

Curious to know

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Abstract. What is curiosity? An attractive option is that it is a desire to know. This analysis has been recently challenged by what I call *interrogativism*, the view that inquiring attitudes such as curiosity have questions rather than propositions as contents. In this paper, I defend the desire-to-know view, and make three contributions to the debate. First, I refine the view in a way that avoids the problems of its simplest version. Second, I present a new argument for the desire-to-know view that focuses on ascriptions of the form ‘S is curious to ϕ ’, which, despite their prevalence, have been ignored in the literature. Third, I examine the central motivation for interrogativism—the argument from metacognition, according to which animals can be curious yet do not have the metacognitive capacities required by desires to know—and argue that it rests on questionable assumptions about desires and attitude ascriptions.

1 Introduction

Curiosity is a central inquiring attitude. When we inquire, it is often because we are curious about something, and our inquiry is typically settled once our curiosity is satisfied.¹ What kind of attitude is curiosity? An attractive analysis is that it is a desire to know: curiosity is a type of desire, and it is one that is satisfied by knowledge. On this view, Aristotle’s dictum “all human beings by nature desire to know” can be understood as a claim about human curiosity.

Recently, however, the desire-to-know analysis has been challenged. The challenge turns on the idea that a desire to know is a second-order propositional attitude: a desire about knowing. On the competing view, which I call *interrogativism*, curiosity is not a

¹For some recent work on the nature and value of curiosity see Whitcomb (2010), Inan (2011), Friedman (2013), Carruthers (2018), Inan et al. (2018), and Ross (2020). See also Friedman (2017, 2019), Archer (2018), and Drucker (forthcoming) for work on the closely related attitude of wondering.

second-order attitude about knowing but a *sui generis* attitude that takes questions, rather than propositions, as contents.² Interrogativism reaches beyond debates about the nature of curiosity, as it also challenges the widely held view that all intentional attitudes are propositional. The central motivation for interrogativism is the argument from metacognition: desires to know are metacognitive, since they are desires about epistemic states, but many animals that lack the cognitive sophistication to form such states can nonetheless be curious.

This paper has three aims. The first is to offer a precise statement of the desire-to-know analysis of curiosity, one that avoids the problems that beset its simplest version. The second aim is to present a new argument for the desire-to-know analysis. This argument focuses on ascriptions of the form ‘S is curious to ϕ ’, which so far have not received any attention in the literature. I argue that data from such ascriptions supports the desire-to-know analysis over its rivals. Moreover, since a theory of curiosity should explain the nature of the state ascribed by such expressions, I propose an analysis of curiosity to ϕ . The third aim of the paper is to counter the interrogativists’ argument from metacognition and argue that it does not warrant a rejection of the desire-to-know view.

In the next section, I present and motivate the desire-to-know view of curiosity, consider some objections, and propose a refinement of the view. In §3, I present interrogativism in more detail. In §4, I discuss curiosity to ϕ . In §5, I discuss the argument from metacognition.

2 Curiosity as a desire to know

2.1 The simple theory

On the view to be defended, curiosity is a desire to know. A simple statement of the view is as follows:

DTK S is curious Q iff S has a desire to know Q .

As it will later turn out, DTK is too simple, and will need be refined. But it will do for now.

A few clarificatory remarks. First, the ‘iff’ in DTK is meant to denote a relation of identity, and not merely an equivalence: curiosity Q just is a desire to know Q . Second, ‘ Q ’ ranges over questions, and so DTK is about question-directed curiosity, as reported by the following:

²See Whitcomb (2010), Friedman (2013), and Carruthers (2018).

- (1) Ann is curious who won the game.
- (2) Bob is curious why dogs bark.

Sometimes, though, curiosity is reported as object-directed:

- (3) Ann is curious about the game.
- (4) Bob is curious about dogs.

DTK does not directly apply to such cases. Plausibly, however, object-directed curiosity is reducible to question-directed curiosity. For instance, to be curious about the game is to be curious Q , for some question(s) Q about the game. It would seem incoherent for someone to claim to be curious about the game and at the same time not to be curious about any game-related question. At any rate, a desire-to-know analysis of object-directed curiosity is readily available: to be curious about the game is to desire to know something about the game. There is surely more to be said about object-directed curiosity, but I will set this issue aside here.

The expression 'curious Q ' is meant to represent question-embedding curiosity ascriptions such as 'Ann is curious who won the game', and the phrase 'curiosity Q ' is meant to refer to such states in general. Often 'about' is inserted, as in 'Ann is curious about who won the game'. For simplicity, and also to avoid confusion with curiosity about objects, I will always use 'curious Q '.

Finally, 'know Q ' is meant to represent question-embedding knowledge ascriptions, like the following:

- (5) Ann knows who won the game.
- (6) Bob knows why dogs bark.

I deliberately avoid the locution 'know the answer to Q ', for the following reason. Suppose Ann is curious where she can buy an Italian newspaper. The indirect question 'Where she can buy an Italian newspaper' is interpreted here as a mention-some question. That is, one does not need to list all the places in the world that sell an Italian newspaper to answer the question; a few will do. By contrast, some questions are mention-all, and require exhaustive answers; for instance, 'Who came to the party?', under one reading, requires stating for each person whether or not they came to the party. For mention-some questions, there is no 'the answer', so it would be wrong to say that Ann desires to know the answer to 'Where can Ann buy an Italian newspaper?'. Instead, DTK says that Ann desires to know where she can buy an Italian newspaper, which seems right.

Why accept DTK? DTK can be motivated in several ways. Let us first note that DTK can be broken down into two separate claims:

Attitude Curiosity is a desire.

Satisfaction Curiosity is satisfied by (and only by) knowledge.

Each claim can be motivated independently. First, the attitude claim. Curiosity seems like a desire: it is a motivational state—it motivates agents to inquire about the objects of their curiosity; it is an affective state, and can be felt more or less intensely; it is generally triggered by a perception of lack, e.g., a lack of answer; it can be frustrated or satisfied; and, finally, its satisfaction is rewarding. Are there any non-desire such states? Some states share some or most of these properties. Emotions such as anger or resentment, for instance, seem to be motivational, affective, and triggered by a certain kind of perceived lack. They are not, however, capable of being frustrated or satisfied. It seems to me that there are no states other than desire and curiosity that have all the above properties. A good explanation for this is that curiosity is a species of desire.

Second, the satisfaction claim. Curiosity is satisfied by the acquisition of some epistemic state. Natural candidates are belief, true belief, justified belief, knowledge, and understanding.³ I will say more in §4 to support the claim that this unique state is knowledge. For now, here are some linguistic considerations in favor of this claim. Utterances such as the following sound incoherent:

(7) # I know who won the game, but I'm curious who won the game.

(8) # I know that Ann won the game, but I'm curious who won the game.⁴

A natural explanation is that knowledge is sufficient for satisfying curiosity. There are also reasons to think it is necessary. Suppose I believe, but do not know, that my lottery ticket lost. Consider:

(9) I believe I didn't win, but I don't know if I won or not, so I'm still curious whether I won.

This sounds coherent, and there is no problem making sense of the speaker: she has a belief about the result, but that does not stop her from being curious to find out the

³Some of these options besides knowledge have been defended. For true belief, see Foley (1987) and Goldman (1999). For understanding, see Kvanvig (2013).

⁴See Whitcomb (2010, p. 668), van Elswyk and Sapir (2021, p. 18) for such considerations in favor of the knowledge satisfaction claim.

actual result. Her belief, moreover, is justified and, we may assume, true. So mere true or justified belief are insufficient for satisfying curiosity. Thus acquiring knowledge seems both necessary and sufficient for satisfying curiosity.

The attitude claim and the satisfaction claim together entail DTK: If curiosity is a desire, and it is satisfied by knowledge, then it is a desire to know. It is worth noting that Whitcomb (2010) accepts both the attitude and the satisfaction claims but rejects that curiosity is a desire to know in the sense intended here. I discuss Whitcomb's view in §3.2.

A third and final, for now, consideration in favor of DTK is that it seems incoherent to report curiosity but deny a desire to know. Consider:

(10) # I'm curious why dogs bark, but I have no desire to know why dogs bark.

(11) # Ann is curious who came to the party, but she has no desire to know who came to the party.

These infelicities suggest that curiosity entails a desire to know. DTK can explain this entailment: curiosity *is* a desire to know. As will soon emerge, however, this entailment is one-directional, and one can find cases where it is coherent to report a desire to know while denying curiosity.

2.2 Refining the theory

We have seen reasons to think that curiosity is a desire to know. But there are some problems with this view. Here are three. First, suppose I need to refill my medication as soon as possible, and I thus need to know whether the closest pharmacy is open. I have a desire to know whether the pharmacy is open, but it would be odd to say that I'm curious. In fact, it would be perfectly fine to say that I'm not curious at all—it is just something that I need to know. Or suppose I want to know how many stairs there are in the humanities building. I want to know not because I'm curious—In fact, I couldn't care less about the number of stairs—but because my boss sent me on this task, or because a large sum of money will be given to whoever is first to find out. It seems, more generally, that a desire to know can be motivated by things other than curiosity. This suggests that desire to know is not sufficient for curiosity.

Second, it is possible to desire things one already has. I may, for example, want to have the job I have and thus not want to change jobs. And it is perfectly coherent to say that I have everything that I want. In the same way, I may want not to lose my present knowledge and thus want to know what I already know. But, even though I want to know

what I already know, I am not curious about what I already know. So, again, it seems that desire to know is not sufficient for curiosity.⁵

Third, it may seem that desire to know is not even necessary for curiosity. This is argued by Friedman (2019), with the following case. Suppose you are presented with a box and told that knowing what is inside will immediately kill you. You may be very curious what is inside the box. But, being aware of the consequences of knowing, you don't want to know what is inside it. It thus seems possible to be curious without wanting to know.

These problems can be addressed, however, by pinpointing the kind of desire that curiosity is. First, curiosity is an *intrinsic* desire for knowledge. That is, it is a desire for knowledge for its own sake, and not for the sake of some other end.⁶ When one is curious, one wants to know for the sake of knowing. Thus my desire to know whether the pharmacy is open, or my desire to find out the number of stairs, are not cases of curiosity, since those desires are purely instrumental. Second, curiosity is a desire to *come to know*. That is, it is a desire to transition from a state of ignorance to a state of knowledge. Thus a desire to have the knowledge I already have is not curiosity. Third, curiosity need not be an all-things-considered desire. Desires may conflict. I may have a desire to eat a lot of chocolate and also a desire not to consume a lot of calories. Since the latter desire is stronger, it is the one that guides my actions. I may even say "I don't want to eat a lot of chocolate", not because I do not have such a desire but because the desire not to consume a lot of calories overrides it.⁷ In just the same way, I may have a desire to know what is inside the mysterious box but also a desire not to die. I may even say "I don't want to know what's inside the box", not because I do not have such a desire, but rather because the desire not to die is the one I choose to act on. Such conflicting desires are *some-things-considered* desires. Curiosity is this kind of desire.

All in all, we have a refined analysis of curiosity:

DTK S is curious Q iff S has a some-things-considered intrinsic desire to come to know Q.

For simplicity, I will continue using the slogan that curiosity is a desire to know, keeping in mind that DTK describes how this claim is to be unpacked.

⁵I'm grateful to an anonymous reviewer for this point.

⁶Perhaps it is possible for a desire to be both intrinsic and instrumental, i.e., both for its own sake and for the sake of some further end. In that case, a desire may still amount to curiosity, as long as it is not purely an instrumental desire.

⁷Thus 'I want / don't want to ϕ ' may have an all-things-considered reading. See Phillips-Brown (2018) for related discussion.

3 Interrogativism

3.1 Interrogativist accounts of curiosity

DTK offers an attractive analysis of curiosity. Recently, however, a new challenge has emerged to the claim that curiosity is a desire to know. To appreciate the challenge, let us note the following feature of DTK. According to DTK, a subject who is curious Q has a desire to know Q . Desire is a propositional attitude, and the propositional content of a desire to ϕ is the proposition denoted by the infinitival clause ‘to ϕ ’. The content of a desire to know Q is therefore the proposition denoted by the clause ‘to know Q ’. In this sense, desire to know is a second-order cognitive state: it is a cognitive state that is about another cognitive state.

The view that challenges DTK on this point is due to Friedman (2013) and Carruthers (2018), influenced to some extent by Whitcomb (2010). I call this view *interrogativism*. According to interrogativism, curiosity is not a desire to know because it is not even a desire, and it is not reducible to any of the familiar propositional attitudes. Rather, curiosity is a *sui generis* first-order attitude that takes questions, rather than propositions, as contents.⁸ Questions in this context are extra-linguistic objects akin to propositions: just as declarative sentences are taken to denote propositions, interrogative sentences are taken to denote questions; and just as propositions can function both as the semantic contents of declaratives and as the contents of attitudes such as believing and desiring, questions, on this view, can function both as the semantic contents of interrogatives and as the contents of attitudes such as wondering and being curious.

The central motivation for interrogativism is the argument from metacognition. The argument begins with the observation that desire to know is a metacognitive state. But, the argument goes, many animals can be curious even though they do not have metacognitive states, which are thought to require more sophisticated cognition. So curiosity cannot be a desire to know nor a desire for any other epistemic state. The correct account of curiosity must therefore construe it as a non-metacognitive state. Interrogativism meets this requirement: if curiosity has questions as contents, then it is a first-order attitude, on

⁸A note on terminology. Friedman uses the term ‘interrogative attitude’ to denote attitudes like curiosity, wondering, investigating, and so on, all of which are related to inquiry. The term, in Friedman’s usage, does not imply that these attitudes have questions as contents. She uses ‘question-directed’ for that. Nevertheless, I chose ‘interrogativism’ as a name for the view that interrogative attitudes have questions as contents, in part because it contrasts with *propositionalism*. I avoid the term ‘question-directed’, which can be misleading. Everyone, I take it, agrees that attitudes such as curiosity and wondering are question-directed in the sense that they are relations to questions. The issue is what those relations are, and whether they are reducible to propositional relations such as desiring and knowing.

par with beliefs and desires.⁹ Let us set this argument aside for now. I return to it in §5.

Interrogativists thus reject the attitude claim of DTK. They do not, however, have to reject the satisfaction claim. That is, they may accept that knowledge is the unique satisfier of curiosity. Carruthers (2018, p. 135) holds that curiosity is satisfied once the agent “learns or otherwise comes to believe” one of the answers to the question the agent is curious about, while Friedman (2013, p. 145) writes that inquiring attitudes such as curiosity “are the sorts of attitudes we typically have as we move ourselves from ignorance to knowledge”, though her view on satisfaction is harder to pin down. Whitcomb (2010), who is a quasi-interrogativist (see more below), explicitly argues that only knowledge satisfies curiosity. At any rate, the interrogativist view is that some epistemic state, such as knowledge, true belief, or similar, is what satisfies curiosity, but also that this state does not figure in the contents of curiosity. For simplicity, I will take interrogativists to accept the satisfaction claim of DTK; nothing of substance will hang on this, as long as interrogativists accept that some epistemic state in the vicinity of knowledge satisfies curiosity.

Interrogativism can thus explain some of the data that motivates DTK. Consider infelicitous conjunctions such as (7), reproduced here:

(12) # I know who won the game, but I’m curious who won the game.

Since curiosity is satisfied by knowledge, a subject can be curious only if she lacks knowledge. This explains why claiming to have both knowledge and curiosity about the same question is infelicitous.

Perhaps more troubling for interrogativism are curiosity reports that deny a desire to know:

(13) # I’m curious why dogs bark, but I have no desire to know why dogs bark.

(14) # Ann is curious who came to the party, but she has no desire to know who came to the party.

Perhaps there is some plausible explanation that interrogativists can offer here. In §4, I present more curiosity ascription data that I take to be difficult for interrogativists to explain.

Let us end this subsection by pointing out another reason why it is important to examine the case for interrogativism. A widely held view in the philosophy of mind is propositionalism: the view that all intentional attitudes are propositional in content. Propositionalism is typically opposed by objectualism: the view that some intentional attitudes

⁹See Friedman (2013, p. 155; 2019, p. 298) and Carruthers (2018, pp. 130-134) for this argument. The account of Whitcomb (2010) is motivated by similar concerns. Drucker (forthcoming) also appeals to metacognitive concerns in motivating his account of wondering.

have objects, rather than propositions, as contents.¹⁰ But if interrogativism is true, then propositionalism is false for a different reason: there are intentional attitudes that are irreducibly interrogative rather than propositional. And indeed, some have endorsed interrogativism in arguing against the propositionalist view.¹¹ Although I only discuss interrogativism about curiosity in this paper, my arguments in §5 cast doubt on interrogativism about other inquiring states, such as wondering.

3.2 A hybrid view?

Although interrogativists such as Friedman (2013) and Carruthers (2018), and to some extent Whitcomb (2010), explicitly reject a desire-to-know analysis of curiosity, one might wonder whether interrogativism is necessarily at odds with such an analysis. Can't curiosity both have questions as contents and be a desire to know? An account such as Whitcomb's fits this description. On Whitcomb's view, curiosity is a desire that has questions as contents and is satisfied by knowledge. Curiosity Q , then, is a desire to know Q , since only knowing Q would satisfy the desire, but the content of the desire is just the question Q . Such a hybrid view, however, is implausible. First, and most obviously, it requires accepting the claim that some desires have questions as contents. Ordinarily, desires are for things or states of affairs: I can desire tea, and I can desire to meet a friend. The contents of such desires are propositions: the proposition that I drink tea, or the proposition that I meet a friend. But it seems that one cannot desire a question. One can desire the answer to a question, but that is a desire for the answer, which ordinarily would be construed as a desire with propositional content—a desire to have the answer to the question.

Suppose, however, that desires can have questions as contents. The hybrid view would require the rejection of the following claim:

Contents The contents of a desire to ϕ is the proposition denoted by the clause 'to ϕ '.

For otherwise curiosity would not be a desire to know on the hybrid view. But then further difficulties arise. If I have a desire to dance, the contents of my desire is the proposition that I dance. I take it that the proponent of the hybrid view would not wish to reject this. But then why would Contents not hold universally? Perhaps there is some way in which one could hold that the contents of a desire to dance is the proposition that one dance, but the contents of a desire to know Q is just Q , rather than the proposition

¹⁰See e.g. Montague (2007), Grzankowski (2013). See Sinhababu (2015) for a defense of propositionalism.

¹¹See e.g. Grzankowski (2018) and Felappi (2021).

that one know Q . But then what about question-involving desires for states other than knowledge? Consider, for instance:

(15) Ann desires to know what Bob is doing.

(16) Ann desires to see what Bob is doing.

(15) and (16) denote distinct desires: the former is satisfied by knowing, while the latter is satisfied by seeing, and not by knowing. On the hybrid view, the contents of Ann's desire to know is the question *What is Bob doing?*. What about the contents of Ann's desire to see? If, on the hybrid view, the contents of Ann's desire to see is the proposition denoted by the clause "to see what Bob is doing", then it is hard to see why the same should not hold for Ann's desire to know, i.e., that its contents is the proposition denoted by "to know what Bob is doing". On the other hand, if the hybrid view says that the contents of Ann's desire to see is also the question *What is Bob doing?*, then this seems wrong, insofar as desires are individuated by their contents, because then the desires in (15) and (16) would have identical contents. Moreover, consider:

(17) Ann desires to see Bob's work.

In (17), the contents of Ann's desire is the proposition denoted by clause "to see Bob's work". But then what justifies taking Ann's desire to see in (16) to have a question as contents, but her desire to see in (17) to have a proposition as contents? A much more plausible view is that in both cases the contents of her desire is a proposition that she see something.

The hybrid view requires an implausible theory of desire. I will therefore set it aside for the rest of this paper.

4 Curious to ϕ

In this section, I present a new argument for the desire-to-know analysis of curiosity. The argument revolves around infinitival curiosity ascriptions, i.e., ascriptions of the form 'S is curious to ϕ '. Despite the prevalence of such ascriptions, they are, to the best of my knowledge, never discussed in the literature on curiosity. Here are some naturally occurring examples:

(18) Curious to meet some of the people behind the HeartMate, I travelled to the Texas Heart Institute, in Houston.¹²

¹²<https://www.newyorker.com/magazine/2021/03/08/how-to-build-an-artificial-heart>

- (19) I was curious to try it, mostly because I crave panna cottas of every stripe and had never had a chocolate one.¹³
- (20) Curious to know more, I began to dig into its origins, and what emerged was a tale of ancestral wisdom, rare Amazonian languages, poison and layers of intrigue that thickened, just like the sauce, the deeper I dug.¹⁴
- (21) He recalled that, as a small boy, he had destroyed the stove and nearly killed himself when he threw a pouch of gunpowder onto it, curious to see the result.¹⁵
- (22) He was curious to read something from the book, and on opening it he came across the verse, "*Quod vitae sectabor iter?*"¹⁶

The infinitival form of 'curious' is recognized by dictionaries such as *Merriam-Webster*, which lists the following usage examples in its 'curious' entry:

- (23) They were curious to find out who won the game.
- (24) I'm curious to know more about her.¹⁷

Moreover, the 'curious to ϕ ' construction is not unique to English, and it can be found in languages such as French and Hebrew.¹⁸

A good account of curiosity must explain these ascriptions. What mental state exactly is attributed to an agent who is said to be curious to ϕ ? If curiosity is a desire to know, what is it that the agent who is curious to ϕ desires to know? According to the account I will propose in §4.2, 'S is curious to ϕ ' means, roughly, that S desires to ϕ as a way of coming to know something. Before that, I will argue in §4.1 that data from infinitival curiosity ascriptions supports both the attitude and the satisfaction claims of DTK: curiosity is a desire and it is satisfied only by knowledge.

4.1 Curiosity to ϕ and the desire to know

Infinitival curiosity ascriptions support the desire-to-know analysis of curiosity. That is, they support the claim that curiosity is a desire and the claim that curiosity is satisfied only by knowledge.

¹³<https://www.nytimes.com/2010/03/10/dining/10appe.html>

¹⁴<https://www.bbc.com/travel/article/20201122-the-amazons-mouth-watering-fifth-flavour>

¹⁵<https://www.nybooks.com/articles/2016/11/10/liszt-the-reluctant-superstar/>

¹⁶Bordo (1999).

¹⁷<https://www.merriam-webster.com/dictionary/curious>

¹⁸For example, French: "Je suis curieuse [curious] de voir [to see] le résultat" ("I'm curious to see the result"); Hebrew: "ani sakran [curious] likro [to-read] sfarim nosafim shela" ("I'm curious to read more books by her").

Start with the attitude claim. I argue for the following:

Desire If S is curious to ϕ , S has a desire to ϕ .

I take this to mean that curiosity to ϕ is not merely accompanied by a desire to ϕ but rather *is* a kind of desire to ϕ . Like curiosity about questions, it is a some-things-considered desire. It is not, however, an intrinsic desire, in the sense that it is not a desire to ϕ for the sake of ϕ -ing. Rather, it is a desire to ϕ for the sake of knowledge. More on this in §4.2.

Why accept Desire? Ascribing curiosity to ϕ while denying a desire to ϕ seems incoherent:

(25) # Ann is curious to see her brother's new apartment, but she has no desire to see it.

(26) # Bob is curious to meet the new neighbours, but he has no desire to meet them.

(27) # I'm curious to hear about your trip, but I have no desire to hear about it.

The explanation for the incoherence of these sentences is simple: one who is curious to ϕ desires to ϕ .

Moreover, curiosity to ϕ fits the functional profile of a desire to ϕ : it motivates the agent to ϕ , it can be felt more or less intensely, it is typically triggered in the (perceived) absence of ϕ -ing, and it can be satisfied by ϕ -ing. Curiosity to ϕ and the desire to ϕ seem to arise and end at together. When Ann first hears about the new apartment, she is curious to see it and she desires to see it. Once she visits and sees the apartment, her curiosity is satisfied, and her desire is satisfied. The claim that curiosity to ϕ is a kind of desire to ϕ can explain all of these phenomena.

Consider now the satisfaction claim, that curiosity is satisfied by knowledge, and only by knowledge. The support for this comes from 'curious to know' ascriptions. Here are two naturally occurring examples:

(28) I'd always been curious to know how extensively Nabokov revised *Camera Obscura* when turning it into *Laughter in the Dark*.¹⁹

(29) Meeting Iceland's prime minister later, I was curious to know why she had taken such a backseat.²⁰

'curious to know' ascriptions have a special place among the 'curious to ϕ ' ascriptions: 'S is curious to know Q' seems to mean the same thing as 'S is curious Q'. That is, I claim:

¹⁹<https://www.newyorker.com/books/page-turner/nabokov-retranslated-laughter-dark>

²⁰<https://www.bbc.com/news/world-europe-56412790>

Curious to Know S is curious to know Q iff S is curious Q.

As before, 'iff' is meant to represent identity: being curious to know Q just is being curious Q.

The evidence for Curious to Know comes from the incoherence of affirming one kind of curiosity while denying the other. For the left-to-right direction, consider:

- (30) # Ann is curious to know who won the essay contest, but she's not curious who won the essay contest.
- (31) # Bob is curious to know why cats sleep so much, but he's not curious why cats sleep so much.
- (32) # I'm curious to know how your trip was, but I'm not curious how your trip was.

These sound like contradictions. A good explanation for this is that curiosity to know Q is a kind of curiosity Q. For the right-to-left direction, consider:

- (33) # Ann is curious who won the essay contest, but she's not curious to know who won the essay contest.
- (34) # Bob is curious why cats sleep so much, but he's not curious to know why cats sleep so much.
- (35) # I'm curious how your trip was, but I'm not curious to know how your trip was.

These, too, sound incoherent. Similar conjunctions with other verbs, on the other hand, are acceptable. Consider:

- (36) I'm curious what Ann is doing, but I'm not curious to *see* what she's doing—I'm just curious to know.

A denial of curiosity to know, in this case, is still unacceptable:

- (37) # I'm curious what Ann is doing, but I'm not curious to know what she's doing.

Thus when curiosity Q is ascribed, some forms of curiosity to ϕ can be denied, but not curiosity to know. This suggests that curiosity Q just is curiosity to know Q. This, in turn, suggests that knowledge, and only knowledge, satisfies curiosity.

4.2 Knowing by ϕ -ing

What is it to be curious to ϕ ? To start, consider the following two sets of ascriptions. Ascriptions in the first set sound fine, while those in the other sound odd:

- (38) a. I'm curious to ask Ann about her work.
b. I'm curious to see how Bob is doing.
c. I'm curious to meet the new neighbour.
- (39) a. ? I'm curious to ask Ann for a ride home.
b. ? I'm curious to forget my phone number.
c. ? I'm curious to go to sleep.

It is easy to make sense of a speaker who says one of first three sentences. But the latter three can be puzzling. Here is an explanation: in the first three cases, it is clear that there is something the speaker wants to know by doing the thing she is curious to do. One typically desires to ask a question, see something, or meet a new person, in order to come to know. But one does not typically desire to ask a favor, forget a number, or go to sleep in order to know. However, if context makes it clear that there is something the speaker wishes to know by doing these things, then the respective curiosity ascriptions sound fine. Suppose, for instance, that I want to ask Ann for a ride home because I want to see how she reacts. Then it seems perfectly fine to say that I'm curious to ask Ann for a ride home. Or suppose that forgetting my phone number is guaranteed to lead to an exciting adventure. Then I can be curious to forget my phone number. Suppose, finally, that every time I go to sleep I have a new strange and memorable experience. Then it makes perfect sense to say that I'm curious to go to sleep. It seems, therefore, that one can be curious to ϕ as long as there is something one desires to come to know by ϕ -ing.

To further support this conclusion, consider the difference between having a desire to ϕ and being curious to ϕ . As I argued above, curiosity to ϕ is a kind of desire to ϕ . But not all desires to ϕ are kinds of curiosity to ϕ . Here is a case to bring out the difference. Suppose Bob is an artist who has a new painting, and Ann is curious to see it. Both of the following are true:

- (40) Ann is curious to see Bob's painting.
- (41) Ann wants to see Bob's painting.

Suppose that Ann sees the painting and that her curiosity is satisfied. A few days later, Ann again has a desire to see the painting, because seeing it again would give her pleasure. This time, however, only (41) is true: Ann wants to see the painting, but she is not curious to see the painting. What has changed is that Ann now knows what the painting looks like. In the first case, Ann wanted to see the painting because she wanted to know what it looked like, while in the second case she wanted to see it for different reasons. This is not to say one could not be curious to ϕ after one has already ϕ -ed. Ann could be curious to see the painting again if there was still something she wanted to come to know by seeing it. Suppose, for example, that after seeing the painting Ann learns that it is meant to allude to some famous painting. Now she might be curious to see the painting again. The upshot here is that the difference between being curious to ϕ and merely desiring to ϕ seems to be that in the former but not in the latter case there is some epistemic motivation for ϕ -ing.

I propose, therefore, the following analysis:

Curiosity to ϕ S is curious to ϕ iff, for some question Q, S has a desire to ϕ in order to know Q.

Thus, for instance, someone who is curious to see what happened wants to know what happened by seeing what happened, and someone who is curious to ask Ann about her trip wants to know how her trip was, or what it was like, by asking Ann about her trip.²¹

Why think that the desire to ϕ in curiosity to ϕ is in order to know and not in order to acquire some other epistemic state? First, it seems incoherent to ascribe curiosity to ϕ while denying there is something one desires to know:

- (42) # I'm curious to see where the lightning struck, but I have no desire to know where the lightning struck.
- (43) # I'm curious to find out who won the game, but I have no desire to know who won the game.
- (44) # I'm curious to hear what you think, but I have no desire to know what you think.

Second, attitude predicates that do not entail knowledge are not embeddable under 'curious to'. For instance:

²¹One might wonder whether there is always a particular question one wants answered when one is curious to ϕ . Consider, e.g., curiosity to read from a book. But even in such cases there is a question, e.g., What is in this book? What kind of writing does the book contain? What is it like to read from it? etc. The question one want answered might even be a conjunction of such questions.

(45) # I'm curious to be sure about the answer.

(46) # I'm curious to guess who won the game.

One cannot be curious to guess or be sure, even though one can desire these things:

(47) I want to be sure about the answer.

(48) I want to guess who won the game.

On the other hand, one can be curious to know the same things:

(49) I'm curious to know the answer.

(50) I'm curious to know who won the game.

The present account offers an explanation of this: one cannot know Q by guessing Q or by merely being sure about the answer to Q , and so one cannot be curious to guess or be sure.

To sum up this section, curiosity to ϕ is a desire to ϕ in order to come to know something. Interrogativist accounts of curiosity, which hold that curiosity is not a desire, have trouble explaining why curiosity to ϕ seems to be a kind of desire to ϕ . Other rival accounts, which hold that curiosity is a desire for something other than knowledge, have trouble explaining various other curiosity to ϕ phenomena, such as that curiosity Q and curiosity to know Q seem to be identical, and that only knowledge-entailing attitude predicates are embeddable under 'curious to'. The data from curiosity to ϕ favors the view that curiosity is a desire to know.

5 Metacognition

The argument from metacognition is the central argument for interrogativism and against desire-based accounts of curiosity. My aim in this section is to show that this argument is not decisive, and that it does not warrant a rejection of the desire-to-know analysis of curiosity.

A clear statement of the metacognitive argument is given by Friedman (2013, p. 155):

If having some higher-order attitudes is necessary for having IAs [interrogative attitudes, such as curiosity and wondering], then having IAs always involves representing our first-order epistemic standing by way of beliefs about

what we don't know and desires to know (and so on). This would mean that only creatures capable of representing their own epistemic standings could have IAs. But very simple creatures—creatures not thought to have the relevant sort of metarepresentational capacities—can have at least some of the IAs under discussion, e.g., curiosity, wondering.

Let us begin by considering the premise that simple creatures, such as infants and non-human animals, can be curious. Why accept this premise? One reason might be that we routinely ascribe curiosity to such creatures as cats, dogs, and young infants. But we often also ascribe metarepresentational states to the same creatures. We might say, for instance, that an infant wants to see what is under the bed, or that a cat wants to look out the window. But wanting to see and wanting to look are metarepresentational states—they are desires about the agent's perceptual state. So if facts about what states we commonly ascribe to infants and animals tell us what states they can have, then we should accept that they can be curious *and* have metarepresentational states.

Perhaps one could reply that, yes, we have equal reason to ascribe both curiosity and desires to see or know to animals, until we notice the conceptual resources the latter would require. So we should accept that animals can be curious but not that they can have desires to know. I will say more on conceptual resources below. But for now, let me note that this reply would be question-begging. The issue at hand is whether curiosity is a desire to know, and so is whether curiosity and the desire to know require the same conceptual resources. The interrogativist has not given us any independent reason to think that curiosity is any less conceptually demanding than the desire to know.

Perhaps there is another way of motivating the premise that animals can be curious. Carruthers (2018), who makes a similar metacognitive argument against the desire-to-know view, supports this premise as follows:

Many animals besides humans seem capable of curiosity. Or more neutrally—so as not to beg any questions—many animals engage in forms of behavior that do not seem obviously instrumental, but which seem designed to obtain information. An animal confronted with something unusual might look closer at it, move up to sniff it, walk around it to examine it from the other side, and so on. In humans, this would be recognized as exhibiting curiosity. (pp. 132-3)

Carruthers's reason for ascribing curiosity to animals here is that they engage in the kind of behavior curious humans engage in. That is, if humans and animals behave the same way, and we ascribe curiosity to humans on the basis of this behavior, then we should

ascribe curiosity to animals on the basis of that behavior. But, as before, the same kind of reasoning supports ascriptions of desires to know to animals. A human who engaged in the kind of behavior that Carruthers describes would be said to be curious, but the same human would also be said to desire to know. Given Carruthers's reasoning, then, we should also say that an animal who behaved this way desires to know. We might be reluctant to ascribe a desire to know to the animal because of the conceptual resources such a state would require. But again, we then have no non-question-begging reason to ascribe curiosity to the animal.

Suppose, however, that there is some reason to think that animals can be curious, regardless of whether or not they can have desires to know. Why think that they cannot have desires to know? Let us note two things interrogativists and desire theorists agree on. First, curiosity is satisfied by acquiring a cognitive state such as knowledge. Second, animals who can be curious can also, in the words of Carruthers (2018, p. 139, n. 6), "monitor their own states of knowledge, detecting and responding appropriately to a state of ignorance".²² This should not be surprising. How else can an animal be in a state whose satisfaction condition is the acquisition of knowledge? How can, for instance, a cat who is curious about its environment act so as to obtain knowledge about its environment when it lacks that knowledge, and no longer act that way once it has acquired it? Clearly, the animal must be able to tell, or detect, in one way or another, what knowledge it has. Why, then, not accept that the same animals can have desires to know? The thought seems to be that a desire to know requires more than that, that it requires also representing knowledge as such, through a concept of knowledge. But I see no reason to insist on that. If an agent can consistently detect whether or not p obtains, and act in the absence of p in a way that reliably brings about p , then I see no reason not to say that the same agent has the capacity to have mental states whose content is p , regardless of what concepts the agent may or may not possess. Since everyone in this debate agrees that curious animals have such capacities with respect to knowledge, they should also accept that these animals can desire to know.²³

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²²For more on such capacities of animals, see Proust (2013).

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