioning*. Thus, one strategy of reducing normativity to natural properties is through evolutionary biology.[1]

One bold approach to ethical normativity is offered by Neo-Aristotelians. They suggest ethical judgments are of the same form as normative claims made of non-human animals and plants. However, their views sit uneasily with biological teleology as we shall see. In this essay, I take this "natural goodness approach" seriously. First, I provide a sketch of this approach highlighting how Neo-Aristotelians have been resistant to reducing ethical normativity to evolutionary biology. Second, I consider a challenge to grounding normative ethical claims in biological human nature offered by David Hull (1986) and Philip Kitcher (1999). After some discussion, I find their challenge wanting since it presupposes an excessively strong species essentialism. Third, I consider the prospects of reducing ethical normativity to the work of evolution by natural selection. Though Neo-Aristotelians reject this, it is instructive too see how it violates our considered moral judgments. An an example, I discuss Randy Thornhill and Craig Palmer's (2001) speculative work on the evolution of rape. Fourth, I explore reconciling naturalism and normativity through a "gene-culture coevolutionary" account of selected functions. This avoids reducing normativity to biology, and is consistent with naturalism. However, I argue that it conflicts with our considered moral judgments too. As one example, insofar as altruistic punishment has evolved by cultural group selection, it has the function of driving other less altruistic groups socially extinct which is extremely problematic from a moral point of view. Finally, I explore two responses to my arguments, but conclude the natural goodness approach as articulated commit us to non-naturalism or widespread moral revisionism.

2 Natural Goodness

Neo-Aristotelian Naturalism, the *natural goodness approach*, is an important option in metaethics. It has been ably defended by G. E. M. Anscombe, P. T. Geach, Philippa Foot, Rosalind Hursthouse, Martha Nussbaum, Judith Jarvis Thomson, and Michael Thompson. On this view, a character trait is a virtue if, and only if, it is a trait humans needs to live well or flourish. This notion of flourishing is not sui generis. As Hursthouse suggests, "when we talk about ethically good human beings, we have not suddenly started to use the word 'good' in a totally new 'moral' or 'evaluative' way" (1999, 226). Peter

[1] It is worth stressing different sources of normativity can be combined. It is only arguments like Mackie's that encourage us to avoid certain views.

Geach writes,

> Men need virtues as bees need stings. An individual bee may perish by stinging, all the same bees need stings; an individual man may perish by being brave or just, all the same men need courage and justice. (1977, 17)

The notion of flourishing is intended as naturalistic as are functional claims offered in biology.

One way of motivating the natural goodness approach is by considering the term 'good'. Utilitarians have thought that 'good' is a predicative adjective. Consider the sentence, "This is a green computer." This claim implies "This is a computer" and "This is green." However, attributive adjectives are not like this. For example, consider the sentence, "Charlie is a small dog." This claim does not imply "Charlie is a dog" and "Charlie is small." The reason is that the property *smallness* depends on the subject of the predication; he is a *small dog*. For Neo-Aristotlelians, the property *goodness* is always *goodness in a way*. As Foot writes,

> As 'large' must change to 'small' when we find that what we thought was a mouse was a rat, so 'bad' may change to 'good' when we consider a certain book of philosophy first as a book of philosophy and then as a soporific. Seen in the light of Geach's distinction, thoughts about good actions, which are fundamental to moral philosophy, appear with thoughts about good sight, good food, good soil, or good houses. (2001, 2 – 3)

The notion that *goodness* is always relative to a kind is contrary to utilitarianism, for example. Consider two objects both of which are good. According to utilitarianism, either the former is better than the latter, the latter is better than the form, or they are equal in value. This is true independent of what the objects are. Neo-Aristotelians deny *goodness* is like this. With regard to living things, goodness is always relative to a "life-form."

The natural goodness approach is a cognitivist metaethical theory. Moral claims are truth-apt; i.e. they are either true or false.[3] However, unlike J. L. Mackie's cognitivist error theory, some positive moral claims are true according to Neo-Aristotelians.[4] Additionally, the natural goodness approach is naturalistic. Thus, moral properties are natural ones. This does not make it a excessively reductionistic approach though. If we consider special science properties to be natural, then moral properties *just are* natural properties. However, it does not require that natural properties just are physical ones.

Most proponents of the natural goodness approach support virtue ethics as the correct normative theory. Following Rosalyn Hursthouse, virtue ethics focuses on virtuous character. As Rosalyn Hursthouse summarizes the account,

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[3] For the purposes of this paper, I am ignoring deflationary approaches to truth (Bradley P Armour-Garb and JC Beall 2005). Deflationary approaches seem to trivialize the differences between cognitivist and non-cognitivist theories (Drier 1996, 2004). Suppose '*p*' is true if, and only if, *p*. Thus, 'Murder is wrong' is true if, and only if, murder is wrong. But this seems to imply that moral claims are trivially true.

[4] On Mackie's error theory, a positive moral claim like "Murder is morally wrong" is false because the term 'morally wrong' is non-referring since there is no property *moral wrongness*.

> P1. An action is right iff it is what a virtuous agent would characteristically (i.e. acting in character) do in the circumstances.
> P1a. A virtuous agent is one who has, and exercises, certain character traits, namely, the virtues.
> P2. A virtue is a character trait that... (Hursthouse 1999, 28, 29)

Presumably, (P2) is fleshed out by a list character traits that satisfy a criteria for being a virtue. One such criterion is this: virtues are character traits that benefit the possessor; here is another: virtues are character traits that contribute to eudaimonia (i.e. human flourishing). One can subscribe to the natural goodness approach and not virtue ethics. Consider character consequentialism which holds we should choose or inculcate those character traits which produce the greatest expected well-being (Driver 2001). One could consistently hold eudaimonism and try to maximize it through enculcating apt character traits.[5]

Following Elizabeth Anscombe, fundamental to the natural goodness approach is what is termed an "Aristotelian necessity." An Aristotelian necessity is something which is required for an *F* to be a good *F*. Foot writes,

> We invoke the same idea when we say that it is necessary for plants to have water, for birds to build nests, for wolves to hunt in packs, and for lionesses to teach their cubs to kill. These 'Aristotelian necessities' depend on what the particular species of plants and animals need, on their natural habitat, and the ways of making out that are in their repertoire. These things together determine what it is for members of a particular species to be as they should be, and to do that which they should do. And for all the enormous differences between the life of humans and that of plants or animals, we can see that human defects and excellences are similarly related to what human beings are and what they do. We do not need to be able to dive like gannets, nor to see in the dark like owls; but our memory and concentration must be such as to allow us to learn language, and our sight such that we can recognize faces at a glance; while, like lionesses, human parents are defective if they do not teach their young the skills that they need to survive. (2001, 15)

For example, a Neo-Aristotelian would claim a non-flowering rhododendron or an oak tree with shallow roots are defective. They lack features that are conducive to their suffering. This is also true for antisocial bonobos and free-riding wolves (Sandler 2005). If a human is a good human being, they must have those properties required for them to be good *qua* human being. If Jane is a good *Homo sapiens*, she must have those properties which are necessary for her to be good *qua Homo sapiens*. The "logical structure" of moral judgments are of the same form as functional ones of organisms generally. If a

[5] One way of seeing this is that virtue ethics is not a maximizing theory whereas character consequentialism is. However, one could evaluate character traits with regard to their expected consequences without thinking these traits could be maximized or even are commensurable with regard to one another. Thanks to Richard Boyd on this point.

sequoia is a good *qua Sequoia sempervirens*, then it has those features required as a member of that species to be a good instance of it.

More so than anyone else, Michael Thompson (1995, 2008) has described the structure of these "Aristotelean necessities," or what he calls "Aristotelean categoricals" and "natural-historical judgments." They take the form, "The *S* is (or has, or does) *F*". For example, "The bobcat breeds in spring." This form is crucial to understanding normative judgments.

> It may seem a bit absurd that a form of predication suggestive of field guides, dusty compendia, and nature programs should be supposed to be the ticket for a philosophy of organism. (2012, 66)

One might assume that these judgments can be assimilated to familiar forms. He denies this (2012, 68). First, they are not equivalent to a universally quantified statement. Let *B* be our claim "The bobcast breeds in spring." *B* is not equivalent to "Every bobcat breeds in the spring" since not every bobcat does so. And, it is still true of the species or "life-form." Second, natural-historical judgments are not equivalent to statistical generationalizations. *B* is not equivalent to "Most bobcats breed in spring" since the latter can be false when *B* is true. Thompson claims this type of natural-historical inference is correct: If the *S* is *F* and the *S* is *G*, then the *S* is *F* and *G*. No such inference is generally correct for statistical generalizations. Third, natural-historical judgments are not equivalent to *ceteris paribus* generalizations. "The bobcat breeds in spring" is importantly different from "Every bobcat that is _____ breeds in spring." With *ceteris paribus* generalizations, they hold only relative to some circumstances filling in "_____". According to Thompson, natural-historical judgments require the circumstances to be determined by the life-form itself. He writes, "These conditions are thus 'presupposed' by the life-form itself; and how the bearer comes to arrive in them will itself be described in natural-historical terms" (2012, 71).[6] Oxygen being present is not determined by the nature of matches.

Plainly, the good-making characteristics of humans are in part different from other species. Human behavioral ecologists claim human life history traits are relatively unique. We differ from other primates in that our children depend on us for subsistence far longer than other mammal's offspring; we wean babies earlier than most other apes do so; the age of first reproduction is much older comparatively (though our fertility can be greater than other apes). Additionally, we have the longest average age of the terrestrial mammals, though women stop giving birth in the middle of their lives. Those traits conducive to human flourishing need not be the same across sex, age, stage, and habitat, in fact.[7]

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[6] Thompson's point is best understood in terms of the work of Richard Levins and Richard Lewontin. They contend whether something is a part of an organism's environment itself crucially depends on the organism (Levins 1968, Lewontin 1991, Levins and Lewontin 1985).

[7] Chrisoula Andreou (2006) objects to the natural goodness approach because she thinks it is committed to a monomorphic notion of human flourishing. She rightfully notes that species often exhibit polymorphic adaptations. However, the natural goodness approach does not require monomorphic adaptations. Andreou's deeper point though is that human polymorphic traits can include undesirable variants. For example, maternal behavior can be nurturing, but it can also disregard young that makes for poor parental

Hursthouse argues we should evaluate living things as members of their kind. One is a good member of a kind when one contributes in ways characteristic of that kind to the ends of survival and reproduction (and possibly to the characteristic enjoyments of the kind and where rationality plays a role in *Homo sapiens*). She writes,

> A good social animal (of one of the more sophisticated species) is one that is well fitted or endowed with respect to (i) its parts, (ii) its operations, (iii) its actions, and (iv) its desires and emotions; whether it is thus well fitted or endowed is determined by whether these four aspects well serve (1) its individual survival, (2) the continuance of its species, (3) its characteristic freedom from pain and characteristic enjoyment, and – the good functioning of its social group – in the ways characteristic of the species. (1999, 202)

A free-riding wolf, a non-sharing bee, or a nurturing polar bear are, in a word, defective. Ethical evaluations are made in light of our characteristic features including rationality. From a evolutionary point of view, there is nothing *essential* about rationality. Or, consider some hominid group ancestral to our own that lacked "rationality." Imagine our species evolved "in reverse." It is a possibility consisent with evolutionary theory. This is the simplest way to dislodge our intuition we are an essentially rational species (Kitcher 1999). [9]

Defenders of the natural goodness approach deny moral judgments are reducible to biological ones. Rather, they are "on a par" with them. They have the same form as them; "The *S* is *F*."

> It is imperative that the word 'function' as used here is not confused with its use in evolutionary biology, where, as Simon Blackburn has put it in the Oxford Dictionary of Philosophy, 'the function of a feature of an organism is frequently defined as that role it plays which has been responsible for its genetic success and evolution'.... It is easy to confuse these technical uses of words such as 'function' and 'good' with their everyday uses, but the meanings are distinct. To say that some feature of a living thing is an adaptation is to place it in the history of a species. To say that it has a function is to say that it has a certain place in the life of the individuals that belong to that species at a certain time. (Foot 2001, 32)

> We are not then interpreting it as a historical question, as 'proper function' is interpreted, for instance, by Ruth Millikan in *Language, Thought, and Other*

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investment (2006, 71 – 2).

[9] Some use the term 'human' to be synonymous with the concept PERSON contrary to biologists' usage. One might claim that the property *rationality* is essential to personhood. Fair enough. But, it does not follow that it is essential to being a member of our biological species *Homo sapiens*. Proponents of natural goodness move between talk of kinds, species, and life-forms. This is problematic. For example, Thompson assumes that every organism belongs to some life-form or species (he thinks of these categories as roughly the same) (2012, 28). However, if as Ernst Mayr thought, species are all and only interbreeding populations, then many, many, many organisms are species-less.

> *Biological Categories*, chapter 1, and as 'function' would generally be interpreted in evolutionary biology. As David Wiggins says in Postscript 4 in *Needs, Values, Truth*, 353, 'we really need to describe what morality has become, a question on which evolutionary theory casts no particular light'. (Ibid, 40)

Hurtsthouse reaches a similar conclusion in her discussion of Bernard Williams' (1983) criticisms of Neo-Aristotelianism.

> One thing this passage draws to our attention is that the non-ethical evaluations of living things that I have outlined are 'Aristotelian' rather than Darwinian. They do, as I have been at pains to emphasize, rely on the idea that there is, in relation to each natural kind of thing, 'an appropriate (= characteristic) way for things of that kind to behave' in relation to which they are evaluated as good or defective. The evaluations do not – as they might in a post-Darwinian age – evaluate members of species of living things simply as good, or not so good, or downright defective, as replicators of their genes. (1999, 257)

As we shall see, there are non-historical accounts of function. But they cannot do the job that Foot and Hursthouse need done. This raises a question: if moral judgments are not reducible to biological ones, in what sense are they naturalistic? The only good theory we have of normative natural functions is the selected effects account. In this essay, I show why they should resist this reduction, but also that their options are bleak.[10]

3 Natural Goodness Meet Evolutionary Biology

One popular view of the sciences is that they investigate *natural kinds*.[11] For simplicity, a natural kind is a group of objects sharing essential properties, which explain why they have the other properties they do. As examples, the kind *gold* is characterized by all and only things with atomic number 79; *carnivore* is characterized by all and only those things that are exclusive flesh-eaters. One can defend a *global* or *local* essentialism. *Global essentialism* is the view that for any science, the objects it investigates include natural kinds. *Local essentialism* suggests that some sciences investigate natural kinds but others may not.[12] Additionally, we can distinguish between *kind* and *token essentialism* (LaPorte 1997).[13] The former claims that kinds have essences and the latter claims particulars do.

[10] Thompson's views are more complicated than other proponents of the natural goodness approach regarding whether life-forms and species are the same. He notes that the former term is a philosophical one deriving from Aristotle and the latter is from empirical science, but suggests that they are used "more or less equivalently" (2012, 28). However, he does suggest that life-forms can change and ultimately go extinct and this is explained by Darwinian processes (2012, 65 – 6).

[11] Here I follow the discussion found in (Sober 1980).

[12] To be clear, a science may investigate natural kinds and concrete particulars. For example, astronomy investigates the kind *black hole* but also specific black holes like V4641 Sgr located near the Sagittarius arm of the Milky Way. Some sciences however may not investigate natural kinds at all. Some have alleged that evolutionary biology is such a science.

[13] Some philosophers such as Richard Boyd deny that kinds and tokens are metaphysically distinct. Some philosophers of biology such as David Hull have argued that species are individuals (i.e. concrete particulars)

For example, necessarily x is nitrogen if, and only if, x has atomic number 14. However, some bit of nitrogen might "transmute" into some other element. Nitrogen has an essence though the bit does not.

If species are natural kinds, then they have essential properties. If species have essential properties, then necessarily there is at least one property which all and only the species' members share, which explains why they are as they are. According to Elliott Sober (1980), essentialism about species was due to Aristotle's natural state model. The natural state model tells us for any natural kind, there is a natural state which instances of that kind tend to. They depart from it when interfering forces occur. For example, Newton's first law tells us an object remains in motion (or at rest) unless acted upon by a interferring force. However, are there natural states in biology?

In the 19th century, statistics appears and codifies the notion of "normality" with the ideas of a mean, variance, and standard deviation. Eventually, errors are simply understood as variation. Variation is not explained away, but becomes part of the explanans. For a range of genotypes and environments, there is an associated set of phenotypic values. However, there are no normal genotypes or environments. Hence, there are no normal phenotypes. All, we have is a *norm of reaction*. This so called "population thinking" simply studies the statistical properties of populations since there are no natural states. Of course, we do find zero-force laws in evolutionary theory analogous to Newton's first law. The Hardy-Weinberg equation states that when there is no selection, mutation, migration, and populations are effectively infinite in size, gene frequencies p and q of alleles A and a at a biallelic Mendelian locus will be $p^2 + 2pq + q^2$. One might suppose natural selection, mutation, migration, or random genetic drift are interferences. But, why suppose the absense of these processes is the natural state of the population? Sober argues there is no such reason.

After the rejection of the natural state model, arguments against species essentialism are given by David Hull (1986) and Philip Kitcher (1999). According to Hull, if *Homo sapiens* is a natural kind, then there are intrinsic essential properties which humans have. However, there are no such properties since evolutionary processes can eliminate or introduce any such intrinsic property without a speciation event. Therefore, *Homo sapiens* is not a natural kind. Of course, even if *Homo sapiens* has no intrinsic essential properties, it is possible for all we know that it has extrinsic essential properties. This is in fact Hull's view. Specifically, a species phylogenetic position in the tree of life could not be other than it is. This is analogous to Saul Kripke's assertion your parents are essential to you. Finding a good argument for this claim is difficult though.[14] Hull's argument carries through to other species as well.

Philip Kitcher (1999) criticizes Neo-Aristotelianism on different grounds. Roughly,

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and not natural kinds. However, Boyd denies that the category individual and natural kind are ontologically distinct. Hence, if right, he can trivially accept the species as individuals thesis. If Boyd is right, in kind and token essentialism are "notational variants" of one another.

[14] In conversation, Thomas Hurka raised the following objection to this response. If necessarily a species has the phylogenetic position it does, then it follows that necessarily scientific creationism is false. However, most of us regard scientific creationism as merely contingently false not necessarily so. However, in our post-Kripke times, we have become accustomed to the idea that certain truths known a posteriori could be unexpectedly necessary.

if *Homo sapiens* has at least one essential property it will not be a property like *rationality* since we could evolve to have very minimal cognitive powers. Likewise, non-humans could evolve much greater cognitive powers. So, even if our species has an essence, it will not be what Neo-Aristotelians celebrate.[15]

There is a response to this pair of argument, which we can must from Richard Boyd (1988, 1991, 1999).[16] He claims that traditional Lockean empiricism assumes that kinds are conventional, defined in terms of necessary and sufficient conditions (via intrinsic properties), unrestricted with regard to time and place, described by exceptionless natural laws, and and membership occurs in virtue of sharing properties. On his Cornell realist account, he contends kinds are real and known a posteriori; however, though not defined in terms of necessary and sufficient conditions. According to Boyd, for any kind, there is a family of co-occurring properties resulting in a sort of homeostasis. The homeostasis in the family occurs because (a) either properties in the family are causally related or (b) result from some common mechanism. A kind term *k* refers to the homeostatic property cluster. There is no analytic definition of *k* in terms of necessary and sufficient conditions since the homeostasis is contingent and imperfect. The "essence" of a homeostatic property cluster kind is contingent and known a posteriori. Given the imperfect homeostasis, there will "extensional indeterminancy" with regard to *k* (i.e., there will be an *x* such that it will be neither true nor false whether *k* applies to an *x*). The upshot of Boyd's position is this – we need not assume that natural kinds have modally robust essences. Rather, essences might concern the mere clustering of intrinsic and extrinsic properties (however, see Ereshefsky 2010 for a contrary view). If correct, then the above arguments against species essentialism are unsound since they assume a excessively strong form of essentialism.

Another interesting argument against species essentialism, even as moderate as Boyd's, is this (Hull 1976, 1978).

> Similarly, if all gold atoms were to cease existing, the class of gold atoms would temporarily have no members. Later when atoms arose with the appropriate atomic number, gold would come into existence again. However, once a species becomes extinct, it cannot arise again. If a species of flying reptile were to evolve which was identical in every respect to a species of extinct pterodactyl save origin, it would have to be classed as a new species. (Hull 1976, 184)

Hull assumes that species are historical entities which are spatiotemporally continuous; they have no "temporal gaps" (Ereshefsky 1992). That is, if a species go extinct at an earlier time, it cannot appear at a later time. But, Boyd could simply suggest that if a species goes "extinct" it simply improbable for it to exist at the later time.[17]

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[15] Kitcher (1984) has argued that species are best construed as sets and not concrete particulars or natural kinds. He claims that anything that can be said about species as individuals (i.e. concrete particulars), can be reconstructed as species as historically connected sets, an *n*-tuple with a first member as founder and *n* immediate descendants.

[16] For a similar though different response, see the following discussions in Machery (2008, 2012) Lewens (2012), and Ramsey (2013).

[17] A more effective defense of species as historical, spatiotemporal entities is this.

Contrary to David Hull (1986) and Philip Kitcher (1999), evolutionary biology allows for a modest species essentialism. Insofar as the natural goodness approach is essentialistic, evolutionary biology gives it a pass. However, things become more complicated when we turn to biological functions.

4 Natural Goodness and Functions

Philosophers have spilt much ink trying to make sense of functional claims. A particularly important account is Wright (1973, 1976). On Wright's view,

> The function of *x* is to *z* means (a) *x* is there because it *z*s, and (b) *z* is a consequence of *x*'s being there.

The usual example of his analysis is an old favorite. "The function of the human heart is to circulate blood" means the heart is there because it circulates blood, and circulating blood is a consequence of human hearts being there.[18] This account was rejected due to many criticisms. Here is one due to Christopher Boorse (1976). Suppose in a scientist's lab there is a gas leak rendering the scientist unconscious. This case satisfies both (a) and (b) above. "The function of the gas is to render the scientist unconscious" means the gas leak is there because it renders the scientist unconscious, and the scientist's unconscious state is a consequence of the gas leak. Surely, the gas leak has no function, or at least not this function.

A common response to Wright's etiological account is to revise it in light of evolution by natural selection. Simply put, the selected effects theory (or as it is sometimes

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> Since the inception of evolutionary theory, species taxa have been considered evolutionary units, that is, groups of organisms capable of evolving. The evolution of such groups requires that the organisms of a species taxon be connected by heredity relations. Heredity relations, whether they be genetic or not, require that the generations of a taxon be historically connected, otherwise information will not be transmitted. The upshot is that if species taxa, or any taxa, are to evolve, they must form historically connected entities. (Ereshefsky 1992, 688)

Heredity requires material overlap and spatiotemporal continuity (Griesemer 2000). Hence, if this is correct and there are no hereditary relations between flying reptiles at *t* and *t′*, they cannot be parts of the same species.

[18] It is important to note that Wright's account is a conceptual analysis of what he takes the meaning of functional claims to be (or at least some paradigm cases). Current accounts do not necessarily claim to be offering a conceptual analysis. Thus, consider Donald Davidson's "swampman" (1987) – suppose a molecule-for-molecule replica of a human is created by lightning in a swamp. According to the selected effects historical account, this swampman's heart would have no function. However, if one is not giving a conceptual analysis of the concept biological function, then it is not clear what force such recondite examples have (Millikan 1984; Neander 1991). Michael Thompson however suggests no natural-historical judgments would be true of it.

> [T]he thing has no ears to hear with and no head to turn; it has no brain-states, no brain to bear them, and no skull to close them in; prick it, and it does not bleed; tickle it, and it does not laugh; and so forth. It is a mere congeries of physical particles and not so much as alive. (2012, 60)

called, "modern history theory") says,

> The function of a trait *T* is that for which *T* evolved by natural selection in the recent past.

A trait evolves by natural selection if, and only if, the trait is heritable, entities with the trait have greater reproductive success relative to alternatives due to possessing it, and there is variation with respect to the trait. Thus, the human heart has the function of circulating blood if, and only if, having a human heart is heritable, having a human heart contributed to the reproductive success of those who possessed it in the recent past by circulating blood relative to the alternatives, and there was variation in the recent past with respect to humans hearts concerning the circulation of blood. A more sophisticated account of selected effects functions is due to Peter Godfrey-Smith.

> The function of *m* is to *F* iff: (i) *m* is a member of family *T*, (ii) members of family *T* are components of biologically real systems of type *S*, (iii) among the properties copied between members of *T* is property or property cluster *C*, (iv) one reason members of *T* such as *m* exist now is the fact that past members of *T* were successful under selection, through positively contributing to the fitness of systems of type *S*, and (v) members of *T* were selected because they did *F*, through having *C*. (1994, 350)

This selected effects account avoids Boorse's counterexample since the gas leak is not a member of a reproductive family.

On the selected effects account of functions, if a trait has the function to *F*, then it it *supposed to F* and if it does not, it is malfunctioning. This sort of normativity *just is* biological function. Accordign to the natural goodness approach, ethical claims are normative and teleological by their nature. This theory has the right "shape." Unfortunately, some human adaptations are deemed ethically impermissible. Evolution by natural selection may have selected for *F,* but nevertheless ethical considerations suggest we should not do *F*. Here is an example.

In their *A Natural History of Rape*, Randy Thornhill and Craig Palmer offer two hypotheses for the evolution of rape by males of our species.[19] The first hypothesis is that rape is an adaptation, and the second is that it is a by-product of other adaptations. Their argument starts from claims regarding human sex differences. Since parental investment by women involves great costs through pregnancy, nursing, and infant care, they have evolved to be exceptionally choosy regarding mates. However, male parental investment is much less since they may impregnate a female with no investment of resources in parenting. According to evolution by natural selection, one maximizes reproductive success by having as many (viable) offspring as possible. For males, that means have lots of sex given that sperm is cheap. For females, that means putting lots of resources into one's offspring given

[19] Elijah Milgram mentions evolutionary psychologists' work on rape in his discussions of the "Polyanna problem" for the natural goodness approach (2009, 562). Thanks to an anonymous reviewer for drawing my attention to this review. However, he does not consider the cultural "escape hatch" I do in the next section.

that eggs and subsequent resource allocation are very expensive. Now consider males that are "low status" and unchosen. If there is heritable variation in fitness with regard to male rape behavior, then all things considered, such behaviors should be selected for. As such, this behavior would be an adaptation having increased expected reproductive success. The by-product hypothesis claims rape behavior is not itself an adaptation, but a consequence of other adaptations. Thornhill and Palmer consider the latter hypothesis, but accept the adaptation hypothesis as better supported.

My objection to the natural goodness approach is this. It is possible males of our species are adapted to rape women when they cannot have sexual relations with them. However, if rape is an adaptation, and given the selected effects account of function, this behavior has the function of increasing reproductive success of low status, unchosen males. Our resulting natural-historical judgment would be roughly, "Unchosen, low status human males rape human females." Males in those circumstances would be *malfunctioning* if they didn't rape; this is what they are *supposed* to do. Clearly, this conflicts with our considered moral judgments regarding relationships between men and women. It is morally wrong to rape. Moral theorists agree we must find a stable equilibrium between our considered moral judgments, normative theories, metaethical views, and the sciences. My suggestion is that the natural goodness approach, evolutionary psychologists' account of male rape behavior, and the selected effects account of functions is an unstable equilibrium.

As a matter of fact, I think evolutionary psychologists are wrong (see Lloyd 2001, Kitcher and Vickers 2003, Coyne 2000 for critical discussions). First, Thornhill and Palmer are committed to a hyper-adaptationism, the claim that most traits are adaptations. This is challenged by many biologists. Second, they characterize rape as a sexual (i.e. reproductive) act. Even if true sometimes, this does not explain the rape of children, same-sex individuals, and those past reproductive age. Third, they provide no evidence that there is heritable variation in fitness in this trait, which is needed to argue it evolved by natural selection. Fourth, in the case of rape, the success rate of insemination is extremely low (approximately 2%, see Lloyd 2001). This suggests that it is a very ineffective strategy. Of course, none of this removes the objection I have raised. The fact that it is possible that such behavior would be functional, and hence would be morally permissible should be worrisome enough. We should not take cover in being fortunate.

One might respond to the above in several ways. First, suppose all the above was true. Rape would not be regarded as morally impermissible since things would be so very different than they are.[20] Unfortunately, this response does not work. Evolutionary psychologists suggest this behavior is an adaptation *in the actual world*. We are not talking about some far flung possible world. Contrary to the above skepticism, evolutionary psychologists *could be right*. And, our *actual* moral convictions are that this, if true, is morally abhorrent. This is worrisome enough for a biologically grounded natural goodness approach.

A second response notes that Neo-Aristotelians think that character traits must be

[20] Here I am thinking of R. M. Hare's (1979) response to the objection that utilitarianism would condone slavery. His response is twofold. First, if slavery were really harmful, then utilitarianism would not condone it. Second, if it were not really harmful, then it might condoned, but so what?

evaluated with regard to several goals. They are evaluated with respect to how they serve individual survival, species' continuance, freedom from pain and enjoyment, and the functioning of the social group. Though this might increase the unchoosen, low status male's reproductive success, he should not rape because of the woman's suffering and anguish. Still, this is but one of the goals mentioned. It is certainly possible this sort of individual is "fitted" or "endowed" quite well with regard to the other aspects of human flourishing.

Another response would be to reject the selected effects account of functions. In fact, this is precisely what Foot does as we saw earlier. One could employ the other main approach to functions namely Robert Cummins' (1975) systemic capacity account of functions. Suppose that *x* is some part of a system *S*, has a disposition *F,* and *S* itself has some disposition *C*. Roughly then, the systemic capacity function of *x* in a system *S* is to *F* if, and only if, *x* is capable of *F*-ing and *x*'s capacity to *F* in part accounts for *S*'s capacity to *C*. The notion of flourishing needed on the natural goodness approach presupposes a notion of proper function. That is, if some *x* has a function *F*, then *x ought to F*; there would thereby be norms of performance. One can plausibly argue that the selected effects account provides us with norms of performance since *x* has the function *F* in virtue of past *x*s *F*-ing even when *x* as a matter of fact cannot *F*. For example, a defective heart ought to circulate blood because past hearts were selected to circulate blood. However, the systemic capacity account ascribes functions even when no previous *x F*-ed. That is, we cannot ground norms of performance in terms of past *x*s *F*-ing. Hence, on the systemic capacity account, there are no proper functions; i.e. no natural normative properties. But if there are no natural normative properties on this view, then this account cannot supply the natural goodness approach with what it needs.[21]

One might also object that I have made no mention of reason. A unchoosen, low status male if they acted in accordance with reason would recognize that rape is morally wrong. However, reason itself is subject to evolution by natural selection. To my knowledge, all accounts of the evolution of cognition are very speculative. However, one can run a similar argument to that above regarding reason. Suppose our cognitive strategies are subject to heritable variation in fitness. Likewise, suppose the selected effects account of functions is correct. Consider an example due to Stephen Stich (1990, 61 – 2 though see Stephens (2001) for a reply). Imagine our hominid ancestors live in environment in which there is a variety of food stuff. However, many of the edible plants look *very* similar. Unfortunately, some of the local plants are poisonous; lethal in fact. Evolution by natural selection might fashion a cognitive strategy that represents such plants as deadly even when they are safe. A risk-averse, "safe better than sorry" approach would maximize reproductive success but nevermind truth. If a story like this was correct and generalizable, then our cognitive strategies have proper function of risk-averise and incidentally mostly false beliefs. They maximize reproductive success by outputing false

[21] On Cummin's view, one might wonder why normativity is undercut by *x* not having *F*-ed in the past. If *x should F* even if it never has, then this would mean that the normativity of *F*-ing is *built right into the dispositions themselves*; this just assumes away the problem of normativity. Proponents of natural goodness could just assume character traits as dispositions that come pre-packed with the relevant normative properties. This eschews naturalism.

positives. Of course, this is all wildly speculative, but the point remains the same. Epistemic and moral norms are in the same boat on the natural goodness approach.

Finally, and most obviously, one might claim that ethical normativity is not a species of biological normativity. Though biological functions are one component of human flourishing, they do not exhaust it. The form of evaluative judgments in morality is the same as biological ones but that does not imply that they are biological per se.[22] Rather, they are a diffferent type of *natural*-historical judgment. It is this last strategy that I want to pursue in the next section.

5 Natural Goodness and Gene-Culture Coevolution

Behaviorally modern humans (those with blades, beads, burials, bone toolmaking, and beauty) reached the Arctic circle approximately 30,000 years ago. Suppose you are stranded on the coast of King William Island (68.935N, 98.89W) in November.[23] The monthly average temperature is between −25°C and −35°C, so how do you stay warm? The Central Inuit used Caribou skins that were stretched and scraped into shape and had wolverine collars. How do you build shelter? The Central Inuit built vaulted structures 3 meters high made of snow blocks cut with serrated bone knives with low doors and skins draped along the outside achieving a temperature of 10°C −20°C. How you make fire? You cannot use wood. So, you make stone lamps with wicks made of moss which burns seal fat fuel. How do you get food? Over an ice hold, you waiting for hours for seals to move a down trigger. When they do, you plunge your handmade antler harpoon with a detachable head and sinew cord.

Could you make it? No. During 1845 – 1846, Sir John Franklin set out with two ships to explore the north coast of North America. Franklin was an experienced Arctic traveler. He had an extensive library, a very select crew, and a three year supply of food. They spent the winter of 1846 at King William Island stuck in the ice. After they ran out of food, they left on foot and everyone died from starvation or scurvy. Similarly, the Polar Inuit of northwest Greenland were hit by an epidemic. This disaster killed older, knowledgeable members of the group resulting in the loss of kayaks, bows and arrows, and efficient snow houses. They could not hunt caribou, and could only hunt seals and char part-time. Their population dwindled until they encountered an immigrating group of Polar Inuit from Baffin Island.

The crucial insight of these stories in that we inherit more than genes. We also inherit culture. Moreover, inherited cultural forms can be selected for just as genes and phenotypic traits are. As dual inheritance theorists Robert Boyd and Peter Richerson write,

> Culture is information capable of affecting individual's behavior that they acquire from other members of their species through teaching, imitation, and other forms of social transmission. (2008, 5).

[22] For responses to worries regarding biological teleology and the natural goodness approach, see (Gowans 2008, Hacker-Wright 2009, Lott 2012). Hacker-Wright and Lott's work is discussed below.

[23] The details of the following story come from Henrich and McElreath (2003).

Dual inheritance theory, otherwise known as gene-culture coevolution theory, argues that sometimes behavioral changes occur too quickly to explained by genes and behavioral traditions vary even in environmentally homogeneous environments. Genes and environment undoubtedly account for some variation in human behavior, but the socially transmitted component of culture cannot be ignored (Boyd and Richerson 1988).

Social transmission can occur in several different ways (for a nice discussion of the basic concepts of gene-culture coevolutionary theory, see Laland and Brown 2011, ch. 7). First, it can occur *vertically* from parents to offspring. Second, it can occur *obliquely* from parental to offspring generation; e.g. from teachers or religious elders. Third, it can occur *horizontally* from within-generation peers, e.g. as learning from friends or siblings. Selection for cultural traits is a form of *bias*. That is, the expected reproductive success of cultural variants differ. There are several forms of such bias. According to *biased cultural transmission*, given a choice between two alternative behaviors, individuals may be more likely to adopt one rather than the other. *Direct bias* occurs when individuals choose which of two alternative behaviors to adopt. *Frequency-dependent bias* occurs when the commonness or rarity of a behavior affects the probability of information transmission (which can generate conformity). *Indirect bias* occurs when cues are used to determine which individuals to observe in order to acquire information about trait.

The most common empirical example of gene-culture coevolution is the lactose intolerance in humans. Adult humans vary considerably in their ability to digest milk. This is because there is variation in the enzyme lactase, which breaks down energy-rich sugar lactose in dairy products. Absorbers reach 90% in dairy farming regions but typically less than 20% in non-dairy farming regions. Why? Because a culture of dairy farming created a selective regime for the allele for absorption. Feldman and Cavalli-Sforza (1986) devised a model combing single-locus genetics for lactose absorption and two culturally influenced behavior traits (milk users, non-users) and showed If Pr(child milk usage | parent milk usage) is high, then there is strong selection for the allele for lactose tolerance to reach high frequencies within 300 generations. If Pr(child milk usage | parent milk usage) is low, then unrealistically strong selection is required for the allele for lactose tolerance to reach high frequencies in 300 generations. Hence, the only way to explain the prevalence of certain biological traits is through cultural selection and inheritance.

One puzzling finding in the social sciences is what is called "altruistic punishment." An example of this is the *ultimatum game*. In this game, two players interact to decide how to divide a sum of money. The first player proposes that they receive an amount x and then the second player receives $(1 - x)$. However, the second player can either accept or reject the offer. If they reject the offer, no one receives any money. Experimentally, psychologists have shown in a variety of cultures, though not all, when the second player perceives the proportions to be unfair, they routinely punish the second player by rejecting the offer (Henrich, Heine, and Norenzayan 2010). This of course ensures they receive nothing. However, many think this is irrational since so long as $(1 - x) > 0$, then it is in the second player's self-interest to accept the proposal. Surely, it is better to receive some sum of money rather than none. Traditional evolutionary explanations for such behavior including kin selection and reciprocal altruism seem incapable of explaining such one-shot games amongst non-kin and their results. Gene-culture coevolution models have been

offered to explain altruistic punishment and its prevalence.

Robert Boyd, Herbert Gintis, Samuel Bowles, and Peter Richerson (2003) have offered one such cultural group selection model. Let me sketch their results informally. Suppose we have a large population of groups with three behavioral types *contributors*, *defectors*, and *punishers*. Contributors provide a benefit at some cost, and defectors receive the benefit but do not provide it. Thus, they do not pay the cost. Punishers provide a benefit at a cost but also incure another cost through punishing defectors. So, defectors are more fit than contributors, which are more fit than punishers. If selection occurred only in one group, punishers (and contributors) would go extinct. Bowles, Boyd, Gentis, and Richardson modeled cultural group selection of altruistic punishment as follows. First, cooperation reduces the fitnesses of contributors and punishers; however, it also increases a group's ability to compete with other groups. Second, punishers punish previous defectors. Third, individuals randomly pair and groups with fewer defectors outcompete ones with more. Thus, as cooperation and punishment increase, defectors decrease increasing the probability that altruistic groups outcompete selfish groups. Altruism, and specifially altrusitic punishment, can spread through a metapopulation through cultural group selection.

Bowles, Boyd, Gentis, and Richardson ran computer simulations showing the evolution of cooperation is strongly influenced by the presence of altruistic punishment. In this simulations, there are 128 groups one with only altruistic punishers and the other 127 were only composed only of defectors. The simulations were run for 2,000 time periods. The parameter values were chosen to model cultural evolution in small scale societies or tribes based on background knowledge (2003, 3532).

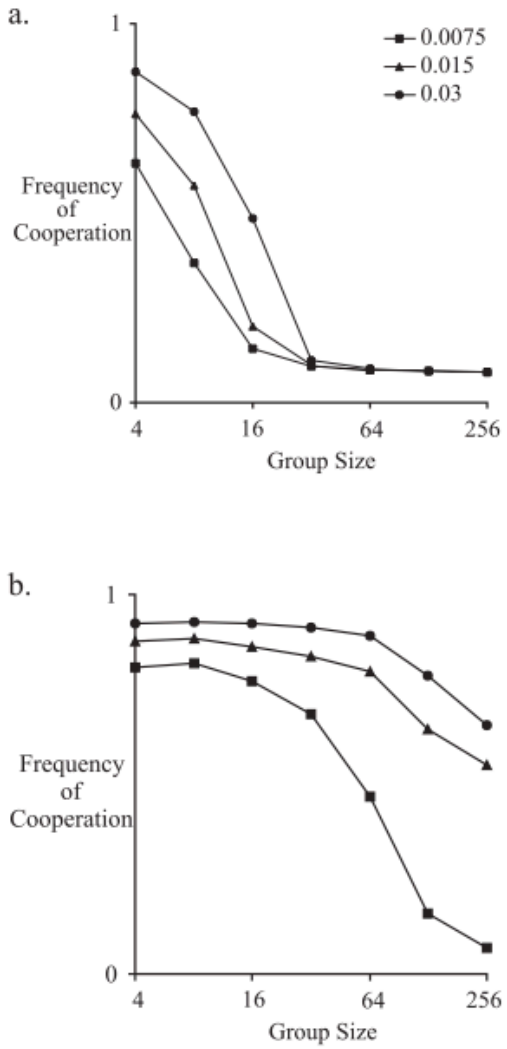

Figure 1: The evolution of cooperation is strongly affected by the presence of punishment (2003, 3532).

In figure (a), we have the long-run average frequency of cooperation as a function of group size if there is no punishment for three different conflict rates, 0.075, 0.015, and 0.003. It turns out that group selection is ineffective when groups are small. However, in figure (b), when punishment is incorporated, cultural group selection can keep cooperation prevalent in larger groups.

As an empirical example of cultural group selection (though not necessarily through altruistic punishment), consider the Nuer and Dinka who lived in the marshes of southern Sudan (see Kelly 1985; Richerson and Boyd 2008, 23–25). Both Nuer and Dinka used the same habitat with the same technologies; however, they differ in important ways. First, during the dry season, the Nuer maintained larger herds of cattle than the Dinka and never slaughtered them for food as did the Dinka. Rather, they consumed almost only grains and milk. Second, the Nuer tribes were structured patrilinearlly and the Dinka tribes were arranged around those who lived together in encampment. Third, the two differed over their bride-price customs. The Nuer required a minimum of 22 cows and would not take

credit and the Dinka had no minimum and did take credit. The upshot of these practices is that the Nuer outnumbered the Dinka in raids often 2:1. Between 1820 –1860, the Nuer expanded their territory conquering the Dinka by either killing them or assimilating the Dinka into Nuer tribes. Cultural evolution by cultural group selection requires variation amongst groups in their cultural features, those features contribute to the persistence or proliferation of groups, and those cultural features are passed on generation to generation. One can argue that each of these conditions was satisfied in the intergroup conflict between the Nuer and Dinka.

Gene-culture coevolutionary theory thus provides an important "how possibly" explanation for the cultural evolution of an otherwise puzzling phenomenon: altruistic punishment. Philosophically, there are two important implications of this work for the natural goodness approach. First, cultural evolution by cultural group selection occurs when there is heritable variation in cultural group fitness. Thus, when some cultural group trait evolves in this way it comes to have a "cultural function." The selected effects account of functions can be applied to cultural traits. We can merely revise Godfrey-Smith's account to include "real cultural systems", cultural inheritance, and transmission biases. Moreover, we can talk sensibly about what certain cultural traits, behaviors, or norms are *for*. These traits have evolved for certain effects, which explain their presence. Insofar as a group does not exhibit such traits, we can say that they are malfunctioning – they are not doing what they are supposed to. Second, we have the very same sort of problem as before. We found a conflict between our considered moral judgments and the implications of evolutionary biology. The exception here is that we have removed reduction to biology. Consider the cultural evolution of altruistic punishment. If Bowles, Boyd, Gentis, and Richardson are correct, then it evolved to facilitate the driving of less cooperative groups to extinction. Altruistic punishment evolved to encourage the "good functioning of its social group" precisely by eliminating other social groups or tribes. We have the following natural-historical judgment, "The Nuer drive other tribes exinct." Insofar as altruistic punishment, tribal instincts, and imitative bias were culturally selected for intergroup conflict, the Nuer tribes *should have* driven the Dinka socially extinct. Moreover, if they had opted not to, then then those tribes would be malfunctioning. They would be as malfunctional as a free-riding wolf, a non-sharing bee, or a nurturing polar bear. But surely this is not a trait that should be promoted. Xenophobia leading to violence or cultural extinction is morally wrong.

Thus, we have the following dilemma. If there are natural normative properties had by our species, then those normative properties derive from selected effects functions. However, selected effects functions derive from either evolution by natural selection or cultural evolution by cultural selection. These selection processes may shape traits that have functions, which should be resisted not promoted. For the natural goodness approach to make sense, it must endorse these traits contrary to what our considered ethical judgments suggest. As such, the natural goodness approach either leads to moral problematic judgments or cannot make good on the notion of teleology operating in the theory.

One might resist the dilemma in one of two ways. First, one might deny that natural normative properties derive from either biological evolution by natural selection or

cultural evolution by cultural selection. Second, one might claim we should simply reject our "moral intuitions" in cases like this and argue for a revisionist metaethic. In the next two sections, I take up these concerns.

6 The New Vitalists

The natural goodness approach is committed to cognitivism and naturalism regarding moral judgments. Moral judgments purport to be true and are understood naturalistically. Naturalism in contemporary metaethics comes to this. Moral properties are natural properties that can be studied by the sciences. As we noted above, we need not assume that natural properties are physical properties, but they must be special science properties. Several philosophers (Andreou 2006, Fitzpatrick 2009, Gowan 2009, and Millgram 2009) have objected to the natural goodness approach because once you understand natural-historical judgments as biological claims, you must embrace dubious claims like those discussed above.

One response to this argument by John Hacker-Wright (2009) and Micah Lott (2012) is to deny that natural-historical judgments regarding Aristotelian necessities are reducible to evolutionary biology. This is of course the suggestion of Foot and Hursthouse as well. Hacker-Wright writes,

> The mistake in this view is that it sees Foot's theory as a contender in the wrong field. Foot does not hope to displace the evolutionary view of function. Instead, we should read her as aiming at a view of function that is quite different, and plays a separate theoretical role… It is also important to recognize that Foot's view of function does not claim to be explanatory. It is not a biological theory at all; rather, it is a logical theory, a theory of statements about living things. (2009, 317)

Likewise, Lott writes,

> A natural goodness view is not impugned by an evolutionary perspective. Nor can Aristotelian life form judgments be replaced by an evolutionary account of living things. Rather, in order to even have a topic for evolutionary explanation, we must already be engaged in life form thought of the sort described by Thompson and Foot. (2012, 3)

So, what do Hacker-Wright and Lott mean that natural-historical judgments are not reducible to evolutionary biology, but are presupposed by it? The basic line of argument is this. If we make a natural-historical judgment regarding something, we must represent it as alive. That is, we must regard it as of a life-form; only then can we regard it as eating, reproducing, metabolizing, etc (Thompson 2008, Ch. 3). For example, I might represent something as a bobcat and judge that, "The bobcat breeds in the spring." We might question why bobcats breed in the spring, but that is separate from the natural-historical judgment. Additionally, when natural goodness proponents talk of flourishing or the good

of some life-form, they are not talking about the replication of genes.[26] The notion of flourishing is not biological per se. Moreover, if philosophers assume natural normative properties are reducible to evolutionary functions, then they beg-the-question against the natural goodness approach. Lott writes regarding William Fitzpatrick's criticisms,

> But of course the Thompson-Foot view is spelling out a different understanding of "function," which is not arrived at by considering the evolutionary history of the species. (2012, 17)

I have three responses.

First, natural-historical judgments are not reducible to biological selected effects claims. Rather, if you are naturalist, then your best bet is that they reduce to selected effects claims. Those selected effects could come from evolutionary biology or cultural anthropology (or any another science in which selected effects are present (e.g. Marxist history (Cohen 2001)). As we saw above, there are other accounts of functional claims such as Cummins functions. However, these are not normative and hence do not do the job needed.

Second, suppose Hasker-Wright and Lott are correct that natural-historical judgments are presupposed by evolutionary biologists. It does not follow that they are true or that there are normative properties, moral or otherwise. To see this, consider two different approaches to practical and moral normativity. Daniel Dennett (1989) has long argued that doing folk psychology is to adopt an "intentional stance." We regard others as having propositional attitudes, which given perceptual inputs, bring about various actions. But, of course, Dennett is an instrumentalist about folk psychology; he does not accepted it as true. It is a useful fiction. Consider Simon Blackburn and his quasi-realism about ethics (e.g. 1984). According to Blackburn, moral judgments are expressions of attitudes that are projected on to the natural world. For example, instead of having approval and disapproval operators in our language, we use declaratives and moral predicates to express our attitudes. However, he alleges we can account for the "validity" of moral inferences, moral truth, moral progress, and mind-independence in expressivist terms. Both Dennett and Blackburn think such "stances" can be applied more broadly. In fact, Dennett himself talk of the "design stance" in which we regard living things as having functions, purposes, and being designed. So, suppose natural-historical judgments are presupposed by evolutionary biology. This alone does not show there are normative properties, or that natural-historical judgments purport to describe them.

Third, remember we started with the problem of normativity and how could it exist in a wholly natural world. Of course, one might think that there is special sort of normative judgment over and above that of evolutionary biology, cultural anthropology,

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[26] Proponents of the natural goodness also note talk of flourishing of some life-form is not reducible to the replication of genes. Following Richard Dawkins, William Fitzpatrick (2000) has argued that if evolutionary biology supplies ends, it is the replication of genes. However, evolutionary theory does not imply this. Dawkins (1976, 33) argued that something is a replicator if it possesses longevity, fecundity, and copying-fidelity. He likewise claims that only genes possessed these properties. However, if we consider phenotypic traits as *types* and not *tokens*, then they could possess these properties as well (Sober 1984).

and other special sciences. Lott certainly thinks so,

> Neo-Aristotelian judgments articulate the functional relations within a life form; they do not attempt to explain how the life form came to be as it is. The fact that biologists (and philosophers of science) have a *different* way of approaching biological teleology does not, in itself, show anything illegitimate about the kind of judgment that interests Foot and Thompson. (Lott 2012, 11)

One can say that there is some special form of judgment not reducible to our best scientific accounts of placing normative properties in a natural world. But this is to give up on naturalism. It is a form of vitalism. We no longer have the *natural* goodness approach.[27]

7 Moral Revisionism

By way of summary, we have seen one solution to the problem of normativity in a wholly natural world is to understand normative properties as natural.[28] They are selected effects functions due to either biological evolution or cultural evolution. However, what these selected effects functions are for is contrary to our considered ethical judgments. Hence, we could accept our considered moral judgments and reject the claim that selected effects functions ground ethical normativity. We saw that this is precisely what some proponents of the natural goodness approach – the new Vitalists as I called them – do. Or, one can always reject the considered moral judgments of the day in favor of a particular metaethical or scientific view. It is to this final strategy that I now turn.

Let's say that a moral theory (metaethical or normative) is *revisionist* insofar as it rejects considered moral judgments. A theory then can be more or less revisionistic. It might reject more important considered judgments than others (if we weight some judgments greater than others). One might resist the claim that rape behavior or aggressive intergroup conflict are morally bad. For example, one might argue that in very exceptional circumstances (i.e. after some apocalypse), our considered moral judgments would be very different regarding forcible sex of a woman. Likewise, one might argue that altruistic punishment should lead to the social extinction of other groups (e.g. consider a group that engages in female genital mutilation). Now, I have registered my dissatisfaction with both of these responses. First, evolutionary psychologists claim that rape is *in the actual world* an adaptation. Hence, supposing our considered moral judgments *would be* different in an apocalypse is irrelevant to the present case. Second, our considered moral judgments regarding social extinction and female genital mutilation surely would be that this social norm should be eliminated, but the cultural group selection model applies to *any* norms which involve altruistic punishment (Boyd, Gintis, Bowles, and Richerson 2003). For example, Boyd and Richerson write,

> Moralistic punishment is the strategy of punishing others who disobey a moral rule

[27] Hacker-Wright acknowledges this by noting a Kantian strain in the natural goodness approach (2009, 308).

[28] I am particularly indebted to William Rottschaefer and Nicholas D. Smith for discussion of the points in this section.

> and also sanctioning those who do not punish others for breaking the rule. In principle, moralistic punishment strategies could create cooperation in large groups. However, this mechanism will stabilize any norm that becomes common, whether adaptive or not (wearing ties to work is a humble example of the latter). (Richerson and Boyd 2001, 195)).

Surely, if Boyd and Richerson are right that even norms like, "wear a tie to work," could have the function of social extinction through altruistic punishment we should not drive other groups social extinct based on their windsor knots and paisleys.

As an another example of revisionism, many act utilitarians recognize that their theory makes extremely demanding claims on moral agents. If one must choose the action of those available that maximizes expected utility, one can argue that there will be little in the way of an enjoyable life.[29] However, those utilitarians simply deny that we should expect an enjoyable life – morality *is* extremely demanding (Singer 1972)! One should not buy that latte, beer, or go see that movie since one could do far more good with that small sum of money. But this sort of denial of considered moral judgments is a limited strategy. Some such judgments are required to even motivate acceptance of a normative or metaethical theory. Wide reflective equilibrium (Daniels 1979) occurs between our considered moral judgments, normative principles, metaethics, and the natural and social sciences. However, without our considered moral judgments (maybe even with) we will have more than one coherent set of normative principles, metaethics, and the natural and social sciences.

Additionally, we must find relevant difference-makers regarding why some considered judgments are accepted and others rejected. Otherwise, such revisions will be ad hoc. Consider an example from the history of science, the case of Uranus' orbit. In the nineteenth century, Newtonian mechanics had successfully accounted for the orbits of most of the known planets. However, there was one particularly difficult case, Uranus. Newtonian mechanics incorrectly predicted Uranus' orbit. Astronomers concluded that either Newtonian mechanics was incorrect or they made a mistaken calculation. John Adams and Urbain Leverrier proposed that there was an unobserved planet of a certain size and distance beyond Uranus and they subsequently predicted its orbit. They found that the orbit of Uranus was as Newtonian mechanics predicts when conjoined with the additional auxiliary hypothesis. Eventually the unobserved planet, Neptune, was observed and Newtonian mechanics was credited with the success. The auxiliary hypothesis, "There is a planet of a certain size and at a certain location which gives rise to certain perturbations in Uranus' orbit," was not ad hoc since one could test it independently of Newton's law of gravitation and laws of motion. Eventually, one could see Neptune with a telescope. We need some notion of "independent testing" in our moral theorizing too.

In the case of utilitarianism, it is clear that philosophers like Peter Singer accept considered moral judgments when they support their theory (e.g. you should save a drowning child when it merely ruins your shoes). However, they reject them when they challenge it (e.g. you should not have a latte, a beer with friends, or see a movie at the

[29] Of course, one can accept or deny that utilitarianism is an excessively demanding theory (Kagan 1991; Mulgan 2001). My point is meant to be illustrative.

theater). One might suppose thought experiments provide such an independent test of moral theories. However, unlike perceptual judgments, moral intuitions cannot be independently corroborated as reliable; we would have to have access to the "moral facts" and then determine if our moral intuitions corresponded to them. Thus, I am skeptical that a radical revisionism with regard to metaethics and normative moral theory. We should be suspicious of those who simply shirk our considered moral judgments.

Let me make one last point about Neo-Aristotelianism. Nothing I have said speaks against their most central ideas of (a) human needs are structured such that there is human flourishing, (b) inculcating virtues, classical or otherwise, is the most effective means to advance human flourishing, and (c) and morality is fundamentally about human flourishing. Rather, Neo-Aristotelians should not expect to ground their purportedly naturalistic account of normativity in the selected effects functional approach, but in some other approach (e.g. Foot 1972).[30]

8 Conclusion

In this essay, I have scrutinized the natural goodness approach. After presenting the approach, I argued challenges regarding its commitment to species essentialism fail. Likewise, I argued the coupling the natural goodness account of natural-historical judgments with the selected effects account of function, leads to implausible ethical conclusions. This is so whether the account is specified by evolutionary biological or gene-culture coevolutionary details. That said, proponents can either retreat to non-naturalism or moral revisionism. But, in the end, the natural goodness appears to be neither natural nor good.

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