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Striking coincidences: How realists should reason about them

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Abstract

Many metaethicists assume that our normative judgments are both by and large true, and the product of causal forces. In other words, many metaethicists assume that the set of normative judgments that causal forces have led us to make largely coincides with the set of true normative judgments. How should we explain this coincidence? This is what Sharon Street (2006) calls the practical/theoretical puzzle. Some metaethicists can easily solve this puzzle, but not all of them can, Street argues; she takes the puzzle to constitute a specific challenge for normative realism. In this article I elucidate Street's puzzle and outline possible solutions to it, framed in terms of a general strategy for reasoning about coincidences. I argue that the success of Street's challenge crucially depends on how we set the 'reference class' of normative judgments that we *could* have endorsed, assuming realism. I conclude that while the practical/theoretical puzzle falls short of posing a general challenge for normative realism, it can be successful as a selective challenge for specific realist views.

KEYWORDS

coincidence, epistemology, metaethics, realism, Sharon Street

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1 | INTRODUCTION

On the evening of 11 February 2013, shortly after Joseph Ratzinger – alias Pope Benedict XVI – had taken many by surprise by announcing his decision to abdicate from his papal office, lightning struck St. Peter's Basilica in Vatican City. The image was captured on camera and rapidly spread via news agencies and social media. Several Twitter-users responded incredulously, claiming that the picture was either a hoax or a sign of divine intervention. This could not be *just a coincidence*; something else had to be going on.

To express incredulity is a common response when faced with a striking coincidence. Striking coincidences trigger epistemic anxiety: they appear to be too unlikely, too ingeniously set up or too miraculous to be accepted as *mere coincidence*. These coincidences call for further context and explanation, which may serve either to vindicate the intuition that an event is no mere coincidence or to debunk this intuition. In the former case, some alternative hypothesis is devised to account for the coincidental event. In the latter case, support is given to the null hypothesis that the coincidence is due to chance. In either case, the aim of providing further context and explanation is to alleviate the epistemic anxiety triggered by the initial observation. Coincidences may be explained or explained away, but they should not be ignored – otherwise we are left in an epistemically unsettling position.

What holds for coincidences in Vatican City also holds for coincidences in metaethics: they require some kind of context or explanation in order to generate epistemic ease. This explanatory demand is at the root of a metaethical challenge that Sharon Street (2016) has recently raised, which she calls the practical/theoretical puzzle. While this puzzle – outlined in Section 3 – is faced by many metaethicists, it is specifically troubling for normative realists, Street argues: she holds that realists are incapable of generating the desired epistemic ease.

The aim of the present article is to elucidate Street's puzzle in terms of a general strategy for reasoning about coincidences. I point out that the ambition she formulates at the beginning of her article – to provide 'a completely general argument against normative realism, whether of a naturalist or non-naturalist variety' (Street 2016, p. 300) – cannot be delivered by her puzzle alone. However, I argue that the puzzle can be successful as a *selective* challenge for a specific version of normative non-naturalism, which relies on a problematic 'third-factor account'.

The article proceeds as follows. In Section 2 I give a characterization of coincidences, distinguish between some of their defining features and outline a general framework for reasoning about them. In Section 3 I introduce Street's practical/theoretical puzzle, and argue that this general framework for reasoning about coincidences is also applicable to her puzzle. In Sections 4 and 5 I evaluate whether realists can solve the puzzle by pursuing the null hypothesis that the coincidence between the contents of our normative judgments and the mind-independent normative truths is due to chance. I argue that they can do so by attempting to narrow down the reference class of possible normative judgements, assuming realism. This move requires realists to provide some 'alternative explanation' of the coincidence. I discuss different alternative explanations in Section 6, and highlight that at least one of them – Enoch's (2010) third-factor account – does not solve the puzzle adequately. But I conclude in Section 7 that in order to provide a *general* challenge to normative realism, Street's puzzle requires the support of further arguments, such as her Darwinian Dilemma (2006).

2 | HOW SHOULD WE REASON ABOUT COINCIDENCES?

Before turning to Street's metaethical puzzle, I begin by disambiguating some characteristic features of coincidences, and outline the general steps involved in reasoning about them.

2.1 | Defining coincidences: Causal versus psychological characteristics

On Diaconis and Mosteller's (1989, p. 853) influential definition, a coincidence is 'a surprising concurrence of events, perceived as meaningfully related, with no apparent causal connection.' Consider a famous example from

Aristotle's *Physics*: a man goes to the market in order to see a spectacle and runs into a debtor of his, who has just sold his cattle, which allows him to instantly repay his debt. There is no causal connection explaining why the man and his debtor go to the market simultaneously and encounter each other under just the right circumstances for the debt to be repaid. Given the absence of this connection, the meaningful concurrence is likely to strike us (and particularly them) as surprising: it is a prototypical coincidence.¹

The definition by Diaconis and Mosteller captures two key characteristics of coincidences: the absence of a *causal connection* between coinciding phenomena and the *psychological response* coincidences engender. Prototypical coincidences often have both of these characteristics, although the psychological element is dispensable. Borrowing an example from Street (2016), consider the concurrent presence of McDonald's franchises and M-shaped golden arches on poles. This coincidence is entirely mundane and does not generate any surprise, but there is a colloquial sense in which it is a coincidence still: it constitutes the concurrent presence of two items that appear to be meaningfully related.

2.2 | Coincidence observation versus coincidence explanation

On a narrower definition, then, coincidences can be characterized in purely causal or explanatory terms. For instance, Owens (1992, p. 13) defines a coincidence as 'an event which can be divided into components separately produced by independent causal factors.' Along similar lines, Mogensen (Manuscript, p. 9) defines a coincidence as 'a conjunction of facts whose conjuncts are explanatorily independent of one another: neither fact figures in the explanation of the other, and there is no relevant explanatory factor shared by the members of the conjunction.' Both of these definitions characterize coincidences in terms of causal or explanatory independence. Mogensen's proposal additionally captures the intuition that once we can point out some explanatory connection between the concurrent events, we typically no longer regard their concurrence as coincidental.

As this last intuition suggests, whether we regard a concurrence of events as coincidental is subject to change: what we initially regard as a coincidence, we may no longer regard as such once we have explained it. To make this intuition more precise, it is useful to follow Sober (2012) in distinguishing between 'coincidence observations' and 'coincidence explanations'. Street's example of the concurrent presence of McDonald's franchises and M-shaped golden arches on poles is a coincidence observation: the observation of two items that appear to be meaningfully related. But this is not to say that their concurrent presence is best explained as *mere coincidence*. In fact, it clearly is not: what explains their concurrent presence is the fact that the presence of McDonald's franchises and M-shaped golden arches on poles have a common cause. Yet for some concurrences no such causal explanation is available; our best explanation is that two items just happened to coincide. The coincidence is just that: mere coincidence. This is what Sober calls a coincidence explanation, which, on his account, is characterized by the absence of a causal explanation for the concurrence of events (Sober, 2012, p. 362). Each event was produced via an independent causal process; their concurrence is due to chance.

2.3 | Steps in reasoning about coincidences

Building on Sober's distinction, we can now identify two steps involved in reasoning about coincidences. First, we can observe that two (or more) events or items appear to be related. Next, we can assess which of two hypotheses is the most plausible: the coincidence is due to chance (a coincidence explanation) or there is some alternative explanation for it.

¹Psychological research suggests that coincidences that occur in one's own life are typically regarded as more striking than coincidences that occur in the lives of others (Falk, 1989).

1. Coincidence observation: Two (or more) concurrent events appear to be related.

2a. Coincidence explanation:

- There is no causal relation between the observed events;
- there is no defeater for the null hypothesis that the coincidence is due to chance;
- further context may be provided to support that this is 'mere coincidence.'

2b. Alternative explanation:

- There is some causal relation between the observed events;
- this serves as a defeater for the null hypothesis that the coincidence is due to chance;
- the causal explanation undermines the suggestion that this is 'mere coincidence.'

2.4 | Why do coincidences often strike us as surprising?

These steps comprise our general strategy for reasoning about coincidences, which I will apply in a metaethical context in the following sections. But before we turn to metaethics, let's revisit the psychological aspect that we disentangled from Diaconis and Mosteller's definition. Coincidences often strike us as surprising. Why so? Typically, coincidence observations lend themselves to explanations that conflict with our prevailing models about how the world works. They provide *prima facie* support for some alternative to a currently favoured theory, but this alternative has a lower prior probability than the theory currently favoured (cf. Griffiths and Tenenbaum, 2007). As a result, the observations steer us into an epistemic twilight zone. Consider that coincidences can be a source of superstition and conspiracies, but also a source of scientific discoveries. Is the apparent meaningfulness we observe noise that should be discarded, or a signal that should be picked up? If it turns out to be noise, then the null hypothesis that a coincidence observation is due to chance (i.e. the coincidence explanation) is correct; if it is a signal that should be picked up, then the hypothesis that the concurrence is no mere coincidence (i.e. the alternative explanation) is correct.

Following Griffiths and Tenenbaum, this understanding of coincidences can be stated in Bayesian terms. The likelihood of a hypothesis h with respect to evidence e is defined as the probability that h confers on e , expressed as $P(e|h)$. By contrast, the prior probability of a hypothesis h is defined as the probability that h is true on the basis of our background knowledge k before evidence e is taken into account, expressed as $P(h|k)$. Consider the hypothesis that papal abdications and thunderstorms in Vatican City are causally related. The prior probability $P(h|k)$ of this hypothesis is rather low, given our background knowledge about causal relations, meteorology, etc. However, the hypothesis has a high likelihood $P(e|h)$: if papal abdications and thunderstorms in Vatican City are indeed causally related, then we might expect lightning to have struck St. Peter's Basilica on 11 February 2013. Hence, although the hypothesis has a low prior probability, it does have a high likelihood – and this contrast is precisely what makes the observed coincidence particularly striking.

3 | THE PRACTICAL/THEORETICAL PUZZLE

In this section I outline Street's practical/theoretical puzzle and show how we may approach it using the same strategy for reasoning about coincidences. Borrowing Kantian terminology, Street observes that from a 'practical standpoint' – i.e. when we reflect on what courses of action are good, valuable and worthwhile – we think of ourselves as beings capable of making normative judgments that are by and large true. From a 'theoretical standpoint' – i.e. when we understand ourselves as beings who are part of the world of cause and effect – we understand these judgments as products of causal forces and subject to scientific explanation, broadly understood (e.g. explicable in terms of our cultural upbringing, psychological inclinations, social pressures, natural selection, etc.). Combining these two standpoints, we arrive at the following: we typically assume that the set of practical normative judgments

that causal forces have led us to make roughly coincides with the set of true practical normative judgments.² How should we account for this coincidence? This is what Street calls the practical/theoretical puzzle.

3.1 | Clarifying the Puzzle and its Target

Let's start by clarifying and elaborating on the puzzle in four respects. First, Street states that this is a puzzle that *all* metaethicists, including herself, face. This is, in fact, a hasty generalization: it is a puzzle only faced by metaethicists who think that our normative judgments are products of causal forces and that these judgments are largely true. While this includes Street's Humean constructivism, it excludes error theorists, who maintain that our normative judgments are (typically) false. Street does not consider this option; I will follow her and set it aside for the remainder of this article.³

Second, Street does not mean to suggest that the puzzle cannot be solved. In fact, she maintains that this *can* be done, albeit not by metaethicists of all stripes. Specifically, she argues that non-naturalist realists, according to whom the truth-makers of normative or evaluative judgments are mind-independent and causally inert properties or facts, are ill-equipped to solve the puzzle.⁴ As Street herself notes, this makes the practical/theoretical puzzle similar to the Benacerraf-Field challenge for mathematical Platonism.

Third, it might be thought that Street's puzzle is not only problematic for realists regarding practical normativity but also for realists regarding sense perception judgments. After all, we also think that our judgments about manifest surroundings are by and large true and products of causal forces. In other words, we assume that the set of empirical judgments that causal forces have led us to make roughly coincides with the set of true empirical judgments. Street, however, argues that this coincidence (i.e. the coincidence observation) can be explained (i.e. can be given an alternative explanation): the objects in our manifest surroundings are things with causal powers, and the evolutionary fitness of our ancestors has been promoted by the formation of veridical perceptions of such objects. Normative realists who deny that normative properties have causal powers cannot appeal to an analogous explanation. Therefore, Street thinks she can advance her puzzle as a challenge specific to realism about the *normative* domain.

Fourth, as I will illustrate in the upcoming sections, Street's puzzle – and strategies for solving it – are better appreciated once reframed in terms of the general strategy for reasoning about coincidences outlined in Section 2. Street's challenge starts with a presumed coincidence observation: presumably, the set of true normative judgments and the set of normative judgments that causal forces have led us to make roughly coincide. We should keep in mind that this coincidence is not directly *observed*, but *conjectured*. For present purposes, however, this disanalogy is inconsequential. Since (*ex hypothesi*) all metaethicists want to preserve the idea that there is a coincidence between these two sets, they have to pursue one of the two aforementioned explanatory strategies: to provide a coincidence explanation or an alternative explanation for the conjectured coincidence.

3.2 | Solving the puzzle? The realist's coincidence explanation and Street's criticism

Street (2016) discusses Ronald Dworkin (1996) as the protagonist of realists who rely on a coincidence explanation. According to Street.

²Here I follow Street (2016) in restricting the scope of the puzzle to *practical* normativity and excluding *epistemic* normativity (although Street (fn. 2, pp. 293, 294) herself suggests that the challenge might carry over to the epistemic domain as well). In what follows, then, 'normativity' and 'normative reasons' should be read as shorthand for 'practical normativity' and 'practical normative reasons'.

³Street (2016, p. 295) seems to think that it is a *desideratum* to preserve the idea that our normative judgments are typically true: she calls both our practical and theoretical perspectives 'inescapable' and expresses the 'hope' that they can be reconciled.

⁴Street uses the terms 'normative' and 'evaluative' judgments interchangeably; in this article I will do so as well.

Dworkin's answer to the practical/theoretical puzzle is that the coincidence in question is just that – a coincidence; one ought to understand it as a 'piece of luck' (Dworkin 1996, p. 125) that the true normative judgments, on the one hand, and the normative judgments that causes led one to make, on the other, line up as much as they do. (Street, 2016, pp. 309, 310)

Dworkin's position is epistemically unsatisfactory, Street argues: it is akin to a person who claims to have won a low-odds lottery merely on the basis of having entered it. After all, there are countless sets of normative judgments that we could have endorsed. Assuming that there is a unique set of mind-independent normative truths, there are countless ways in which our normative judgments could be 'off-track'. Given this predicament, the realist should do more to explain how our normative judgments have (roughly) been able to track the independent normative truths. In the absence of such an explanation, realists should conclude that they probably did not win the normative lottery: they are probably mistaken about the contents of the mind-independent normative truths.

Is Street's dismissal of the realist's coincidence explanation successful? How, in fact, can we determine the odds of this 'metaethical lottery'? In the next two sections I will explore the options realists have to challenge Street's contention that the odds of this lottery are very unfavourable for realism. I will argue that realists have the resources to do so, but only if they provide the outlines of a positive epistemology. In other words, a 'pure coincidence explanation' will not suffice to deflect Street's challenge; additionally, realists should provide some alternative explanation.

4 | PURSUING A COINCIDENCE EXPLANATION

The general strategy when offering a coincidence explanation is to point to contextual factors which make the prior coincidence observation more likely to have occurred. Consider once more the observation that lightning struck St. Peter's Basilica on the same day that the pope announced his abdication. Suppose that one is presented with two rival hypotheses: either this concurrence was mere coincidence (the coincidence explanation) or it was the result of divine intervention (the alternative explanation). The following considerations are relevant to weighing these hypotheses and to raising the probability of the former with respect to the latter:

- A1. *High likelihood of the observation given the null hypothesis.* Satellite research suggests that, around the globe, lightning flashes around 40 times per second; even though not all flashes hit the Earth, this engenders an enormous potential source of apparently meaningful impacts. The observed coincidence may be regarded as an instance of what Diaconis and Mosteller (1989) call 'the law of truly large numbers': with a large enough sample, surprising concurrences are bound to be plentiful.
- A2. *Low likelihood of the observation given the alternative hypothesis.* Additionally, one might argue that given the alternative hypothesis, the coincidence was in fact not that likely to occur. Consider the apparent 'design' of the situation, which raises the initial suspicion of a divine set-up: this design is not nearly as perfect as it first appears. Lightning only struck in the evening, many hours after the pope had voiced his impending abdication. What caused this delay in the divine response? Would the coincidence have not made much more impact if God had struck immediately? And why did He not express His fury in a more efficient manner, say by electrocuting the pope, rather than by directing his rage at a basilica? *Post facto* auxiliary assumptions that purport to increase the probability of the hypothesis (e.g. by rationalizing why God aimed His fury at the basilica rather than the pope) are bound to be *ad hoc*.
- A3. *Low prior probability of the alternative hypothesis.* Indeed, one might argue that the alternative hypothesis is rather implausible to begin with. I single out one of many relevant considerations: the alternative hypothesis exhibits a combination of characteristics that is typical of conspiracy theories, such as hindsight bias, selective use of evidence and *ad hoc* hypothesizing. With hindsight, the concurrence of the pope's announcement and

the lightning strike appears remarkable, yet beforehand no one had predicted this concurrence of events in any detail. Any hypothesis which displays these theoretical vices should be held in low epistemic regard.

These three considerations mutually support each other: while none of them may be conclusive, in combination they give substantial support to the hypothesis that the concurrence of events on 13 February 2013 was due to chance.

Now return to the practical/theoretical puzzle. In roughly analogous fashion, realists might push back against Street's challenge by arguing as follows:

- B1. *High likelihood of the coincidence given realism.* If there is only a limited number of ways in which causal forces might have led us to endorse normative judgments that do not coincide with the normative truth, then the suggestion that such a coincidence *has* in fact occurred becomes much more palatable. Accordingly, realists might argue that there is only a limited number of ways our normative judgments might have been constituted. Given these limited possibilities, it is not much of a miracle that causal forces roughly made them coincide with the set of normative truths.
- B2. *Low likelihood of the coincidence given the alternative hypothesis.* The success of Street's alternative explanation hinges on the assumption that if normative truth is *mind-dependent*, then we *can* be reliable truth-trackers. But it might be argued that assuming Street's version of antirealism – Humean constructivism – it is not at all clear that our normative judgments will roughly coincide with the mind-dependent normative truths.⁵
- B3. *Low prior probability of the alternative hypothesis.* It might be argued that Humean constructivism is a rather implausible theory to begin with, for example because it fails to vindicate the intuition that normative truths are robustly objective: the view commits us to an implausible degree of relativism.⁶

Of course, these propositions need to be supported with further argument. Here, I merely mention B2 and B3 to illustrate that the plausibility of a coincidence explanation partly hinges on the merits of the alternative explanation with which it contends. We are engaged in a holistic explanatory game: the success of any given hypothesis is relative to the failure of its rivals.

For present purposes, let's set Street's alternative explanation aside and focus specifically on B1 – the likelihood of the hypothesis that the contents of our normative judgments have accidentally coincided with the mind-independent normative truths, *assuming realism*. Following Enoch (2010, p. 427), we should note that the conjectured coincidence is imperfect: no realist wishes to argue that *all* normative judgments *anybody* makes are true. People regularly make normative mistakes and depending on the class of people whose normative judgments we are considering (in which culture, which historical era, *etc.*), realists may submit that such mistakes can be plentiful. On the other hand, realists want to resist the contention that, assuming realism, the normative judgments that people presently endorse are generally unreliable. The presumed coincidence that requires explanation, then, is that the contents of people's ordinary normative judgments *roughly* overlap with the normative truths – at least sufficiently to warrant their general reliability.

Even so, if the set of normative judgements that we *could* have made is incredibly large compared to the subset of predominantly true normative judgments that we *actually* endorse, then Enoch's coincidence explanation provides little solace for the realist. This is the view that Street takes: she maintains that realists are still committed to a coincidence that is 'incredible' (Street, 2006, p. 125), 'astonishing' (Street, 2008, p. 208), 'striking', or 'puzzling' (Street, 2016,

⁵Berker (2014, p. 234) argues for this claim. I defend a version of Humean constructivism in Hopster (2017), and argue against Berker's criticism in Section 7 of that article.

⁶I argue against one of the main arguments underlying the claim that realist theories are *prima facie* in better standing than antirealist theories in Hopster (Forthcoming).

pp. 305–308). Others have followed Street's terminology and described the presumed coincidence as 'suspicious' (Wielenberg, 2010, p. 464), 'extraordinary' (Shafer-Landau, 2012, p. 10), 'remarkable' (Cuneo and Shafer-Landau, 2014, p. 424), 'miraculous' (Tropman, 2014, p. 129), 'startling' (Mogensen, 2015, p. 201) and 'implausibly lucky' (FitzPatrick, 2015, p. 890). Are these characterizations apt, or misleading? As we saw in Section 2, how much one is struck by a coincidence observation depends *inter alia* on the likelihood of this observation, given the hypothesis one favours. Therefore, to assess whether a coincidence between our normative judgments and the normative truths is indeed highly unlikely, assuming normative realism, we have to assess to which possibilities realists are committed.

5 | QUESTIONING STREET'S REFERENCE CLASS

Street's reason for thinking that the presumed coincidence between our normative judgments and the mind-independent normative truths is highly unlikely rests on the suggestion that there are numerous ways in which our normative judgments could have gone off-track with respect to these truths, assuming realism. Street argues that there are countless evaluative systems, 'including, for example, systems that place above all else the value of grass-counting, or hand-clasping, or not having one's finger scratched, or counting to the number 78 and back again, and so on' (Street, 2016, p. 314). The eccentric agents who endorse such systems are merely creatures of the imagination; we do not encounter them in our actual world. Nonetheless, they are possible creatures that are relevant from a realist perspective, Street argues. Indeed, realists *make* such creatures relevant, since they insist that 'if they existed, they would be mistaken' (*idem*, p. 317; cf. Lott, 2018). This insistence seems to imply that, assuming realism, all of these rather unorthodox normative judgments are at least *possible*.

What kinds of possibilities, then, are realists committed to? Street (*idem*) thinks that they are theoretically committed to the claim that all *imaginable* normative judgments are possible normative judgments. It follows that assuming realism, *all imaginable evaluative outlooks* are relevant when assessing the likelihood of the hypothesis that our actual normative judgments happened to coincide (at least roughly) with the mind-independent normative truths. In other articles Street (2006, 2008, 2011) advances slightly different proposals, arguing that the relevant 'possibility space' consists of the full range of judgments that are *logically* or *conceptually* possible. For instance, she claims that

as a conceptual matter, the independent normative truths could be *anything*. (...) [W]hat are the odds that our values will have hit, as a matter of sheer coincidence, on those things which are independently really worth pursuing? That the odds seem low is an understatement. (Street, 2011, p. 114)

Naturally, if this possibility space is infinitely large, then the odds of a coincidence will be infinitely low. And since Street contends that assuming realism, this possibility space is indeed vast, the occurrence of a coincidence is highly unlikely. In order to counter Street's proposal, realists have to challenge her contention that all of the possibilities she imagines are relevant from a realist point of view. If the relevant possibility space turns out to be much smaller, then the odds will come out more favourably for the realist.

We can reframe the task of establishing what is the relevant possibility space as the task of establishing the proper reference class for assessing the likelihood that a coincidence has occurred. Such a task is notoriously contentious; delineating the relevant possibility space leads to the infamous 'reference class problem'. As such, we should not be surprised if Street's proposals are somewhat controversial. Nonetheless, there may be good grounds for rejecting reference classes that are clearly too broad or too small. Consider Street's proposals: are all imaginable, conceptually or logically possible value systems relevant, assuming realism?

5.1 | Street's reference class without Darwinian Dilemma

To understand Street's suggested reference class, it is relevant to point out that Street originally proposed it in the context of her Darwinian Dilemma (2006). This dilemma departs from the assumption that the contents of our evaluative endorsements are saturated with evolutionary influence, and asks realists whether or not there is a relation between this evolutionary influence and the contents of the mind-independent evaluative truths that realists posit. For realists who go the route of *denying* that there is such a relation, a good case can be made in support of the reference class that Street attributes to them. After all, realists who grant that evolutionary influences *do not* constrain the relevant possibility space of candidate mind-independent evaluative truths, seem to be committed to the view that these truths might have been *anything*, or at least that the relevant possibility space is extremely broad (cf. Hopster, 2018).

However, not all realists pursue this strategy in response to Street's dilemma. Some realists assert that there is a relation between the evolutionary influences on our evaluative endorsements and the contents of mind-independent evaluative truths (e.g. Enoch, 2010); other realists deny the evolutionary assumption that underlies Street's dilemma to begin with (e.g. FitzPatrick, 2015; Shafer-Landau, 2012). In the context of Street's (2016) practical/theoretical puzzle, then, it cannot be taken for granted that realists are theoretically committed to the claim that the evaluative truths might have been *anything*. But counterproposals to limit Street's proposed reference class require theoretical justification as well. To see this, consider three of the counterproposals that realists have advanced.

5.2 | FitzPatrick's counterproposal

According to William FitzPatrick, many of the possible evaluative judgments (e.g. 'clasping one's hands is more valuable than saving the life of a drowning child') contained in Street's reference class do not only strike us as far-fetched but also as unintelligible. He argues that the normative possibilities Street presents are not 'viable candidates for a true system of values because they are divorced from any background framework within which talk of value is intelligible' (FitzPatrick, 2014, p. 253). It follows that the reference class proposed by Street is uncharitable to realists: she ascribes possibilities to them which realists themselves do not envision.

Importantly, for this criticism to be effective, it does not suffice merely to *assert* that the possibilities Street envisions are not intelligible, assuming realism. Instead, the task for realists is to argue that it *follows from their theory* that they are not. Hence, FitzPatrick should come up with a theory-driven proposal of why the set of unintelligible normative judgments is limited, assuming realism. Moreover, he should be able to explain why this set roughly aligns with the set of normative judgments that causal forces have led us to make. In other words, he has to provide the outlines of an alternative explanation for the coincidence.

5.3 | Cuneo and Shafer-Landau's counterproposal

Alternatively, non-naturalists might argue that the space of conceptual possibilities is much more restricted than Street envisions. Indeed, some non-naturalists maintain that some normative truths – viz. moral truths – are *conceptually necessary*. For instance, Terence Cuneo and Russ Shafer-Landau (2014) argue that our basic moral truths, or what they call the 'moral fixed-points', are conceptual truths 'for beings like us in worlds like our own' (*idem*, *passim*). These truths are necessary; they could not have been any different. Hence, if we restrict the realist's preferred reference class to conceptual possibilities, it follows trivially that our moral judgments, if conceptually coherent, coincide with moral truths.

As it stands, it is questionable whether this line of reply adequately answers Street's explanatory challenge. After all, insisting that moral truths are conceptually necessary for conceptually coherent moral agents does little to explain why we are conceptually coherent moral agents. Such an explanation may be forthcoming,

however: conceptual realists may argue, for instance, that these mind-independent conceptual truths causally influence the normative judgments of moral agents (cf. Shafer-Landau, 2012). This would solve Street's practical/theoretical puzzle, but note that it commits non-naturalists to the controversial view that moral properties have causal powers – a commitment that is arguably untenable on scientific grounds (Street, 2006).

5.4 | Lott's counterproposal

Another theory-driven proposal for narrowing Street's reference class is to argue that normative truths are species-dependent or anthropocentric truths. Micah Lott (2018) advances a response along these lines, defending a version of Aristotelian naturalism. In thinking about possible normative truths, Lott argues, we should only consider those possibilities which we take seriously in deliberative contexts, when thinking about what to do and how to live. Practical reasons serve to make our actions intelligible, and there are limits to what might intelligibly count as worthwhile pursuits for creatures like us (Lott, 2018, pp. 92–94). On this version of naturalist realism, Street's reference class is certainly inapt; normative systems that place most value on grass-counting, hand-clasping and the like are not genuine candidate systems of human values. Hence, by tying normative truths to our species-typical characteristics, naturalist realists can solve Street's puzzle.

5.5 | Conclusion: Are coincidence explanations successful?

I have briefly discussed three proposals for limiting the reference class of possible normative judgments, assuming realism. In the process of outlining these proposals, realists have to explicate their own theoretical commitments and provide some alternative explanation for the coincidence. Rather than a pure coincidence explanation, then, these realists explain the coincidence by using a mixed strategy – just like our earlier argument in support of the null hypothesis for the papal thunderstorm.

In the light of these alternative explanations, Street's proposed reference class may come out as uncharitable: there is room for normative realists, on the basis of substantive theoretical considerations, to push back against Street's claim that a coincidence would be astonishing, assuming realism. However, we should keep in mind that each of these alternative explanations rests on a hypothesis about how causal forces enabled us to track normative truths – and the tenability of these hypotheses may be criticized (e.g. Street, 2006). Moreover, as I will argue in the next section, not all alternative explanations succeed in sufficiently downsizing the reference class to certify the general reliability of our normative judgments.

6 | THE TENABILITY OF ALTERNATIVE EXPLANATIONS

The general strategy of providing an alternative explanation for a coincidence between A and B is to argue that they are related, either because A causes B, or because B causes A, or because they share a common cause. The same three general strategies are available when explaining the presumed coincidence between our normative beliefs and the normative facts, albeit with a slight modification: the explanation need not be given in causal terms. Street is aware of this:

(...) although I claim that *some* kind of explanation of the coincidence is demanded, I am presupposing nothing about what *kind* of explanation is needed – whether it be causal, normative, philosophical, or of any other particular kind. (Street, 2016, p. 305)

More specifically, since the *explanandum* of the practical/theoretical puzzle is to account for the presumed relation between the causes of our normative judgments and the grounds of normative truths, the *explanans* will have to be

some sort of '*causal-cum-grounding* account': an account that reconciles the grounds of normative truths with a causal explanation of the contents of our normative judgments. The three general strategies for providing such an account are the following:

1. to argue that all normative facts are at least partly grounded in our attitudes;
2. to argue that normative facts have causal powers; and
3. to argue that there is a third factor which indirectly shapes our normative judgments and grounds their truth.

The first solution to the puzzle, which Street (2016, Section 6) herself endorses, is to argue that 'normative truth just is a (rather complex) function of the normative judgments that causal forces led us to make' (Street, 2016, p. 307). More specifically, our own attitudes – which have been shaped by natural selection, our cultural history, the social environment and various other causal forces – are ultimately the truth-makers of normative judgments (see Hopster, 2017 for further elaboration). Therefore, it is only to be expected that the set of judgments that causal forces have led us to make roughly coincides with the set of true normative judgments. Hence, what explains the purported coincidence between our evolutionarily shaped normative judgments and the normative truths is that the former ground the latter.

The second alternative explanation lets the arrow of explanation run the other way around: the normative truths cause our normative judgments. Many naturalists are sympathetic to this explanation, and perhaps some non-naturalists are too. According to these realists, our normative judgments can be causally influenced by mind-independent normative truths – hence, they give up the assumption that normative properties are causally inert. Street (2016, Section 7) regards this alternative as implausible. Indeed, she argues against this explanation in her Darwinian Dilemma (2006), where she suggests that causal versions of realism are scientifically untenable, since they are inferior to explanations of our evaluative endorsements in terms of the causal influence of natural selection. Note, however, that Street's (2016) practical/theoretical puzzle contains no independent argument to this effect. Hence, unless Street's puzzle is supplemented with her original Darwinian Dilemma (and this dilemma succeeds in challenging realists), the thesis that the normative truths cause our normative judgments can be offered as a legitimate solution to the puzzle.

The third type of alternative explanation is to argue that instead of a direct dependency relation between our normative judgments and the normative facts, these are *indirectly* connected. Indirect *causal-cum-grounding* explanations are often labelled 'third-factor explanations', as they point at some 'third factor' which has shaped our normative judgments in such a way that they roughly align with the normative truths. For instance, Enoch (2010, p. 430) conjectures that our normative beliefs are indirectly caused by facts about what promotes survival and that 'survival is at least somewhat good' – i.e. on average, what promotes survival correlates with what is normatively good. This third-factor – survival – establishes a connection between our normative beliefs and the normative facts, which goes at least some way towards explaining the coincidence.

6.1 | Are third-factor accounts trivially question-begging?

Enoch's third-factor account explicitly relies on a substantive normative assumption, and so do other third-factor accounts. They assume, for instance, that it is morally right to conform to one's society's authoritative moral codes (Copp, 2008), that well-being is morally good (Brosnan, 2011) or that pleasure is usually good and pain is usually bad (Skarsaune, 2011). This reliance on normative assumptions may seem unwarranted, given that Street has cast doubt on the reliability of our moral intuitions, assuming realism. Indeed, Street (2016, p. 319) calls explanations along these lines 'trivially question-begging'.

But others have defended the move of third-factor theorists. As Berker (2014) and Vavova (2014) point out, it is impossible to explain how our normative judgments could ever track normative truths without assuming that

some of them are indeed true (see also Lutz forthcoming; Tersman, 2017). By way of comparison, consider once more our perceptual beliefs. We assume that these beliefs are generally reliable, and there is an evolutionary explanation for thinking so: the objects in our manifest surroundings have causal powers, and it would be detrimental to our reproductive success not to discern these objects (cf. Street, 2016). But in appealing to evolution, we are appealing to the truth of empirical claims whose justification ultimately depends on the reliability of our perceptual beliefs – hence, such an appeal is circular as well. If we could not rely on these beliefs in establishing their reliability, we would be saddled with global scepticism. This threat of global scepticism, in turn, may be real, but it is not a threat that is particular to normative realism.

Street (2016, p. 321) anticipates this line of response and criticizes it: according to her, the realist's reliance on normative truths in presenting a third-factor account is 'trivially question-begging', whereas the reliance on the reliability of our sense data in the manifest surroundings case is only 'ultimately question-begging' and therefore more acceptable. Even if appeals to the reliability of our perceptual beliefs are *ultimately* circular, they are at least supported by a convincing epistemology, which provides good internal reason to think that our perceptual beliefs are generally reliable. But according to Street, non-naturalist realists like Enoch lack a clearly formulated epistemology – i.e. a positive account that specifies how we can track the contents of normative truths, as she highlights towards the end of her exposition of the practical/theoretical puzzle:

I'm not assuming that there must be any *particular type* of epistemology for the normative domain, much less that it be of the same type that's appropriate for objects with causal powers; I'm merely assuming that there must be *an* epistemology, and that's what the non-naturalist normative realist has so far utterly failed to provide. (idem, pp. 323, 324)

Let's assume, for the moment, that Street is correct and non-naturalist realists have failed to provide a positive normative epistemology. In the absence of such an epistemology, a third-factor response to the challenge is indeed problematic: Enoch's (2010, p. 430) assumption that 'survival is at least somewhat good' seems no more than an auxiliary assumption devised *ad hoc* to account for the 'coincidence conjecture' – not unlike an *ad hoc* explanation for why God directed His fury at a basilica, rather than at the pope. Indeed, if realists lack a positive epistemology – a theory that specifies how we gain knowledge of normative truths – then *any* explanation of the presumed coincidence will appear to be remarkably *ad hoc*. After all, if there is no positive epistemic account to rely on, then realists can only *posit* what is necessary to provide a quick fix to the challenge. Moreover, if realists lack an epistemology altogether, then that fact itself renders realism highly problematic – sufficiently problematic, perhaps, to make the practical/theoretical puzzle a redundant challenge.

That said, it is unlikely that realists will grant Street that they do not have any positive epistemology (see for instance, Dworkin's 2011 (fn. 9, p. 447) response to Street), and this certainly cannot be assumed without further argument. Even if the details of a realist epistemology turn out to be vague and ultimately unsatisfying, their failure cannot simply be assumed but should be argued for by engaging with the details of their actual contents. Since Street (2016) does not engage with these contents, her contention that a realist epistemology is 'trivially question-begging' is uncharitable.

6.2 | Does Enoch's explanation establish that our normative judgments are generally reliable?

As previously stated, the most attractive strategy for solving the practical/theoretical puzzle is to combine a coincidence explanation with an alternative explanation. The former serves to moderate the epistemic unease triggered by the coincidence; the latter serves to explain what is left of the coincidence after such moderation. Enoch (2010, pp. 427–435) explicitly pursues this strategy. First he argues that the coincidence is not all that striking; next he explains what remains of the coincidence by arguing that our normative beliefs are indirectly caused

by facts about what promotes survival, and that 'survival is at least somewhat good.' This suffices, Enoch thinks, to vindicate the claim that assuming realism 'we are at least somewhat more likely to get things right rather than wrong with regard to normative issues' (idem, p. 427) – i.e. to think that our normative judgments are generally reliable.

However, it is questionable whether Enoch's third factor can truly secure a somewhat positive correlation between our normative judgments and the normative truths. After all, the reference class of survival-promoting judgments is still vast; presumably there is only a small set of normative judgments within this enormous reference class that tracks normative truths. Enoch's reference class allows for survival-promoting strategies such as killing the offspring of rivals, abusing others for one's own benefit and cheating to the detriment of the group. Clearly, the presumed set of mind-independent normative truths is much more constrained than the set of normative imperatives that these – and many other – survival-enhancing behaviours would allow for. As a result, there is still a coincidence that needs an explanation: of all the survival-enhancing evaluative truths, why do the contents of our judgments largely coincide with the 'right' ones – the mind-independent normative truths?

Prima facie, a line of reply that may be open to Enoch is to argue that apart from the goodness of survival, there are several other factors which have simultaneously caused and grounded our judgments. However, such a reply may appear to be very much *ad hoc* and to provide just the kind of vicious explanation outlined above: unless these further third-factors are posited on the basis of theory-driven considerations, their assumed presence is trivially question-begging. Indeed, Enoch (2010) does not indicate that his third-factor account is driven by theoretical considerations, other than answering Street's challenge. It seems, then, that there are serious worries about the adequacy of Enoch's third-factor account as a solution to the practical/theoretical puzzle.

7 | CONCLUSION

How should we solve the practical/theoretical puzzle? I have outlined two general strategies for solving it – providing a coincidence explanation or providing an alternative explanation – which should best be pursued in tandem. With regard to the former, the task for realists is to come up with a theoretically motivated proposal for diminishing Street's proposed reference class of normative judgments that we *could* endorse, assuming realism. With regard to the latter, the task for realists is to argue that their alternative explanation is more plausible, all things considered, than the alternative explanation Street favours.

The prospect of normative realists to complete the former task may be brighter than Street (2016) suggests. Realists can come up with various theoretically driven proposals which suggest that, assuming realism, making true normative judgments is not like winning a lottery with extremely low prior odds. But not all realist proposals succeed in establishing the general reliability of our normative judgments. Specifically, I have argued that Enoch's (2010) third-factor account does not sufficiently constrain the relevant reference class: his account still commits him to a leap of faith in assuming that we have been among the normatively lucky ones.

To complete the latter task, and explain the coincidence between our normative judgments and the mind-independent normative truths, realists may want to argue that moral properties have causal powers (see Section 5). Realists who pursue this strategy are able to solve Street's puzzle, but in doing so they are likely to run into a different challenge – namely, that their view is incompatible with our best science, as Street (2006) argues in her Darwinian Dilemma. It is beyond the scope of the present paper to evaluate the success of this further challenge.⁷ Here, I merely point out that absent the support of further arguments against the tenability of causal versions of normative realism, realists may be well positioned to solve Street's practical/theoretical puzzle. Hence,

⁷I analyze the tenability of moral realism in the face of Street's (2006) evolutionary challenge in Hopster (2018).

in order to pose a *fully general* challenge for normative realism, aspiring debunkers have to supplement Street's (2016) recent coincidence challenge, for instance with scientifically driven considerations.

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