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# BIOLOGICAL EXPLANATIONS OF SOCIAL INEQUALITIES

BY

DAN LOWE

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**Abstract:** Inequalities of social goods between gender, racial, or other groups call out for explanation. Such inequalities might be explained by socialization and discrimination. But historically some have attributed these inequalities to biological differences between social groups. Such explanations are highly controversial: on the one hand, they have a very troubling racist and sexist history, but on the other hand, they are empirical claims, and so it seems inappropriate to rule them out *a priori*. I propose that the appropriate epistemic attitude toward biological explanations of social inequalities is a general but defeasible skepticism. I then turn to the appropriate moral attitude, arguing that when such explanations are inadequately supported, they are offensive.

In 2005, Larry Summers made headlines after speaking at a conference on diversity in science and engineering. Summers, then president of Harvard, discussed the underrepresentation of women in tenured positions in these fields at top research universities. Although he was careful to say that he did not know for sure why the gender gap existed, he ventured his ‘best guess’.<sup>1</sup> Among other hypotheses he endorsed, Summers argued that there was ‘different availability of aptitude at the high end’ for men and women.<sup>2</sup> In other words, men had greater levels of ability than did women when it came to the most sophisticated problems in certain math and science skill areas. Summers cited as support a study of the top 5% performing twelfth graders, which showed around two thirds of the top performers were men.<sup>3</sup> Summers rejected the idea that this underrepresentation was the result

<sup>1</sup>Summers (2005), paragraph 6.

<sup>2</sup>Ibid., paragraph 2.

<sup>3</sup>Xie and Shauman (2003), Ch. 2.

of socialization or discrimination – an alternative hypothesis. Rather, Summers said that the difference was a matter of ‘intrinsic aptitude’.<sup>4</sup> In short, Summers claimed that a major reason for the dearth of female professors in math and science at top research institutions was that women were less adept than men at sophisticated math and science – by nature.<sup>5</sup>

Summers’ remarks caused an uproar. Denice Denton, a professor of engineering attending the talk, said that ‘it was really shocking to hear the president of Harvard make statements like that’.<sup>6</sup> A Harvard student, Andrew Barr, commented in the *Crimson*, ‘obviously my instinct is not to buy into any theory that there’s some sort of genetic flaw in women’.<sup>7</sup> Nancy Hopkins, a biologist from MIT, left midway through Summers’ remarks, stating that ‘it was just too upsetting’ for her to stay.<sup>8</sup>

We should distinguish between two different aspects of these reactions. First, some of the criticism was epistemic: some people were *skeptical* of his hypothesis. Second, some of the criticism was moral: some people were *offended* by his hypothesis. This second aspect prompted Summers to apologize for his remarks. But not all of the reactions were critical; some came to Summers’ defense, including columnist George Will, who asked whether it was ‘unthinkable’ that Summers was right, especially considering the data cited by Summers about the different scores between men and women in math tests.<sup>9</sup> Will argued that honest exploration of the science had been snuffed out by political correctness.<sup>10</sup>

Explanations like Summers’ and the accompanying outrages are nothing new. In the 1990s, the publication of *The Bell Curve* evoked great controversy for its view that the persistence of a disproportionately black underclass in the USA was partly explained by inequalities in innate intelligence between the races.<sup>11</sup> More recently, an internal memo from a Google engineer attracted attention for its claims that the gender gap in technology fields is partly due to biological differences between men and women.<sup>12</sup> In the time since this paper’s writing, there has no doubt been yet another, similar controversy in the news.

<sup>4</sup>Summers (2005), paragraph 6.

<sup>5</sup>It’s important to not overstate Summers’ position here. Summers (Ibid., paragraph 2) did not think that this intrinsic difference was the most important factor in explaining the gender gap (though he did think it was more important than any socialization or discrimination that girls underwent). Nor did Summers claim all men or even the average man was better at such subjects than women – although men were overrepresented at the high end of the spectrum, average mathematical ability shows little gender differences. Summers also admitted that the hypothesis was potentially dispiriting, saying that if it were correct, it would be ‘unfortunate’, and confessed, ‘I would like nothing better than to be proved wrong’ (Ibid., paragraph 6).

<sup>6</sup>Goldberg (2005).

<sup>7</sup>Ibid.

<sup>8</sup>Hemel (2005).

<sup>9</sup>Will (2005).

<sup>10</sup>Ibid.

<sup>11</sup>Hernstein and Murray (1994).

<sup>12</sup>Bergan and Huet (2017).

These are all examples of what I will call *biological explanations of social inequalities*, where significant inequalities between social groups are explained by their members' biology.<sup>13</sup> I focus on social groups rather than individuals because it is group-based inequalities which have been perennially invoked and debated.<sup>14</sup> For the same reason, I focus on significant inequalities – significant either in the size of the inequality itself, or the importance of the social good that is shared unequally. These explanations have a troubling history; in particular, the oppression of women and people of color has been justified (in ways we now recognize as sexist and racist) by arguing that social inequalities reflected natural inequalities between groups. Does this history mean that such explanations are off limits in the present? How should we think about such explanations when they recur today?

I argue that we should have a general but defeasible skepticism toward biological explanations of social inequalities. The skepticism I advocate is general in the sense that it concerns biological explanations of social inequalities as a type of explanation, and not just worries about some particular instances of the type. Because of its general character, such skepticism casts doubt not only on previous explanations, but explanations to be offered in the future.

By 'skepticism', I mean the epistemic attitude that the belief in question is likely to be false.<sup>15</sup> I do not think it is possible to specify the level of likelihood very precisely, except to say that the skepticism I advocate is substantial but not absolute – as the defeasibility condition indicates, it can be overridden with enough empirical evidence. George Will is correct at least in this: the possibility of some biological explanations of social inequalities

<sup>13</sup>What counts as explaining something via biology is hard to pin down. First, it is not simply that biology features in the explanans. Suppose there was a society where females did not work outside the home because it was widely held that it was inappropriate for them to do so. Biology features in the explanans here, since the 'female' is (at least plausibly) a biological term. But the explanation of why women don't work outside the home is clearly a social one – it is the social attitude that explains the inequality; the attitude just happens to be about a biological feature. Second, a biological explanation is not one where biology is the only factor in the explanatory chain. Explanatory chains, like causal chains, can go back a very long way; if we live in a deterministic universe, for instance, there is some sense in which everything that happens is explained, at least at some level of abstraction, by the Big Bang – a nonbiological factor. Roughly, biological explanations are explanations where biology is the *primary* or *salient* explanatory factor. This characterization is admittedly vague, and so it may be more helpful to rely on our intuitive sense of when an explanation is biological.

<sup>14</sup>Presumably biological explanations of inequalities between individuals – height, for instance, is determined to a large extent by genetics – are more obviously plausible. But by itself, this does not tell us anything about inequalities between groups. Moreover when the inequality in question involves access to an important social good, such explanations become more dubious. For instance, height has some correlation with income, but a purely biological explanation here would be far less plausible, since income and our attitudes toward height are of course socially mediated.

<sup>15</sup>The term 'skepticism' is used in many ways. Some skeptics, like the ancient skeptics, advocate simply withholding assent from propositions. Other skeptics, like external world skeptics, make the claim say that knowledge in some domain is impossible. The skepticism I advocate here is different: unlike the ancient skeptics, it involves an estimation about the likelihood of the belief, and not a refusal to give any estimation; unlike the external world skeptic, it does not go so far to say that knowledge is impossible, but only that certain claims are unlikely to be true.

being correct is not unthinkable, and it would be dogmatic to assume *a priori* that such explanations could *never* be correct. However, I shall argue against Will's contention that moral offense has no place in debates like the one over Summers' remarks. I do not argue that biological explanations of social inequalities are always offensive, but I argue that they often are. And I shall argue that this is partly because of the skepticism mentioned earlier; in other words, the proper moral attitude toward such explanations depends in part on the proper epistemic attitude.

In putting forward these arguments, I try to capture some of the actual reasons people have for rejecting biological explanations of social inequalities. In other words, the argument I make is what Imre Lakatos would call a *rational reconstruction* – an attempt to capture in retrospect the reasoning and beliefs of real people.<sup>16</sup> As the case of Summers' remarks shows, many people react to biological explanations of social inequalities with both skepticism and offense, and it's worth asking why. We may find that academic discourse should take seriously arguments from ordinary people.

### ***1. Philosophical responses to biological explanations of social inequalities***

The view for which I argue is by no means novel. Feminist and antiracist philosophers have long resisted biological explanations of social inequalities<sup>17</sup>; in this literature, we can distinguish three different lines of critique.

First, some philosophers argue that we cannot (at least currently) reliably differentiate between what is caused by nature and what is caused by nurture. John Stuart Mill famously makes this argument, claiming, 'I deny that anyone knows, or can know, the nature of the two sexes, so long as they have only been seen in their present relation to one another'.<sup>18</sup> Mill's argument holds that one can always provide a social explanation for gender inequalities as long as men and women are socialized differently.

Second, some philosophers argue that what is purportedly biological is in fact socially constructed. Judith Butler, for instance, claims that sex itself is socially constructed, so even if some social inequalities could be traced to sex differences, this explanation would turn out to be a social one after all.<sup>19</sup> Likewise, as Iris Marion Young argues in her classic paper, some

<sup>16</sup>Lakatos (1970).

<sup>17</sup>Namely, Fausto-Sterling (1992).

<sup>18</sup>Mill (1988), Chapter I, paragraph 18.

<sup>19</sup>Butler (1990). For a similar argument about race, see Charles Mills (1997) who argues that race, which might seem to be biological, does not precede the existence of a racial contract which disadvantages nonwhites, but is instead brought into existence by the racial contract itself, and is thereby socially constructed (63).

phenomena which appear to be biological, such as bodily comportment and coordination, are more plausibly socially constructed than biologically determined.<sup>20</sup>

And third, some philosophers argue that such explanations are to be doubted because, as we have noted, they often serve an ideological function. As Sally Haslanger argues:

... traditional efforts to justify racist and sexist institutions have often relied on viewing women and people of color as inferior by nature. There is an unmistakable pattern of projecting onto subordinated groups, as their 'nature' or as 'natural', features that are instead (if manifested at all) the result of social forces. If one function of references to 'nature' is to limit what is socially possible, thereby 'justifying' pernicious institutions, we must be wary of any claim that a category is 'natural'.<sup>21</sup>

Mill supported a version of this argument as well, when he noted that those with privilege were especially susceptible to this ideological motivation: 'Was there ever any domination which did not appear natural to those who possessed it?'<sup>22</sup>

Below I propose a fourth argument. I do so not because I take the aforementioned arguments to be unsound; indeed, I have some sympathy for all of them. But the argument is quite simple, and so where other arguments have not been persuasive, this one may be – perhaps even to the George Wills of the world.

## ***2. A simple argument for skepticism about biological explanations of social inequalities***

### **2.1. THE ARGUMENT ITSELF**

The argument I advance here is simple: We should adopt a general (but defeasible) skepticism toward biological explanations of social inequalities because such explanations have almost always turned out to be poor explanations. The 'almost always' qualification is to be taken in a strong but ultimately comparative sense. As philosophers of science have pointed out, the vast majority of *all* scientific hypotheses over the course of history have turned out to be false.<sup>23</sup> Nevertheless, we do not on the basis of this pessimistic induction regard chemistry as no better than astrology, because chemistry is still far more successful than astrology. Likewise, the point here

<sup>20</sup>Young (1980).

<sup>21</sup>Haslanger (2012), p. 5.

<sup>22</sup>Mill (1988), Chapter I, paragraph 9.

<sup>23</sup>Laudan (1981).

is that biological explanations of social inequalities have a dismal history *comparatively*.

Obviously it is impossible to survey the entire history of biological explanations of social inequalities, and catalog the success or failure of each. But one can still see the force of the argument's starting point by noting two general facts. The first fact we have already noted: virtually every unjust social arrangement throughout history – the subordination of women, slavery, homophobia, war and genocide of all kinds – has been justified by biological explanations of social inequalities.<sup>24</sup> Indeed, the ubiquity of such explanations was a source of confidence in the explanations themselves; as Arthur de Gobineau, now recognized as the father of 19<sup>th</sup> century 'scientific racism' noted, 'the idea of an innate and permanent difference in the moral and mental endowments of the various groups of the human species, is one of the most ancient, as well as universally adopted, opinions'.<sup>25</sup>

The second fact is this: almost all of these explanations we now reject as deeply flawed. And not just morally flawed, but empirically flawed, relevant because we are focusing here on the appropriate epistemic attitude. The history of these explanations follows a familiar pattern. Some existing social inequality – regarding women, people of color, gay men and lesbians – would be explained by alleged biological differences, rather than social circumstances; the social circumstances would change, often as the result of social movements which rejected these biological explanations; and then the social inequalities would gradually shrink or even disappear. This is a well-known pattern of social progress, but in addition to its moral importance, it has an epistemic importance – it reveals that the biological explanations initially offered were faulty. And this is not just because of additional data which is brought to light, but because the initial data point – the social inequality between groups along some dimension – shrinks or even disappears entirely as social conditions change. The inequalities which were supposed to point toward biological differences often turned out to be products of ephemeral social arrangements, and so biological explanations were undermined by the course of history itself.

This pattern is also exhibited in Summers' explanation. The data he cited showing differences in performance in math and science by gender initially seemed quite robust. But the biological explanation of the data involving math tests has since been undermined by the discovery of stereotype threat. Stereotype threat is an underperformance which is caused by anxiety about confirming a negative stereotype about one's group – in this case, the stereotype that women are bad at math.<sup>26</sup> In a study which gave highly skilled students rigorous tests beyond their abilities, men outperformed women,

<sup>24</sup>Tom Regan (2011) identifies the strategy of naturalizing difference as a common 'pattern of resistance' to progress, one which has been faced by most of the major social movements of the past.

<sup>25</sup>Quoted in Gould (2006), p. 379.

<sup>26</sup>Steele (2011), p. 9.

leading credence to Summers' hypothesis that there was differential ability at the high end. But once stereotype threat was controlled for in a study by Claude Steele, the results were strikingly different: '...among participants who were told the test did not show gender inequalities, where the women were free of confirming anything [stereotypical] about being a woman, *women performed at the same high level as equally skilled men. Their underperformance was gone*'.<sup>27</sup> To be clear, this study concerned only a subset of high performers in which men were already represented, and so Steele does not claim that stereotype threat accounts for all gender differences in math performance.<sup>28</sup> Nevertheless, it does provide an alternative explanation of at least some of the differences in test performance; though it does not debunk Summers' hypothesis definitively, it does significantly undermine it.

The point is not just that Summers' hypothesis looks weaker in hindsight. Rather, this is just the last in a long line of biological explanations which have not fared well in the sustained light of history. And so, by this argument, it was reasonable to be skeptical about Summers' hypothesis even *before* Steele's experiments, given the history of these types of explanations.

This skepticism is defeasible; if one can marshal enough rigorous evidence for a biological explanation of a social inequality, then one should accept such an explanation. Of course, what counts as 'enough' will depend on the explanation in question – the more ambitious the explanation (in terms of the size of the inequality explained or the plausibility of the explanatory mechanism), the more evidence is needed.<sup>29</sup> But whatever the threshold, the argument here is that skepticism should be the default attitude. This form of skepticism is suggested by the Harvard student quoted earlier: 'Obviously *my instinct* is not to buy into any theory that there's some sort of genetic flaw in women' (emphasis added). This suggests that the student did not have evidence one way or another about Summers' particular hypothesis, but was nevertheless skeptical of Summers' remarks as a *type* of

<sup>27</sup>Ibid., p. 40, italics in original.

<sup>28</sup>Although in popular media this is sometimes how his findings are reported (Sackett *et al.*, 2004). Scholarly debate about stereotype threat is lively, but the vast majority of disagreement concerns the size of the effect (Flore and Wicherts, 2015) and its mechanism (Pennington *et al.*, 2016), not the reality of the phenomenon.

<sup>29</sup>This qualification helps us understand how to regard explanations which attribute only part of a social inequality to biology, leaving the rest of the inequality to be explained socially. Such explanations are different from the paradigmatic cases of biological explanations of social inequalities, which explain the entire inequality with biology. Nevertheless, they can still be regarded as instances of biological explanations of social inequalities, but simply with a more limited scope – biology is the primary and salient factor in the explanation, but where the thing being explained is only a certain *slice* of a larger inequality. On the account above, partial biological explanations of social inequalities are easier to justify because their ambition is more modest. Thus, the categorical skepticism I argue for still applies to partial biological explanations – but in such cases it is *ceteris paribus* easier to defeat that skepticism.

explanation. The argument here is that such skepticism is perfectly reasonable when one considers how many of these explanations have turned out to be wrong.

I take this inductive move to be fairly intuitive. Nevertheless, some may have unanswered questions about the nature of the induction. Is it legitimate to move from the failure of hypothesis tokens to skepticism about a hypothesis type? Are all biological explanations of social inequalities impugned by these failures, or can we exempt some subset from this skepticism? And finally, isn't it necessary to have a deeper story about *why* biological explanations of social inequalities have such a poor track record? I address these questions in the Appendix for those interested. Meanwhile, I address a more common objection.

## 2.2. THE OBVIOUS CASE AGAINST THE ARGUMENT

Categorical skepticism may seem too strong. After all, biological explanations of social inequalities are empirical claims, and as such it seems like they ought to be judged on their own individual merits. This is presumably part of George Will's argument for approaching Summers' remarks with an open mind. Isn't advocating skepticism in advance of seeing a claim's empirical support by definition prejudicial?

This objection gets its force from evidentialism: the idea that one's beliefs ought to be based on evidence, and that belief independent of the evidence is epistemically irresponsible. The canonical formulation of evidentialism is to be found in Hume's slogan that 'a wise man ... proportions his belief to the evidence'.<sup>30</sup> Although some philosophers reject evidentialism<sup>31</sup> it is 'far and away the dominant ethic of belief among early modern and contemporary philosophers alike'.<sup>32</sup> It thus would be a serious problem if the view I advocate here required a rejection of evidentialism.

However, we often justifiably adopt a skeptical attitude toward empirical claims even in advance of hearing (all of) the evidence. If you should hear tomorrow that your neighbor has been abducted by a UFO, it would be appropriate for you to doubt such an account, even without hearing the particular evidence in favor of the proposition that so-and-so was abducted. And this is because, in the past, stories of UFO abduction have been very difficult to substantiate, and so skepticism toward this *type* of story is justified. Of course, the point is not that invoking biology to explain social inequalities is just as absurd as invoking UFOs (since at least we know biology is real). The point is that forward-looking skepticism which takes hold in advance of the evidence particular to a case can be entirely justified. In other

<sup>30</sup>Hume (1748), sect. 10.

<sup>31</sup>Most famously James (1896) and Plantinga (1983).

<sup>32</sup>Chignell (2010), sect. 4.1.



words, if such skepticism is prejudicial at all, it is not prejudicial in a pejorative sense.

Moreover, this forward-looking skepticism is entirely consistent with evidentialism. In both the UFO case and biological explanations of social inequalities, it is still *evidence* which bears on our epistemic attitude. The UFO skeptic is not rejecting the relevance of evidence, but rather taking into account our evidence about what has been the case in the past. Likewise, when we doubt biological explanations of social inequalities, it is not because we form a judgment without considering the evidence, but rather because we are considering the evidence of history.

Finally, this is an entirely orthodox version of evidentialism. Hume's statement of the evidentialist slogan occurs in his famous chapter on miracles. Hume argues there that it is rational to be skeptical of testimony of miracles, even independent of any evidence about some particular piece of testimony, because it is rational to be skeptical of that *type* of testimony. In other words, forward-looking, categorical skepticism isn't just one, possibly marginal position under the umbrella of evidentialism – it's the position of the prototypical evidentialist.

### 3. *When are biological explanations of social inequalities offensive?*

So far I have treated the epistemic issue of whether one ought to be skeptical of biological explanations of social inequalities as separate from the moral issue of whether such explanations are offensive. Obviously being skeptical of a claim does not entail being offended by it. Claims that the capital of Kansas is Shanghai, that aliens built Stonehenge, or that okra is delicious are all doubtful, but they are not in the least offensive. Nevertheless, as I shall argue, skepticism can shed light on the issue of offense.<sup>33</sup>

I put forward a sufficient condition for when biological explanations of social inequalities are offensive – specifically, when they are insufficiently supported by evidence. The basic argument is this:

- P1.** Something is offensive when it violates a fragile norm which is worthy of respect.
- P2.** The norm against justifying oppression is fragile and worthy of respect.
- P3.** Biological explanations of social inequalities which are insufficiently supported violate the norm against justifying oppression.

<sup>33</sup>To head off misunderstanding, the account I offer is not a version of pragmatic encroachment, although that could also establish a connection between the two. For representative positions in the debate, see Jeremy Fantl and Matthew McGrath (2014) and Baron Reed (2014) in Steupp (2014).

C. Therefore, biological explanations of social inequalities which are insufficiently supported are offensive.

If the argument of the previous section is correct, and we should be skeptical of such explanations, then it is likely that biological explanations of social inequalities will be insufficiently supported. So although biological explanations of social inequalities are not inherently or always offensive, they will often and perhaps typically be so. In what follows, I explain and argue for these claims.

### 3.1. AN ACCOUNT OF OFFENSE

In its broadest use, the noun ‘offense’ concerns the violation of some norm. This norm may be legal (hence the description of lawbreakers as ‘offenders’), moral, rational, or even aesthetic (as when an entrée consisting entirely of steamed okra is an offense against good taste). By contrast, the narrower use, the adjective ‘offensive’, concerns some particular subset of offenses.<sup>34</sup> I am aware of no analysis of offensiveness in the philosophical literature, and propose one here.<sup>35</sup>

Falsely shouting ‘Fire!’ in a crowded theater is an *offense* in the broad sense, whereas shouting racial slurs in a crowded theater is *offensive*. Both involve the violation of norms, so what is distinctive about offensive acts? For one, describing something as an ‘offense’ does not involve any endorsement of the norm in question. When one disobeys an unjust law, one can concede that one has committed an offense (in the sense that one has violated the law) without endorsing that law. Claiming that something is ‘offensive’, however, is not to claim that some people will be offended by it, but that being offended is *fitting*, and so the norm in question is endorsed.<sup>36</sup>

However, this is not the only distinguishing feature of offensiveness. In the case of falsely shouting ‘Fire!’, the norm in question is endorsed, and yet it is merely an offense and not offensive. Nor is the distinction to be found in the kind of harms involved, although it is true that the harm caused in the fire case is indiscriminate, whereas in the racial slur case the harm is aimed at a specific group. Group-based harms are not necessary for offensiveness – an effusion of foul language at the dinner table in front of one’s elderly

<sup>34</sup>In addition there is the noun ‘offensive’, describing an aggressive action (‘the Tet Offensive’, a ‘charm offensive’). In what follows I consider only the adjectival form of the word.

<sup>35</sup>However, there are discussions of the normative significance of offense, such as whether it is the basis for legal punishment. For a classic discussion, see Feinberg (1985).

<sup>36</sup>I say that being offended is fitting rather than one *should* be offended. Being offended is not morally obligatory because ought implies can. At any given moment there are innumerable offensive acts occurring and ongoing; it is probably not possible to be offended by all of them (and in any case, doing so would crowd out all other worthy objects of thought and concern). Moreover, to be offended is not just to accept certain propositions, but to feel an emotion, and one’s emotions are not always within one’s direct control. In many cases, one may be too exhausted, numbed, or justifiably preoccupied to feel the requisite emotion.

grandparents can be offensive, even if none of the foul language involves group-based slurs.

I argue that what distinguishes offensiveness from offense is not just the endorsement of the violated norm, but the potential effects of the violation on the norm itself. Here I follow Margaret Urban Walker's discussion of resentment, which involves cases of offense where the action which violates the norm also *threatens* the norm: 'Cases of offense or affront are revealing, for what we see in them is not a harm or injury in the usual sense but an occurrence construed as a threat either to a norm or familiar pattern imbued with some prescriptive force by the perceiver'.<sup>37</sup> Although falsely shouting 'Fire!' in a crowded theater certainly violates an important norm, it is easy to see such actions as mere aberrations. And this is not just a comment on their statistical frequency; it is that we do not view norms around fire safety as in any special danger of being violated or of losing their force. Perhaps things would be different if falsely yelling 'Fire!' in crowded theaters was a widespread and recurrent feature of our history. Then we might well regard norms around fire safety as being especially vulnerable, in need of extra care and vigilance to maintain them. This is closer to the way we think about norms around race relations. Our history (as a species and within each society) tells us that we are susceptible to inflicting racist hatred and violence. Thus, even if our norm against shouting racial slurs is widely accepted, there is a *fragility* to that norm that is lacking in the norm about fire safety.<sup>38</sup>

This gets to the heart of what Walker identifies as so dangerous about the offensive variety of norm transgression:

[T]ransgressions against boundaries cause us concern when they announce the possibility of something we might have to reckon with – a factor that throws us out of our normative expectations, moral and otherwise, or undermines our ability to assert with confidence what and where certain social, moral, or interpersonal boundaries lie.<sup>39</sup>

Thus, when it comes to fragile norms, the danger of the violation of the norm is not merely that harm is done, but that the norm itself can come *undone*. This is why the violation of the norm does not merely merit disapproval, as the unjustified violation of any worthy norm does, but the additional moral emotion of offense. In short, something is offensive when it violates a fragile norm which is worthy of respect.

<sup>37</sup>Walker (2004), p. 151.

<sup>38</sup>There is some relativity to whether a norm is fragile or not. The very same norm may be fragile in one society but not in another, and even within a society the norm may be resilient until someone who is supposed to have moral authority threatens it, like a Pope or a President. This is just like any other kind of fragility – old porcelain plates may be fragile to a clumsy user, but even the most resilient dishware is fragile if there is literally a bull in the China shop.

<sup>39</sup>Ibid., p. 153.

### 3.2. WHEN DO BIOLOGICAL EXPLANATIONS VIOLATE THE NORM AGAINST JUSTIFYING OPPRESSION?

We can now begin to see how the concept of offensiveness might apply to biological explanations of social inequalities. As I noted earlier, such explanations have a troubling history, having been used to justify the oppression of women and people of color. Consider those who argued in the 19<sup>th</sup> century that natural differences between men and women explained why men and women worked in different spheres.<sup>40</sup> These explanations justified oppression in two ways, because states of affairs can be oppressive in two different ways. First, a state of affairs might be oppressive in itself; the unequal legal status of men and women is an example, and these explanations were deployed to maintain this state of affairs. Second, a state of affairs might be oppressive because it is the result of oppression; men and women occupied different spheres because of gender-based oppression, and attributing this inequality to biology obscured oppression as the real cause, thereby allowing the oppression to continue.

The norm against justifying oppression is bound to be both worthy of respect and fragile, whatever oppression ends up amounting to.<sup>41</sup> And so, in cases where biological explanations violate that norm, they will be offensive. The question, then, is about *when* biological explanations of social inequalities violate the norm against justifying oppression. Do they always?

I argue that they do not – specifically, when they are well-supported by evidence. Moreover, there are two other cases where it is initially plausible that such explanations do not violate the norm which I shall discuss. I consider these three cases in what follows, though at the end of the day I argue that only evidential support is actually exonerating.

#### 3.2.1. Evidence

I propose that a biological explanation of a social inequality would not justify oppression if it turned out to be true – a possibility my account allows. Even those most put off by biological explanations of social inequalities are, I think, not offended by what they regard as *true* explanations. Rather, they object that inequalities which are in fact the result of social institutions under our collective control have been treated as natural and thus inevitable.

<sup>40</sup>Mill discusses these arguments in *The Subjection of Women*, Chapter 1.

<sup>41</sup>One wrinkle here is that, as I noted earlier, the fragility of a norm is to some extent relative to the violator. A norm which is normally not fragile will be if violated by people with great moral authority. By the same token, someone who is not at all taken seriously – a crank who has lost all credibility even with his own followers – will not be seen as a threat to the norm even if they are legitimately violating it. In cases like this, I think it is still true to say that the violating statement is itself offensive, when considered in a vacuum. However, because of who it is coming from, offense may not be the appropriate reaction to the speech act which consists in the assertion of the statement.

This objection presupposes that biology is not in fact the true explanation of the inequality in question.

That said, a true explanation might be *used for* oppressive ends – one can easily imagine even a very modest biological hypothesis explaining a minor group inequality being marshalled in support of grossly unjust and repressive politics. In this case, such an explanation would be *used as* justification for oppression, but would not *be* justification for oppression, because it would not in fact support any oppressive inequality. In this respect, biological explanations are no different from anything else; even the most innocuous facts can be used for the purposes of propaganda or misinformation, just as the most innocent household items can be used as tools for violence. In cases like these, there is indeed something which violates the norm against justifying oppression – presumably the intentions of the arguer – but the biological explanation itself does not.

Of course, we do not have direct access to the truth of an explanation; we judge truth in these cases, as in others, by the evidence we have. And so when a biological explanation of a social inequality is well-supported, then it does not violate the norm against justifying oppression. By contrast, if evidence is wanting – including haphazard data collection, inadequate discussion of alternative hypotheses, or just general sloppiness – then the biological explanation will be offensive.<sup>42</sup>

### 3.2.2. *Innocent inequalities*

Another case where biological explanations initially seem to avoid violating the norm against justifying oppression involves the kind of inequalities which are explained. Although some social inequalities are oppressive in themselves, and some are the result of oppression, others are neither. Consider the debate about whether the gender wage gap – a social inequality – is unjust. Some argue that it is the result of workplace bias and internalized regressive norms; others argue that it is the result of fully autonomous choices men and women make to go into different occupations. What is presupposed by both sides in this debate is that the cause of this inequality matters to its justness; this concedes that some inequalities at least could be innocuous, if they came about in the right way (even if one thinks this

<sup>42</sup>It might be argued that this proves too much, rendering any bad argument about public policy offensive, since the policy might end up creating oppression. However, in most cases of public policy, there is no clear burden of proof on either side. Yet in the case of biological explanations of social inequalities, as I have argued, the history of their failure means that the burden of proof is on those who would defend them. As a result, the bar for what counts as a good argument is much higher for them than for typical debates about public policy, and so most such arguments will not violate the norm against justifying oppression due to insufficient evidence. Of course, a truly careless argument for a policy which has a non-trivial risk of creating oppression would, on this account, be offensive. But I think this is the right result; the stakes of public policy are high, and so we owe each other conscientiousness in our reasoning about politics.

is not the case with the gender wage gap specifically).<sup>43</sup> And so it seems that a biological explanation of a social inequality does not justify oppression when the inequality that is being explained is not oppressive.

It is true that some inequalities are not, in themselves, oppressive; however, this by itself does not decide the issue. After all, it is not always *clear* whether an inequality is oppressive or not – the gender wage gap being an excellent case in point. Here it is important to understand the nature of norm violation. Norms can be violated in paradigmatic, first-order ways, where a behavior which is forbidden is taken to be acceptable. In this case, it is tempting to reason that if the inequality is not in fact oppressive, then the norm against justifying oppression has not been violated. But norms can also be violated in second-order ways, where a behavior shows insufficient respect for the norm by skirting too close to the line, even if the line itself is not crossed. The norm against drunk driving, for instance, is not just violated by actually driving drunk. If someone has a couple of cocktails at a bar which usually serves weak drinks but occasionally serves stiff ones, it will be unclear whether they are drunk enough to drive. But if they then drive home, they have still violated the norm against drunk driving – even if we stipulate that in their level of intoxication turned out to be within acceptable limits. The driver has *ex hypothesi* not violated this norm in a first-order way, but has nevertheless violated the norm in a second-order way. This is a typical feature of norms. Social norms do not only regulate behavior at the very moment it crosses a specific and clear line, but also cases where the line is skirted – perhaps crossing it, perhaps not, but all too close to the border for comfort. Because the line is not always clear, our norms concern themselves not just with obvious violations, but with ambiguous ones, too.<sup>44</sup>

So although some social inequalities are oppressive and some are innocuous, it is not always clear which is which. So even if some biological explanations of social inequalities do not violate the norm against justifying oppression in a first-order way (because some social inequalities might be innocuous), they may violate the norm in a second-order way when it is unclear which inequalities are innocuous.

Of course, it is possible to take this sort of caution too far; we should not be paralyzed, afraid to act even in clear cases because of the specter of

<sup>43</sup>Indeed, those on the left will say that social inequalities are typically oppressive, in the sense of either constituting or being the result of oppression, and the burden of proof is on those who think an inequality is innocuous. My account thus explains why people on the left tend to be more frequently offended by biological explanations of social inequalities than those on the right, as we saw in the case of George Will. Nevertheless, the argument below does not hinge on whether one thinks that social inequalities are typically oppressive, and so does not beg the question against any particular political orientation.

<sup>44</sup>Alternatively, one might think that all norms concern first order violations, with one exception: a second-order principle of moral caution governing adherence to all other norms. Moral caution as a constraint on action is plausible, as Guerrero (2007) has argued. Either way of conceiving of the violation can support the point I make in this section.

getting too close to the line. How, then, can we identify the clear cases? The obvious strategy would be to show, through rigorous argument, that the inequality was not oppressive. But recall that inequalities can be oppressive in two different ways – oppressive in themselves and as the result of oppression. So even if through diligent reasoning an inequality could be shown to not be oppressive in itself, there would still be the question of whether it is caused by oppression. And this would be a rival explanation to the biological explanation. As a result, showing that the inequality was innocuous would require marshalling sufficient evidence for the biological explanation. And so we are back to the first way of exonerating biological explanations of social inequalities – making sure the explanation itself is empirically rigorous.

### 3.2.3. *Explanation without justification*

So far we have discussed two features of biological explanations of social inequalities – the explanation (whether it is empirically supported) and the inequality (whether it is oppressive). But the question is whether the norm about *justifying* oppression has been violated, and there is a difference between explanation and justification. Even if an inequality is genuinely oppressive, explaining why it exists is not the same as justifying it. To return to the case of Larry Summers, one might accept that men and women have some differential mathematical ability at the high end, and simply take this to be a reason to invest more heavily in STEM education for girls. And so the third potentially exonerating case is that a biological explanation need not justify the inequality it explains.

To be clear, there is indeed a difference between explanation and justification. But part of what makes biological explanations of social inequalities philosophically interesting and historically significant is that it is in precisely such cases that the line between the two becomes blurred. Recall the 19<sup>th</sup> century argument that men and women were fitted for separate spheres because of their different biology. It would be naïve to take this to *merely* be an explanation, designed only to satisfy our curiosity, like when we ask why the sky is blue. And this is not merely a comment on the motivations of those who put the explanation forward. If the explanation of a social inequality is biology, then the inequality is apt to be difficult, perhaps impossible, to remedy with public policy. This is the whole reason biological explanations of social inequalities have historically been so appealing to defenders of the unequal status quo – because explanations of this type can so easily function as justifications.

Because the line between explanation and justification is blurred in these cases, the possibility of second-order violation of the norm rears its head once more. Explanations are not automatically justifications, but if in these cases there is significant overlap between the two, it will be difficult to tell

whether one is justifying the inequality or merely explaining it. And so once again, respect for the norm in question requires ensuring that the case is a clear one; this involves diligence and care in the evidential support for the explanation.

It might be objected, as in the previous section, that there is another way to make the case clear: by laying out why the explanation is not a justification. Consider John Stuart Mill's argument in *The Subjection of Women* that patriarchy is a vestige of more primitive times when men could use their greater physical strength to dominate women.<sup>45</sup> This is a biological explanation of a social inequality, because it names biological strength as a factor in explaining the unequal status of men and women in Mill's society. But clearly Mill is not justifying patriarchy here – he is undermining it, characterizing it as a survival from a period of barbarism.

I agree that Mill's explanation is inoffensive, though I take this to be because his account is well-supported.<sup>46</sup> Not justifying the inequality in question is not sufficient to avoid offense. Imagine a naïve person who genuinely wishes to remedy a social inequality, but does so by offering a ham-handed biological explanation like the following:

There is a real dearth of female fighter pilots in the Air Force, and this is a serious injustice that must be remedied. The gap between men and women here is traceable to the fact that piloting a jet takes calm and composure, but menstruation makes females temperamental and impulsive. As a result, the Air Force should devote significant resources to achieving equal representation, in particular by helping female recruits overcome their monthly irritability.

Even if such an argument is sincere, and so the inequality being explained is not being justified, it is still pretty clearly offensive because of the crudity and sloppiness of the explanation.

Moreover, the explanation is offensive because it violates the norm against justifying oppression. Not in any first-order way; we have again a second-order violation. This *particular* inequality is not justified by the explanation, but this kind of sloppy appeal to biology is nevertheless the *kind* of thinking that leads to violating the norm in other cases. If someone makes a habit of thinking this way, their good intentions will not save them from justifying oppressive arrangements in the future.

<sup>45</sup>The adoption of this system of inequality never was the result of deliberation, or forethought, or any social ideas, or any notion whatever of what conduced to the benefit of humanity or the good order of society. It arose simply from the fact that from the very earliest twilight of human society, every woman (owing to the value attached to her by men, combined with her inferiority in muscular strength) was found in a state of bondage to some man. Laws and systems of polity always begin by recognising the relations they find already existing between individuals. They convert what was a mere physical fact into a legal right, give it the sanction of society ...' (Mill, 1988, Chapter 1, paragraph 5).

<sup>46</sup>This does not mean it is unassailable. Perhaps men's greater physical strength is a result of their domination (and thus greater access to nutrition), rather than a cause of it. That could well be the case. Nevertheless, Mill's account is about as plausible as any other; it is difficult to argue for the superiority of another hypothesis since the events in question are so deep in prehistory.



Earlier we discussed a case where someone took a modest, well-supported biological explanation of a minor social inequality and used it to advocate for grossly unjust political arrangements. In that case, the explanation itself was not offensive, but the agent's intentions were. This case is the converse: the agent's intentions are inoffensive, but the explanation itself is. So although there is something admirable about laying out why an explanation does not necessarily justify the status quo, doing so is neither necessary nor sufficient to save the explanation from being offensive.

#### 3.2.4. *Summary of the argument*

In short, there are three ways that a biological explanation of a social inequality might seem to avoid violating the norm against justifying oppression. The first is that the explanation is true, which we judge on the basis of having strong evidence. On the account developed here, this successfully saves the explanation from violating the norm against justifying oppression. The second is that the inequality is not an oppressive inequality. However, we do not always know which inequalities are oppressive or not, and unclear cases violate the norm against justifying oppression, too. The third is that the explanation does not actually justify the inequality. But biological explanations of social inequalities are distinctive because they tend to blur the line between explanation and justification. So of these three separate considerations, there is only one truly exonerating condition: in order for biological explanations of social inequalities to avoid violating the norm against justifying oppression, they must be sufficiently supported.

### 3.3. WHEN BIOLOGICAL EXPLANATIONS OF SOCIAL INEQUALITIES ARE OFFENSIVE

We can now return to the whole argument concerning offense:

- P1.** Something is offensive when it violates a fragile norm which is worthy of respect.
- P2.** The norm against justifying oppression is fragile and worthy of respect.
- P3.** Biological explanations of social inequalities which are insufficiently supported violate the norm against justifying oppression.
- C.** Therefore, biological explanations of social inequalities which are insufficiently supported are offensive.

By focusing on evidential support, this account contends that biological explanations of social inequalities are offensive not because of *what* claims such explanations involve, but *how* the claims are made. This is not unique to biological explanations of social inequalities; there is nothing inherently

wrong with performing surgery, but performing it in the wrong way, like without knowing what you are doing, is morally reckless. Surgery is simply too dangerous to be performed willy-nilly. Likewise, the very troubling history of biological explanations of social inequalities does not mean that they are categorically off limits, but that they must be advanced conscientiously and with the proper respect that such history requires. When it comes to biological explanations of social inequalities, we owe it to each other to proceed with care.<sup>47</sup>

Of course, what counts as evidence sufficient for that care will be controversial, and as I noted earlier, the threshold will vary with the modesty or ambition of the explanation. As a result, the argument here is not a formula for picking out exactly which biological explanations of social inequalities are offensive. But, if the argument of the previous section is correct, and we should have a (defeasible) skepticism toward biological explanations of social inequalities, then all things being equal, it is likely that such explanations will not meet the level of evidence necessary to violate the norm against justifying oppression. So although biological explanations of social inequalities are not always or inherently offensive, they will often and perhaps typically be so.

#### 4. Conclusion

Let us return to Summers' remarks and see if the account here can rationally reconstruct some of the responses to them. Summers explained the lack of women in the most prestigious science and engineering departments partly by the hypothesis that women had inherently less high-end scientific and mathematical ability than men. To his credit, he did not offer this as the sole explanation of the inequality, but as one factor among others. Such an explanation was more modest and more defensible than if he had neglected social explanations altogether. Moreover, he reassured his audience that he would focus on a narrow area within women's underrepresentation, speaking only on elite science and engineering departments because 'it's the only one of these problems [of underrepresentation] that I've made an effort to think in a very serious way about'.<sup>48</sup>

And yet, if Summers had done 'very serious' thinking about these issues, it was not apparent in his talk. He could not appeal to his own expertise, because he was speaking outside of his area: he is an economist, not a biologist, neuroscientist, or sociologist. He supported the idea that gender differences are innate with personal anecdotes about how his daughters played with

<sup>47</sup>The surgery analogy and its relationship to such explanations comes from Coates (2011).

<sup>48</sup>Summers (2005), paragraph 1.

their toys in stereotypically feminine ways.<sup>49</sup> He cited only one source<sup>50</sup> and only one part of that source's research – the gender gap in math and science among high-achieving 12<sup>th</sup> graders.<sup>51</sup> Summers admitted that his own extension of data on high schoolers to the case of top researchers in these fields was 'crude', and 'I'm sure was wrong and certainly was unsubtle, [in] twenty different ways'.<sup>52</sup> Summers also made no attempt to discuss alternative explanations of the data, even though the fact that the gender gap starts out quite small and gets larger as students grow older<sup>53</sup> suggests obvious socialization hypotheses. And in fact, his own conclusion, that the tests indicate differences in innate ability and not differences in socialization, was explicitly stated as unwarranted by the authors of the study.<sup>54</sup>

Of course, presenting a hypothesis with insufficiently compelling evidence is, by itself, merely an epistemic failing. But this was not just any hypothesis; biological explanations of social inequalities have a history of justifying all manner of oppression. Although the hypothesis that women are innately less capable than men at sophisticated kinds of math and science is not inherently offensive, what Summers said – by his own characterization, a 'provocation' and a 'guess'<sup>55</sup> – was offensive because he asserted it in such a casual, offhand, and sloppy way.

As noted earlier, Summers' hypothesis has been undermined by subsequent studies. But if the argument of this paper is sound, then it is not merely appropriate for us to be skeptical in hindsight; rather, it was entirely appropriate for people in the audience at the time, even ones without specific knowledge of the research he was citing, to be skeptical of his claims. Recall the MIT biologist, Nancy Hopkins, who walked out of Summers' remarks. In explaining her reaction, Hopkins told the *New York Times*, 'Let's not forget that people used to say that women couldn't drive an automobile'.<sup>56</sup> Hopkins seems to be saying that, given the failed history of these types of

<sup>49</sup>Ibid., paragraph 6.

<sup>50</sup>Xie and Shauman (2003).

<sup>51</sup>Summers (2005), paragraph 5.

<sup>52</sup>Ibid., paragraph 4.

<sup>53</sup>Xie and Shauman (2003), p. 52.

<sup>54</sup>Summers perhaps misread the authors' controlling for *some* social factors as controlling for *all* social factors: 'Gender differences in math and science achievement cannot be explained by the individual and family influences that we examine. On the contrary, we find that controlling for the complete set of individual and familial explanatory factors increases, rather than decreases, the estimated gender gap both in mean math and science achievement and in the odds that a student is in the top 5 percent of the achievement distribution. There are many other factors that are unaccounted for in this study that have been hypothesized to contribute to gender differences in math and science. They include differences in the biological functioning of the brain, social influences in school, and the socializing influences of peers, teachers, counselors, and parents. The limited scope of our analysis precludes us from making any statements about these and other potential causes of gender differences in math and science achievement'. Xie and Shauman (2003), pp. 55–56.

<sup>55</sup>Summers (2005), paragraph 9.

<sup>56</sup>Dillon (2005).

claims, we ought to be skeptical of Summers' explanation. I have simply argued that this is good reasoning.

Department of Philosophy  
University of Michigan

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## APPENDIX

### INDUCTIONS FROM EXPLANATION TOKENS TO EXPLANATION TYPES: AN ANALOGY FROM THE PHILOSOPHY OF RELIGION

The argument for skepticism laid out in §2.1 is simple: Biological explanations of social inequalities have almost always turned out to be bad explanations; therefore, we should adopt a general (but defeasible) skepticism toward biological explanations of social inequalities. This is clearly an inductive rather than deductive argument. The induction is distinctive because rather than moving from the failures of a given explanation or hypothesis to skepticism about that hypothesis, it moves from failures of numerous

explanation tokens to skepticism about an explanation type. Is such a move justified?

We can get a clearer sense of the strength of the inference by comparing it with a structurally similar inference. This inference comes from a very different area, the philosophy of religion, and concerns another type of explanation: so-called ‘God of the gaps’ style explanations. These explanations have two key features. First, there is some natural phenomenon for which there is no available and plausible naturalistic explanation. Second, an explanation is offered which includes God as the primary or salient explanans. Because the function of God in these explanations is to fill in the gaps in our understanding of the natural world, Charles Coulson coined the term ‘God of the gaps’ to describe such explanations.<sup>57</sup>

Coulson illustrated the phenomenon with an example from physics:

...Newton, trying to apply his splendid discovery of the law of gravitation to as many different problems as possible, and finding that although it would deal with the motion of the moon round the earth, and the earth round the sun, it would not deal with the spinning of the earth around its polar axis to give us night and day, wrote to the Master of his Cambridge College, Trinity: ‘the diurnal rotations of the planets could not be derived from gravity, but required a divine arm to impress it on them.’<sup>58</sup>

Although Newton did not arrive at this view lightly, it is hard not to wince in anticipation of what is to come. To anyone with a passing familiarity of the history of science, the pattern is obvious: God is invoked to explain otherwise inexplicable phenomena, only to have those phenomena gradually yield to entirely naturalistic scientific understanding.

As Coulson pointed out, this pattern is frequent enough that we can draw a general conclusion from it:

There is no ‘God of the gaps’ to take over at those strategic places where science fails; and the reason is that gaps of this sort have the unpreventable habit of shrinking. For as soon as any possible scheme is devised whereby the planets might conceivably have obtained their angular momentum, the ‘divine arm’ ceases to be needed ...<sup>59</sup>

The thought is echoed by Francis Collins:

Various cultures have traditionally tried to ascribe to God various natural phenomena that the science of the day had been unable to sort out – whether a solar eclipse or the beauty of a flower. But those theories have a dismal history. Advances in science ultimately fill those gaps, to the dismay of those who had attached their faith to them.<sup>60</sup>

<sup>57</sup>Coulson (1955).

<sup>58</sup>Ibid., p. 20.

<sup>59</sup>Ibid., pp. 19–20.

<sup>60</sup>Collins (2006), p. 193.

And the same line is argued by theologians like Dietrich Bonhoeffer, who says that it is wrong

to use God as a stop-gap for the incompleteness of our knowledge. If in fact the frontiers of knowledge are being pushed further and further back (and that is bound to be the case), then God is being pushed back with them, and is therefore continually in retreat.<sup>61</sup>

The upshot is clear: God of the gaps style explanations should be regarded very skeptically.

It should be emphasized that these arguments presuppose nothing controversial about the existence or non-existence of God. While it is true that some militant atheists like Richard Dawkins take special glee in documenting the failure of God of the gaps style explanations,<sup>62</sup> skepticism toward such explanations is also common among theists. I quote the three aforementioned authors partly because they are all theists. Indeed, there are specifically theistic reasons for rejecting such explanations: predicating one's faith on a gap in scientific knowledge is likely to unmoor that faith if the gap goes away.

The structural similarity should now be clear. I have argued that biological explanations of social inequalities have almost always turned out to be bad explanations; therefore, we should have a general (but defeasible) skepticism toward biological explanations of social inequalities. Likewise, philosophers of religion argue that theological explanations of natural phenomena have almost always turned out to be bad explanations; therefore, we should adopt a general (but defeasible) skepticism toward theological explanations of natural phenomena.

I do not argue that the two cases are parallel in every respect. In particular, it may be objected that there are *no* accepted theological explanations in science, while there may be *some* apt biological explanations of social inequalities. I am not sure this is right. Theists will disagree, because they think that there are *some* apt theological explanations of naturalistic phenomena – namely the explanation of their existence. But it makes little difference to concede some disanalogy here. Even if the induction is stronger in one case than another, all it would show is that one ought to be *severely skeptical* of God of the gaps style explanations – whereas one ought to be merely *pretty skeptical* of biological explanations of social inequalities. If the induction from explanation tokens to explanation types is justified in the case of God of the gaps skepticism, then this should give us confidence in the inference used in the argument about skepticism toward biological explanations of social inequalities.

<sup>61</sup>Bonhoeffer (1953), p. 405.

<sup>62</sup>Dawkins (2008), pp. 125–134.

The structural similarity gives us resources to answer further questions about the induction. Biological explanations of social inequalities are an explanation type which contains not just individual tokens within it, but smaller type subsets. Summers' explanation token is a member of the subset of cognitive-based biological explanations. More notorious are morally-based biological explanations, where (for instance) differential rates of crime among groups are explained by an innate propensity to do wrong. And less notorious are evolution-based biological explanations, where (for instance) males and females experience different selection pressures and thereby develop different propensities toward mate-selection. This raises the question of whether the induction is justified not about the broadest possible explanation type (biological explanations of social differences) but rather about some especially unsuccessful subset (morally-based biological explanations of social differences). Or perhaps an unusually successful subset should be carved out from the larger explanation type, and thereby exempted from skepticism. Our ability to carve up the explanation type into subsets raises the question of whether the scope of the induction as I've construed it is overly broad.

It is certainly true that, in principle, explanation types can be carved up into innumerable subtypes, with different credences appropriate to each. But practically this is not so easy. Human cognition is limited, and so we need heuristics for making our initial judgments. Categorical skepticism about biological explanations of social inequalities is one such heuristic. But if these heuristics become too fine-grained, they cease to be usable. God of the gaps skepticism is a case in point. Theological explanations of individual physical phenomena, like the rotation of the Earth, have an absolutely dismal track record. Others, such as theological explanations of physical laws and constants, of which the fine-tuning argument is one token, are worth taking more seriously. But because of our cognitive limitations, it would be unhelpful in the project of responsible belief to have a laundry list of explanation subtypes each with slightly different levels of associated skepticism.

Of course, if the levels of appropriate skepticism were *radically* different – if some subset merited very strong skepticism and another subset merited the opposite, high initial plausibility – then it might be worth it practically to make such distinctions. I qualify this with 'might' because if the subsets in question were extremely small, that would also tell against the practical value of making the distinction. And of course the subset has to be non-arbitrary; one cannot simply group together all the successful explanation tokens and gerrymander a category around it. So in short, it can make sense to reduce the scope of skepticism to a subset of an explanation type – but only when (a) the subset is non-arbitrary, (b) somewhat large, and (c) the difference in merited credence is somewhat large.



I do not know of any subset of biological explanations of social inequalities which meet all of these criteria. (The same is true, I believe, of God of the gaps style explanations). Although some subsets have a worse track record than others, there is no non-arbitrary group of tokens which has a particularly good track record. The example given earlier of evolutionary pressures for mate selection is plausible, but the subset of which it is a member is not particularly large – keep in mind that the larger subset is not simply evolutionary psychology, because although the vast majority of hypotheses in that field invoke biology in explanations, it is not primarily to explain *social inequalities*. And if the worry is that some plausible hypotheses will be regarded with skepticism because of the category they fall into, one must recall that the skepticism is defeasible: if a given biological explanation of a social inequality really is plausible and well-supported, then believing it is entirely justified.

Of course, if this skepticism is defeated repeatedly by a (non-arbitrary, significant) subset of biological explanations of social inequalities, then eventually it will be appropriate to exempt that subset from skepticism. After all, the number of explanation tokens is constantly expanding, and the success of past tokens can be re-evaluated in light of new evidence. In short, the door should be wide open for restricting the scope of the skeptical induction – but this should emerge through continued research and argument.

Finally, it is natural to ask *why* biological explanations of social inequalities have such a bad track record. Don't we need some deeper story in order to be justified in such skepticism? Discovering such a story would no doubt provide intellectual satisfaction, but as the case of God of the gaps style explanations, it is not necessary to find the argument persuasive. The atheist will of course account for explanatory failures by saying that God does not exist (and so can't explain anything). The theist may account for repeated failures by saying that it is bad theology to suppose that God could not or would not create a world in which natural phenomena were entirely explicable by natural laws. Perhaps one of these stories is correct. (It's possible that both are.) But in motivating skepticism about God of the gaps style explanations, it is not necessary to posit any particular story about why these explanations fail; it is enough to know the history of such explanations.

Accordingly, the same is true of biological explanations of social inequalities. The three canonical arguments surveyed in §1 all provide possible accounts of the deeper story. Perhaps (as suggested by Mill) this is simply an area of science where experimental testing is unavailable, because controlled conditions would require reorganizing all of society to test what inequalities emerge under different social arrangements. Perhaps (as suggested by Young) people often fail to appreciate how certain facts *could* be socially constructed, and so adhere to biological hypotheses

not so much because the evidence supports them but simply because they see no other explanatory option. Or perhaps (as suggested by Haslanger) the explanations on offer are frequently motivated by a desire for system justification, and so are unlikely to track to the truth. Maybe all three of these contain some truth; or maybe the answer lies elsewhere entirely. No doubt knowing the deeper story would strengthen this skepticism further, and perhaps even refine its scope. But as with God of the gaps style explanations, the mere fact of their repeated failure is enough for such explanations to lose their claims to our confidence.<sup>63</sup>

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