Genealogical Defeat and Ontological Sparsity[1]

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Consider the following pair of cases:

> **Durian**: You seem to recall eating a durian for breakfast. So, on the basis of that apparent memory, you form the belief that you recently ate a durian. A trusted friend then says that she watched you eat a durian for breakfast this morning. Based on her testimony, you conclude that your having eaten a durian for breakfast is causally responsible for your apparent memory as of having done so.

> **Double-X**: You seem to recall eating a durian for breakfast. So you form the belief that you ate a durian. A trusted friend then says that she watched you take the drug XX, which reliably causes short-term memory loss and vivid apparent memories as of having recently eaten unusual fruit. Based on her testimony, you conclude that your having taken XX is causally responsible for your apparent memory as of eating a durian.

Let your "durian belief" be your belief that you recently ate a durian. Plausibly, your durian belief enjoys *prima facie* justification in both cases. And, in both cases, you learn something about that belief's causal-historical origins. What you learn in the first case is epistemically innocuous. But what you learn in the second case renders your durian belief unjustified.

One's belief that q is a *defeater* for one's belief that p just in case, in virtue of believing that q, one loses one's justification for believing that p. One's belief that q is an *undercutting* defeater for one's belief that p just in case, in virtue of believing that q, one gains a defeater for one's belief that p but does not thereby become justified in believing that not-p.[2] Intuitively, you

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[2] By contrast, one's belief that q is a *rebutting* defeater for one's belief that p just in case one's belief that q defeats one's belief that p by way of giving one positive justification for believing that ~p. See Pollock 1987, p. 485.

gain an undercutting defeater—henceforth just "defeater"— in the Double-X case, but not in the Durian case.

Let the *genealogy* of a belief or type of belief be a causal-historical explanation how one came to hold that token belief (ex. the belief that you had a durian for breakfast, the belief that God exists, the belief that torture is morally wrong, etc.) or that type of belief (ex. memorial beliefs, religious beliefs, moral beliefs, etc.). The contrast between these two cases is just one instance of more general epistemological phenomenon. In general, recognizing a belief's genealogy sometimes, but not always, gives one a defeater for that belief.

Now consider the following question:

> **Genealogical Defeat Question** (GDQ): When, and in virtue of what, does awareness of a belief's genealogy give one a defeater for that belief?

GDQ asks what distinguishes defeater-generating genealogies from epistemically innocuous ones. A good answer to GDQ should be both extensionally and explanatorily adequate—it should both render correct verdicts about which genealogies are defeater-generating and *why* those genealogies generate defeaters.

GDQ is an important question in the epistemology of higher-order evidence and undercutting defeat.[3] But its importance also extends beyond those rarified topics. Consider genealogical debunking arguments, which threaten to undermine our justification for holding all manner of beliefs—religious beliefs, moral beliefs, perceptual beliefs, mathematical beliefs, just to name a few—by drawing our attention to their genealogies.[4] It is a matter of significant

[3] See Christenson 2010 and Lasonen-Aarnio 2014 and higher-order evidence and defeat.

[4] The literature on debunking arguments is vast and spans many subdisciplines. For discussions of debunking arguments against moral realism, see Street 2006, Joyce 2005, Bedke 2014, Kahane 2011, and Vavova 2015. On the debunking of religious beliefs, see Freud 1927 and Plantinga 2000. On the debunking of mathematical Platonism, see Field 1988, Clarke-Doane 2017, and Clarke-Doane 2020. On perceptual beliefs about ordinary objects, see Merricks 2003 and 2014, Korman 2014, and Barker 2020.

controversy which, if any, of the debunker's genealogies are genuinely defeater-generating.[5] Moreover, even those who agree about the defeating powers of a given debunking genealogy often disagree among themselves about *why* it has those defeating powers.[6] Answering GDQ can help settle these disputes (see §VII).

Two families of answers to GDQ have emerged in the recent literature.[7] According to *modalist* answers to GDQ, genealogies generate defeaters when and because they reveal that one's belief is not appropriately modally connected to the relevant facts.[8] According to *explanationist* answers to GDQ, genealogies generate defeaters by revealing that one's belief is not appropriately explanatorily connected to the facts.[9]

In a recent series of papers, Korman and Locke have defended the following explanationist account of genealogical defeat:[10]

> **Explanatory Constraint** (EC): "If p is about domain D, and S believes that her belief that p is neither explained by nor explains some D-facts, then S is thereby rationally committed to withholding belief that p."[11]

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[5] For example, Trenton Merricks and Daniel Korman agree that microphysical particles arranged in various ways—together with perceptual predispositions— causally account for our perceptual experiences as of composite material objects and, therefore, for our object beliefs. Yet they disagree about whether that genealogy is defeater-generating—Merricks 2015 argues that it is, while Korman 2014 and Korman 2015 argues that it is not.

[6] Indeed, a significant portion of the literature on Evolutionary Debunking Arguments in metaethics is devoted to intra-debunking squabbles about *why* the debunker's evolutionary explanations of our moral beliefs have defeating force. Bedke 2014 provides a coincidence diagnosis, Joyce 2006 provides an explanatory diagnosis, and Baras and Clarke-Doane 2021 provides a modal diagnosis.

[7] Although see Bedke 2009 and 2014 for a "coincidence" account of genealogical defeat, which arguably falls into neither of the two categories.

[8] For example, perhaps genealogies defeat by revealing that one's belief is insensitive—i.e. that one would still have believed that p even if p were false. Or perhaps genealogies defeat by revealing that one's belief is unsafe—i.e. that one could have easily been mistaken about p. See Baras and Clarke-Doane 2021 for a recent defense of modalism.

[9] Korman and Locke are explanationism's main defenders. Allies include Faraci 2019 and Bogardus and Perrin 2022.

[10] In Korman and Locke 2023, they officially renounce EC. See §V for discussion of their newest explanationist account of genealogical defeat.

[11] See Korman & Locke 2020a p.21 and Korman & Locke 2020b p. 194 for this formulation of EC. Korman 2019a, Korman 2019b, and Locke 2014 all defend simpler versions of EC that omit reference to "domains" of facts. In Korman and Locke 2023, they renounce EC in favor of a new explanationist account of genealogical defeat. See Section V for further discussion.

Let us say that one's belief that p is "explanatorily connected" to the D-facts just in case either the D-facts explain one's belief that p or one's belief that p explains the D-facts.[12] According to EC, then, genealogical defeat occurs when and because one recognizes that one's belief in a proposition *p* is not explanatorily connected to the domain of facts that *p* is about.

This paper's first conclusion is that EC is false. However, before I can lay out my argument, I must spend some time clarifying its target. For, as we shall see, EC's invocation of "domains" of facts renders it ambiguous (§I). Once EC has been clarified, I can lay out my argument against it. That argument will draw on the popular "sparse" theory of worldly facts (§II). Crucially, though, I will not assume that the sparse theory is actually—or even possibly—true. Instead, I will only assume that it is not always irrational for anyone to believe the sparse theory. That modest assumption alone leads to EC's demise (§III and §IV).

Korman and Locke have recently renounced EC in favor of a new explanationist account of genealogical defeat. While their new proposal represents an improvement over EC, I will argue that it does not provide a satisfying account of *why* genealogical defeat occurs when it does (§V). I will then propose a new explanationist answer to GDQ—Truthmaker Explanationism or TE—which is both explanatory and solves the puzzle about ratioanl belief in ontological sparsity (§VI). Finally, I will argue that TE can help resolve the debate over the soundness of perceptual debunking arguments in the metaphysics of material objects (§VII).

I. Clarifying EC

Let '*p*' denote the proposition that p. And let '[p]' refer to the worldly fact that p. According to EC, genealogical defeat occurs when and because one recognizes that one's belief that p is not explanatorily connected to the "domain" of facts that *p* is about. Which domain of facts is a

[12] Ibid.

given proposition *p* about? Presumably *p* is about whatever domain of facts [p] belongs to (or, in cases where *p* is false, whatever domain [p] *would* belong to, if [p] existed). But which domain does a given fact [p] belong to?

Russellian facts or Armstrongian states of affairs are worldly entities that are "built up" out of the particulars, properties, logical connectives, and quantifiers that are their constituents. Let '[p]' denote the worldly fact that p. *Atomic* facts have only particulars and monadic properties as constituents. For example, [Copper is a dog] has a particular, Copper, and a monadic property, the property of being a dog, as its only constituents. *Complex* facts include polyadic properties, logical connectives, quantifiers, and atomic facts among their constituents. For example, [either Copper is a dog or Ollie is a cat] has [Copper is a dog], [Ollie is a cat], and logical disjunction among its constituents.

I propose that we understand domains of facts as maximal collections of worldly facts unified by one or more common constituents. For example, the domain of dog facts is the collection of all and only those facts that have the property of being a dog among their constituents. The domain of Copper facts is the collection of all and only those facts that have the particular, Copper, among their constituents. Similarly, the domain of disjunctive facts is the collection of all and only those facts that have logical disjunction. And so on. Call this the *constituency account* of domains.

Note that, according to the constituency account, every fact belongs to multiple domains—one for each of its constituents. This result is intuitively plausible. Intuitively, [Copper is a dog] belongs to two different domains—the domain of Copper facts and the domain of dog facts. And, since [Copper is a dog] has Copper and the property of being a dog as its only constituents, that is exactly what the constituency account implies. Moreover, since the

proposition *Copper is a dog* is about [Copper is a dog], it follows that *Copper is a dog* is about both the domain of Copper facts and the domain of dog facts.

Suppose that I—JB—believe the proposition *JB ate a durian for breakfast*. According to EC, I gain a genealogical defeater for that belief if I realize that it is not explanatorily connected to the domain of facts that *JB ate a durian for breakfast* is about. However, in light of the above, it should now be clear that proposition is about multiple domains. For example, it is about the domain of durian facts, the domain of JB facts, and the domain of breakfast facts, among other domains.

Now imagine that, as in the Double-X case, I realize that [JB took XX] causally explains why I believe I ate a durian for breakfast. Clearly, [JB took XX] is *not* in the domain of durian facts. For [JB took XX] does not have any durian constituents. Yet [JB took XX] *is* in the domain of JB facts. For it has JB among its constituents. As a result, *JB ate a durian for breakfast* is about one domain of facts that is not explanatorily connected to my durian belief. But it is about another domain that *is* explanatorily connected to that belief. So what verdict does EC render about the Double-X case?

The answer depends on how we understand EC's reference to "the" domain of facts a proposition is about. As David Killoren has recently argued, EC admits of two possible readings:[13]

> **Explanatory Constraint 1** (EC1): if, for any domain of facts D that *p* is about, S believes that her belief that p is not explanatorily connected to the D-facts, then S has a defeater for her belief that p.
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> **Explanatory Constraint 2** (EC2): if, for some domain of facts D that *p* is about, S believes that her belief that p is not explanatorily connected to the D-facts, then S has a defeater for her belief that p.

[13] See Killoren 2021. My formulations of EC1 and EC2 are paraphrases of Killoren's EC*-wide and EC*-narrow, respectively.

EC1 says that one gains a genealogical defeater for a belief that p when one realizes that *none* of the domains that *p* is about are explanatorily connected to one's belief that p. By contrast, EC2 says that genealogical defeat occurs when one realizes there is even *one* such domain that is not explanatorily connected to one's belief that p. EC1 and EC2 yield different verdicts about whether genealogical defeat occurs in the Double-X case.

The proposition *JB ate a durian* is about the domain of JB facts. And [JB took XX] is in the domain of JB facts. So, when I realize that [JB took XX] explains my belief, I have not thereby realized that my belief is explanatorily disconnected from *every* domain of facts that the proposition *that JB ate a durian* is about. Indeed, at least one such domain *is* explanatorily connected to my belief. As a result, EC1 does not yield the verdict that I gain a genealogical defeater.

By contrast, EC2 does yield a verdict of genealogical defeat. For, although the proposition *JB ate a durian* is about the domain of JB facts, it is also about the domain of durian facts. And [JB took XX] is *not* in the domain of durian facts. When I learn that [JB took XX] explains my belief, then, I should also conclude that the domain of durian facts does *not* explain my belief. EC2 only requires an explanatory disconnect with *one* of the relevant domains. So it yields the verdict that I gain a defeater.

The above illustrates that EC1 and EC2 are substantively different answers to GDQ. So, rather than arguing against the ambiguous EC, I must argue against the disambiguated EC1 and EC2, respectively. Second, only EC2 yields the correct verdict about the Double-X case. For only EC2 implies that I gain a genealogical defeater in that case. This is a point in EC2's favor.[14]

[14] However, Killoren 2021 argues that EC2 mishandles different category of beliefs, namely, our beliefs about the Consider my belief that the sun will rise tomorrow. The proposition *the sun will rise tomorrow* is about the domain of future sunrise facts. But—so Killoren assumes—no future sunrise fact is explanatorily connected to my belief in

However, one of my goals is show that formulate a very general challenge that any explanationist account of genealogical defeat must meet. Toward that end, I will lay out versions of the challenge for each of the two versions of EC (§III and §IV).

II. Abundant Truth and Sparse Ontology

There are broadly two theories about how true propositions correspond to worldly facts—the "abundant" theory, on the one hand, and the "sparse" theory, on the other. My arguments against EC1 and EC2, respectively, will draw on that distinction. So let us consider each theory in turn.

According to the abundant theory of facts, for every truth *p* there is a corresponding worldly fact [p]. For example, suppose *Copper is either a dog or a cat* is true. Then, according to the abundant theory, there is a corresponding disjunctive worldly fact, [Copper is either a dog or a cat], which has Copper, the property of being a dog, the property of being a cat, and logical disjunction as its constituents.

According to sparse theories of facts, there are some truths, $p_1 \ldots p_n$, to which there are no corresponding worldly facts. D.M. Armstrong famously believed that there are disjunctive truths but no corresponding worldly disjunctive facts.[15] For example, suppose the disjunctive proposition *Copper is either a dog or cat* is true. According to Armstrong, there is nevertheless no

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that proposition's truth. Once I realize this, EC2 implies that I gain a defeater for my belief that the sun will rise tomorrow. However, the problem dissolves when EC2 is paired with the constituency account of domains. Consider this conditional fact: [if the sun has risen every day in the past, then it will probably rise tomorrow]. That fact has a future sunrise among its many constituents. So, according to the constituency account, it is in the domain of future sunrise facts. Moreover, although my belief that the sun will rise tomorrow is not explanatorily connected to [the sun rises tomorrow], it *is* explanatorily connected to [if the sun has risen every day in the past, then it will probably rise tomorrow]. So there is at least one fact in the domain of future sunrise facts that is explanatorily connected to my belief that the sun will rise tomorrow. As long as I realize this, EC2 does not imply that I have gained a defeater for my belief. Bogardus and Perrin 2022 and Korman and Livengood 2020 offer similar solutions, although neither relies on the constituency account of domains.

[15] Armstrong 1979, pp. 32—33 introduces the distinction between basic and complex universals. Armstrong's elimination of disjunctive and negative universals led him to eliminate disjunctive and negative worldly facts as well. See Ch.1—4 and Ch. 8 of Armstrong 1997.

corresponding worldly disjunctive fact that has Copper, the property of being a dog, the property of being a cat, and logical disjunction as its constituents.

There are many versions of the sparse theory. Armstrong also believed in true negative existential propositions while denying that there are any corresponding worldly negative facts or states of affairs.[16] Some think Armstrong could have nixed conjunctive states of affairs too.[17] Or consider the long medieval tradition of admitting relational truths while denying the mind-independent existence of relations and relational facts.[18] Recent sparse theorists admit a plenitude of "non-joint-carving" truths while restricting properties—and thus worldly facts—to only the most perfectly natural or "joint-carving."[19] Others admit general truths but no general worldly facts.[20] And so on.

III. EC1 and Negative Existentials

Here is EC1 again:

> **Explanatory Constraint 1** (EC1): if, for any domain of facts D that *p* is about, S believes that her belief that p is not explanatorily connected to the D-facts, then S has a defeater for her belief that p.

And here is my argument against EC1:

Argument from Negative Existential Beliefs

(N1) It is not irrational for everyone to believe that there are negative existential truths but no negative existential facts.
(N2) If EC1 is true, then it is irrational for everyone to believe that there are negative existential truths but no negative existential facts.
(N3) Therefore, EC1 is false.

The argument is valid. I shall now defend its two premises.

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[16] See Armstrong 2004, pp. 56—9.
[17] Cf. Mellor 1992.
[18] A recent example is Lowe 2016.
[19] Lewis 1983 introduced the idea of naturalness for properties. More recently, see Sider 2011.
[20] See Lewis 1992, pp. 201—7 and Skyrms 1981, pp. 199—206.

My defense of N1 begins by noting what it does *not* assert. N1 does not assert that this particular version of the sparse theory is actually true. Nor does it assert that this version is possibly true. N1 does not assert that there is no one for whom it is irrational to believe this version of the sparse theory. Finally, N1 does not assert that there is someone for whom this theory enjoys indefeasible epistemic justification. Instead, N1 makes the modest assertion that it is not always irrational for everyone to believe this version of the sparse theory of facts.

Consider your own case. Presumably, you believe that the proposition *there are no unicorns* is true. Either you believe that there are no negative existential worldly facts or you do not. Let us consider the two options in turn.

On the one hand, suppose you do believe that there are no negative existential facts. Then, presumably, you also believe that it is not *irrational* for you to hold the combination of those two beliefs.[21] That is, you believe it is not irrational for you to both believe that *there are no unicorns* is true *and* believe that there are no negative existential facts. Therefore, you should accept N1.

On the other hand, suppose you do not believe that there are no negative existential facts. Still, you should recognize that there are many philosophers—namely, many defenders of the relevant version of the sparse theory of facts—who believe that there are negative existential truths but no negative existential facts (see §II). Presumably some of those philosophers arrived at their view using the standard philosophical method—they evaluated the arguments on either side, considered how well each option cohered with their existing beliefs, and so on. Maybe you

[21] Suppose you are an epistemic akratic—i.e. you think it is irrational for you to continue believing that there are no negative existential facts while also believing that there are true negative existential propositions. Epistemic akrasia is always irrational. So it is irrational for you to continue being an epistemic akratic with respect to your belief in this version of the sparse theory of facts. Therefore, you should either stop believing it is irrational for you to believe this version of the sparse theory, or else you should stop believing this version of the sparse theory. If you take the latter route, then you are invited to consider the argument of the next paragraph. If you take the former route, then you should accept N1.

think that method led them to a false conclusion. Still, I think that intellectual humility requires you to acknowledge that not all of them are *irrational* for holding the philosophical positions they do. Therefore, you should accept N1.

My defense of N2 begins by assuming that EC1 is true. So, in what follows, I will be assuming that the following is sufficient for *S* to have a defeater for her belief that p: for every domain of facts D that *p* is about, S believes that her belief that p is not explanatorily connected to any D-facts. I will argue from that assumption, which is N2's antecedent, to N2's consequent.

Consider an arbitrary person—call him "David"—who believes that there are negative existential truths but no negative existential facts. And consider an arbitrary negative existential belief of David's. For example, suppose that David believes that there are no orcs. Since David denies that there are any negative existential facts, he also denies that there is any such worldly fact as [there are no orcs].

Here is a highly plausible principle: if *S* believes that x does not exist, then *S* is rationally obligated to deny that x is explanatorily connected to any existing entity y. For example, suppose you believe there is a mess in your office. Add that you believe that gremlins do not exist. Then you are rationally obligated to deny that gremlins are explanatorily connected to—either explain or are explained by—the mess in your office. The above principle explains why you have this rational obligation. I shall assume the principle's truth in what follows.

David believes that [there are no orcs] does not exist. So David is rationally obligated to deny that [there are no orcs] is explanatorily connected to any existing entity. Of course, David's own *beliefs*—including his negative existential belief that there are no orcs—are existing entities. As a result, David is rationally obligated to deny that [there are no orcs] is explanatorily connected to his belief that there are no orcs. Indeed, David is rationally obligated to deny that

his belief that there are no orcs is explanatorily connected to *any* negative existential facts. After all, David believes that there are no negative existential facts exist.

Consider again the proposition *there are no orcs.* That proposition is about whatever domain(s) of facts [there are no orcs] would belong to, if that fact existed. For example, [there are no orcs] would belong to the domain of negative existential facts, if it existed. Yet David believes there is no explanatory connection between his belief that there are no orcs and any negative existential facts. So there is at least one domain of facts that *there are no orcs* is about such that David believes that his belief is not explanatorily connected to any facts in that domain.

Nor is *there are no orcs* about any other domain of facts that David can rationally maintain is explanatorily connected to his belief that there are no orcs. For example, *there are no orcs* is about the domain of orc facts. Yet David denies that there are any orcs. Therefore, David should also believe that his belief that there are no orcs is not explanatorily connected to the domain of orc facts.

More generally, for every domain of facts the proposition *there are no orcs* is about, David should believe that his belief that there are no orcs is not explanatorily connected to facts in that domain. Suppose that David believes everything he ought to believe. So David believes that, for every domain D such that *there are no orcs* is about D, his belief that there are no orcs is not explanatorily connected to any D-facts. Thus, given EC1, David has a defeater for his belief that there are no orcs.

It is irrational to hold a belief that one has a defeater for. Therefore, it is irrational for David to believe that there are no orcs. Of course, we could have started with *any* negative existential belief of David's and shown, via analogous reasoning, that it is irrational for David to

hold that belief. So, more generally, it is irrational for David to believe that there are any true negative existential propositions.

Trivially, then, it is irrational for David to believe *both* that there are true negative existential propositions *and* that there are no negative existential facts. Of course, David himself was also picked arbitrarily. We could have started with anyone who believes that there are true negative existential propositions but no negative existential facts and shown, via analogous reasoning, that it is irrational for that person to hold that combination of beliefs.

We began by assuming that N2's antecedent is true. I just argued from that assumption to N2's consequent. N2 is true. I conclude that EC1 is false.

IV. EC2 and Ontological Sparsity

Here is EC2 again:

> **Explanatory Constraint 2** (EC2): if, for some domain of facts D that *p* is about, S believes that her belief that p is not explanatorily connected to the D-facts, then S has a defeater for her belief that p.

My argument against EC2, like my argument against EC1, involves belief in a particular version of the sparse theory of facts. However, as we shall see, analogous arguments against EC2 can be constructed using various other versions of the sparse theory of facts as well.

Here is the argument:

Argument from Disjunctive Beliefs

(D1) It is not always irrational for everyone to believe that there are disjunctive truths but no disjunctive facts.
(D2) If EC2 is true, then it is always irrational for everyone to believe that there are disjunctive truths but no disjunctive facts.
(D3) Therefore, EC2 is false.

The argument is valid. I shall now defend its two premises.

D1, like N1, makes a very modest claim (§III). D1 merely claims that it is not always irrational for everyone to believe the version of the sparse theory according to which there are disjunctive truths but no disjunctive facts. Consider your own case. Presumably *you* believe there are some disjunctive truths. For example, presumably you believe that the disjunctive proposition *either Biden is president or unicorns are pink* is true.

Either you also believe that there are no disjunctive worldly facts or you do not. If the former, then you presumably do not think it is irrational for you to believe there are disjunctive truths while denying that there are disjunctive facts (§III). So you should accept D1. If the latter, then intellectual humility should lead you to refrain from painting *every* philosopher who disagrees with you on this point as irrational (see §II and §III). So you should accept D1. Either way, then, you should accept D1.

My defense of D2 begins by assuming, per EC2, that the following is sufficient for defeat: for some domain of facts D that *p* is about, S believes that her belief that p is not explanatorily connected to any D-facts. I will argue from that assumption, which is D2's antecedent, to D2's consequent.

Consider an arbitrary person—call him $David_2$—who believes there are disjunctive truths but no disjunctive facts. For example, suppose $David_2$ believes that the proposition *either Biden is president or unicorns are pink* is true, while denying that [either Biden is president or unicorns are pink] exists.

Suppose that $David_2$ believes everything he is rationally obligated to believe. If one believes that x does not exist, then one is rationally obligated to deny that any existing entity y is explanatorily connected to x (see §III). Consequently, $David_2$ denies that [either Biden is

president or unicorns are pink] is explanatorily connected to his belief that either Biden is president or unicorns are pink.

More generally, $David_2$ denies that this disjunctive belief is explanatorily connected to *any* disjunctive facts at all. Yet *either Biden is president or unicorns are pink* is about the domain of disjunctive facts. So there is at least one relevant domain of facts that , $David_2$ believes is not explanatorily connected to his disjunctive belief. Thus, $David_2$ has a defeater. Therefore, it is irrational for $David_2$ to continue holding that disjunctive belief.

Note that it will do $David_2$ no good to locate *another* domain of facts that is explanatorily connected to his disjunctive belief and that the disjunctive proposition *either Biden is president or unicorns are pink* is about. For example, it will do $David_2$ no good to point out that *either Biden is president or unicorns are pink* is also about the domain of Biden facts and that his belief in that proposition is explanatorily connected to certain facts in that domain. For, according to EC2, recognizing the lack of an explanatory between one's belief that p and even a single domain that *p* is about is sufficient for defeat.

Of course, that particular disjunctive belief of $David_2$'s was picked arbitrarily. An analogous line of reasoning would show—*mutatis mutandis*—that it is irrational for $David_2$ to continue believing that any disjunctive proposition is true. Trivially, then, it is irrational for $David_2$ to continue believing *both* that there are disjunctive truths *and* that there are no disjunctive facts. Of course, $David_2$ was also picked arbitrarily. More generally, then, it is irrational for *anyone* to believe that there are true disjunctive propositions but no disjunctive facts.

The above argument against EC2 focuses on its implications for those who believe in one particular version of the sparse theory of facts. However, we can easily construct analogous

arguments against EC2 using other versions of the sparse theory. For example, here is an argument against EC2 that draws on the conjunctive version of the sparse theory (see §II):

Argument from Conjunctive Beliefs

(C1) It is not always irrational for everyone to believe that there are conjunctive truths but no conjunctive facts.
(C2) If EC2 is true, then it is always irrational for everyone to believe that there are conjunctive truths but no conjunctive facts.
(C3) Therefore, EC2 is false.

Note that C1 could be supported by a line of reasoning analogous to the defense of D1 above. The same goes, *mutatis mutandis*, for C2 and D2, respectively.

These various domain-specific arguments, when taken together, support a more general argument against the EC2:

The Sparsity Argument

(S1) It is not always irrational for everyone to believe the sparse theory of facts.
(S2) If EC2 is true, then it is always irrational for everyone to believe the sparse theory of facts.
(S3) Therefore, EC2 is false.

This argument targets a particular version of explanationism about genealogical defeat, namely, EC2. But it also reveals a puzzle that any adequate explanationist answer to GDQ must solve. The puzzle is to account for the possibility of rational belief in the sparse theory of facts. In §VI, I will introduce a new explanationist account and argue that it solves the puzzle.

V. Support Explanationism?

Korman and Locke have recently renounced EC.[22] In its place, they formulate a new explanationist principle couched in terms of whether the facts that explain one's belief "support"

[22] See Korman and Locke 2023. One might wonder whether their renunciation of EC undercuts the importance of this paper's main line of argument. I do not think so. First, Korman and Locke reject EC on the grounds that its more

that belief. Here is the first version of their new principle, which they subsequently refine in light of objections:

> **Support Explanationism 1** (SE1): If S is not entitled to believe that the facts that explain her belief that p support her belief that p, then S's belief that p is defeated.[23]

According to SE1, genealogical defeat occurs when one loses one's entitlement to believe that the facts that explain her belief that p also support that belief. What does it mean for some facts to support a belief?

First, support is a relation between facts and beliefs.[24] For example, [Copper is a dog] supports my belief that Copper is a dog. Second, there are different ways for some facts to support a belief. For example [the sun has risen in the past] *inductively* supports my belief that the sun will rise tomorrow, but it does not *deductively* support that belief.[25] Finally, whether certain facts do or do not support a given belief is "always relative to a set of background propositions."[26] For example, [the sun has risen every day in the past] supports my belief that the sun will rise tomorrow relative to the proposition *the future generally resembles the past* but not relative to the proposition *the sun will explode at 11:59pm tonight*.

To see why, SE1 requires further refinement, consider the Double-X case again. Plausibly, [JB took XX] does not support my belief that I recently ate a durian. However, that is

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plausible disambiguation, EC2, yields the incorrect verdict that we have genealogical defeaters for our beliefs about the future. However, I argued above that the challenge from future beliefs dissolves when EC2 is paired with the constituency account of domains (§I). So, although I agree with Korman and Locke 2023 that EC must be abandoned, we have very different reasons for abandoning it. Second, my arguments against EC1 and EC2 reveal a new explanationist answer that Korman and Locke do not consider (§VI). Finally, as I will argue below, their new proposal is explanatorily inadequate in a way that TE is not.

[23] Korman and Locke 2023, p. 10.

[24] Ibid., p. 10 fn. 21.

[25] Ibid. p. 10.

[26] Ibid. p. 11.

just one of the many facts in the explanation of my durian belief. That explanation also includes, for example, [in the past, JB's vivid apparent memories have been generally true] and [JB has a vivid apparent memory of eating a durian]. And, unlike [JB took XX], those facts *do* support my durian belief. As a result, the unrefined SE1 incorrectly implies that I gain no defeater.

The fix, according to Korman and Locke, is to specify the right set of background propositions relative to which support relations obtain. For example, [in the past, JB's vivid apparent memories have been generally true] and [JB has a vivid apparent memory of eating a durian] do support my durian belief relative to the null set. But those facts do *not* support my belief relative to all the propositions I ought to believe in the circumstances. After all, among those propositions is presumably the following: *the drug XX produces unreliable memories*. Relative to *that* proposition, those facts do not support my durian belief.

In light of the above, Korman and Locke refine SE1 as follows:

> **Support Explanationism 2** (SE2): If S is not entitled to believe that the facts that explain her belief that p support—relative to everything else she ought to believe—her belief that p, then S's belief that p is defeated.[27]

According to SE2, then, genealogical defeat occurs when one is not entitled to believe that one's belief is supported—i.e. supported relative to everything else one ought to take to be the case—by the facts that explain it.

There is a lot to like about SE2. In particular, it does not immediately imply that it is irrational to believe in abundant truth amidst ontological sparsity. For example, although David denies that his belief that there are no orcs is explanatorily connected to any negative existential facts, he presumably thinks it *is* explanatorily connected to certain positive facts. Suppose David

[27] Ibid., p. 12. Strictly speaking, their final proposed account of genealogical defeat is an even more complex refinement of SE2. However, my criticisms of SE2 below apply, *mutatis mutandis*, to the further refined version. So I will just focus on the simpler SE2.

is entitled to believe that those positive facts support—relative to everything else he ought to believe—his negative existential belief. Then, according to SE2, his negative existential beliefs avoid defeat.

However, note that SE2 implies that David avoids defeat *only given* a crucial assumption, namely, that the positive facts that explain his negative existential belief supports—relative to everything else he ought to believe—that belief. But what else ought David believe? Consider, for example, this proposition: *David's awareness of the genealogy of his negative existential belief gives him a defeater.* If David ought to believe *that* proposition, then the explanation of his negative existential belief clearly does not support—relative to everything else he ought to believe—that belief.

So SE2 yields the right verdict about David only when it is conjoined with the following assumption: it is not the case that David ought to believe that his awareness of the genealogy of his negative existential beliefs gives him a defeater for those beliefs. The problem is that whether David ought to believe that his genealogy has given him a defeater is part of what SE2 is supposed to settle for us.

Look at it this way. An answer to GDQ should yield intuitively correct verdicts about when genealogical defeat does or does not occur. Such an answer should also provide an account of *why* or *in virtue of what* genealogical defeat occurs when it does. SE2 can yield intuitively correct verdicts, but in combination with a list of which other beliefs the agent ought to hold. That list must include what the agent ought to believe about whether she has gained a defeater. But we don't know whether the agent ought to believe she has gained a defeater until we know

whether the genealogy of her belief is defeater-generating. So SE2 does not provide an independent explanation of *why* a given genealogy is or is not defeater-generating.[28]

VI. Truthmaker Explanationism

Here is my proposed alternative answer to GDQ:

> **Truthmaker Explanationism** (TE): If some facts, the xs, are *p*'s truthmaker and S believes that her belief that p is not explanatorily connected to the xs, then S has a defeater for her belief that p.

TE is an explanationist account of genealogical defeat. For it says that genealogical defeat occurs when and because genealogical information reveals an explanatory disconnect between one's belief and certain facts. However, there are three features that distinguish TE from Korman and Locke's explanationist principles, EC and SE.

First, TE only includes those propositions that have truthmakers within its scope. Truthmaker maximalism is the view that every truth has a truthmaker.[29] If truthmaker maximalism is true, then TE includes every proposition within its scope. However, many truthmaker theorists reject truthmaker maximalism. For, so they claim, certain propositions do not "demand" or "require" worldly truthmakers.[30] If that's right, then those propositions fall outside TE's scope. As a result, our beliefs in such propositions are immune to genealogical defeat.

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[28] On p. 12, Korman and Locke acknowledge—and express "some sympathy" with—the similar worry that their new support-based account is "trivial." My objection is not that SE2 is completely trivial. For, as they go on to point out, it does impose at least one non-trivial sufficient condition for genealogical defeat, namely, that one is not entitled to believe that one's belief that p is explanatorily connected to the facts that support it. Instead, my worry is that, by relativizing the support relation to facts about what the agent ought to believe, SE2 is unable to *fully* explain why genealogical defeat occurs when it does.

[29] See MacBride 2019, Section 2.1.

[30] For example, many claim about necessary truths do not require truthmakers. In future work, I hope to explore the implications of this point for genealogical debunking arguments about mathematical and moral beliefs.

Second, TE does not include a requirement to the effect that the proposition *p* must be "about" the facts to which one's belief that p is explanatorily connected. Rather, TE requires only that *p*'s truthmaker be among the facts to which one's belief that p is explanatorily connected. In general, a proposition *p* needn't be "about" its truthmaker.[31]

Third, TE omits any mention of "domains" of facts. The only facts that matter for genealogical defeat, according to TE, are the facts that are *p*'s truthmakers. As a result, TE does not inherit EC's ambiguity. Nor must TE be supplemented with an account of which collections of facts are or are not genuine domains.

TE yields the intuitively correct verdicts in Durian and Double-X. The truthmaker for the proposition *JB ate a durian for breakfast* is [JB ate a durian for breakfast]. In the Durian case, you learn that [JB ate a durian for breakfast] causally explains why you believe *that JB ate a durian for breakfast*. Thus, your new genealogical information has revealed that your belief in that proposition is explanatorily connected to its truthmaker. So TE correctly yields no verdict of defeat.

In the Double-X case, on the other hand, you have learned that [JB took XX] causally explains why you believe *that JB ate a durian for breakfast*. Of course, [JB took XX] is not that proposition's truthmaker. Nor do you have reason to think its truthmaker features elsewhere in your belief's genealogy. Thus, you should deny that your belief is explanatorily connected to the proposition's truthmaker. So TE correctly yields a verdict of defeat.

Moreover, TE can accommodate rational belief in sparse ontology. Return to $David_2$, who believes that there are disjunctive truths but no disjunctive worldly facts. As a result, $David_2$ denies that his disjunctive beliefs are explanatorily connected to the domain of disjunctive facts

[31] Although see Merricks 2007 pp. 28—35 for an argument to the contrary.

(§IV). However, let us now suppose—following many truthmaker theorists—that the non-disjunctive fact [p] can, all on its own, serve as the truthmaker for disjunctive propositions that have *p* as a disjunct.[32] Then, depending on what else $David_2$ believes, he needn't gain a defeater for his disjunctive beliefs.

For example, suppose $David_2$ believes that [Biden is president] is explanatorily connected to his belief that either Biden is president or unicorns are pink. Perhaps he thinks [Biden is president] is among the causes of his belief that Biden is president from which he inferred, via disjunction introduction, his belief in *either Biden is president or unicorns are pink*. Now, so we are assuming, [Biden is president] is the truthmaker for that disjunctive proposition. So $David_2$ believes that his disjunctive belief is explanatorily connected to the fact that is its truthmaker. Therefore, TE correctly implies that he gains no defeater.

Of course, TE does not make $David_2$'s disjunctive belief immune to genealogical defeat either. For example, suppose that $David_2$ later discovers that he recently took the drug YY, which causes false beliefs about who is currently president. He has thereby discovered that [$David_2$ took YY] is causally responsible for his belief that Biden is president and, as a result, also for his belief that either Biden is president or there are unicorns. Of course, [$David_2$ took YY] is not the truthmaker for *either Biden is president or there are unicorns*. So $David_2$ has discovered that his belief in that proposition's truth is *not* explanatorily connected to its truthmaker. Therefore, TE correctly implies that he gains a genealogical defeater.

Recall the first David, who denies that negative existential facts are explanatorily connected to his negative existential beliefs. There are two ways David can nevertheless escape

[32] Many truthmaker theorists endorse the thesis that [p] is enough, all by itself, to serve as the truthmaker for *p or q*. For example, see Russell 1940, Lewis 1992 p. 216, Armstrong 2004 p. 24 & 54, Rodriguez-Pereyra 2006, p. 968, Asay 2020 pp. 67—8, among others.

defeat. First, perhaps—as some truthmaker theorists have argued—negative truths do not require worldly truthmakers.[33] Then negative existential beliefs fall outside TE's scope. In other words, they are not the kinds of beliefs that can receive genealogical defeaters.[34] As a result, David's denial of an explanatory connection does not give him a defeater for those beliefs.

Second, perhaps—as other truthmaker theorists have argued—true negative existential propositions have certain positive worldly facts as their truthmakers. For example, Armstrong held that the "totality" fact serves as the truthmaker for negative truths.[35] More recently, Ross Cameron and Jonathan Schaffer have argued that the mereological whole that is the entire Cosmos serves as the truthmaker for such truths.[36] Then, so long as David believes that those worldly facts are explanatorily connected to his negative existential beliefs, TE does not imply that he gains a defeater.

More generally, TE does not automatically render it rationally impermissible to believe there are disjunctive, negative, conjunctive, etc. truths while denying that there are disjunctive, negative, conjunctive, etc. worldly facts. So long as defenders of these views can located plausible truthmakers among the sparse facts that explain those beliefs, then they can rationally maintain their commitment to abundant truth amidst sparse ontology.[37]

One final note before moving on. In the last section, we saw that Korman and Locke's new SE2 only yields verdicts about genealogical defeat when it is conjoined with substantive epistemological assumptions about what the agent ought to believe. By contrast, TE can be applied without the aid of such epistemological assumptions. Instead, TE requires us to make

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[33] Ex. Simons 2005 p. 255 who claims that negative existential truths are "true by default." Also see Mumford 2007.
[34] Of course, such beliefs would not thereby be immune to *all* forms of defeat. They beliefs might still be subject to rebutting defeaters, for example.
[35] Armstrong 2004, pp. 56—9.
[36] Cameron 2008 and Schaffer 2010 §4. For an influential argument that no positive fact can serve as the truthmaker for negative truths, see Molnar 2000.

metaphysical assumptions about truthmaking. As we are about to see, such assumptions are often contested. However, those disputes can be settled independently of debates over whether genealogical defeat does or does not occur in a given case. As a result, TE is a more explanatory explanationist answer to GDQ than is SE2.

VII. TE and Genealogical Debunking Arguments

Some truthmaking claims are relatively uncontroversial. For example, it is relatively uncontroversial that non-disjunctive worldly facts, such as [Biden is president], are sufficient all on their own to serve as the truthmakers for disjunctive propositions like *either Biden is president or unicorns are pink*. However, in other cases, it is a matter of significant controversy which facts can serve as a proposition's truthmaker.[38]

Consider Trenton Merricks' genealogical debunking argument targeting our perceptual beliefs about ordinary material objects.[39] Suppose you believe that there are tables because you've had various perceptual experiences as of tables. However, suppose you then realize that facts about the causal activities of countless particles arranged table-wise fully causally explain why you've had those experiences and, so, why you believe in tables. Once you realize this, you ought to conclude that facts about tables—even if tables do exist—play any role in the causal process that led you to believe that there are tables. According to Trenton Merricks, this latter conclusion gives you a defeater for your previously justified belief in tables. [40]

[38] Indeed, Cameron 2020 argues that such debates over truthmaker requirements are paradigm cases of substantive metaphysical disputes.
[39] See Merricks 2014.
[40] For discussion of the relationship between Merricks 2001's original Overdetermination Argument and his more recent epistemic formulation of the argument, see Merricks 2003, Korman 2015, and Barker 2020.

Whether Merricks is right about this turns in part on which answer to GDQ we adopt. For example, if either version of EC is the correct answer to GDQ, then realizing that your table beliefs aren't causally explained by the facts about tables *does* give you a defeater for those belief. For the proposition *there are tables* is about the domain of table facts. And so, if no tables facts are explanatorily connected to your belief in that proposition's truth, then both EC1 and EC2 yield the conclusion that your table beliefs are defeated.

However, if TE is the correct answer to GDQ, then matters are more complicated. For, given TE, perceptual debunkers like Merricks must do more than merely convince you that your table beliefs are not explanatorily connected to the facts about tables. In addition, they must also show that *there are tables* can only be made true by facts about tables.

According to some truthmaker theorists, facts about particles arranged table-wise are sufficient truthmakers for *there are tables*.[41] Suppose they are right. Then, given TE, you gain no defeater upon conceding that facts about tables are not explanatorily connected to your table beliefs. For, presumably, you still believe that facts about particles arranged table-wise—the truthmakers for propositions about tables—are explanatorily connected to your table beliefs.

Another upshot of this paper, then, is that the success of perceptual debunking arguments turns in part on metaphysical questions about truthmakers. More generally, if TE is the right answer to GDQ, then disputes between genealogical debunkers and their realist opponents may be as much *metaphysical* as they are epistemological.

[41] See especially Cameron 2008b and 2010.

Bibliography

Armstrong, D. M. (1978). Universals and Scientific Realism. Volume II: A Theory of Universals. Cambridge: Cambridge University Press.

--- (1996). *A World of States of Affairs*. Cambridge University Press.

--- (2004). *Truth and Truth-makers*. Cambridge: Cambridge University Press.

Asay, Jamin (2020). *A Theory of Truthmaking: Metaphysics, Ontology, and Reality*. New York, NY: Cambridge University Press.

Baras, Dan & Clarke-Doane, Justin (2021). Modal Security. *Philosophy and Phenomenological Research* 102 (1):162-183.

Barker, J. (2020). "Debunking Arguments and Metaphysical Laws." *Philosophical Studies* 177 (7):1829-1855.

Bealer, G. (1993). "Universals", *Journal of Philosophy*, 90(1): 5–32.

Bedke, Matthew S. (2014). No Coincidence? *Oxford Studies in Metaethics* 9:102-125.

--- (2009). Intuitive non-naturalism meets cosmic coincidence. *Pacific Philosophical Quarterly* 90 (2):188-209.

Bogardus, Tomas & Perrin, Will (2022). Knowledge is Believing Something Because It's True. *Episteme* 19 (2):178-196.

Clarke-Doane, Justin (2017). What is the Benacerraf Problem? In Fabrice Pataut (ed.), *New Perspectives on the Philosophy of Paul Benacerraf: Truth, Objects, Infinity*. Springer Verlag.

--- (2020) *Morality and Mathematics*. Oxford University Press.

Cameron, Ross P. (2008a). How to be a Truthmaker Maximalist. *Nous* 42/3: 410-421.

--- (2008b). Truthmakers and ontological commitment: or how to deal with complex objects and mathematical ontology without getting into trouble. *Philosophical Studies* 140 (1):1 - 18.

--- (2010). How to have a radically minimal ontology. *Philosophical Studies* 151 (2):249 – 264.

--- (2020). Truthmaking and Metametaphysics. in Bliss, Ricki & Miller, James (eds.) *The Routledge Handbook of Metametaphysics*. Routledge.

Christensen, David (2010). Higher Order Evidence. *Philosophy and Phenomenological Research* 81 (1):185-215.

Faraci, David (2019). Groundwork for an Explanationist Account of Epistemic Coincidence. *Philosophers' Imprint* 19.

Field, Hartry (1988). Realism, Mathematics and Modality. *Philosophical Topics* 16 (1):57-107.

Freud, Sigmund (1927). *The Future of an Illusion*. Broadview Press.

Horgan, Terry & Potrč, Matjaž (2008). *Austere Realism: Contextual Semantics Meets Minimal Ontology*. MIT Press.

Joyce, Richard (2005). *The Evolution of Morality*. Bradford.

Kahane, Guy (2011). Evolutionary Debunking Arguments. *Noûs* 45 (1):103-125.

Killoren, David (2021). An Occasionalist Response to Korman and Locke. *Journal of Ethics and Social Philosophy* 19 (3).

Korman, Daniel Z. (2014). Debunking Perceptual Beliefs about Ordinary Objects. *Philosophers' Imprint* 14.

--- (2015). *Objects: Nothing Out of the Ordinary*. Oxford University Press UK.

--- (2019). Debunking Arguments in Metaethics and Metaphysics. In Alvin Goldman & Brian McLaughlin (eds.), *Metaphysics and Cognitive Science*. Oxford University Press. pp. 337-363.

--- (2019). Debunking arguments. *Philosophy Compass* 14 (12).

Korman, Daniel Z. & Locke, Dustin (2023). An Explanationist Account of Genealogical Defeat. *Philosophy and Phenomenological Research* 106 (1):176-195.

--- (2020a). Against Minimalist Responses to Moral Debunking Arguments. *Oxford Studies in Metaethics* 15:309-332.

--- (2020b). Evolutionary Debunking and Moral Relativism. In Martin Kusch (ed.), *The Routledge Handbook of Philosophy of Relativism*. New York: Routledge. pp. 190-199.

Lasonen-Aarnio, Maria (2014). Higher-Order Evidence and the Limits of Defeat. *Philosophy and Phenomenological Research* 88 (2):314-345.

Lewis, David (1983). New work for a theory of universals. *Australasian Journal of Philosophy* 61 (4):343-377.

--- (1992) "Armstrong on Combinatorial Possibility", *The Australasian Journal of Philosophy*, 70, 211-224.

Livengood, Jonathan & Korman, Daniel Z. (2020). Debunking material induction. *Studies in History and Philosophy of Science Part A* 84:20-27.

Locke, Dustin (2014). Darwinian Normative Skepticism. In Michael Bergmann & Patrick Kain (eds.), *Challenges to Moral and Religious Belief: Disagreement and Evolution*. Oxford University Press.

Lowe, E.J. (2016). "There are probably no relations", in Marmodoro & Yates (eds.) 100–112.

MacBride, Fraser (2019). Truthmakers. *Stanford Encyclopedia of Philosophy*.

Mellor, D. H. (1992). There Are No Conjunctive Universals. Analysis, 52(2), 97–103.

Merricks, Trenton (2001). *Objects and Persons*. New York: Oxford University Press.

--- (2003). Replies. *Philosophy and Phenomenological Research* 67 (3):727-744.

--- (2007). *Truth and Ontology*. Oxford University Press.

--- (2014). Do Ordinary Objects Exist? No. In Elizabeth Barnes (ed.), *Current Controversies in Metaphysics*. Routledge.

Molnar, G. (2000). Truthmakers for Negative Truths. *Australasian Journal of Philosophy*, 78, pp. 72–86.

Mumford, Stephen (2007). Negative Truth and Falsehood. *Proceedings of the Aristotelian Society* 107 (1pt1):45 - 71.

Plantinga, Alvin (2000). *Warranted Christian Belief*. Oxford University Press USA.

Pollock, John L. (1987). Defeasible Reasoning. *Cognitive Science* 11 (4):481-518.

Rodriguez-Pereyra, Gonzalo (2006). Truthmaking, entailment, and the conjunction thesis. *Mind* 115 (460):957-982.

--- (2009). The Disjunction and Conjunction Theses. *Mind* 118 (470):427-443.

Russell, Bertrand (1940). *The Philosophy of Logical Atomism*. ed. David Pears. La Salle, IL: Open Court.

Schaffer, Jonathan (2004). Two conceptions of sparse properties. *Pacific Philosophical Quarterly* 85 (1):92–102.

--- (2010). The least discerning and most promiscuous truthmaker. *Philosophical Quarterly* 60 (239):307 - 324.

Skyrms, Brian (1981) "Tractarian Nominalism", *Philosophical Studies*, 40, 199-206.

Sider, Theodore (2011). *Writing the Book of the World*. Oxford, England: Oxford University Press.

Simons, Peter (2005). Negatives, numbers, and necessity some worries about Armstrong's version of truthmaking. *Australasian Journal of Philosophy* 83 (2):253 – 261.

Street, Sharon (2006). A Darwinian dilemma for realist theories of value. *Philosophical Studies* 127 (1):109-166.

Vavova, Katia (2015). Evolutionary Debunking of Moral Realism. *Philosophy Compass* 10 (2):104-116.