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Is there a role for 'human nature' in debates about human enhancement?

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ABSTRACT

In discussions about the ethics of enhancement, it is often claimed that the concept of 'human nature' has no helpful role to play. There are two ideas behind this thought. The first is that nature, human nature included, is a *mixed bag*. Some parts of our nature are good for us and some are bad for us. The 'mixed bag' idea leads naturally to the second idea, namely that the fact that something is part of our nature is, by itself, *normatively inert*. The **Inert View** claims that nothing normative follows from the mere fact that some trait is a part of our nature. If the Inert View is correct, then appeals to the value or importance of human nature in debates about enhancement are indeed misplaced. We argue that the Inert View is wrong, and that a certain concept of human nature – which we refer to as human form – *does* have an important role to play in debates about enhancement.

1. Introduction

With the world warming at an alarming rate, Matthew Liao, Anders Sandberg, and Rebecca Roache have recently argued that we should think seriously about enhancing humans to deal better with a warmer planet.[1] Similarly, Julian Savulescu and Ingmar Persson have argued that to effect the change in lifestyle needed to avoid environmental catastrophe, our 'moral motivation must be enhanced so that [we] pay more heed to the interests of future generations'.[2]

These are but two discussions in a larger debate about when, if ever, it is morally permissible to enhance human beings. A common move in these discussions is to claim that the concept of 'human nature' has no helpful role to play here. It's easy to see why. As John Harris puts it, 'Famines, floods, droughts, storms are all natural and all disastrous'.[3] Harris' point is that

[1]Matthew S. Liao, Anders Sandberg and Rebecca Roache, 'Human engineering and climate change', *Ethics, Policy & Environment* **15.2** (2012), 206-221.

[2] Ingmar Persson and Julian Savulescu, *Unfit for the future: The need for moral enhancement* (New York: Oxford University Press, 2012), 2. Persson and Savulescu are also concerned with enhancing our moral motivation so as to allow for changes in our mode of life that will allow us to effectively prevent terrorism.

[3] John Harris, 'Enhancements are a Moral Obligation', in Julian Savulescu and Nick Bostrom eds., *Human Enhancement* (Oxford: Oxford University Press, 2009), 134.

nothing evaluative, let alone normative, follows from pointing out that something is natural. As Frances Kamm puts it, 'The human and the good are distinct conceptual categories'.[4] Some things that are part of (our) nature (such as arrogance) are surely bad for us. And some things that are not part of our nature (inhuman altruism perhaps) may well be good for us.[5] So how could pointing out that some trait is part of human nature tell us anything about whether we would do well to change it (or not)? 'What is natural,' concludes Harris, 'is morally inert'.[6]

There are two ideas behind this line of reasoning. The first is that nature, human nature included, is a *mixed bag*. Some parts of our nature are good for us and some are bad for us. The 'mixed bag' idea leads naturally to the second, namely that the fact that something is part of our nature is, by itself, *normatively inert*. The **Inert View**, as we shall call it, is not that there is no such thing as human nature. Nor is it that all traits that belong to human nature are normatively inert, since proponents of the inert view think that some parts of our nature are good for us while others are bad for us. The claim, rather, is this:

> **Inert View**: Nothing normative follows from the mere fact that some trait is a part of our nature. Its naturalness does not, on its own, tell for (or against) it.

If the Inert View is correct, then appeals to the value or importance of human nature in debates about enhancement are indeed misplaced. We will argue, however, that the Inert View is wrong, and that the concept of human nature *does* have an important role to play in debates about enhancement. The Inert View seems unavoidable if the 'mixed bag' view of human nature is correct. And the mixed bag view seems unavoidable *given* a certain sense of human nature, which we will refer to as the 'statistical concept of human nature'. But we will show that the statistical concept of human nature is insufficient for thinking about our nature. Indeed, the statistical concept relies upon a different, non-statistical sense of human nature, which we will refer to as 'human form'. And the notion of human form, we will argue, is conceptually tied to what is good (and bad) for humans. To say that something is part of human form entails that it is part of our good, part of what is good for us. So, to claim that a particular enhancement would

[4] Francis Kamm, 'What Is and Is Not Wrong With Enhancement?', in Julian Savulescu and Nick Bostrom eds., *Human Enhancement* (Oxford: Oxford University Press, 2009), n.13 103.
[5] These are Kamm's examples.
[6] Op. cit. note 3, 134.

eliminate or drastically alter some aspect of human form gives us *pro tanto* reason not to make the change. Likewise, to claim that a particular enhancement would contribute to or genuinely enhance some aspect of human form gives us *pro tanto* reason to make the change. *Contra* Kamm, the human and the good are *not* simply 'distinct conceptual categories'.

It is important to be clear about what we are claiming. Our claim is that the Inert View as stated above is false because it fails to hold for a certain important sense of 'human nature' – i.e., human form. However, we are not claiming that the Inert View fails to hold for the statistical concept of human nature. Nor are we claiming that the statistical concept of human nature is itself misguided, or that it should be abandoned. Rather our claim is that human form is a distinct and legitmate sense of human nature, and that (in ways described below) any attempt to spell out a statistical conception of human nature depends upon the notion of human form. Moreover, the notion of human form sheds important light on questions of human enhancement.

By distinguishing between two senses of human nature, we can clarify both what is true and what is misguided in the position of those who reject entirely a role for human nature in debates about enhancement. If the only viable concept of human nature were the statistical one, then indeed the 'mixed bag' view would likely follow, and with it the Inert View. In that case, Tim Lewens might be right to claim that 'we are in fact better off if we refrain from mentioning human nature altogether in debates over enhancement'.[7] What that claim misses, however, is the importance of the human form concept of human nature.

Crucially, we not claiming that once one recognizes a role for human form in thinking about enhancement, one must conclude that all enhancement is impermissible or wrong or immoral. On the contrary, we think that appeals to human form in enhancement debates could just as easily lead to the conclusion that we should perform some particular enhancement than that we should not. This is because whether an appeal to human does or does not offer support for enhancement in particular cases depends on the *content* of human form – i.e., a substantive account of what is actually true of human nature, in the sense of human form. Without such an account, the mere concept of human form is not going to settle questions about whether we should enhance in particular ways.

[7] Tim Lewens, 'Human Nature: The very idea', *Philosophy & Technology* **25.4** (2012), 460.

Now, we are not offering a substantive account of the content of human form.[8] But then you might wonder: if introducing the concept of human form offers no practical guidance on its own about enhancement, what's the point of arguing against the Inert View and its correlative conclusion that we should just dispense with the concept of human nature in enhancement debates? To answer this question, and to bring our thesis more sharply into view, think about a concept that is obviously not normatively inert: well-being. Few would claim that nothing normative follows from the fact that something promotes or hinders human well-being. Indeed, as Alan Buchanan has suggested, the central question we must ask about possible enhancements is: Will this have a salutary effect on our well-being?[9] If the answer is 'yes' then we plausibly have pro tanto reason to enhance. If the answer is 'no' then we plausibly have pro tanto reason not to enhance.

But notice that thinking that the concept of 'well-being' is important for discussions about enhancement does not, on its own, tell us whether to enhance on any particular occasion. To know that, we would need a *substantive account* of well-being. The concept of well-being, then, does almost no work on its own. It is a frame, as it were, through which we look at the issue of enhancement. But it yields no answers without a particular picture of well-being inside the frame.

Our claim is that the concept of human form functions in much the same way. The idea that the concept of human form does not, on its own, provide any practical guidance about particular enhancement debates is no more a knock against it than the idea that the concept of well-being does not, on its own, do so either. Just as the concept of well-being is hardly normatively inert, so too is the concept of human form. Indeed, as we shall argue, it is very plausible to think that the concept of human well-being is conceptually linked to the concept of human form. So the latter is no more out of place in debates about enhancements than the former.

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[8]Our defence of the place of the concept of nature in debates about enhancement, then, is different from those like Leon Kass, 'Ageless bodies, happy souls', *The New Atlantis* **1** (2003), 9 – 28; Francis Fukayama, *Our posthuman future: Consequences of the biotechnology revolution* (New York: Picador, 2002); and Michael J. Sandel, *The case against perfection* (Cambridge MA: Harvard University Press, 2009) who deploy particular (and contentious) conceptions of the content of human nature and its origin in order to caution against particular kinds of enhancement (Michael Hauskeller, 'Human enhancement and the giftedness of life', *Philosophical Papers* **40** (2011), 55 – 79 offers a detailed defense of Sandel's view.). For reasons that will emerge below, we do not see our position as lending support to the anti-enhancement camps. If anything, our view provides (modest) support for the enhancement camp.

[9] Allen E. Buchanan, *Beyond Humanity? The Ethics of Enhancement* (New York: Oxford University Press, 2011).

The paper proceeds as follows. In section 2, we explain the content and motivation for the Inert View. This leads to our critique in section 3, where we argue that the concept of human nature assumed in the Inert View is incomplete. In showing how it is incomplete, we introduce the notion of human form, which we explicate in some detail in section 4. In section 5, we first bring out the conceptual connection between human form and goodness in human beings. We then respond fully to the Inert View by showing that there is also a conceptual connection between human form and what is good *for* us. In section 6, we deepen this discussion by examining the place of vulnerabilities in human form. We conclude, in section 7, by drawing four conclusions for debates about enhancement that come from recognizing the importance of human form.

2. The Inert View

The Inert View claims that whether or not a characteristic belongs to human nature provides, as such, no normative guidance concerning the proper response to that characteristic.

One of the most articulate proponents of the Inert View is Allen Buchanan.[10] According to Buchanan, when opponents of enhancement appeal to human nature to support their position, they are failing to appreciate that human nature is a *mixed bag*. Once we accept the mixed bag view, it follows that the fact that some trait belongs to human nature cannot, on its own, give us reasons for or against biotech interventions that would alter it. As Buchanan says:

> In principle, then, there seems to be nothing wrong with the idea of changing those parts of our nature that are bad, if this can be done without imperiling the good parts. To assume otherwise is to beg the question at hand, to assume, rather than argue, that changing human nature is itself a wrong. Further, we can give reasons – just the sort of reasons that we use to support judgments about the good in other cases – for why it would be good, other things being equal, to alter some of the more unsavory traits which, on some views, are part of human nature. For example, suppose, as some evolutionary biologists claim, that it is part of human nature – a widespread trait due to our evolutionary past – that we have a bias toward negative evaluations of those we regard as alien, as 'not one of us'. Perhaps if this propensity were reduced, there would be fewer

[10]In what follows we focus on Buchanan's position, though we believe that his central points are supported by a large number of contemporary philosophers. We are using the terms 'trait' and 'characteristic' interchangeably.

> wars and a reduction of the miseries that was bring. The reasons we have for changing this putative aspect of human nature are familiar reasons having to do with what is bad for us, with what tends to undercut our well-being.[11]

Crucially, while the Inert View holds that human nature as such is normatively inert, it accepts that our given nature may well impose practical *constraints* on what is possible for us enhancement-wise: our bodies are such that substantially enhancing our eyesight, for example, is going to be easier than giving us the ability to fly. But the constraint that our nature provides on the possibility of enhancement is just that: a constraint. It is not, itself, normatively relevant.

Moreover, it might be possible and desirable to remove the constraint itself through enhancement. In other words, the constraints that our nature places on us are themselves subject to evaluation from a standpoint that is independent of our nature. And thus nature's constraints do not have normative significance in themselves. Buchanan provides a helpful analogy:

> [I]f we are limited to a particular canvas we only create a painting that fits within its boundaries and we should take that into account in deciding what to paint – *on it*. But if we have the option of using *a different* canvas, then there will be other possibilities (and other constraints, as well). Recognizing that a given canvas limits the artistic good we can achieve does not imply that we should refrain from changing canvasses; nor does it imply that we *should* change canvasses. But it does raise the question of whether there might be reasons for using a different canvas, if we can. We might come to realize that if we changed our nature in a certain way, we would become capable of goods that are not available to us but that would be worth pursuing.[12]

Of course, to know whether or not human nature is a mix of good and bad, we need some understanding of what we mean by 'human nature'. Buchanan offers the following account:

> Human nature is a set of characteristics (1) that (at least) most individuals who are uncontroversially regarded as mature human beings have; (2) that are recalcitrant to being

[11] Op cit. note 9, 137.
[12] Ibid., 123 – 124.

> expunged or significantly altered by education, training, and indoctrination; and (3) that play a significant role in explanations of widespread behavior and in explanations of differences between humans and other animals.[13]

Because it relies on concepts like 'most' and 'widespread,' we will refer to this as the *statistical concept of human nature*.[14] As Buchanan points out, this general concept of human nature is consistent with different substantive conceptions of human nature — i.e. different accounts of which characteristics satisfy these three criteria. Thus one strategy for challenging the Inert View would be to begin with the statistical concept of human nature, and then to argue for a substantive account that is more *optimistic* than the mixed bag view. On the optimistic view, the characteristics that satisfy the three criteria (or something close to them), turn out to be only ones that are good (for us) rather than bad (for us), and thus we have reason to embrace or favor what is part of our nature.

We have no interest in arguing for a more optimistic view of human nature, *given* the statistical concept of human nature. Moreover, we agree with Buchanan and others that if human nature is simply a mixed bag, then we should accept the Inert View. Nor are we opposed to the statistical concept of human nature *per se*. The question is whether the statistical concept is the only legitimate and important way of thinking about human nature.

3. Beyond the Statistical View: Human Nature as Human Form

The answer is that it is not. In fact, the statistical concept of human nature relies upon a different, non-statistical sense of human nature. We will refer to this second concept of human nature as *human form*, because it belongs to a larger category of life form concepts. Proponents of the Inert View have failed to consider the concept of human form, which captures a sense of human nature for which the claims of the Inert View are false.

Let's look more closely at Buchanan's account of the statistical concept of human nature. Doing so reveals that in order to apply Buchanan's own criteria for determining whether something is part of our nature – in the statistical sense – we must employ the non-statistical conception of human nature as *human form*. In this way, the concept of human form is

[13] Ibid., 118.
[14] A clear, concise version of this kind of account of human nature can be found in Edouard Machery, 'A Plea for Human Nature', in *Arguing about human nature: contemporary debates*, Stephen M. Downes and Edouard Machery eds. (New York: Routledge, 2013).

conceptually prior to the statistical conception of human nature.[15]

Consider the first feature of Buchanan's statistical concept: a characteristic of human nature is one 'that (at least) most individuals who are uncontroversially regarded as mature human beings have'. This suggests rightly that in reflecting on human nature, we should direct our attention to 'mature' human beings: animals grow and develop, and a theory of human nature should take our maturation into account. Moreover, in figuring out which characteristics belong to human nature, we want to know what is true about humans at their developed stage. A theory of dog nature that never got past the puppy stage would be inadequate (though very cute), and so would a theory of human nature that ended before adolescence.

But how are we to understand the notion of 'mature,' and how are we to say what *counts as* maturation in human beings? Unless we can identify certain things as mature or immature, the first criterion will be impossible to apply. We might be tempted to think that maturation can be defined simply in temporal terms, and that the 'mature' ones are those that have reached a certain age. But this can't be right. For an organism (human or otherwise) might be around for a long time, but *fail* to mature – its growth might be stunted or inhibited, even though it continues to survive. The stunted, immature organism might even outlive all its un-stunted, mature relatives. So maturation is not a matter of mere temporal persistence.

Perhaps, then, what really counts as 'mature' is what *usually* happens with individual organisms as time goes by, in the sense of what is *statistically likely* to happen. But this cannot be right either. Consider the birds of Chernobyl which have substantially smaller brains than their non-irradiated counterparts.[16] The right thing to say here is not that what counts as mature for the birds in question has changed. Rather, the birds of Chernobyl have *failed* to mature fully, remaining instead in a stunted or inhibited state. And this would be true if, instead of being limited to Chernobyl, the background radiation in question blanketed the earth. Another example comes from the humble mayfly, among whom only a few individuals reach adulthood out of thousands born.[17] Becoming a mature mayfly is statistically very uncommon, and in the right (well, the wrong) circumstances, the same could be true for human beings as well. How, then,

[15] The discussion in this section is heavily indebted to Michael Thompson, 'Apprehending Human Form', *Royal Institute of Philosophy* Supplement 54 (2004): 47 – 74. In section 4, we turn directly to Thompson's view, and our debt is even more clear.
[16] Anders Pape Møller et al. 'Chernobyl birds have smaller brains', *PLoS One* **6.2** (2011): e16862.
[17] See Michael Thompson, *Life and Action: Elementary Structures of Practice and Practical Thought* (Cambridge MA: Harvard University Press 2008), chapter four.

are we to understand the concept of 'maturity' invoked in Buchanan's conception of human nature?

Before answering that question, let's turn to another criterion in Buchanan's conception which raises similar questions. According to the second feature of the statistical view, a characteristic of human nature is 'recalcitrant to being expunged or significantly altered by education, training, and indoctrination'.[18] We can apply this second criterion only if we are able to determine which events *count as* 'education, training, and indoctrination'. This may seem like an easy task, but a little reflection reveals that it is not.

The ideas of 'education' and 'training' imply, at minimum, the development of some capacity in response to outside influence. If an organism's capacities are left unchanged, or the source of change is entirely within the organism, we would not describe this as an instance of 'education' or 'training'. Of course, in order for education or training to take place, there must be a capacity that is receptive to being developed. It is impossible to educate an earthworm in mathematics, or to train a snail to play catch, because those organisms lack the relevant capacities. Crucially, however, even when the relevant capacity is present, not just *any* change in a capacity introduced by an outside influence will count as education or training. We do not 'educate' a young child's capacity for speech by removing his tongue, though that will certainly influence that capacity. Likewise, education and training can *fail* to occur. Or, once begun, they can be interrupted. The education of a toddler's linguistic capacity will be interrupted if she is lost in the forest and raised by wolves.

Perhaps we should say, then, that a capacity is educated or trained when it is subject to influences, or altered in ways, that are *statistically common*. In some cases, this might pick out the extension of 'education' or 'training'. But it will not do as a *criterion* for what it is to be educated or trained for reasons familiar from our discussion of maturity: it is perfectly possible for there to be a widespread failure of education and training. What happens to the unfortunate child lost in the woods might, in principle, happen to the majority of children!

Whatever it is to be mature is not just a matter of what most members of a given species or group are like when they're old. Whatever it is to be educated is not just a matter of what influences the capacities of most members of a species or group. What, then, is required to get a grip on these concepts?

[18] Op. cit. note 9, 118.

Let's start with 'maturation'. Consider again that a particular organism might fail to mature, or that even every member of a species might fail to mature. These possibilities show that the concept of maturation implies the idea of an *unfolding process* that is subject to potential interruption. In conceiving of something as maturing in the way that living things do we draw on some conception of what is *supposed to happen* with the kind of thing we are considering. The idea of such an unfolding process gives a special sense to the question, 'What happens next?' Crucially, when we ask this question about an organism in the context of wondering what it is to be a mature instance of its kind we are not asking for a *prediction* about what will happen to this particular organism. The answer to the prediction question may depart wildly from the answer to the question 'What happens next in the process of maturation for this kind of thing?' Think again of the mayfly. The answer to, 'What happens next?' where this is a question about what is going to happen to this particular mayfly, is likely to be, 'It will die'. The answer to, 'What happens next?' where this is a question about how the mayfly, as a kind, matures from whatever stage of development we're currently looking at, is something else altogether. The second question is asking about the process of maturation in 'the mayfly', a process that is interrupted in the case of most particular mayflies.

And what is true of maturation in mayflies is equally true for maturation in hibiscuses, hamsters, and human beings. Our understanding of what constitutes an organism's maturation is not a statistical summary. Rather the relevant concept of 'mature' implies a *non-statistical* sense of how things stand with organisms of a particular kind – a particular conception of 'what they do' or 'how things go with them' when they mature. And the truth of such a conception is consistent with widespread failure and interruption of the process(es) of maturation in individuals.

Thus in order to apply the first criterion of the statistical concept of human nature, we must have some other, *non-statistical* conception of human nature. For the statistical concept relies upon the notion of maturation, and we have no way to determine what counts as a mature human apart from some non-statistical conception of human maturation.

A similar point holds for concepts like 'education' and 'training'. They too imply a conception of an *unfolding process* that is subject to potential interruption. In conceiving of an organism's capacity as being educated, or failing to be educated, we draw on some conception of what is *supposed to happen* with the capacities of the kind of thing we are considering. This is a

conception of 'how things go with them' when they are educated or trained, an understanding of what counts as educating or training a given capacity. Such a conception is not a statistical summary of the population. Rather, it is conceptually prior to any statistical summary, for such a conception is necessary to so much as identify an instance of education or training, and to distinguish a case of education and training from a lack of, or interruption in, education and training. The statistical concept, then, depends upon some non-statistical conception of what human beings are like, of 'how things go with us', with respect to educating and training our capacities.[19]

4. Human form and the representation of life

At this point, the reader may be asking what a non-statistical conception of an organism's nature, or form, amounts to. The most fully developed account of this comes from Michael Thompson. In *Life and Action*,[20] Thompson examines what is involved in our representation of living things *as* living. He concludes that in order to represent any individual as living, we must employ some (implicit) understanding of the *life form* to which that individual belongs, i.e. a conception of the organism's kind. This conclusion is supported by the following two claims:[21]

1. In order to represent any individual thing as living, we must represent some goings-on as vital processes of the organism.
2. In order to represent any goings-on as a vital process, we must bring it under the 'wider-context' of a conception of the life form to which the organism belongs.

The key thought in the first claim is that to be alive just is to be *doing* certain things that count as vital processes – e.g. eating, breathing, hunting, reproducing. If we couldn't identify any happenings as vital processes of one sort or another, we would have no grounds for supposing that we were dealing with a living thing. Thus representing something *as* living requires representing some happenings as vital processes.

The second claim is that in order to represent some process as a vital process, we need to place it in the context of the thing's life form. Why? The basic idea is that if we attempt to

[19] What of Buchanan's third component of his conception of human nature? We consider it below, p. 12.
[20] Op. cit. note 17.
[21] There is also a third, crucial claim which connects the representation of life to the evaluation of it. We discuss this in detail in section 5.

consider a process in isolation from the *kind of organism* in which it occurs, there is nothing to fix the proper description of what is happening *qua* vital process.

To see this, consider the fact that vastly different physical-chemical happenings can amount to the same vital process across different life forms – e.g. 'hunting' or 'breathing' or 'reproducing' can be instantiated in different physical-chemical happenings in aardvarks, ants, and albacore tuna. Moreover, the *same* physical-chemical happening can amount to different vital-processes in different life forms. A striking illustration of this is the process of mitosis, which is process of *self-maintenance* in human beings and *reproduction* in amoebas. Apart from a conception of the life form in which a process is taking place, there is nothing to fix the vital-description one way or another, nothing to determine that this physical-chemical happening counts as 'hunting', 'reproducing', etc. Since representing something as living requires representing some goings-on as vital processes of the organism (claim 1), and representing some goings-on as vital processes requires a conception of the organism's life form (claim 2), it follows that in order to so much see something *as* living, and to grasp what is going on here and now with an organism, we must interpret an individual through some conception of its life form.

What, then, is involved in having a conception of a life form? A life form is represented in what Thompson calls a *natural history*, which is a system of natural historical judgments. Such judgments describe the characteristic features and activities of the life form, e.g. 'the tiger has four legs', 'wolves hunt in packs'. Natural historical judgments have some canonical forms: 'The S is/has/does F' or 'S's are/have/do F'. These judgments describe the function of different parts and activities in the life of the species. We make natural historical judgments when we talk about how the bald eagle builds its nests, or the African lion finds a mate, referring not to particular eagles or lions (who might, sadly, never build nests or find mates), but to the respective life forms that individual eagles or lions instantiate. The *system* of natural-historical judgments provides an ordered account of the organs and operations of the organism, and thus for any kind of organism it answers the question 'how do they live?' As Thompson says, a natural history provides 'one's *interpretation* or *understanding* of the life form shared by the members of that class'.[22]

Importantly, natural historical judgments possess a sort of generality that is neither universal nor statistical. From the fact that 'tigers have four legs' it does not follow that a

[22] Op. cit. note 17, 73.

particular tiger has four legs, or even that *any* tiger now living does. A disease may have ravaged the tiger population, leaving the current population three-legged. That sad state of affairs would not make the natural-historical judgment 'Tigers have four legs' false, though it would mean that each of the diseased tigers is *missing* a leg.

It should now be clear that natural historical judgments provide precisely what is lacking in the statistical concept of human nature. As we have seen, the statistical concept relies on ideas of 'maturity' and 'education'. These ideas imply the idea of an unfolding process subject to potential interruption, and the relevant sort of process cannot be understood as a statistical summary of individuals of the species. But a natural history is a *non-statistical* conception of 'how things go' with organisms of a particular kind. And a natural history provides an answer to the relevant question 'What happens next?', where the answer is not a prediction about what will happen to some individuals but an articulation of the stages of the process itself. Indeed, every vital process is an unfolding process subject to potential interruption. What fixes the arc of the process, and therefore determines what counts as completion versus interruption, is the *kind of thing* in which the process is occurring – i.e. the life form. Thus a life form conception makes it possible to do the very thing that a merely statistical approach cannot do, namely fix an understanding of what *counts as* 'maturity' or 'education'. And it is only with this understanding that it is possible to judge whether particular individuals are mature or immature, educated or not.

The same is true for Buchanan's third criterion for determining whether a characteristic is part of human nature, namely that it plays, 'a significant role in explanations of widespread behavior and in explanations of differences between humans and other animals'. To apply Buchanan's third criterion we need to have some way of knowing what behavior we are dealing with on a given occasion. Unless we can identify instances of the *same* behavior, both within and across individuals, the task of explaining widespread behavior is impossible. And we have no way to say when various goings-on count as instances of the same behavior unless we can characterize those goings-on as some kind of vital activity – as instances of eating or walking or reproducing, etc.

Now, identifying kinds of behavior is typically an easy task. We know when a human is swimming, and when she is singing; when she is swinging a bat, and when she is reading a book. Moreover, we are very good at knowing when two people are doing the same thing and when

they are not. The point is not that we have difficulty in identifying behavior. Rather the point is about what is required to be able to do this. And what is required is knowledge of the wider context of a life form conception. What counts as 'singing', 'swimming', etc. is not fixed by any features of the individual, or any physical-chemical description of the event, considered in isolation from a life form conception. To bring any activity or process under a vital description, and hence to describe it as one type of behavior rather than another, we need some non-statistical conception of the kind of thing we are dealing with, some conception of the species, or life form, in which these activities (or processes) occur. Thus to so much as begin the process of explaining widespread human behavior we must have a conception of human form.[23]

Moreover, traits that might be widespread and uniquely human may not belong to human form. Imagine, for example, that 90% of adult humans have a certain heart defect, that this heart defect cannot be altered by education, and that it leads the humans who suffer from it to take a nap every afternoon at 3pm. According to Buchanan's criteria, this heart defect would be an aspect of 'human nature'. It would not, however, belong to the life form of 'the human',

[23]At this point, one might worry that there is a deep problem for this view. For, on the one hand, we cannot understand any particular behavior or activity as the kind of thing it is without situating it in the context of the thing's life-form. But, on the other hand, we cannot come to apprehend a thing's life form without *first* observing particularly behaviors and activities (*as* particular behaviors and activities). Clearly, apprehending life-forms is not an *a priori*, armchair exercise; it requires actual fieldwork! But then it looks like, *contra* what we have been arguing here, any particular life-form conception must come *after* at least some preliminary statistical conception of the thing under observation ('Hey look! All four of them have tail-like appendages!'). The solution to this problem is to differentiate between two claims: a) the conception of a particular life-form that we *settle on* comes after, and is based-on, particular observations of individuals of the life-form, and b) particular observations of individual organisms are prior to forming *any* conception of the thing's life-form. The advocate of the life-form conception will grant a), but deny b). Of course our conception of the life-form 'bobcat' comes about from observing bobcats. It would be absurd to deny that. But this is consistent with thinking that even the initial observations of particular bobcats brought with them the idea of a *form of life instantiated by this kind of thing*, and that it is this idea – however implicit – that is required for the identification (or perhaps, initially, *mis*identification) of particular behaviors *as* instances of reproduction, or eating, or defectation etc. As Michael Thompson (Op. cit. note 15, 52) helpfully puts it in his discussion of jellyfish:

> At the outset, in your first vital descriptions of the first strange jelly you encountered, you did not make even latent reference to 'umbrella jelly kind' as such, which you hadn't properly conceived. But you did, I think, make latent demonstrative reference to 'this kind of jelly' or 'this form of jelly life' – the kind or form of jelly before you. […] It is only in light of a conception of this form, however dim that conception might be, that you could intelligibly suppose, for example, that the tentacles are not parasites or cancerous excrescences or undetached bits of waste.

This resolution to the problem should make clear something else about the view we are defending, namely that life-forms are not unchanging essences or hidden 'micro-structures'. Life-forms themselves, and our conception of them, will change over time 'as they are affected by selection, mutation, drift and so forth' (Op. cit. note 7, 461).

precisely because it is a heart *defect*. To call it a 'defect' means that it is a interruption of the life-cycle as spelled out in a system of natural historical judgments. A defect does not belong to the natural history; it does not play a part (in the relevant sense) in the life of the species, and it is not part of the life form. This is true even if the defect is widespread and helps to explain much of what goes on with the species.

The same point goes for some actual traits that Buchanan mentions as possible candidates for being part of our nature:

> It is said that to be human is to be selfish, to be inclined to excessive partiality, or to be sinful for example…[S]uppose, as some evolutionary biologists claim, that it is part of human nature – a widespread trait due to our evolutionary past – that we have a bias toward negative evaluations of those we regard as alien, as 'not one of us'. Perhaps if this propensity were reduced, there would be fewer wars and a reduction of the miseries that wars bring. [24]

While these bad traits may be likely candidates for inclusion in human nature in the statistical sense, none of them are plausible candidates to be part of human form. For the very description of these traits makes them like the imaginary heart defect. In each case, the trait is construed as the misuse or malformation of the human mind or will, and hence each case implies a standard for the proper development and exercise of human capacities. To speak of 'bias' against outsiders implies that one is not weighing factors properly in one's evaluations of others, that there is another way of evaluating them that would count as unbiased and correct. Likewise, 'excessive partiality' implies that one has failed to get it right when it comes to concern for some versus concern for others (or everyone). Thus no matter how statistically common, recalcitrant, and explanatory these traits might be, they do not (absent some special story) merit inclusion in human form.

The point here is not that we should have a more optimistic view of human nature *in the statistical sense*. A view about what is part of human form is consistent with a very pessimistic appraisal of how most humans are doing. Rather the point is that any conception of a life form is a conception of the *proper* (=uninterrupted, undistorted) unfolding of its vital activities. Thus

[24] Op. cit. note 9, 136 – 137.

once we characterize something as a defect, or interruption of normal functioning in a human, then, no matter how common it is, it won't belong to human form.

5. The evaluative significance of human form: goodness *as*

Let's take stock of our argument so far. We've argued that the Inert View is grounded in the mixed-bag view of our nature, which itself relies on a statistical concept of human nature. We've also argued that the statistical concept of human nature depends upon a different, and conceptually prior, sense of human nature – human form. Moreover, we've shown how some traits – those that are defects – may be part of our statistical nature but not part of human form. Rather, they are *interruptions* and malformations of that form.

This last point relates directly to our rejection of the Inert View. It should now be obvious that the Inert View, as stated above, fails to distinguish between the statistical concept of human nature and human form. And we think there is nothing wrong with Inert View so long as the nature we're talking about is our statistical nature:

> **Inert View$_{\textbf{stat}}$:** Nothing normative follows from the fact that some trait is a part of our statistical nature. Its statistical naturalness does not, on its own, tell for (or against) it.

Our statistical nature *is* a mixed-bag, and so learning that some trait is part of our statistical nature tells us nothing, on its own, about whether it is good or bad for us (let alone whether we should do something about it).

But if we're right, there is more than one way to understand the reference to 'nature' in Inert View. For by 'human nature' we might mean 'human form':

> **Inert View$_{\textbf{form}}$:** Nothing normative follows from the fact that some trait is a part of human form. Its status as part of human form does not, on its own, tell for (or against) it.

Now, the Inert View$_{\text{form}}$ might be true as well. The point here is just that arguing that our statistical nature is a mixed-bag does nothing to show this, because that sense of 'human nature' is not relevant for assessing the Inert View$_{\text{form}}$. Thus, for all we've been told by the likes of Buchanan, Harris, Kamm, and others, we don't have reason to accept the Inert View$_{\text{form}}$.

But this isn't a very satisfying place to stop. What we need is a positive argument to reject

the Inert View$_{form}$. The start of such an argument can be found in our discussion above about the relationship between common human defects and human form. Recall that in explaining the representation of life forms, we noted that the existence of a three-legged tiger does not falsify the natural-historical judgment 'the tiger has four legs'. Rather, given that 'the tiger has four legs', and that *this* tiger has three legs, it follows that *this* tiger is missing a leg. And this is just one instance of a larger point: a natural history makes possible evaluations of excellence and defect in individuals members of the kind. Indeed, a life form conception is a *criterion* for determining goodness in individuals of that kind.

Because the standard for such evaluations of *goodness as* in living things is an individual's life form, individuals of different life forms must be judged by different standards. A pigeon without wings is missing something, whereas a hedgehog without wings is not. Excellent vision in a mouse would be poor vision in a hawk. Thus if we want to evaluate an individual organism, we need to know what kind of organism we are dealing with. As we have seen, however, we can only represent something as living, and fix a description of any of its vital activities, by bringing it under some life form conception. So the very thing that is necessary to represent an individual *as* living – the representation of the life form – also provides the standard for evaluations of goodness in individuals *qua* members of this kind.[25] Understanding and evaluation of living things are thus two sides of the same coin. As Thompson says, 'we go *no*

[25] This formulation of the neo-Aristotelian position highlights why a recent criticism from Lewens misses the mark. Lewens claims that at best Thompson and Foot offer support for the view, established by a bevy of social science research, that people are 'intuitive essentialists' (Op. cit. note 7, 468). As he puts it, Foot and Thompson 'have shown only that people are intuitive Aristotelians, without showing that Aristotelianism is a position we should adopt' and that, 'the onus is on the likes of Foot and Thompson not merely to show that much discourse seems committed to normative essences, but that there really are such essences' (Op. cit. note 7, 469). The problem, as Lewens sees it, is that they cannot meet this burden because, 'there's no justification in biological reality for that conception [of a species' nature]' (Op. cit. note 7, 469).

However, if what we've said is right, then Lewens is seriously mistaken. To begin, Thompson and Foot are not just helping themselves to 'intuitive essentialism' without argument. Rather, Thompson argues (convincingly we think) that *any* of our thinking about living things *as living* cannot dispense with life-form judgments. Indeed, as we hope to have shown, even the statistical conception of species that Lewens' favors cannot do without the Aristotelian conception of life-form he wants to jettison. If Thompson's arguments about life forms are correct, then we cannot so much as bring 'biological reality' into view without relying on life-form judgments; life-form thought is a precondition for there to be a subject matter of biological investigation.

The burden, then, is on Lewens to show where the arguments for life-form thought – including those given here – go wrong. Oddly, Lewens never takes up this burden. In fact, he acknowledges this at one point, saying 'what follows is not intended as a refutation of their [Thompson and Foot] work, because I will not be addressing the most important parts of their case' (Op. cit. note 7, 467). In another essay on Foot, Lewens also fails to address the core arguments we have outlined here. See Tim Lewens, 'Foot Note', *Analysis* **70** (2010), 468-473.

farther for critique than we went for interpretation'.[26]

To understand human form, then, is to know what it is to be good *qua* human. But then it is wrong to say that human nature (understood as form) is one thing and human goodness another, and to leave it at that, or to assert, as Kamm does, that 'the human and the good are distinct conceptual categories'.[27] For there is a *conceptual connection* between an organism's nature (life form) and *goodness in* the organism, i.e. *goodness as* the kind of living thing the organism is.

6. The normative significance of human form: goodness *for*

We have shown that the idea of a life form is implicitly *evaluative* in the following sense: to articulate a conception of a life form is, at the very same time, to provide a criterion for goodness and badness in bearers of that form. However, the Inert View$_{form}$ says that human form has no *normative* significance: the fact that some trait is part of human form does not, on its own, give us any reason to *do* anything. Our interest, after all, is in whether there's any place for the concept of human nature in debates about enhancement – debates about whether we have good reason to do something to ourselves. Pointing out that there is a conceptual connection between human form and goodness *qua* human doesn't obviously tell us anything about whether we should change human form. So for all we've said, it looks like Inert View$_{form}$ may well be true.

Indeed, we can put the point more sharply. When we're wondering whether to enhance in a particular way, what we're interested in is whether changing in that way would be good *for* us.

[26] Op. cit. note 17 , 81 (emphasis added). Philippa Foot, *Natural Goodness* (Oxford: Oxford University Press, 2001) uses the terms 'natural goodness' and 'natural defect' to describe the sort of goodness *as* or badness *as* that arises from a comparison between a) the representation of a life form, (e.g. 'the tiger has four legs') and b) the representation of an individual bearer of the form (e.g. 'this tiger has three legs'). Foot also calls this 'intrinsic' or 'autonomous' goodness in living things, since it is a kind of goodness that is not derived from our purposes for living things. When we speak about goodness as, or goodness in, it is this sort of intrinsic goodness that we have in mind.

We can now understand better why traits characterized as defects or distortions cannot belong to the representation of the life form: the life form itself is the criterion for determining what *counts as* defect or distortion in individual members of the kind. We judge that a certain functioning of the human heart is defective by comparing individual hearts to 'the human heart', i.e. to a conception of the properly functioning heart, as *defined by* the natural history of human beings. It is thus not an *ad hoc* maneuver, or misplaced optimism, to say that defects are not part of human form. Rather it follows from the very judgment that something is defective, i.e. a lack of *goodness as* human beings. And this makes even clearer the difference between the statistical concept of human nature and the human form view. On the statistical concept, it makes perfect sense to say 'to err is human'. On the human form view, it is closer to the truth (though less poetic) to say 'what counts as 'erring' is determined by 'the human'". We can, of course, affirm both of these senses of human nature without contradiction, so long as we keep straight which sense of human nature we have in mind.

[27] Of course, Kamm might have had in mind something like the statistical conception of 'the human' in mind when she wrote this. But if that's the case, then the point we made above (p. 14) applies here: the statistical conception of human nature supports the Inert View$_{nature}$, not the Inert View$_{form}$.

Good *for* has an essentially normative component. To say that X is good for Y entails that there is at least *prima facie* reason to do (or give X) for (to) Y.[28] *Goodness as,* however, appears to be merely evaluative, without an essential connection to our reasons for acting. There would be no problem here if we could simply move from 'good as' judgments to 'good for' judgments. The worry, however, is that we cannot do this. For it seems that *goodness as* a living thing and *goodness for* a living thing can, and often do, come apart.

Consider: does it follow from the fact that a particular mayfly is good *qua* mayfly that its life is good *for* it? Might not an excellent mayfly life be bad for the mayflies that have to endure it? There appears to be a conceptual gap between good *qua* and good *for*. And surely we have reason to pursue what is good *for* us, even if it departs from what makes us good *qua* human. Why, after all, should we continue caring about being good as human beings, if being good as human beings is not good for us? So even if there is a conceptual connection between life form judgments and goodness as, human form might still be normatively inert. If *goodness as* and *goodness for* are distinct, and if we have reason to pursue what is good for us, then human form is still inert from the perspective of what we have reason to pursue – including our reasons to change our nature when it is bad for us.

But appearances here are deceiving. In fact, what is good *for* a living thing does not float free from flourishing *as* a particular kind of organism. We can begin to see why by thinking about which things are good for living things, i.e. what benefits various organisms. Lots of sunshine is good for a cactus. Being in a mountain stream is good for a salmon. Drinking its mother's milk is good for a human infant. What do each of these things – sunshine, freshwater, and milk – have in common? In each case, the things enable the organism to carry out the vital activities characteristic of the kind of organism it is. They enable the cactus to undergo photosynthesis, or the salmon to breathe and swim, or the human to develop healthy brain cells and heart tissue, etc. In contrast, too much water is bad for a cactus, being on a forest floor is bad for a salmon, and drinking gasoline is bad for a human infant. Why? Because each of these things disrupts the characteristic parts and vital activities of the organism. In general, then, what benefits a living thing seems to be whatever helps it to live well as the kind of thing it is – i.e. to

[28] In some cases, the *prima facie* reason will also be a *pro tanto* reason. In other cases, it won't. We might think that it is good for the killer to get a new axe, without thinking that that gives *anyone* any reason to give the killer an axe. But this does not mean that there is no conceptual connection between X being good for Y and there being a reason to do X for Y. It just means that in some cases, the connection is undermined (while in others it is outweighed). See Garrett Cullity, *The Moral Demands of Affluence* (Oxford: Clarendon Press, 2004), 17 – 18. .

do the things that make it good as a member of its kind, and enable it to live well as that kind of organism. What is bad for an organism is what prevents it from living well *qua* the type of organism that it is. This idea is nicely expressed by Richard Kraut:

> [Living things flourish] by developing properly and fully, that is, by growing, maturing, making full use of the potentialities, capacities, and faculties that (under favorable conditions) they naturally have at an early stage of existence. Anything that impedes that development or the exercise of those mature faculties – disease, the sapping of vigor and strength, injuries, the loss of organs – is bad for them.[29]

Since what counts as living well varies across life forms, what is beneficial or harmful also varies. Being at the bottom of a mountain stream is good for a salmon but bad for a human infant, just as being cradled in human arms is good for an infant but bad for a salmon.

If those things that benefit an organism are things that help it to live well as the kind of thing it is, and if harmful things impede such living well, it is a short step to the idea that what is good for an organism in the fullest sense *just is* living well *qua* the kind of thing that it is. For how could sunshine, water, or milk, be beneficial for those respective organisms, if what those beneficial things made possible – living well as a particular kind of thing – was not itself good for those organisms?

In response to this line of thought, a critic might grant the seemingly undeniable claim that *flourishing* is indeed good for any organism, but deny that we can equate flourishing with the development and exercise of natural capacities. This objection grants that 'flourishing is a good thing – good for what is flourishing', but rejects the claim that our flourishing consists in our natural goodness, as faring well *as* the kind of thing we are.

Someone might be led to this claim by considering examples where a creature seems to benefit from getting, or doing, something that is not part of the life-cycle of the life form. For example, it seems good for a tiger to be given nutritious food in a zoo, rather than having to undertake the difficult task of hunting in the wild. This is not the way for 'the tiger' to get its food, and so it doesn't make the tiger in the zoo naturally good with respect to its activity of

[29] Richard Kraut, *What Is Good and Why: The Ethics of Well-Being* (Cambridge MA: Harvard University Press, 2007), 131.

hunting (it precludes that goodness, in fact). But the zoo's food and method of delivery might be much better for the zoo tiger, in comparison to the difficult and dangerous business of hunting.

We think that this example and others like it do not, in fact, show that being naturally good is not necessary for being good for. There are two points to consider. First, the food the tiger is given must be what is naturally good for it – i.e. what is fit for tiger digestion – otherwise the food itself won't be any good for it. And what counts as 'good food' for a tiger? Precisely the sort of food that is necessary for its organs and operations to unfold properly, as defined by 'the tiger'. So tiger-form still plays an essential role in fixing what counts as a 'good thing' for an individual tiger. Second, insofar as we attend to the tiger's way of getting food – the fact that it is not hunting – this *is* bad for our zoo tiger. The tiger is badly off, not well off, insofar as it is unable to carry out its naturally good hunting activity, and this is true even if the tiger can still enjoy food that is good for it without hunting – the loss of hunting is still a loss of naturally good activity, and a loss for the tiger. This point is supported by the common belief that keeping animals well fed but inactive is bad for them. And zoos that are better for their animals are ones that allow them to be active to a greater degree – and active precisely in those ways that are most naturally good for them (i.e. re-creating habitat, climate, objects of interest that engage the organism's capacities and allow those capacities to develop and be active).

But the objector might press another sort of example, more directly related to the enhancement debate. Suppose that a particular tiger was able to run 150 miles per hour, thereby becoming much more successful in hunting. Being able to run 150mph is not naturally good for a tiger. It does not belong to 'the tiger' to run that fast. But a tiger who cannot run that fast is not thereby defective! On the contrary, being able to run that fast would likely be *good* for a particular tiger. And so goodness as and flourishing seem to come apart.[30]

We are willing to grant that being able to run 150mph could be good for the tiger, even though being able to run that fast is certainly not a requirement for natural goodness in a tiger. We deny, however, that the goodness of being able to run that fast can be understood apart from tiger-form. On the contrary, being able to run that well would be good for an individual tiger only because, and insofar as, being able to run that fast would *enable* and *sustain* the tiger in realizing other aspects of its naturally good life. What the enhanced running capacity does is

[30]A similar example involving a snail is discussed in David Copp and David Sobel, 'Morality and Virtue: An Assessment of Some Recent Work in Virtue Ethics', *Ethics* **114** (2004), 514 – 554.

precisely to make possible hunting and eating that is naturally good for 'the tiger'. And if it did not do that – if running 150 miles an hour disrupted the performance of other vital activities – then being able to run that fast would not good for an individual tiger. So even here we don't have a case in which goodness for is present in the absence of goodness as. On the contrary, we are inclined to posit goodness for only *because* there is natural goodness in some respect.

Consider, finally, an even more fanciful example: doing philosophy seems like a good thing. Wouldn't it be good for a tiger if it could philosophize?[31] Of course a tiger who cannot philosophize is not naturally bad, but a philosophizing tiger would surely be flourishing more than his non-philosophical fellow tigers. Moreover, it seems implausible to explain the goodness of this change in terms of its contribution to *other* characteristics of tiger flourishing. Rather, we are introducing something to tiger form that (purportedly) counts as an improvement all by itself.

Far from undermining the conceptual connection between natural goodness and flourishing, the prospect of a philosophical tiger actually reinforces that connection. For what are we being asked to imagine here? On the one hand, if we hold tiger-form more or less fixed, it is hard to imagine tigers philosophizing, since it would involve such a radical change in their capacities. To the extent that we are able to hold their form fixed, we reject as absurd the idea that philosophy would be good for them. Surely we don't think we will do them any benefit by starting up philosophy groups among them as they are now. On the other hand, if we imagine tigers with the capacities and the kind of life that enables them really to do philosophy, they would have to be so radically altered that we would no longer be dealing with the same form. So it would no longer make sense to say that philosophy is good *for tigers* since we would no longer be dealing with tigers (we would be dealing with phigers). Thus for any individual that we hold fixed as a tiger, we have to say that philosophy isn't good for it. And for any individual for which we imagine philosophy to be a good, we have to say it isn't a tiger.[32] So this example actually reinforces, rather than undermines, the idea that there is a conceptual connection between natural goodness and goodness for.

[31]We have adapted this example from Christine Korsgaard, 'The Relational Character of the Good' in *Oxford Studies in Metaethics Vol. 8*, Russ Shafer-Landau ed. (Oxford: Oxford University Press, 2013).

[32]But can't we ask of this individual whether it would be better off as a tiger or a phiger? Our answer is the same: if the change is radical enough, then we'll deny that we're dealing with the *same individual*. If, on the other hand, we have a case where the very same individual persists through the change that is because its form has remained sufficiently stable. Of course, what counts as a radical enough change is a big question. A general and illuminating answer may not be available, and in any case our point does not require one.

7. Vulnerabilities and human form

We have argued that a natural history provides both: a) the criterion for goodness *as* an organism of a given kind, and b) an account of what is good *for* those organisms. Given this, it is natural to describe the life-cycle – as described in the natural history – as *the good of* an organism. When an individual organism is/has/does everything in a non-defective way for its kind, then it achieves the good of such an organism – e.g. mayfly good, tiger good, human good.

This picture appears to run into trouble, however, when we consider the place of vulnerabilities in a living thing's life. It seems that at least some vulnerabilities are characteristic of certain kinds of organisms: A healthy deer hide is vulnerable to being pierced in ways that a healthy rhinoceros hide is not. A healthy human spine is vulnerable to shingles, and a healthy human soul is vulnerable to grief. So, the thought goes, certain characteristic vulnerabilities, connected to the particular kind of creature we are, seem like good candidates to be part of our *form*. They are neither individual defects nor merely part of a statistical conception of human nature.

However, it seems strange to suppose that a vulnerability to defect or harm could be *good for* an organism, or part of *the good of* an organism. Indeed, the concept 'vulnerability' is tied to the idea of 'harm'. To be vulnerable to something is to be susceptible to a kind of *harm* (we don't say, except perhaps jokingly, that someone is vulnerable to health or happiness). And, other things being equal, it is not good for a creature to be susceptible to harm. Nor is it plausibly part of the good of an organism that it is susceptible to certain harms. So if vulnerabilities are part of our life form, then it appears that some aspects of human form are bad for us. And thus human form will be a mixed bag after all, and the Inert View$_{\text{form}}$ has all the support it needs.

But is it true that characteristic vulnerabilities are part of an organism's form? Consider again the example of the deer's vulnerable skin. On the one hand, we can certainly describe deer life form with statements like 'the deer has skin that is vulnerable to being pierced in such-and-such ways'. And an individual deer whose skin was vulnerable in that way would not be thereby defective, whereas an individual rhinoceros would be. On the other hand, however, if we imagine an individual deer whose skin was tougher and less vulnerable, and who did not experience any other problems as a result, we would not be inclined to say that this deer was defective. If anything, it would be especially good, a 'super deer'. What explains this asymmetry?

Recall that a given life form is understood, first and foremost, in terms of what the

organism is/has/does as part of its life-cycle. This means understanding various vital parts and processes in terms of the role they play in the life-cycle of the organism.[33] But with vulnerabilities like the deer's skin, the vulnerability *as such* – i.e., the skin's susceptibility to particular harms – does not belong to the life-cycle of an organism in the same way as its parts and processes do. On the contrary, the vulnerability is merely a side-effect of other aspects of the life form. To see this, notice that there are good answers to the questions, 'What does the deer's skin do?' and 'What is the flexibility of the deer's skin good for?' But there are no comparable answers to the questions, 'What is the pierce-ability of the deer's skin good for? What does it allow the deer to do?' Of course, we might come to understand how the skin's particular vulnerability is a consequence of something that matters for the deer, namely that its skin is flexible enough to allow for very quick movements. But the pierce-ability itself is not *for* anything. Indeed, the deer would seem to be much improved if its skin were flexible *and* tough. And there is no reason, conceptually speaking, why it could not be. So even though a particular vulnerability is characteristic of deer skin, that vulnerability nonetheless belongs to deer form in a secondary and derivative way. It is not part of the good of the deer and, indeed, an individual deer might do a better job of realizing the good of the deer if it didn't have such vulnerable skin. Likewise, while humans certainly have many characteristic *side-effect* vulnerabilities, these vulnerabilities do not show that human form itself is a mixed bag.

Things are more complicated, however, with a different type of vulnerability. Consider our vulnerability to heartbreak or devastating loss. Having a loving relationship with another person requires a kind of emotional openness and trust that necessarily makes one vulnerable to terrible disappointment and even extreme pain. We could not have loving relationships without these vulnerabilities, for the emotional openness and trust that makes for good loving relationships is precisely what makes us vulnerable to loss. Because such vulnerabilities appear to be in principle inseparable from a key feature of human form, let us call them *inseparable vulnerabilities.*

Are inseparable vulnerabilities, then, part of what the human is/has/does in the primary sense? An answer, we believe, cannot be given apart from one's substantive conception of the human. However, whatever one's substantive conception, these vulnerabilities do not pose a problem for the framework we have articulated. To see why, suppose we ask, 'What is the role of

[33] Cf. Foot Op cit. note 26, 30 – 33.

human vulnerability to heartbreak? What part does it play in human life?' Perhaps one believes that no answer is forthcoming – that heartbreak is simply injury, and that the vulnerability to heartbreak is like the vulnerability to broken bones. To the extent that one views the vulnerability this way, one treats it as basically a side-effect vulnerability. The only difference is that, in the case of heartbreak, the vulnerability is an *unavoidable* consequence of something that is part of our good (our capacity for love). However, one might reject this view and insist that vulnerability to heartbreak *does* have a role in human life and that the vulnerability itself is good for something. It has certainly allowed for a tremendous amount of wonderful art. Some might argue that it allows for a certain depth of soul. In that case, it would be a mistake to think of vulnerability to heartbreak as a mere side-effect of human form.

For our purposes, it does not matter which view is correct. The important point is that, whatever one's substantive view, a connection holds between what one takes to belong to 'the human' in the primary sense, and what one takes to be *good for* individual humans. If one thinks of a vulnerability as having no proper part to play in human life, then one will not see the vulnerability as good for humans or part of the human good. And this is true even if you recognize that the vulnerability (e.g. possible heartbreak) is inherently unavoidable, given some other aspect of human good (e.g. loving relationships). Alternatively, if one thinks of the vulnerability as itself having a proper role in human life, then one must see the vulnerability itself as furthering or constituting some aspect of the life of 'the human' – and hence as in some way *good for* human beings. However, in neither case does what is good for human beings come apart from our characteristic life-cycle. Thus even inseparable vulnerabilities do not show that human form itself is a 'mixed bag' in a way that vindicates the Inert View$_{\text{form.}}$

8. Human form and human enhancement

Let's take stock. We've shown that there is a conception of human nature – human form – that is not a mixed-bag: traits that are part of our form (in the primary sense) are part of the human good. Moreover, we've argued, our good *qua* humans is also what is good *for* us. If that's correct, then there *is* a conceptual connection between the kinds of creatures we are and welfare-related practical reasons. In other words, human form is *not* normatively inert (even if human nature, statistically understood, is).

By way of concluding, we want to say something about how the notion of human form we've developed relates to issues of human enhancement. Specifically, we offer the following

four conclusions.

First, *the notion of human form provides a conceptual framework in which we can best make sense of the objects of possible enhancement, namely a) widespread defects and b) characteristic vulnerabilities.* As we argued above, the notion of human form allows us to explain what makes defects *defects*, namely that they interrupt the life-cycle of a particular individual as spelled out in a system of natural historical judgments about the kind of thing it is. A defect does not belong to the natural history; it does not play a part in the life of the species, and it is not part of the life form. This is true even if the defect is widespread and helps to explain much of what goes on with the species. Likewise, in describing something as a 'vulnerability', we are identifying it precisely as a liability to *harm*. And to understand what counts as harm and benefit we need to understand what furthers, and what disrupts, the parts and processes of an organism's characteristic life-cycle.

Second, *the idea of human form is not at all in tension with enhancements that aim to eliminate either: a) widespread defects, or b) characteristic 'side-effect' vulnerabilities.* In arguing for the existence of a normatively relevant conception of human nature, we've happily conceded that there is a normatively inert conception of human nature, namely the statistical conception. And we've granted that human nature understood statistically is very likely a mixed-bag. So nothing we've said about human form supports arguments *against* enhancing ourselves in a way to rid ourselves of the bad parts of the mixed bag.[34] Moreover, to the extent that a characteristic vulnerability is a mere side-effect, and not itself part of human good, then there is *prima facie* reason to think that we would be better off without it. (Of course, this comes with the big caveat that getting rid of the side effect vulnerability should not have other, substantial negative impacts elsewhere in our life-cycle.) At the same time, if we are dealing with what we termed an inseparable vulnerability, then we should recognize that removing that vulnerability would also threaten some part of the human good. This is not to say that, all things considered, we ought not to remove an inseparable vulnerability, but it does mean there is (some) prima facie reason against removing it.

Third, *proponents of the idea that there is such a thing as human form can make sense of, and agree with, the idea that it might be practically rational to alter human form itself. In short,*

[34] Indeed, many such interventions might not be 'enhancements', strictly speaking, but therapeutic interventions to restore or preserve an aspect of proper functioning that commonly goes awry.

there is nothing inherently conservative in thinking that the notion of human form is highly relevant to enhancement debates. This conclusion applies not only to our characteristic vulnerabilities, but to our capacities in general. This point follows from our discussion of whether it would be good for tigers to be able to run faster. The upshot there was that a change to a particular part of a the tiger's form could be good for a tiger when making the change allows for greater realization of, or success in living up to, other parts of the tiger's form.[35] And what goes for the tiger goes for the human. Improving our eyesight, for example, or even possibly giving ourselves the ability to fly, could be justified precisely in terms of how it allows us to do better with respect to other aspects of human form.[36] Thus far from being irrelevant to debates about enhancement, or inherently conservative, the concept of human form allows us to understand better what it would *mean* to enhance ourselves and why we might have *good reasons* to do so.

But our discussion of the tiger and the phiger also support our fourth conclusion: *changes to a thing's form can only be evaluated in the context of the creature's form staying relatively **fixed***. If a proposed change is sufficiently radical – as is the case with the philosophical tigers – then we are not dealing with an alteration to a given form, but rather a new form altogether. And in those cases, it no longer makes sense to ask whether it would be good for the tiger (or a phiger[37]) to change in the way imagined.

Notice that this is perfectly consistent with thinking that over time human form could change dramatically, just as Theseus' ship could change dramatically by changing one plank at a time over many years. Some of that change might come from incremental enhancements. What the human form view rules out is the intelligibility of performing *radical* enhancements on the grounds that doing so will be good for us.[38]

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[35] This is a necessary, not sufficient, condition.
[36] Again, any particular argument to this effect requires bringing a substantive conception of human form to the table. See above, p. 2.
[37] See above n. 32.
[38] Thanks to Sarah Jansen, Richard Kim, Charles Taliaferro and an anonymous referee for helpful feedback on earlier drafts.

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