Pursuit and Inquisitive Reasons

Will Fleisher

Abstract

Sometimes inquirers may rationally pursue a theory even when the available evidence does not favor that theory over others. Features of a theory that favor pursuing it are known as considerations of promise or pursuitworthiness. Examples of such reasons include that a theory is testable, that it has a useful associated analogy, and that it suggests new research and experiments. These reasons need not be evidence in favor of the theory. This raises the question: what kinds of reasons are provided by pursuitworthiness considerations? Are they epistemic reasons or practical reasons? I argue that pursuitworthiness considerations are a kind of non-evidential epistemic reason, which I call an inquisitive reason. In support of this, I first point out two important similarities between the traditional pursuitworthiness considerations discussed in philosophy of science, which I call promise reasons, and certain social epistemic reasons that I call *social inquisitive* reasons. Specifically, both kinds of reason (1) favor pursuing a theory in a non-evidential way, and (2) concern promoting successful inquiry. I then propose recognition of a new category of normative reason: inquisitive reasons. This category contains both promise and social inquisitive reasons. Finally, I argue that inquisitive reasons share three essential features with previously recognized epistemic reasons: a connection to epistemic aims, explanatory independence, and the presence of a specific right-kind/wrong-kind reasons distinction. Each of these features have been used to argue that evidence should be treated as part of a distinct, independent domain of epistemic normativity. Since inquisitive reasons share these features, they too should be considered part of this independent epistemic domain. Thus, inquisitive reasons, including pursuitworthiness considerations, are epistemic reasons.

1 Anti-bacterial Consensus

In 1980, the consensus view in medicine was that peptic ulcers were caused by excess acid, often due to stress. Around this time, Barry Marshall and Robert

Warren began pursuing a theory that would eventually win them the Nobel prize: that many peptic ulcers are caused by bacteria, i.e., the *Bacterial Theory* (*BT*).[1] When Marshall and Warren began this research, they had some promising results, but the overall evidence was not in favor of *BT*. A great deal of research supported the acid theory. The acid theory was also the basis for many reasonably successful therapies (Kidd & Modlin 1998). Moreover, there was well-known evidence from a landmark study suggesting that bacteria could not survive in the stomach (Palmer 1954). While this evidence turned out to be misleading, it was genuine and widely influential (Fukuda, Shimoyama, & Marshall 2002; Kidd & Modlin 1998; Šešelja & Straßer 2014b). For these reasons, there was scientific consensus in favor of the acid theory. Thus, at the time Marshall and Warren began their research, the preponderance of evidence favored the acid theory over the bacterial theory.

Despite the disfavorable evidential situation, Marshall and Warren were rational to pursue *BT*. Moreover, they were not merely doing well from the perspective of practical rationality, or by moral standards. They were acting rationally by the standards of scientific inquiry. In other words, they were inquiring well by the standards of good inquiry. Perhaps surprisingly, they cannot simply be described as following the evidence where it led them. At the time they began their inquiry, the evidence "led" elsewhere, as it favored the acid theory. This suggests there must have been non-evidential considerations concerning whether it was rational for them to pursue *BT*, by the standards of good inquiry.

Following L. Laudan (1978), we can distinguish between evaluations made in the contexts of *acceptance* and *pursuit*. Evaluations in the context of acceptance concern the evidence in favor of the theory, i.e., whether one would be justified in believing or accepting the theory based on the available evidence. Evaluations in the context of pursuit instead concern considerations about whether the theory is *promising* or *pursuitworthy*, i.e., whether one would be justified in researching or working on the theory. I will call these pursuitworthiness considerations *promise reasons*.[2] Promise reasons are features of a theory itself that support pursuing the theory, even where there is inadequate evidential support to warrant accepting the theory. The acceptance/pursuit distinction helps rationalize theory change in science: it helps to explain how it can be rational for scientists to give up on an established theory in favor of a novel or less well-supported theory. In particular, the distinction helps explain how it was rational for Marshall and Warren to pursue the bacterial theory despite its (initially) weak evidential support.

In response to Laudan's distinction, a robust literature has developed re-

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[1] See Marshall, Armstrong, McGechie, and Glancy (1985) for a detailed historical account of this research and its context. My choice of this case was inspired by Zollman (2010). Zollman's discussion has prompted focus on this case in philosophy of science. See, e.g., Radomski, Šešelja, and Naumann (2020); Šešelja and Straßer (2014b).

[2] In this paper I will use the normative language of reasons for ease of discussion. However, the argument here does not require commitment to the view that reasons are normatively fundamental. The same points could be made in terms of oughts or values.

garding pursuit and pursuitworthiness.[3] A variety of features have been identified as indicating a theory is promising or worthy of pursuit. These are reasons to think a theory is worthy of pursuit grounded in features of the theory itself. Whitt (1992) calls these features "indices of theory promise." Following Whitt, I will understand all of these features as constituting promise reasons. These reasons include that a theory is testable, that it suggests new experiments or lines of research, or that it is associated with useful heuristic resources.

Promise reasons are distinct from evidence, the traditional type of epistemic reason. This raises the questions: What kinds of reasons are promise reasons? Are they ever epistemic reasons? Or are they always merely practical reasons? In other words, what kind of normativity is involved in evaluations of rational theory pursuit? The primary aim of this paper is to answer these meta-epistemological questions.

The motivating questions above should be seen as one part of our inquiry into the nature of epistemic normativity and epistemic reasons, about which there is already robust debate.[4] These questions are interesting for several reasons. First, there are a variety of social roles that come with specific duties to follow epistemic norms and reasons (Goldberg 2017). Scientific experts, judges and jury-members, and regulatory and safety inspectors all have special duties to follow epistemic norms and reasons. Knowing what epistemic reasons there are is crucial for performing such duties. Second, having an impoverished or limited view of epistemic normativity can lead to serious moral and epistemic harms due to gatekeeping (Dotson 2013, 2019), sidelining of important questions and epistemic reasons (Fricker 2007; Mills 2007), or ignoring when moral considerations are relevant to determining epistemic reasons (Douglas 2000; Longino 1990; Solomon 1994). Third, Friedman (2020) has also argued for the importance of expanding epistemology to include study of zetetic, or inquiry-related norms. If promise reasons are epistemic, this provides another argument for an expansive, zetetic epistemology. Finally, in general, having a clear sense of what epistemic reasons one has can help with determining what reasons one has, all-things-considered.

I will argue that promise reasons are epistemic reasons. In particular, I will suggest that they are *inquisitive reasons*: a type of epistemic reason concerning the promotion of successful inquiry. Inquisitive reasons include both promise reasons concerning features of the theory itself and social inquisitive reasons concerning the social circumstances of pursuit. Recognition of inquisitive reasons helps explain how Marshall and Warren could be epistemically rational in pursuing the bacterial theory, despite the theory's relative lack of evidential support and the scientific consensus against it. The balance of inquisitive reasons and evidence favored their inquiry into BT.

My argument is based on the fact that inquisitive reasons share certain es-

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[3]See, for instance, DiMarco and Khalifa (2019, 2022); McKaughan (2008); McKinney (1995); McMullin (1976); Nickles (1981); Nyrup (2020); Šešelja, Kosolosky, and Straßer (2012); Šešelja and Straßer (2014a); J. Shaw (2018); J. C. O. Shaw (2018); Whitt (1990).

[4]For overviews of this literature, see S. R. Grimm (2009); Kyriacou (2016); Olson (2018).

sential features with evidence. These essential features have been used to argue for the existence an independent epistemic domain of normativity to which evidence belongs. I suggest that, insofar as these arguments support treating evidence as part of an independent epistemic domain of normativity, they support including inquisitive reasons in that domain. Thus, promise reasons, as a kind of inquisitive reason, are epistemic reasons.

Going forward, I will first offer additional background on promise reasons (section 2) and social inquisitive reasons (section 3). Then, I will argue for recognizing the category of inquisitive reasons (section 4). I will then argue that inquisitive reasons are genuinely epistemic reasons (section 5).

2   Promise Reasons

Following Kuhn (1970), philosophers in the historicist tradition have been interested in the question of rational theory change.[5] How can it be rational for researchers to move from working on a well-supported, successful theory onto a new theory, given that the new one will almost certainly enjoy less evidential support? To help answer this question, L. Laudan (1978) proposed distinguishing between the context of pursuit and the context of acceptance. The basic idea the distinction supports is that we may be justified in pursuing a theory even though it lacks adequate evidence to warrant accepting it.

The contexts here are contexts of evaluation. In the context of acceptance, we evaluate whether acceptance of a theory is warranted based on its evidential or empirical support.[6] There are a variety of views about the nature of acceptance, but it is generally taken to consist in having some kind of settled attitude of commitment to the theory in question, much like (or perhaps exactly like) a belief.[7] Here, I will understand acceptance as involving belief that the theory is true, or at least that it is the best empirically adequate theory available.

In the context of pursuit, in contrast, we evaluate a theory for whether it is worthy of pursuit based on both evidential and non-evidential considerations. This generally occurs after a theory has been proposed but before it is accepted (or rejected). Pursuit of a theory means researching and working on that the-

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[5]For an overview of the historicist literature, see (Nickles 2021). There is dispute about whether theories are the right object of dispute, or whether we should instead talk about the work on research paradigms (Kuhn 1970), programs (Lakatos 1978), or traditions (L. Laudan 1978). I will talk in terms of theories, but the discussion here should apply regardless of which view one endorses in this dispute.

[6]Laudan drew the distinction as an amendment to Reichenbach's original distinction between the context of discovery and context of justification (Reichenbach 1938). The contexts of pursuit and acceptance bifurcate the context of justification. Like many of the other historicists, Laudan was not a scientific realist and thus does not appeal to evidence for a theory's truth. I will talk in more realist terms concerning evidence and truth, however, the argument here does not depend on this, and could be given in anti-realist terms. All that is required is that there are some genuinely epistemic values, as there are according to e.g., constructive empiricism (Van Fraassen 1980).

[7]For discussion of various views of acceptance, see Alston (1996); L. J. Cohen (1989); Fleisher (2018); Stalnaker (1984); Van Fraassen (1980)

ory. This might involve running new experiments, developing or refining the features of the theory, evaluating various auxiliary hypotheses, defending the theory from objections, or various other research activities. The non-evidential considerations in question are features of a theory that bear on whether the theory is promising or worthy of pursuit:

Promise reasons Features of a theory which favor pursuing that theory because this pursuit will promote successful inquiry.

Here and in what follows, I use "successful inquiry" as a neutral term intended to be ecumenical between different theories about the aims or goals of inquiry.[8] Note that inquiry may be either individual or collective. A promise reason may concern whether an individual will be successful in their inquiry. It may also concern whether collective inquiry is successful. This latter point is important for evaluating pursuit during collective inquiry, particularly when individual scientists may not live long enough to see their inquiry come to fruition.

A reason is a proposition (or fact) that *favors* being in some state or undertaking some action (Alvarez 2017). In other words, a reason is a consideration which supports or recommends a state or action (Scanlon 1998).[9] Promise reasons are distinct from evidential reasons. In particular, the way promise reasons favor a theory is distinct from how evidence favors a theory. Evidential favoring is known as evidential support, which is typically glossed roughly like this:

Evidential support A proposition E is evidence for a theory T iff the truth of E raises the probability of the truth of T.[10]

The primary argument for treating evidential reasons and promise reason as distinct is that evidential support can come apart from the favoring provided by promise reasons. A proposition P might be a strong promise reason for a theory T, while being only weak evidence for T. Alternatively, P might provide no evidence for T at all, or even provide evidence *disfavoring T*.

Following Laudan, philosophers of science have proposed a variety of features of theories as potential indicators of pursuitworthiness or promise. Laudan suggested that the rate at which a theory has been solving empirical problems is an indicator of its pursuitworthiness (1978). Another proposed indicator is the strength of a theory's associated *heuristic*: a set of conceptual resources connected to a theory. Heuristic features that have been proposed as

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[8]The view offered here is compatible with various realist and anti-realist conceptions of the goals of inquiry, e.g., truth (Goldman 1986), knowledge (Williamson 2000), understanding (S. Grimm 2012; Kvanvig 2003; Zagzebski 2001), true answers to interesting questions (Khalifa & Millson 2020), problem solving (L. Laudan 1978), empirical adequacy (Van Fraassen 1980). For an overview of discussion on values and aims in epistemology, see (Pritchard, Turri, & Carter 2018).

[9]There is a great deal of debate over the nature of reasons and of the favoring relation, some of which I will discuss below. For helpful overviews, see Alvarez (2017); Star (2018). However, the account of promise reasons (and inquisitive reasons) I will offer does not depend on particular views in this debate.

[10]For more discussion the evidential support relation, see Kelly (2016).

promise indicators include definitions, methodologies, models, and analogies (Nickles 2002; Šešelja et al. 2012; Šešelja & Straßer 2014b; Whitt 1992). Steel (2010) suggests that testability is a feature of a theory which non-evidentially supports working on it. Recently, Lichtenstein (2021) has suggested that even a theory's anomalies—i.e., facts it does a poor job of explaining—can provide a reason to pursue a theory.

I propose that we understand all of these indicators of pursuitworthiness as promise reasons. In the remainder of this section, I will discuss several examples of promise reasons in greater detail. This discussion will illustrate the similarity between promise reasons and the social inquisitive reasons to be discussed in the next section. This will provide the first step in the argument hat promise reasons are inquisitive reasons. These examples will also help to illustrate the similarities and differences between evidence and inquisitive reasons.

2.1   Testability

That a theory is amenable to empirical testing is an important feature that speaks in favor of the theory. Moreover, testability is not a trivial feature: it is difficult to obtain and to recognize. To test a theory, one needs to establish confidence in various auxiliary hypotheses that allow the theory to make concrete predictions. What counts as a genuine test is disputed, and what it takes to be testable may be different for different fields of inquiry.[11] That a theory is testable is thus a strong reason favoring pursuit of the theory. It provides a research direction for scientists, and will result in obtaining new evidence regardless of the outcome of the test.

However, testability is not strong evidence in favor of a theory. Most theories that are testable are false. When a theory is successfully tested, this may certainly count as strong evidence in its favor. But the evidential support provided by test*ability* is quite weak. Testability favors pursuing a theory because it gives one a reason to test it, not because it significantly increases the evidential support for the theory.

The force of favoring supplied by a theory's testability outstrips the evidential support the very same fact provides. Testability shows that pursuing the theory by testing it has a high probability of promoting successful inquiry. But much of this high probability has to do with circumstances where a test *disconfirms* the theory. The possible worlds where a test disconfirms the theory are also worlds where successful inquiry is promoted by the test. In those worlds, the theory isn't more probable given the evidence, but successful inquiry is more probable. So, the fact that a theory is testable makes it more likely that inquiry will be successful, in large part because it increases the agent's (epistemic) probability of being in a world where the theory is false but testing the theory leads to successful inquiry anyway.

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[11] For helpful discussions of testability, see Mayo (1996); Mayo and Spanos (2006); Millstein (2007); Sober (2008); Staley (1996). For the idea of testability as a reason to work on a theory that is distinct from evidence, see Steel (2010).

Given the above considerations, we should think of testability as a promise reason: it provides strong support for pursuing a theory because doing so will promote successful inquiry. Testing a theory will help push inquiry forward even if the outcome of the test is negative and disconfirms the theory. Testability is an indicator that work on the theory will be fruitful. It is also an example of a promise reason that is only weak evidence for a theory.

2.2   Heuristic Analogies

A second kind of promise reason concerns a theory's heuristic resources. One kind of resource possessed by many theories is an associated analogy. This is an analogy that helps make sense of the theory's *target* domain by analogy with another, better understood *base* domain. "An analogy asserts that a relational structure that applies in one domain can be applied in another," (Whitt 1992, p. 623) For instance, the billiard ball model of gases analogizes the interactions of atoms (the target domain) with the mechanical interactions of billiard balls (the base domain).

For Whitt, a high-quality analogy indicates a theory is promising because the analogy allows the theory to make more and better predictions. It guides researchers in applying the theory to a wider range of phenomena, and helps the theory make specific predictions that provide better potential explanations of those phenomena. Whitt offers several criteria for evaluating the quality of a heuristic analogy (1992, p. 623–624). A good analogy has a base domain that is well-understood and epistemically well-supported. A good analogy is also clear: it offers a precise mapping of the relations from the base domain to the target domain, which allows the theory to make specific and expansive predictions about the target domain. Moreover, a high-quality analogy is also open-ended, meaning that not all features of the analogy are already determined. This offers the potential for the analogy to be fruitfully extended to provide further predictions as more is learned about the target domain. That a theory has an analogy that is high-quality— well-understood, well-supported, clear, and open-ended—provides a strong reason to pursue the theory.

A high-quality heuristic analogy confers a number of advantages on a theory. It suggests new testable predictions and new lines of research.[12] However, the benefits of having new research directions do not depend on the truth of the associated theory. This new research may result in disconfirming evidence for the theory, which is valuable for inquiry despite lowering the probability that the theory is true. These advantages suggest that pursuing a theory will promote successful inquiry, even if the theory itself turns out to be false. This is similar to the extra-evidential faovring provided by testability. There are many possible worlds where using a theory's analogy leads to successful inquiry, but where the theory itself is false. The favoring that the analogy provides thus does not primarily depend on its serving as evidence for its associated theory. Therefore, that a theory has a high-quality analogy provides a promise reason

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[12]For another helpful account of the benefits of a heuristic analogy, see Nyrup (2020).

in favor of pursuing the theory. Notice that analogy possession shares two features with testability: the strength of favoring provided by this promise reason is different from the evidential strength provided. Moreover, what makes possession of a heuristic analogy a reason is how it concerns promoting successful inquiry in general, given how it promises new evidence that might disconfirm the theory in question.

2.3   Anomalies

A third kind of promise reason is an anomaly: a problem or fact that a theory has a difficult time explaining. Anomalies are an important part of Kuhn's theory, as accumulation of anomalies drives the move from normal to revolutionary science (Kuhn 1970). The precession of the orbit of mercury is an example of an anomaly for Newtonian mechanics. Anomalies provide evidence *against* a theory. If the theory were true, one would expect the fact constituting the anomaly not to obtain.

Despite anomalies serving as disfavoring evidence, Lichtenstein (2021) has recently argued that anomalies provide scientists with reasons *for* pursuing a theory. Specifically, he argues that the presence of anomalies for a theory provides guidance for future research into the theory. As an example, Lichtenstein appeals to sixteenth century geocentric astronomers who saw retrograde planetary motion as an anomaly for the geocentric theory. Astronomers such as Tycho Brahe and Jean-Baptiste Morin saw the use of equants and epicycles to explain retrograde motion as explanatory weaknesses (Lichtenstein 2021, p. 12). They borrowed methods from heliocentric astronomers like Copernicus and Kepler in attempts to eliminate these anomalies for the geocentric theory. This led to fruitful research, though it obviously did not ultimately serve to vindicate geocentrism.

The presence of an anomaly may serve as a promise reason in favor of pursuing a theory. The need to fix a theory so that it can explain the anomaly provides a research avenue for contributing to collective inquiry. Just as we saw with testability and analogy, this work promises to promote successful inquiry even if its results end up disconfirming the theory being pursued. The failure to resolve the anomalies for geocentrism, despite avid work, provided evidence against that theory. This helped scientific progress, as it created valuable evidence that disfavored a false theory. Moreover, attempting to explain away anomalies can result in the development of new ideas or experimental methods. For instance, Morley's pursuit of evidence for the luminiferous ether, even after the original Michaelson-Morley experiment famously failed to do so, resulted in large improvements in experimental design that were fruitful for other purposes (Swenson 1972).

So, the presence of anomalies for a theory gives one a reason to pursue that theory if one's goal is to promote successful inquiry. This might stretch the ordinary sense of calling the theory *promising* or *worthy* of pursuit, but it fits well with the purpose of promise reasons. Anomalies provide an example of promise reasons that are actually evidence against the theory that they

favor pursuing. The very same proposition—that the theory has anomalies—provides a promise reason to pursue the theory, and evidence to think the theory is false. This emphasizes the way the evidential support relation and pursuit favoring relation come apart.

In this section, I discussed three kinds of promise reasons. I chose these kinds as helpful examples, but there are a variety of others.[13] Promise reasons are features of a theory that favor pursuing it because doing so will promote successful inquiry. These reasons support pursuing a theory with a favoring relation that is distinct from evidential support. A theory of rational inquiry must account for both ways of favoring a theory.

3   Social Inquisitive Reasons

Scientific inquiry is generally a social activity. People work together in research groups, laboratories, professional bodies, and in fields and subfields of inquiry. If one has the goal of promoting successful inquiry into some question, one will have good reason to work collectively with other researchers who are working on answering the same or similar questions. Promoting successful inquiry thus often means promoting successful *collective* inquiry. Given the social nature of most inquiry, what theories a researcher should pursue depends in part on their social circumstances. These reasons concern how pursuing the theory would promote successful (collective) inquiry.[14] In this section, I will discuss three kinds of social inquisitive reasons.

3.1   Distribution of Cognitive Labor

One important social feature of a field of inquiry is its division of cognitive labor. Kitcher (1990) argues that some ways of dividing work between different theories are better than others. Our motivating case about peptic ulcers helps illustrate this. At the time Marshall and Warren began their pursuit of the bacterial theory, essentially no one was pursuing that theory. All the research was being done in pursuit of the excess acid theory (or on the basis of its acceptance). However, the bacterial theory still had some evidence in its favor. It was (or should have been) a live option as a theory. We can idealize and assume that a rational credence in BT was approximately .15. But the percentage of researchers working on it was approximately 0. This, intuitively, seems like an imperfect distribution of labor: 100% of the research was being done on a theory that was only .85 likely to be true, and none was being done on a theory that was still a live option.

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[13]For discussion of additional promise reasons (or indicators of pursuitworthiness) see Achinstein (1993); L. Laudan (1978); R. Laudan (1987); McKaughan (2008); Šešelja and Straßer (2014a); Whitt (1990, 1992)

[14]The connection between promise reasons and social epistemic reasons like these has not often been noticed. However, see Rueger (1996) and Fleisher (2018) for exceptions to this.

Kitcher and other social epistemologists are interested in what kind of reward scheme for science would promote the best distribution of cognitive labor. The goal is to figure out how to reward scientists with prestige and money in order to make it practically rational for individuals to pursue less probable theories, and so avoid situations like the one just described.[15] For instance, Strevens (2003) offers a justification for the priority rule, which awards all credit for a discovery to the scientist or group that first fully achieves it (whatever that amounts to in a given field). Strevens argued that the priority rule appropriately incentivizes work on theories that are judged less likely to be true, as a researcher has a better chance of being the first to make a discovery when working on a less popular hypothesis. This work focuses on scientists' practical interests in achieving fame and fortune. However, individuals who are knowledgeable of the division of labor, and who have the goal of promoting successful inquiry, can instead treat improvement of a division of cognitive labor as a reason to pursue a theory. Working on a less popular theory means one has a better chance of contributing a great deal to the success of inquiry. Marshall and Warren, for instance, had a reason of this type to pursue the bacterial theory: their working on *BT* improved the division of labor in the field.[16]

That pursuing a particular theory would improve the division of cognitive labor is a reason in favor of that theory. However, it is not evidence for the theory. That most people are not pursuing a theory is not a reason to believe it is true. In fact, it is a reason to doubt the theory. The fact that no one is working on a theory is reason to think that it is false, because others have judged it not worthy of pursuit, suggesting it is unlikely. If it were more probable, people would be more likely to pursue it. This is related to the way disagreement provides evidence against a theory. This point is especially clear in cases where there is a consensus about the favored view, as there was around the excess acid theory of peptic ulcers. In cases like Marshall and Warren's, the very same proposition serves as a reason in favor of pursuing the theory *and* as evidence against the theory. That no one (in 1980) was pursuing the bacterial thesis was evidence that the theory was false. But it was also a good reason to pursue the theory.

Much as we saw above for promise reasons, social inquisitive reasons of this kind must involve a distinct way of favoring a theory besides providing evidential support for the theory. Moreover, improving the division of cognitive labor is a consideration about promoting successful inquiry. Working on a neglected theory will increase the available evidence in the field even if the evidence disconfirms the neglected theory. This increase in evidence will promote the success of collective inquiry, even if it does not end up confirming the

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[15]For more on this literature Muldoon (2013); Romero (2017). For its connection to pursuit, see Rueger (1996).

[16]A related line of research, following Weisberg and Muldoon (2009) and Zollman (2010) uses agent-based computer models to evaluate different collective research strategies. This work too provides examples of social inquisitive reasons. For more discussion of the division of cognitive labor, see De Langhe (2014); Frey and Šešelja (2020); Muldoon (2013); Santana (2019); Thoma (2015)

theory being favored for pursuit.

3.2   Avoiding Premature Consensus

Another kind of social inquisitive reason is related to the division of labor: avoiding premature consensus (Zollman 2010). Premature consensus occurs in cases like Marshall and Warren's. This consensus involves the scientific community generally or universally accepting (or rejecting) a theory. A consensus that a theory is false is premature when the theory is eliminated from consideration before it ought to be. This is most striking in cases where the eliminated theory turns out to be true, as in the case of the bacterial theory of peptic ulcers.

   While premature consensus does involve an extreme case of a bad division of cognitive labor, the existence of consensus causes additional problems. A premature consensus will be self-reinforcing in a way that a merely bad distribution of labor might not be. Marshall and Warren apparently had some difficulty in getting uptake for their initial research because there was a consensus acceptance that the bacterial theory was false (Kidd & Modlin 1998). This additional aspect, that of accepting the eliminated theory as false, makes the premature consensus a more difficult problem to alleviate than a merely bad distribution of labor, even an extreme one. Once the community has accepted that the theory is false, they will be prone to dissuading or disincentivizing future work on that theory. Pursuers and advocates of the theory will be marginalized. This marginalization is an important feature of consensus. After all, scientific consensus helps determine the bounds of reasonable discourse, and some things ought to be outside those bounds, e.g., climate change denial, anti-vax conspiracy theories, flat earth theories, and pseudoscientific racism. Thus, consensus acceptance that a theory is false *should* involve this kind of marginalization. This makes avoiding or undermining inappropriate, premature consensus crucially important.

   Avoiding premature consensus thus provides a strong reason in favor of pursuing a theory. When a theory is a live option, but the community is approaching (or has) a consensus view that the theory is false, a researcher has strong reason to pursue that theory. A theory can be a live option in the relevant sense, despite counter-evidence, because there is at least some evidence favoring it, or because a researcher is in possession of a defeater for the evidence disfavoring it—as was the case for Marshall and Warren (Kidd & Modlin 1998).[17] That pursuing a theory would undercut or avoid a premature con-

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[17]This is one way of figuring out that a consensus is premature, and moreover is a way that distinguishes good cases like Marshall and Warren's from bad cases like flat earth conspiracy theorists attempting to undermine consensus. Flat earthers don't actually have defeaters for the evidence which rules out their theory, even if they believe they do. But note that the defeaters Marshall and Warren had don't themselves give enough evidence to explain the strength of the reason they had to pursue the theory. What the defeaters showed was that the theory was a live option. Here, the defeaters were observation of bacteria from stomachs, and the lack of use of silver staining by the study that purported to eliminate the bacterial theory (Kidd & Modlin 1998; Radomski et al. 2020).

sensus is a reason that favors such pursuit. It favors the pursuit in virtue of how such a pursuit would improve collective inquiry. It is better for inquiry if theories which are a live option are not prematurely abandoned. This is very clear in the cases where the theory is true. However, it still benefits collective inquiry to have researchers pursue theories that are live options, even if they ultimately prove false, because the pursuit may improve the likelihood of achieving the truth more quickly. Again, disconfirming evidence is still useful evidence.

Avoiding premature consensus is a reason because of how it bears on the promotion of successful inquiry. As with our previous kinds of reasons, the strength of this reason cannot be explained in terms of evidential support. In fact, consensus that a view is false gives one reason to doubt the theory. That a proposition is accepted as false by consensus (or near-consensus) is strong higher-order evidence that the proposition is indeed false. So, whenever one has strong reason to pursue a theory based on avoiding premature consensus, one will also have reason to doubt that the theory is true: the consensus (or near-consensus) itself. Thus, we again have a reason whose favoring relation must be distinct from evidential support for the theory, as the evidence disfavors the truth of the theory.

3.3   Productive Debate and Disagreement

A third kind of social inquisitive reason is promoting beneficial debate and disagreement. It is highly intuitive that disagreement and debate is beneficial for a field of inquiry, as philosophers have emphasized going back at least to Mill (2008).[18] Having advocates defend and argue for a variety of different theories confers significant benefits on the community of inquirers. Recent work in psychology has supported this contention. For instance, groups characterized by disagreement do better at recognizing invalid inferences, and do better at solving the logic puzzles like the Wason selection task[19]

Case studies in the history of science also support this idea, e.g., in paleoanthropology (De Cruz & De Smedt 2013) and in the development of plate tectonics (Solomon 1994). Solomon has argued that historically, this kind of disagreement (what she calls "dissensus") was more important than consensus for driving inquiry. Both De Cruz and De Smedt (2013) and Mercier and Sperber (2011) suggest that the presence of disagreement within a research field turns confirmation bias from a liability into an asset that promotes division of cognitive labor. Researchers with a commitment to one theory seek evidence for that theory, develop new versions of the theory, and find novel

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[18] For overviews of recent work on this topic, see Miller (2019); Wylie (2006). For recent defense, see Elgin (2010); Lougheed (2020).

[19] For an overview of this psychological literature on disagreement, see Mercier (2011, 2016); Mercier and Landemore (2012); Mercier and Sperber (2011). For specific studies, see Bonner, Baumann, and Dalal (2002); Geil and Moshman (1998); Kerr, MacCoun, and Kramer (1996); Kerr and Tindale (2004); Laughlin, Bonner, and Miner (2002); Laughlin and Ellis (1986); Resnick, Salmon, Zeitz, Wathen, and Holowchak (1993).

defenses to objections. Pursued individually, this kind of motivated reasoning is a mistake, and an epistemic problem. Within an appropriately configured community, one with adequate venues for criticism and evaluation (of the sort suggested by Longino (1990)), this strategy is transformed into a valuable division of labor.

Promoting productive disagreement provides another reason favoring pursuit of a theory. A researcher may be in a position to prompt useful disagreement by running new experiments on a theory, developing new versions of the theory or new auxiliary hypotheses, or advocating for a theory with a new argument. If so, these possibilities give them reason to pursue that theory. Just as with the previously discussed types of reasons, the strength of this reason is independent of its evidential support for the theory in question. After all, disagreement about a proposition is canonically taken as higher-order evidence against that proposition.[20] Promotion of productive disagreement is a kind of reason that concerns what will benefit successful collective inquiry. That there is (or would be) such disagreement with the theory one pursues is evidence against that theory. This once again illustrates the need for a type of favoring which is distinct from evidential support, and which concerns the promotion of successful inquiry.

The three types of social inquisitive reasons discussed in this section are clearly related, and will often be present together. Each concerns improving the social structures of collective inquiry. However, they are distinct and can come apart. For instance, a field may exhibit premature consensus that a view is false, but the distribution of labor may already as good as it can be. This might be because the prematurely excluded theory really is very unlikely, and a small number of renegade researchers (small enough not to undermine the claim of consensus) are already pursuing it. However, the consensus is still impeding research, as the renegade researchers' work is not being published or widely read, which is leading to a failure of uptake on the evidence they are generating, and is undermining productive disagreement.

Because of their inter-relationships, in many cases the force of one social inquisitive reason might be partially subsumed by the presence of the other. For example, one benefit of undermining premature consensus is promoting better distribution of labor. So, the two reasons will often go together. And the strength of favoring they offer together may not be the result of simply adding the force of the two together. There could even be cases where the only benefit of undermining premature consensus is that it will promote better distribution of labor, in which case the force of both reasons is due entirely to the force of the latter. But in many cases, recognizing the distinctions will be helpful.

The three types of social inquisitive reasons discussed in this section are

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[20]There is an enormous literature about the epistemic import of disagreement, which at this point constitutes a distinct subfield of social epistemology. While the view that disagreement is evidence against the proposition at issue is certainly not universal, it is widely accepted. In any case, there seems little support for the idea that disagreement is evidence *for* the theory in question. For overviews of the epistemology of disagreement, see Christensen (2009); Frances and Matheson (2018); Matheson (2015a, 2015b).

not exhaustive. There are also social inquisitive reasons concerning resistance against oppression (Medina 2013), avoiding epistemic injustice and violence (Dotson 2011; Fricker 2007; Medina 2017), and undercutting active ignorance (Mills 2007). For instance, hermeneutical injustice and active white ignorance both involve systems that impede people's inquiries (among other, more grievous effects). In Fricker's example concerning the history of the concept of sexual harassment, there was a lack of conceptual and semantic resources available for describing the harm women were suffering so that it could be named and called out (2007, p. 150). The presence of this kind of hermeneutical injustice provides inquisitive reason to develop new conceptual and semantic resources. This is a reason to act based on promoting inquiry, not evidence for some particular claim.

4   Inquisitive Reasons

So far, I have discussed two general categories of non-evidential reasons that favor pursuing theories: promise reasons and social inquisitive reasons. I emphasized two features of the examples from each category:

1. *Non-evidential favoring*: The proposition in question strongly favors pursuing the theory. However, the very same proposition offers either (a) weak evidence for the theory, (b) no evidence for the theory, or (c) evidence against the theory.

2. *Promotion of successful inquiry*: The reason favors pursuing the theory because that pursuit will promote successful inquiry.

These similarities are crucial to understanding the nature of promise reasons and these social inquisitive reasons. One explanation for these similarities is that the two types of reasons form a single, unified kind. I will offer just such a unified account. Specifically, I propose that we treat both promise reasons and the social inquisitive reasons as belonging to the category of *inquisitive reasons*: reasons which favor pursuing a theory because that pursuit will promote successful inquiry. After characterizing inquisitive reasons, I will argue that they are a kind of epistemic reason.

A few preliminaries: I will understand reasons as propositions.[21] As noted above, When a proposition R is a reason for agent to engage in an action ϕ (or be in a state S), R is said to *favor* ϕ-ing (or being in S). That is, R is a consideration that supports or recommends doing ϕ (Scanlon 1998). The agent might offer R as a reason that justifies their ϕ-ing. Alternatively, another person might offer R as a reason that the agent should ϕ. Reasons that work this way are called normative reasons: they provide good reason or justification

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[21] As noted above, I here use the normative language of reasons. However, the account does not depend on thinking reasons are fundamental compared to other types of normative properties. The account is also neutral regarding disputes over the metaphysics of reasons (Alvarez 2017; Star 2018).

for actions (Alvarez 2017). Reasons can also be *motivating* reasons: considerations that actually played a role in causing the agent to act in the way they did. Motivating and normative reasons can come apart. Here, my focus is primarily on inquisitive reasons as normative reasons. An inquisitive reason justifies pursuing a theory, or is a good reason for a researcher to pursue a theory.

An inquisitive reason is a reason that favors an action (or state) because of the way the action (or state) promotes successful inquiry. For ease of discussion, I will focus on inquisitive reasons for actions. Here is a more careful characterization:

IR R is an **inquisitive reason** to perform an act ϕ iff R favors ϕ-ing in virtue of the fact that ϕ-ing is likely to promote successful inquiry (and to promote it in the right kind of way).

This characterization is not meant to define reasons, but only to describe what makes one an inquisitive reason. IR is compatible with a wide variety of views about the nature of the favoring relation.[22] An inquisitive reason favors an action in a specific way, in virtue of the fact that the action promotes successful inquiry.

To get an intuitive sense of inquisitive reasons so characterized, consider Marshall and Warren's bacterial theory (BT) once again. That BT was testable was an inquisitive reason for Marshall and Warren to pursue BT. Call this proposition, that BT was testable, A. The testability of BT meant appropriate pursuit of the theory, via testing, was likely to lead to gathering additional evidence regarding whether BT. This would promote successful inquiry regardless of whether BT is true. So, A partially explained why Marshall and Warren's pursuit of BT would promote successful inquiry. Thus, A was an inquisitive reason for Marshall and Warren to pursue BT.

Inquisitive reasons favor acts of inquiry in a way that is distinct from evidential support for the theory.[23] In Marshall and Warren's case, A provided weak evidence for BT, but strong inquisitive reason for BT. Notice that A was evidence for various other propositions. Specifically, it was strong evidence for the proposition O: that *Marshall and Warren ought to pursue* BT. However, this is perfectly compatible with the claim that A was not evidence for BT itself. Notice also that Marshall and Warren need not have believed O in order

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[22]The three most popular views are (1) that favoring is a primitive normative notion (Parfit 1984; Scanlon 1998); (2) that favoring involves explaining why one ought perform an action (Broome 2018; Brunero 2018; Schroeder 2007); or (3) the *Reasons as Evidence* (RaE) view, which claims that all favoring is reducible to evidential support, i.e., R is a reason to ϕ iff R is evidence that *one ought to ϕ* (Kearns & Star 2009). RaE might appear to be in conflict with the claim that inquisitive reasons are distinct from evidence, as it makes inquisitive reasons a type of evidence. However, careful consideration of what act ϕ is at issue in each case will help dispel this appearance. Inquisitive reasons are reasons to pursue a theory, rather than being reasons to believe that theory. In contrast, evidence for a theory consists in reasons to believe the theory.

[23]Leary (2020) argues that there is only one favoring relation, and that practical and epistemic reasons differ instead in what grounds the favoring relation's obtaining between an act and a reason. One could similarity think that it is the grounds that differ here, rather than the relation itself.

to be justified in pursuing BT. The force of the inquisitive reason is what justified their pursuit. Moreover, what explains both the inquisitive favoring of BT and the evidential support for O is the connection A had with promoting successful inquiry. Thus, it is the primary feature of inquisitive favoring that is fundamental in justifying the pursuit of the theory. Recognizing the evidential support A provided for various other related propositions does not undermine the distinction between inquisitive reasons for a theory and evidential support for that theory.

There are several clarificatory points about **IR** that must be made. First, I have formulated **IR** in terms of reasons for action only. This is simply for ease of discussion, since we are here interested in reasons for the act of pursuing a theory, and this simplifies the formulation of **IR**. However, it's compatible with the view that there are also inquisitive reasons for being in a state (e.g., a state of accepting or endorsing a theory). Second, **IR** treats inquisitive reasons as *teleological reasons*: propositions that count as reasons because of their connection to promoting some value (Brunero 2018; Parfit 1984; Portmore 2018; Scanlon 1998; Steglich-Petersen 2011; Stratton-Lake 2018). However, the concept of an inquisitive reason does not depend on their being teleological. Compatibly with the arguments here, they could instead be understood deontologically (Portmore 2018), or in some other fashion. Third, as above, "successful inquiry" is meant to be a neutral term, compatible with various epistemic views about the aim(s) of inquiry, e.g., veritism, knowledge-first, understanding-first, etc. (see fn. 8). As a final clarificatory point, the parenthetical "right kind of way" requirement in **IR** is needed in order to make the wrong-kind/right-kind reason distinction (Maguire & Woods 2020; Schroeder 2010) for inquisitive reasons. I will offer a more careful explanation of this clause, and discuss its importance, in section 5.

The category of inquisitive reasons is a genus, containing the species categories of promise reasons and social inquisitive reasons. **IR** characterizes inquisitive reasons by the two features that unite these types of reasons. Inquisitive reasons are those propositions that help explain why an action will promote successful inquiry. Moreover, it is clear that promoting successful inquiry can come apart from being evidence in favor of a particular proposition. Thus, inquisitive reasons are just those reasons that have the two features characteristic of both promise reasons and social inquisitive reasons.

5   Inquisitive Reasons are Epistemic Reasons

So far, I have pointed out the similarities between various reasons for pursuing theories, and argued that these reasons should be recognized as part of a distinct category of reasons. For all that I have argued so far, one might accept that there are inquisitive reasons, but deny that such reasons are genuinely epistemic. Perhaps they are simply an interesting set of practical reasons. I think that this intermediate conclusion about the existence of inquisitive reasons is already an interesting conclusion. However, in this section I will argue

that we should understand inquisitive reasons as genuinely epistemic. This will allow me to answer the motivating meta-epistemological question I began with: what kind of reasons are promise reasons? Promise reasons are epistemic because they are inquisitive reasons, and inquisitive reasons are epistemic.

My motivation for arguing that inquisitive reasons are epistemic comes from a sense that our intellectual lives should be governed by a unified set of norms. As I suggested in the beginning, it seems that there is a special kind of doing well, *doing well from the perspective of inquiry*. Moreover, this kind of doing well allows for independent evaluation by a distinctive normative standard, just as (other) epistemic norms do. This evaluation is independent in that our ability to evaluate an agent does not depend on their sharing the goals of the standard. In other words, the evaluative standard has more than merely hypothetical force. Given these intuitions, it seems to me that the domain of epistemic normativity should be understood as the entire domain of inquiry. It makes sense that epistemologists are concerned not just with evidence, belief, and knowledge, but that there are also thriving discussions in epistemology about epistemic responsibility, injustice, and virtue. A theory that restricts the epistemic domain simply to evidence for believing a proposition to be true is too restrictive. A theory that denies the existence of the epistemic domain misses an important distinction among normative reasons and has difficulty explaining the ordinary distinctions people draw between epistemically appropriate and inappropriate forms of inquiry.[24]

Relatedly, Friedman (2020) has argued for recognizing *zetetic* normativity (from the Greek for inquiry). Zetetic norms include norms governing whether a question is worth inquiring into, whether inquiry should continue, and whether more evidence should be gathered. Zetetic norms are non-evidential: they concern how to inquire well with respect to actions other than forming beliefs on the basis of evidence. These norms do not look merely practical. They concern the goodness of acts and states of inquiry, judged by the standards of good inquiry. Plausibly, inquisitive reasons constitute one part of zetetic normativity. Notice, however, that the arguments I offer below for recognizing inquisitive reasons are independent of other arguments for zetetic normativity, so zetetic normativity and inquisitive reasons don't necessarily stand or fall together. But if you are convinced by the arguments for zetetic norms, as I am, then this independence between the two lines of argument provides strong support for an expansive notion of epistemic normativity.[25]

The motivating expansive view of the epistemic domain just discussed, along with the arguments for zetetic normativity, offer support for thinking inquisitive reasons are epistemic. However, one does not need to share these background commitments in order to accept that inquisitive reasons are epistemic. The arguments I will offer in this section do not depend on those as-

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[24]There is some skepticism about the use of the term 'epistemic', e.g., in Rinard (2015) and S. Cohen (2016). For defense of meaningfulness of questions about what counts as epistemic, see Lyons (2016); McGrath (2016).

[25]In the same paper, Friedman entertains worries that traditional epistemic and zetetic norms might be in tension. More on this below.

sumptions.

Despite the motivating considerations mentioned above, the received view in epistemology is that only evidence can be an epistemic reason. Call this the *evidence-only view* of epistemic reasons. This view is rarely argued for directly, but comes as a corollary of related theories, especially the thesis that only evidence can serve as a reason for belief.[26] If only reasons for belief are epistemic reasons, and only evidential reasons are reasons for belief, then only evidential reasons are epistemic reasons.[27]

On an evidence-only view of the epistemic, inquisitive reasons must count as practical reasons. There are also advocates of robust pragmatist (or eliminativist) views that deny the existence of epistemic normativity altogether (Montplaisir 2020; Rinard 2015), which also entail that inquisitive reasons are pragmatic. However, both strong pragmatist and evidence-only views have significant problems which have been effectively raised previously. For instance, strong pragmatism has difficulty explaining the apparent non-hypothetical force of epistemic norms, to be discussed shortly (Kelly 2003; Maguire & Woods 2020).[28] Meanwhile, there is reason to doubt that evidence is the only kind of epistemic reason. The primary argument for the evidence-only view depends on identifying epistemic reasons with reasons for belief, and then denying the possibility of practical reasons for belief. This strategy suffers from numerous difficulties (Leary 2017, 2020). For one thing, relevant to our current discussion, there seem to be epistemic reasons for action, e.g., evidence-gathering (Field 2009; Flores & Woodard 2020; Friedman 2020; Thorstad 2021), making assertions (Kvanvig 2003), going to the library (Berker 2018), or cultivating intellectual virtues and epistemic responsibility (Code 1987; Medina 2013; Montmarquet 1992). Moreover, pursuing a theory is an action (or actions). And evidence for a theory also counts as a reason to pursue the theory. Hence, evidence for a theory can provide an epistemic reason for action. If any of these actions really do have epistemic reasons in their favor, then the identification of epistemic reasons with reasons for belief does not go through, which in turn undermines the primary argument for the evidence-only view.

I will not try to offer additional knock-down objections to the evidence-only view or the strong pragmatist view. Instead, I will argue directly for the claim that inquisitive reasons should be treated as epistemic. I will discuss three properties that are essential or paradigmatic features of epistemic reasons. I say that these properties are essential because they have all featured in arguments for treating (evidential) epistemic reasons as part of an independent normative domain. They are each properties of evidential reasons, and as

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[26]This view has various names, including "non-ecumenical evidentialism" (Reisner 2018; Shah & Velleman 2005), "extreme cliffordianism" (Goldberg 2017) or "alethism" (Leary 2017).

[27]Note that the evidence-only view is distinct from evidentialism *about justification*, which claims that a belief is justified iff it is supported by a subject's evidence (Conee & Feldman 2004). Evidentialism about justified belief is perfectly compatible with recognizing inquisitive reasons as epistemic reasons.

[28]For additional problems for the strong pragmatist or eliminativist program, see Flowerree (2020); Howard (2020); Singh (2021).

I will argue, they are properties shared by inquisitive reasons. I suggest that the best explanation for the fact that these features are shared is that evidential and inquisitive reasons are both kinds of epistemic reasons. Moreover, if these properties of evidence support the existence of an independent epistemic domain, then inquisitive reasons must count as part of that domain, in virtue of their possession of the same properties.

5.1   Relation to Epistemic Aims

The first essential feature of epistemic reasons is already well-trodden for belief, and has been the focus of much of the foregoing discussion for inquisitive reasons. Epistemic reasons bear a close relation to epistemic aims. By an "epistemic aim", I once again intend to remain neutral between different conceptions of the goals of inquiry (truth, knowledge, understanding, etc.). For concreteness, however, I will focus on truth in the discussion here.

As noted, a proposition E is evidence for another proposition H just if E is a reason to think H is true. Evidence is thus closely tied to the epistemic aim of believing the truth. Precisely how this relation should be understood is under dispute. My point is compatible with several possible conceptions of this relation. For instance, E might be evidence for H because E partially explains why believing H would *promote* the goal of having true beliefs and avoiding false ones. Alternatively, E might count as evidence for H because believing H partially on the basis of E would show proper respect or commitment to the truth (Hurka 2001; Leary 2020; K. Sylvan 2012). In any event, there is strong reason to think that what gives evidential reasons their force is their connection to the truth.[29]

The epistemic aim of belief is one of the primary arguments offered for evidence-only accounts of epistemic reasons. The idea is that it is the truth connection of belief that requires believing to have a distinct set of norms and reasons attached to it. This connection to the epistemic aim of truth is thus essential to arguments for treating the epistemic domain as distinctive and independent.

As we have seen, inquisitive reasons are also characterized by a relation to epistemic aims. Inquisitive reasons are reasons that concern promoting successful inquiry. "Successful inquiry" is a neutral term that picks out, roughly, that epistemic aims have been achieved. We arrived at this account by examining a variety of examples of promise and social inquisitive reasons, and noting the way they all concerned successful inquiry. Thus, both evidence and inquisitive reasons share this crucial feature of epistemic reasons. If this feature is part of what makes epistemic reasons a distinct category, then inquisitive reasons should be included in the category, too.

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[29]For support of this claim, see BonJour (1985); Feldman (2002); Goldman (1986); Thagard (2007). Even a Kantian account of epistemology must plausibly recognize the relation to truth; see K. L. Sylvan (2020).

5.2   Normative Independence and Categorical Force

The second essential feature of epistemic reasons is that they display a kind of normative independence. Specifically, this is independence from the agent's actual desires/goals. An agent's actions are still normatively evaluable in light of the epistemic reasons they possess, regardless of whether they personally have a goal of true belief (or successful inquiry). This makes the force of the reasons categorical, rather than hypothetical (in a sense inspired by Kant).

A reason is hypothetical when an agent has it conditionally, based on some desire or goal they already have. If I desire to be famous, then I have a (hypothetical) reason to choose a memorable Twitter handle. But since I lack this desire, I have no such reason. As a result, it would be odd and perhaps inappropriate to evaluate me negatively on the basis of my boring Twitter name. Categorical reasons, in the relevant sense, are reasons an agent has regardless of what particular desires they have. I have reason to avoid causing needless suffering, even if I lacked a personal desire or goal to avoid doing so.

Evidential reasons appear to be categorical (in a constrained sense): there is a clear sense in which you should believe (or disbelieve) in accordance with the evidence, even if you have no desire to do so. Kelly (2003, p. 626) offers a helpful example illustrating this. Kelly reports that he often attempts to avoid getting spoilers (i.e., information about the ending) for new movies, in order to better enjoy them. To do so, he attempts to avoid conversations about the movie. He thus does not have the goal of forming a true belief about the movie's ending. In fact, he has the opposite goal, to avoid forming a true belief by avoiding gaining evidence about the ending. However, if someone does blurt out the ending to the movie, he then has strong evidence to believe what they say about it. In fact, the epistemic reasons he has are the same as if he was seeking the truth. Intuitively, he has strong evidential reason to believe the claim about the ending. Therefore, his epistemic reasons can't depend on the particular goals he happens to have. The epistemic reasons provided by his evidence have (some kind of) categorical force.[30]

Note that the non-hypothetical force associated with epistemic reasons is not quite the full notion of a categorical imperative in Kant's sense. This is because epistemic normativity does not represent what one ought to do, all-things-considered. The classic cases of pragmatic reasons for belief illustrate this: if optimism about my recovery from a probably terminal illness will im-

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[30]There are objections to the idea that epistemic reasons have non-hypothetical force, e.g., (Leite 2007). Indeed, there are proponents of instrumentalism or hypotheticalism about epistemic normativity (Steglich-Petersen 2011; Steglich-Petersen 2022). However, I take Kelly's arguments and cases to be compelling, particularly when combined with the kind of analysis offered by Maguire and Woods (2020), which suggests that categorical force in question is limited to the independent epistemic domain of normativity. Moreover, if one is unconvinced by these arguments, and is an instrumentalist about epistemic normativity, rather than a robust pragmatist (such as Rinard), then there is little reason to exclude inquisitive reasons from counting as epistemic. Inquisitive reasons just do concern promoting successful inquiry, which make them epistemic by the instrumentalist's lights. It is only if one takes the hypothetical nature of evidential reasons to favor an eliminativist pragmatist view of epistemic normativity that this would cause a problem for the argument at hand.

prove my chances of recovery, then I have a much stronger reason to believe I will recover than the epistemic reasons to believe I won't. If possible, I all-things-considered ought to believe I will recover. But my epistemic reasons are still in force: I can be evaluated negatively, epistemically speaking, for ignoring my evidence. The epistemic evaluation must therefore be independent from an all-things-considered evaluation. Thus, the categorical, independent force of epistemic reasons requires an explanation that appeals to an independent epistemic domain of normative evaluation.

Inquisitive reasons are characterized by the same kind of independent, categorical force as evidential reasons. Consider another case:

> **Pleasant Archaeology** Archer is an archaeologist researching the origin of a particular style of ancient pottery. There are two hypotheses in the field: a Mayan origin and an Inuit origin. Pursuing the Mayan hypothesis involves working in very pleasant weather, while the Inuit hypothesis involves very unpleasant weather. Archer does not care about the truth, and cares a great deal about the weather. There is almost no one working on the Inuit hypothesis, so Archer could contribute a great deal to that project. The Mayan hypothesis has a glut of researchers and little groundbreaking work remains to be done.

In this case, Archer himself does not have the desire to promote successful inquiry. For his own goals of working in pleasant weather, he has strong practical reason to pursue the Mayan hypothesis. But he clearly has inquisitive reason to pursue the Inuit hypothesis. We can still evaluate him (negatively), from the perspective of inquiry, if he pursues the Mayan hypothesis and not the Inuit hypothesis. The inquisitive reason has a kind of categorical force, of the sort Kelly had to believe the spoiler testimony.

The *Pleasant Archaeology* case illustrates that inquisitive reasons have the same kind of independence and non-hypothetical force as evidential reasons. Insofar as the independence and force of evidential reasons supports the idea that there is an independent epistemic domain of normativity, then this consideration also supports including inquisitive reasons as part of that domain. That is, this shared feature of evidential and inquisitive reasons supports the claim that inquisitive reasons are epistemic.

5.3   Right-kind and Wrong-kind Reasons

A third essential feature of epistemic reasons is that they are *reasons of the right kind* for their target actions. That is, we can make a distinction between the right kind of reasons for an epistemic act (or attitude), and the *wrong kind of reasons* for that act (or attitude). Genuine epistemic reasons are of the right kind. Reasons of the wrong kind for an act are reasons which favor doing the act, but not because of anything good or valuable about the act itself. In contrast, reasons of the right kind are those that speak to the inherent goodness

or value of the act itself. This goodness is "inherent" in that it is the right kind of evaluation for the act given the kind of act it is.[31]

Schroeder argues compellingly that there are wrong-kind reasons for many activities (and attitudes). For instance, one can have the wrong kind of reason for passing the ball in a soccer game. A particular pass might be bad, from a soccer perspective, because it will be intercepted. However, if one is paid (or threatened) to throw the game, one will have compelling reason to make the pass. Such a reason is of the wrong kind, as it violates the internal standards of the activity of soccer. We can identify two types of wrong-kind reasons: (1) those that concern aims other than those internal to an activity, and (2) those that do concern the aims of the activity, but do so in the wrong way; i.e., in a way that violates the internal standards of the activity. Getting bribed to throw a soccer game is a wrong-kind reason of the first type. To get a sense of the second type, imagine a player is paid to win a soccer game flamboyantly, in order to embarrass their opponents. This player would have both right-kind and wrong-kind reasons for the very same actions. Moreover, their wrong-kind reasons concern winning, however, they do so in a degenerate way.

On Schroeder's account, it is the internal aims and standards of the activity that determine whether a reason is of the right or wrong kind. A right-kind reason is one that bears on the "standards of correctness" for the relevant type of activity. Whether a pass is financially lucrative does not bear on its correctness as a soccer act. Schroeder takes the internal standards of an activity to be determined by the kind of activity it is. The internal standards apply to the activity by necessity. This is because taking part in an activity is partially constituted by having certain aims. If a person has those aims, Schroeder suggests, then we can evaluate how well they do at satisfying those aims. The standards of evaluation are determined by what the aims are. For instance, a good knot is one that does not become easily untied. If I am truly engaged in the activity of tying a knot, I must have the aim of having it stay tied (even if I also have other aims). Then, my tying performance can be evaluated based on how good the knot is at staying tied. A right-kind reason for tying a certain knot, then, must be a reason concerning whether the knot will remain tied. A bribe to tie the knot loosely is a wrong kind reason according to these standards.[32]

Maguire and Woods (2020) offer an account of epistemic normativity in part based on Schroeder's account. Specifically, they argue that epistemic rea-

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[31]For background discussions of the right-kind/wrong-kind reason distinction, see (Danielsson & Olson 2007; Gertken & Kiesewetter 2017; Howard 2018; Jacobson 2011; Schroeder 2010).

[32]The argument for inquisitive reasons offered here is compatible with, but does not depend on, Schroeder's view that internal standards are determined necessarily by the type of activity. In fact, I suspect that the aims one takes up in an activity won't be adequate to specify a determinate set of standards. Rather, I suspect there will a variety of permissible standards that would count as adequately promoting the aim in question, but which are mutually inconsistent. Actual social practice will be required to conventionally fix a particular, consistent set of standards. On my preferred view, epistemic reasons are those that satisfy the internal standards of a social practice with a genuinely epistemic aim. I call this the teleological practices view. This view also does a better job of accounting for the non-hypothetical force of epistemic reasons discussed in the previous section. For more on this theory, see (Fleisher 2022).

sons are right-kind reasons for the attitude of belief.[33] On their account, evidence provides reasons of the right kind for belief, as evidential reasons bear on the standards of correctness for belief, i.e., truth. Meanwhile, practical reasons for belief are reasons of the wrong kind. They give one reason to believe, but they don't support the truth of the believed proposition, and hence don't speak to the belief's correctness. This account also explains several puzzle cases for belief, including cases of epistemic bribery (Berker 2013; Firth 1981; Greaves 2013; Jenkins 2007). In epistemic bribery, a subject is offered many true beliefs if they form one false (or unjustified) belief. In Firth's original case, an atheist scientist can win a grant and use it to gain many new true beliefs if they first become a theist. Epistemic bribery is a wrong-kind of reason for belief: the value of *other* true beliefs does not speak to the correctness of the belief in theism, which depends entirely on what evidence there is in favor of theism.

According to Maguire and Woods, the distinction between epistemic and non-epistemic reasons for belief is just the relevant right-kind/wrong-kind distinction applied to belief. Right-kind reasons for belief (i.e., evidence) are reasons that bear on the correctness of believing, by the internal standards of the "game of belief." Meanwhile practical reasons and bribery reasons are wrong-kind reasons for belief. They argue that the existence of wrong-kind reasons for beliefs provides support for treating the epistemic domain as an independent one. They also suggest that this picture helps with explaining the independent, categorical force of epistemic reasons discussed in section 5.2: epistemic reasons are reasons in virtue of their relation to the internal aims and standards for epistemic activity.[34]

Reasons to pursue a theory also admit of the right-kind/wrong-kind reason distinction. Inquisitive reasons are right-kind reasons for acts of pursuit. Meanwhile, there are clear cases of wrong-kind reasons for pursuit: reasons that don't bear on the correctness of pursuing a theory by the standards internal to the activity of inquiry. Consider another case:

> **Sandwich Reasons** Sammy is a scientist who loves sandwiches. In fact, she is slightly more productive any afternoon she has a good sandwich. She must choose to pursue one of two theories. If she pursues theory A, she must work in Lab A. To pursue theory B, she must work in Lab B. Lab A is near her favorite sandwich shop, while Lab B has no good sandwich places nearby.

The question here is whether the proposition *S*, *that there is a sandwich shop near Lab A*, is an inquisitive reason for Sammy to pursue Theory A. Intuitively, *S* is not an epistemic reason. This is despite the fact that it really would make

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[33]For another account of epistemic reasons as right-kind reasons, see (Singh 2021).

[34]The idea of treating the epistemic evaluation as a matter of internal standards of some domain can also be found in earlier work by Sosa (2007), who talks in terms of "critical domains" rather than games or activities. For Sosa, the internal standards of a domain set the threshold of reliability required for competent (and therefore justified) belief.

Sammy more productive to be near a good sandwich shop, and thus *S* helps explain why pursuing Theory A would promote successful inquiry. Indeed, this initially seems like an *objection* to the claim that inquisitive reasons are epistemic reasons. *S* is clearly not an epistemic reason, but it is a reason that concerns promoting successful inquiry. However, *S* is a wrong-kind reason for pursuit: it does not concern promoting successful inquiry *in the right way*. The internal standards of inquiry exclude propositions like *S* from counting as epistemic reasons. Recognizing this point defuses the apparent objection to treating inquisitive reasons as epistemic. We can now see what the parenthetical phrase in **IR** is for: it rules out wrong-kind reasons for pursuit.

The explanation of why sandwich reasons are not inquisitive reasons depends on the claim that the internal standards of inquiry exclude sandwich reasons. However, one might wonder why this is so: after all, *ex hypothesi*, Sammy really is more effective at promoting successful inquiry when she has access to good sandwiches. So, the worry goes, should we not expect the internal standards of inquiry to endorse such a reason as being right-kind? In response, I want to suggest that human cognitive limitations explain why the internal standards of inquiry exclude sandwich reasons.

What we are calling sandwich reasons are a type of reason which are, typically, weak considerations, unlikely to provide a degree of support that makes them worth considering. Humans are limited in the number of considerations they can bring to bear in such deliberation, and including sandwich reasons will lead to computational complexity that is unlikely to be useful. Similarly, people are generally not very good at weighing the import of very small considerations. Weak considerations like sandwich reasons are likely to be given undue weight if they are included, especially while other, similarly weak considerations are left out. These cognitive limitations lead to a dilemma: on the one hand, we could include every potentially relevant consideration, no matter how slight, in deliberation about which theory/lab to choose (e.g., weather patterns, blood sugar, local sport team success). This predictably results in cognitive overload. Or, we allow in only some of the small considerations, and those tend to be given inappropriate weight, skewing deliberation. Neither option is appealing. The better alternative is to simply have a rule excluding from deliberation classes of considerations that are likely to be very weak.

The rules constituting the internal standards of inquiry are generally implicit and complicated. Here I'm following Sosa (2007) in thinking of the implicit rules of our epistemic practices on the model of the rules of etiquette. I would be hard-pressed to articulate the set of rules governing personal space in various social contexts, as these are complex: how close I can permissibly stand to someone at a concert is quite different from how close I can stand to them at a business meeting. I'm sensitive to these implicit rules and follow them, but I would have a hard time articulating them. So, too, with the implicit rules of our epistemic practices. So, too, for the rules of inquiry.

I want to suggest then that the internal standards of the activity of scientific inquiry include certain blanket (possibly defeasible) prohibitions on considering reasons of particular types. I'm imagining these types as being

distinguished by their content. These will be types of considerations that are, generally speaking, very unlikely to bear strongly on the question of which theory to pursue. These rules might be complex, e.g., "When choosing which theory to pursue, ignore considerations about: (1) tastiness of food, (2) pleasantness of weather, (3) beautiful views, (4) quality of the local symphony, ..., (n) loudness of neighbors in the local neighborhood." An implicit rule of this sort will help to keep deliberation focused on considerations more likely to be relevant and avoid cognitive overload.

In sum, because of human cognitive limitations, the internal standards of inquiry should exclude sandwich reasons as irrelevant. This explains why such reasons seem intuitively non-epistemic, and intuitively irrelevant to evaluations of whether someone is doing a good job of inquiring.

What the *Sandwich Reasons* case actually shows is that there are wrong-kind reasons for pursuing theories, as determined by the internal standards of the practice of inquiry.[35] So, rather than being an objection to the claim that inquisitive reasons are epistemic, it instead provides support for that claim. This is for two reasons. First, the ability to make a meaningful right-/wrong-kind distinction for pursuit supports that inquisitive reasons are part of a distinct, independent domain of normative evaluation. It shows that inquisitive reasons are not merely generic pragmatic reasons. A right-/wrong-kind distinction only applies to activities with their own internal standards of evaluation (or standards of correctness, in Schroeder's terms). The clear intuitive difference between, e.g., promise reasons concerning heuristic resources and sandwich reasons suggests that the former are not simply generic pragmatic reasons.

Activities with internal standards are ubiquitous, so right-/wrong-kind distinctions are also ubiquitous. However, the fact that we can make the distinction for inquisitive reasons strongly disconfirms a particular alternative hypothesis about what inquisitive reasons are. Specifically, it speaks against the idea that inquisitive reasons are just ordinary practical reasons. There are ordinary practical reasons for pursuing theories, but these are the wrong-kind reasons already identified (e.g., bribery, coercion, sandwiches). Inquisitive reasons speak to the goodness of pursuing a theory, *qua* act of inquiry.

The second way the right-kind/wrong-kind distinction supports the epistemic nature of inquisitive reasons concerns another similarity with evidence. This similarity suggests that inquisitive reasons are not just part of a distinct, independent normative domain, but the domain in question is the epistemic domain. The right-/wrong-kind distinction is drawn similarly for both kinds of reasons, and this provides further evidence to think they are both part of the same distinctive normative domain.

One plausible argument offered for why evidential reasons should be treated as a distinct normative kind is that they are right-kind reasons for an attitude

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[35]There are other examples of wrong-kinds of reasons for acts of inquiry. For instance, Bright (2016) offers a formal publication market model to show that even researchers who are purely motivated to promote successful inquiry can have incentives to commit fraud. These incentives will count as wrong-kind reasons for publishing. There are also straightforward bribery/coercion cases that will count as wrong-kind reasons for pursuit.

associated with inquiry, specifically with its completion: belief (Maguire & Woods 2020; Schroeder 2010; Singh 2021). Beliefs satisfy the internal standards of inquiry when they are true (or constitute knowledge, understanding, etc.) Hence, good reasons for the belief that P will be evidence for P. Reasons that don't promote the aim of believing truly (or knowledgeably, etc.) regarding whether P will count as wrong-kind reasons. Reasons that promote believing truly, but in a way that violates other internal standards—e.g., epistemic bribery cases—will also count as wrong-kind reasons for belief.

Similarly, inquisitive reasons are right-kind reasons for other acts of inquiry, including pursuing a theory. They speak to the value of pursuing a theory, according to the internal standards of a field of inquiry. Pursuing a theory has the same kinds of epistemic aims as forming a belief: truth, knowledge, understanding, etc. Pursuit simply promotes these aims in a more indirect fashion. Moreover, the internal standards that govern both pursuit and belief depend on how the relevant epistemic aims may be best promoted, particularly when their promotion is undertaken as a social or collective action. The internal standards of inquiry rule out appealing to certain kinds of evidence for forming beliefs, when ruling them out will promote collective success in general—e.g., the way medical research rules out anecdotal evidence and requires evidence to be collected in certain specific ways. Similarly, the internal standards of inquiry rule out certain features relevant to whether pursuit will promote successful inquiry, e.g., sandwich reasons. They do so when paying attention to those considerations is, in general, likely to interfere with collective inquiry.

Thus, once again, we have an argument for treating inquisitive reasons as epistemic that is based on their similarity to evidential reasons. The same considerations that favor treating evidence as epistemic also favor thinking inquisitive reasons are epistemic. Specifically, both evidence and inquisitive reasons admit of a similar kind of right-/wrong-kind reason distinction. The presence of this distinction shows that both must be part of an independent domain of normativity, and the similarity in how the distinction is drawn suggests that it is the very same independent normative domain: the domain of inquiry.

To recap: in this section, I have argued that inquisitive reasons are epistemic reasons. While they are distinct from evidence, they still belong to the domain of epistemic normativity. I supported this claim by pointing out three essential features of epistemic reasons: (1) relation to epistemic aims; (2) explanatory independence and categorical force; and (3) a particular kind of right-/wrong-kind reason distinction. Each of these are properties of evidence that have been appealed to in arguing that evidential reasons should count as part of a distinctive epistemic domain of normativity. Since these properties are shared by inquisitive reasons, this gives us equally strong reason to think that inquisitive reasons also belong in this distinctive epistemic domain. Since promise reasons are epistemic reasons, this brings us to an answer to the motivating question we began with: pursuitworthiness or promise considerations are epistemic reasons.

5.4   Epistemic and Inquisitive Tensions Objection

Before concluding, it is worth briefly considering a worry for the idea that inquisitive reasons are epistemic. Friedman (2020) raises worries for taking epistemic normativity and zetetic normativity to be of the same kind, or in the same domain of normativity. In particular, she is worried about cases where zetetic norms might conflict with epistemic norms (as the latter are currently understood in epistemology). For instance, she considers cases where one has adequate evidence to permit an epistemically justified or rational belief that P, but where zetetic norms require one to forgo forming a belief concerning P. For instance, this might occur when P is unimportant and one is busy with an inquiry into whether Q which is more pressing, and where forming the belief that P would involve becoming distracted (p. 502). Thus, the two standards differ regarding one's obligations and permissions: epistemic norms permit believing that P, while zetetic norms forbid it (due to the cost of being distracted). This, Friedman thinks, suggests that these are different types of normativity involved—i.e., two different normative domains—on pain of incoherence.

There are similar cases of apparent conflict between epistemic reasons and inquisitive reasons. Consider a case where a researcher is conducting a clinical trial on a new drug that is double-anonymized and placebo-controlled. The researcher has good inquisitive reasons to remain ignorant about which group received the the drug and which the placebo. Avoiding learning this will help the researcher keep from biasing the results, and so will promote successful inquiry. But now suppose a lab technician has carelessly left information in a weekly report that puts the researcher in a position to know which group is which, if they thought carefully about it and made some very easy inferences. In this case, the researcher is epistemically permitted to form the belief, but they have an inquisitive reason to avoid doing so. Hence, there appears to be a conflict between traditional epistemic norms and the norms of responding to inquisitive reasons. So, one might think, there must be two distinct normative domains involved in generating this conflict.[36]

I am not convinced that a conflict among norms within a specific domain is impossible, or that any conflict between norms requires postulating two normative domains. For one thing, the conflict might be defused by treating each reason or norm involved as defeasible. It is commonplace to think we can have conflicts between *pro tanto* considerations and between defeasible norms. In fact, this is particularly clear in the case of epistemic normativity because of the defeasibility of evidence. I can have evidence for both P and *not-P*. Sometimes it will be hard for me to adjudicate between two bodies of evidence, but this doesn't suggest that evidential norms are incoherent. Similarly, we can expect there to be hard cases where it is difficult to adjudicate between evidential and inquisitive reasons, but this doesn't require that they are incoherent.

I think the researcher seeking to avoid experimenter bias has defeasible

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[36]I would like to thank an anonymous reviewer at this journal for suggesting both the objection and this case in particular. Note also the similarity to Kelly's movie spoiler case referenced above (2003).

epistemic reasons to form a belief, but the import of this reason is outweighed by the strength of the inquisitive reason.[37] Note that this is compatible with thinking that the researcher might nonetheless form a justified belief about the two experimental groups' identities, if she were to follow the evidence and form the belief. We might think that such a belief-formation is epistemically permissible but suboptimal (i.e., it would be suberogatory (Heyd 2019)). However, this is not the only response to this case compatible with the view being offered here. There is much more to say about the relationship between inquisitive reasons and other epistemic reasons in cases like these. I hope to explore these relations in future work.

Second, one might allow that there are genuine epistemic dilemmas, just as there are moral dilemmas (McConnell 2018). For instance, I might make two permissible promises which turn out, unbeknownst to me, to conflict. This doesn't suggest that there must be two moral domains. Similarly, some have suggested there are genuine epistemic dilemmas (Hughes 2021). If there are, then one might also think that apparent conflicts between inquisitive and evidential considerations are epistemic dilemmas.

I suspect these two considerations also provide a defense against Friedman's worries for taking zetetic norms to be epistemic, though there isn't space to give a full argument for that here. Friedman herself endorses the view the zetetic norms are epistemic, offering several potential paths for reconciling the conflicts she raises (Friedman 2020, §5). One of those paths may also help in defending the idea that inquisitive reasons are epistemic.

6   Conclusion

I began with a metaepistemological question about the nature of pursuitworthiness considerations: what kind of reasons are they? I argued that they are a kind of epistemic reason. I supported this claim by first arguing that promise reasons and certain social epistemic reasons form a natural category: inquisitive reasons. I characterized inquisitive reasons as reasons which favor an action because the action would promote successful inquiry, in the right kind of way. Promise reasons such as testability, having good heuristic resources, and even having anomalies, all favor pursuing theories in just this way. Finally, I argued that inquisitive reasons have three essential features of epistemic reasons. That inquisitive reasons possess these properties provides strong evidence that they should be treated as epistemic reasons. Since promise reasons are inquisitive reasons, characterized by the same properties, they too are epistemic reasons.

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[37]This is also compatible with thinking that some norms are much harder to defeat than others. In ethics, non-consequentialists think it is difficult (but not impossible) to defeat the prohibition against killing, even if the killing will save many people (Alexander & Moore 2021). We might similarly appeal to the idea of a difficult to defeat prohibition to explain the way belief is insensitive to inquisitive reasons, and the strength of the prohibition against epistemic bribery for believing falsehoods (Berker 2013; Firth 1981).

Acknowledgments

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