

# Inferring by Attaching Force\*

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*Abstract:* The paper offers an account of inference. The account underwrites the idea that inference requires that the reasoner takes her premises to support her conclusion. I argue that the required ‘taking’ is neither an intuition nor a belief. I sketch an alternative view on which inferring consists in attaching what I call inferential force to a structured collection of contents.

Suppose you know that Tiara is either in Paris or in New York. You learn that Tiara is not in Paris, and you infer that she is in New York. What were you doing when you inferred this conclusion? More generally: What are we doing when we make inferences?<sup>1</sup> I suggest that inference should be understood in parallel to judgment. Judgment is an act of attaching what I call doxastic force to a proposition. I argue that inference can similarly

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<sup>1</sup>I will focus on theoretical inference, although what I say also applies to practical inference. Deductive inference is a useful example of theoretical inference. What I have in mind is the kind of mental act by which one can acquire knowledge on the basis of things one already knows and that is naturally expressed by using words like “therefore,” “hence,” or “thus.” Inferences under suppositions are inferences, on my way of speaking. Hence, theoretical inferences don’t necessarily yield a belief in the conclusion. See also (White, 1971).

be understood as an act of attaching a force, which I call “inferential force,” to a structured collection of contents.

I will get to this view by engaging with the ongoing debate about whether inference requires that the reasoner ‘takes’ her premises to support her conclusion (Valaris, 2014; McHugh and Way, 2016; Koziolk, 2017; Boghossian, 2018; Siegel, 2018). I will argue that it does, and I will offer an account of the ‘taking.’ My discussion will be structured around two criteria of adequacy for accounts of ‘takings’ that I will motivate below:

- CRIT1 The ‘taking’ involved in inferring always commits the reasoner to the goodness of her inference.
- CRIT2 The ‘takings’ involved in inference cannot be acquired by merely accepting testimony.

I begin by arguing that inference requires the reasoner to ‘take’ her inference to be good (Section 1). Next, I consider what it means to ‘take’ one’s inference to be good. Some say that this ‘taking’ is an intuition, which is often understood as “a form of intellectual perception” (Chudnoff, 2013, p. 1). Others say that the ‘taking’ is a belief. I argue against both of these views. The first criterion of adequacy rules out the intuition-view (Section 2). The second criterion speaks against the belief-view (Section 3). Given that neither option works, what could the ‘taking’ be? The resolution, I argue in Section 4, is that the ‘taking’ is a matter of inferential force.

# 1 The T-Condition and the Inferential Absurdity

Paul Boghossian (2014, p. 5) has recently given a helpful formulation of the idea I want to examine:<sup>2</sup>

T-CONDITION     Inferring necessarily involves the thinker taking his premises to support his conclusion.

To understand the T-Condition, we must understand, firstly, what the relevant kind of ‘taking’ is and, secondly, what is ‘taken’ to be the case. Boghossian (2014) thinks that the content of the ‘taking’ is that the premises support the conclusion; others think the content is that the conclusion follows from the premises (Valaris, 2014), or that believing the premises doxastically justifies one’s belief in the conclusion (Neta, 2013). I will follow Boghossian and say that the reasoner must take her premises to support her conclusion or that she must take her inference to be good. However, I do so for concreteness; nothing in this paper hinges on that assumption. I will focus on the first question: What is this ‘taking’?

John Broome (2014a) accepts a version of the T-Condition, but he thinks that “[n]o normative belief is needed in reasoning” (Broome, 2014b, p. 632).<sup>3</sup> He holds that the relevant kind of ‘taking’ is a seeming or intu-

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<sup>2</sup>I am only interested in the first half of Boghossian’s Taking Condition, which I label “T-Condition” here. The second half says that the reasoner draws her conclusion because she takes her premises to support her conclusion. Boghossian gets it from Frege (1979, p. 3) but the idea has many advocates (e.g. Locke, 2008, bk.IV, ch. 17.2; Peirce, 1998, p. 348; Russell, 1983, pp. 82–83; Thomson, 1965, p. 296; Stroud, 1979, p. 186).

<sup>3</sup>I am ignoring one aspect of Broome’s view here: He thinks that in the case of theoretical inference there is an implicit belief that the conclusion follows from the premises (which he thinks is not normative). But this belief is constituted by a complex disposition “to behave in a particular way (such as coming to have a belief or an intention) and for this to ‘seem right’” (Broome, 2015, p. 236). I will focus on the aspect of “seeming right” and, hence, can ignore this complication here.

ition (see also Chudnoff, 2014).<sup>4</sup> Others think that the ‘taking’ is a belief (Valaris, 2014; Neta, 2013). In opposition to all such views, some doubt that inference requires the subject to ‘take’ her premises to support her conclusion (McHugh and Way, 2016, 2017, pp. 90–91; Siegel, 2018; Wright, 2014, p. 32; Winters, 1983, pp. 207–212; Moore, 1962, p. 7).<sup>5</sup> So before we enter the debate about what ‘taking’ is, such a skeptical view needs to be addressed.

A crucial data point that lends support to the idea that a reasoner must ‘take’ her inferences to be good is what I call “Inferential Absurdity” (INFA).<sup>6</sup>

INFA It is irrational, and transparently so from the subject’s own perspective, to infer  $B$  from  $A_1, \dots, A_n$  and to also believe that these premises don’t support  $B$  or suspend judgment on whether they do.

In formulating INFA,<sup>7</sup> I am thinking about suspending judgment as an attitude and not just as the lack of any attitude (see Friedman, 2013). I have in mind the kind of attitude you could express by saying “for all I know, the inference may be a bad one.” I call the irrationality mentioned in INFA an absurdity because making an inference one believes to be

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<sup>4</sup>Chudnoff, Broome, Dogramaci and other advocates of the view that ‘takings’ are intuitions differ in their views about what intuitions are. Chudnoff, e.g., thinks that intuitions require a particular kind of phenomenology. These differences don’t matter for my purposes.

<sup>5</sup>Boghossian (2014) holds that the ‘taking’-state is neither a belief nor an intuition. I agree, but my positive view of ‘taking’ differs markedly from Boghossian’s.

<sup>6</sup>See (Hlobil, 2014). Marcus (2012) discusses a related variation on Moore’s Paradox.

<sup>7</sup>An opponent might worry that the absurdity mentioned in INFA is illusory. She might argue that one can have undefeated but misleading evidence that one’s inference is bad without this rendering the inferring irrational. This is an extension of the idea that epistemic akrasia can be rational (e.g. Coates 2012; Weatherson 2008). However, there are general reasons to be skeptical about the possibility of rational epistemic akrasia (Horowitz, 2014; Greco, 2014). Engaging that debate is beyond the scope of this paper.

bad does not just have some irrational downstream consequences that may be opaque to the reasoner. Rather, this act-attitude combination is transparently irrational from the reasoner's own perspective, i.e., if the reasoner is conscious of the acts and attitudes mentioned in INFA, then she necessarily experiences a conscious rational tension between them.

The INFA principle can tell us something about the nature of inference. It entails a version of the T-Condition, provided we understand "taking" in the following way:

TAKE\* Subject *S* takes\* it that *P* just in case adding disbelief in *P*, or suspension of judgment regarding *P*, to *S*'s stock of attitudes (leaving all else unchanged) would be transparently irrational from *S*'s own perspective.

According to this definition, believing that *P* is one way of taking\* it that *P* but it need not be the only way. I will suggest below that there are other ways of taking\* one's inference to be good. I use the asterisk to mark that this is a regimented use of "to take" and does not answer the question what the nature of the 'taking' is.<sup>8</sup>

Note that if INFA holds, then it is transparently irrational for a reasoner to deny, and even to suspend judgment, that her premises support her conclusion. But that is just what it means to take\* one's premises to support one's conclusion, in the foregoing sense. Hence, a version of the T-Condition holds.<sup>9</sup> Since this version of the T-Condition seems to be an

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<sup>8</sup>McHugh and Way (2017; 2016) have criticized this kind of argument for the T-Condition. They claim that they have an alternative explanation of the irrationality mentioned in INFA. I respond to their criticism in (Hlobil, 2018), where I argue that their alternative explanation fails.

<sup>9</sup>Notice that even if all facts about the goodness of inferences can be known *a priori* and it is a failure of rationality to be in error about them, this does not mean that these facts are transparent to the subject. So Titelbaum's (2015) "Fixed Point Thesis" about rationality does not undermine what I say in the text.

immediate consequence of the nature of inference, every account of inference should be able to explain it. So, thanks to INFA, we can see that it is a criterion of adequacy for accounts of the 'taking' involved in inference that it always commits the reasoner to the goodness of her inference, and does so in a way that makes the commitment transparent from the subject's perspective (in so far as she is conscious of her inference). CRIT1 above is another formulation of that criterion.

An opponent might worry that only subjects who possess the concept of support or good inference (or the concept for which they stand in) can be subject to the irrationality mentioned in INFA. It can thus seem that INFA cannot tell us anything about inferences of subjects who lack this concept. Notice, however, that if such a subject makes an inference, her state of mind is thereby in immediate rational tension with the view of someone who believes that the premises don't support the conclusion. Supposing that the rational tension in the inter-subjective and in the intra-subjective case are explained in the same way, this lends support to the view that even subjects who don't possess the concept of support must 'take' their premises to support their conclusion.

To sum up, we have seen that the truth of INFA gives us reason to think that inferring requires the subject to be in a state of mind such that it is transparent to her that her premises support her conclusion, should the question arise. We can label this state of mind: "taking one's inference to be good." What is this 'taking'? Two options immediately suggest themselves: (a) it is an intuition that the premises support the conclusion, or (b) it is a belief that the premises support the conclusion. I will now argue that neither of these options is correct.

## 2 Are 'Takings' Intuitions?

It can seem plausible that the 'taking' that is required for inference is an intuition. In reasoning, we seem to 'see' a connection between the premises and the conclusion. John Broome advocates a version of this view when he says that in reasoning we are following a rule and that rule-following requires that what one does "seems right," relative to the rule.

It is seeming right that distinguishes following a rule from mere causation. In particular, it distinguishes reasoning from mere causation. (Broome, 2014a, p. 21)

Briefly, my account of reasoning is this: you operate on the contents of your premise-beliefs, following a rule, to construct a conclusion [...]. The rule guides you and you actively follow it. [...] When you are guided by a rule, what you do seems to you correct relative to the rule or, if it does not, you are disposed to correct yourself. (Broome, 2014b, pp. 624–25)

Sinan Dogramaci advocates a different version of the view when he explains why he is able to infer "Dolphins are born live" from "Dolphins are mammals" and "All mammals are born live":

I have a conditional intuition that dolphins are born live, which is generated by my belief that dolphins are mammals and all mammals are born live. I might self-attribute this conditional intuition by saying, 'It seems to me, in the light of my beliefs that dolphins are mammals and mammals are born live, that dolphins are born live.' (Dogramaci, 2013, p. 394)

Such views suggest that the correct version of the T-Condition requires that the inferring subject has an intuition whose content is appropriately

related to the (apparent) goodness of the inference. The reasoner might, e.g., have an “intellectual seeming” that her premises support her conclusion, i.e., “a phenomenal, attentional sense of the truth of” this proposition, where such seemings “are not beliefs and [...] do not entail forming beliefs” (Audi, 2015, p. 61; see also Chudnoff, 2014).

Now, as we have seen, the correct version of the T-Condition must explain the Inferential Absurdity. That is, it should explain why it is transparently irrational, from the subject’s own perspective, to make an inference she believes to be bad. Unfortunately, intuitions are ill-suited to explain INFA. The problem is that even if intuitions or ‘seemings’ have some rational force, that force is defeasible. It is not always irrational to form beliefs at odds with one’s intuitions. By contrast it is always irrational to believe one’s inference to be bad while making it.

To see that it’s not always irrational to form beliefs at odds with one’s intuitions, consider the Müller-Lyer illusion. If you look at the Müller-Lyer illusion, it seems to you that the top line is longer than the bottom line, i.e., you have an intuition with that content. This intuition is not an *intellectual* seeming, but it shares all features of intellectual seemings—such as the seeming that there are more natural numbers than even numbers—that are relevant here. If you know that you are looking at the Müller-Lyer illusion, it is not irrational—let alone absurd—to believe that the lines are of equal length. In general, it can seem that  $P$  as robustly as one likes, but that cannot on its own suffice to make believing *not-P* or suspending judgment on whether  $P$  irrational. Therefore, the idea that inferring requires an intuition or seeming cannot explain INFA. It does not meet our first criterion of adequacy, CRIT1 above.

This problem cannot easily be fixed. Philosophers who think that intuitions are distinct from beliefs frequently use the fact that intuiting that  $P$  is not in immediate rational tension with the belief that *not-P* in

order to distinguish intuitions from judgments and beliefs (Koksvik, 2011, sec. 2.5). Elijah Chudnoff puts the point thus:

If  $x$  knows that  $\text{not-}p$  and has an intuition experience representing that  $p$ ,  $x$  is not thereby open to criticism; but if  $x$  knows that  $\text{not-}p$  and also judges or forms an inclination to judge that  $p$ ,  $x$  is thereby open to criticism. (Chudnoff, 2013, p. 44)

In order to explain INFA, the ‘taking’ must be precisely such that if you judge (and perhaps even know) that your inference is not good you are thereby open to criticism. And you are open to criticism because you ‘take’ your inference to be good, which, on the current proposal, means “because you intuit it to be good.” So the ‘taking’ must have the very feature that friends of *sui generis* intuitions use to distinguish intuitions from beliefs.

Perhaps an opponent would point out that Broome and Dogramaci don’t share Chudnoff’s views on intuitions and seemings. Can’t they say that their intuitions and seemings are such that intuiting or having a seeming that  $P$  while judging that  $\text{not-}P$  or suspending judgment whether  $P$  are transparently irrational? They can. But they must then explain what intuitions or seemings are, how they differ from beliefs, and why they carry the strong commitment that Chudnoff’s intuitions are lacking. Until these questions are answered, there is sufficient reason to be skeptical of the view that ‘takings’ are intuitions.

To sum up, the idea that the ‘takings’ involved in inference are intuitions cannot account for the rational strength of ‘taking’; it cannot acknowledge that ‘taking’ one’s inference to be good always commits the reasoner to the goodness of her inference.

### 3 Are ‘Takings’ Beliefs?

I have argued that ‘takings’ are not intuitions. The competing view that immediately suggests itself is that to ‘take’ one’s premises to support one’s conclusion is to believe that one’s premises support one’s conclusion. Some think that this over-intellectualizes reasoning and implies that young children and animals cannot make inferences (McHugh and Way, 2016; Winters, 1983). Others worry that such views founder on a Lewis Carroll-style regress (Boghossian, 2003, 2014; Wright, 2014). The problem that I see with this view, however, has gone unnoticed in the literature.<sup>10</sup> The problem is that ‘takings’ are not transmissible through testimony. In this section, I explain the problem, and I thereby argue that ‘takings’ are not beliefs.

The view that inference requires a belief to the effect that one’s inference is good has recently been endorsed by Markos Valaris and Ram Neta. Valaris (2014, p. 102) argues for the following claim:<sup>11</sup>

BR    If one believes *P* by reasoning from *R*, one believes that *P* follows from *R*.

Ram Neta has proposed an even stronger view on which “every inference is simply a judgment with a certain kind of content” (Neta, 2013, p. 404).<sup>12</sup> On Neta’s view, to make a theoretical inference from *P* to *Q* is to judge “*P* and therefore *Q*.” For Neta, this judgment is, roughly, equivalent to the

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<sup>10</sup>I am discussing this problem in a different context in my forthcoming [redacted for blind review]. There I also discuss some possible objections to a similar argument for the same conclusion as the one I am presenting below. Here I am presenting a brief version of the argument in order to get to my positive proposal.

<sup>11</sup>It is important for Valaris to distinguish basic from non-basic reasoning, but for my current purposes I can ignore such details. Recently, Valaris has endorsed the view that ‘takings’ must be the product of what he calls deduction, which is distinct from reasoning. I am here addressing Valaris’s old view.

<sup>12</sup>It does not matter, for my purposes, that Neta is talking about judgments instead of beliefs.

judgment: “*P* and *Q*, and my belief that *P* doxastically justifies my belief that *Q*.”<sup>13</sup> So, on Neta’s view, inference requires that the reasoner believes that the doxastic justification relation holds between her belief that *P* and her belief that *Q*.

On such accounts, the ‘taking’ involved in inference is a belief or judgment. I will now argue that this view is at odds with our second criterion of adequacy.

CRIT2    The ‘takings’ involved in inference cannot be acquired by merely accepting testimony.

To a first approximation, what I mean by CRIT2 is that if you believe that *P* supports *Q* solely on the basis of testimony, then this belief cannot serve as the ‘taking’ in an inference from *P* to *Q*. ‘Taking’ one’s inference to be good is something that everyone must do for herself and cannot get second-hand.

Some misunderstandings must be forestalled immediately. I don’t say that you cannot use facts that you learned by testimony as premises. I also don’t say that witnessing someone expressing an inference cannot prompt you to make the same inference. Finally, I don’t say that you cannot come to ‘take’ *P* to support *Q* and to infer *Q* from *P* in virtue of some training or education that crucially involves testimony to the effect that *P* supports *Q*. My point is that while others can help you to see things aright, they cannot see things aright for you; and that applies to ‘takings.’

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<sup>13</sup>I am simplifying Neta’s view. He thinks that what comes before and after the comma in this formulation is combined in a binary construction that involves hidden deictic elements. You may think that this matters for my argument below because it may seem that I cannot come to hold demonstrative beliefs about my own mental states by accepting testimony. But that is false. If I say “I think that Trump is a great president” and you say “You should see a psychiatrist if that belief persists,” I may come to believe, by accepting your testimony, that I should see a psychiatrist if *that belief* [this being a deictic expression that refers to my belief about Trump] persists.

Let me explain. Imagine someone believes that  $P$  and wonders whether  $Q$ . As it happens,  $P$  supports  $Q$ , but the agent can't infer that  $Q$ , only because she fails to 'take'  $P$  to support  $Q$ . All other conditions for inferring  $Q$  from  $P$  are met. If she were to 'take'  $Q$  to follow from  $P$  she could, and would, infer  $Q$ . Now, I claim that even if the reasoner were told that  $P$  supports  $Q$ , she would not be in the position to infer  $Q$  directly from  $P$ . But if the 'taking' were a belief, it should be possible to form the belief on the basis of testimony. In cases where the 'taking' is the only thing that is missing, this would mean that forming a belief about the goodness of an inference on the basis of testimony could enable the subject to make the inference. But that is false. We can formulate the argument as follows:

- (1) If the 'taking' is a belief, acquiring this belief via testimony enables us to make the corresponding single-step inference, supposing that all further conditions on inferring are met.
- (2) Acquiring such a belief via testimony does not enable us to make the corresponding single-step inference, even when all further conditions on inferring are met.
- (3) Therefore, the 'taking' is not a belief.

In order to deny (1), one would have to deny that acquiring the belief was sufficient to perform the inference in cases where the only thing that is missing is the 'taking.' But this simply isn't an option for those who identify the 'taking' with a belief.

An advocate of Neta's view might think that one cannot acquire beliefs in "This belief, i.e. my belief that  $Q$ , doxastically justifies that belief, i.e. my belief that  $P$ " by merely accepting testimony. However, I doubt that this is so. After all, there are cases in which it is difficult to know how our own beliefs are doxastically justified and epistemologists frequently make claims about how certain beliefs are typically doxastically

justified, e.g., in cases of forgotten evidence. It seems to me that I can sometimes take their word for it, as applied to my own case.

Another worry regarding (1) might be that some beliefs cannot be acquired by receiving testimony, e.g., aesthetic beliefs, beliefs about matters of taste, and perhaps some moral beliefs. Notice, however, that ‘takings’ are not like any of these beliefs. On the view under consideration, ‘takings’ are not the result of any perceptual or quasi-perceptual processes, nor are they bound up with motivation or emotions. Plausibly, these are the features that explain why aesthetic beliefs, judgments of taste, and perhaps some moral beliefs cannot be shared via testimony. No such explanation is available for ‘takings.’ Note also that neither Valaris nor Neta indicate that the beliefs or judgments they identify with ‘takings’ are special in these ways. And there isn’t any good reason, given the rest of their views, to think they should be special.

Let’s turn to premise (2). If premise (2) is false, the following situation is possible: You believe that  $P$ , and all conditions for you making the inference from  $P$  to  $Q$  are met, except that you cannot (by yourself) come to enjoy the ‘taking’ necessary for inferring  $Q$  from  $P$ . You are then given (ideal) testimony to the effect that  $P$  supports  $Q$ . This enables you to make the inference from  $P$  to  $Q$ . And this enabling effect of the testimony does not arise from you thinking about the matter for yourself. In fact, this is not a possible situation and, hence, (2) is true.

To help me make this point, let me borrow some terminology from Sinan Dogramaci (2013). He calls something a “hard consequence” of a premise-set for a reasoner just in case the reasoner is not able to infer it from the premise-set in a single-step inference. Here is an illustration: In a famous incidence, Godfrey Hardy was visiting the mathematical genius Srinivasa Ramanujan in hospital and remarked that he got there in a cab with the number 1729 and that this was a rather dull number. Ramanujan

replied that, on the contrary, it was an interesting number because it is the smallest number expressible as the sum of two positive cubes in two different ways. Idealizing the case for our current purposes, let us assume that Ramanujan made the single-step inference:

- (P1) The cab number is 1729.
- (C) Therefore, the number of the cab is the smallest number expressible as the sum of two positive cubes in two different ways.<sup>14</sup>

Even for a mathematician of Hardy's caliber this conclusion is a hard consequence of the premise. Only a genius like Ramanujan immediately 'takes' (P1) to support (C); he needs to go through no intermediate steps in his reasoning. Now, suppose that Ramanujan told Hardy that (P1) supports (C). Would this have enabled Hardy to make the very same inference as Ramanujan, supposing that all other conditions on inference were met? That seems incredible. Of course, Hardy can, e.g., make the following inference:

- (P1) The cab number is 1729.
- (P2) If the cab number is 1729, then the number of the cab is the smallest number expressible as the sum of two positive cubes in two different ways (as Ramanujan just told me).
- (C) Therefore, the number of the cab is the smallest number expressible as the sum of two positive cubes in two different ways.

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<sup>14</sup>Notice that nothing hangs on this particular example and on whether it is plausible that this is a single-step, non-enthymematic inference for Ramanujan. All that is needed is an inference that someone cannot make because she cannot 'take' the inference to be good.

But that is a different inference. It has two premises, whereas the inference that Ramanujan made has only one premise.<sup>15</sup> Ramanujan cannot transmit his inferential abilities merely by giving Hardy the belief that (P1) supports (C). Hence, someone who rejects (2) must hold that, in such situations, there is some other requirement on inference that is not fulfilled.

What could it be that Hardy is lacking in such a case? It could be that he does not meet some cognitive condition, i.e., that he is lacking some understanding, or intuition, etc. In that case, however, what Hardy is lacking must be part of the ‘taking.’ But on the view under consideration, this ‘taking’ is nothing but a belief.

So an opponent must hold that it is some non-cognitive condition that is missing. Perhaps Hardy is lacking the right kind of disposition to believe the conclusion in response to believing the premise, or his belief in the premise cannot cause a belief in the conclusion in the right way. Whatever the missing non-cognitive condition might be, we (as philosophers) can arrange that it comes to hold simultaneously with the subject receiving the testimony that (P1) supports (C). (Perhaps we need a bit of science fiction involving advanced neuroscience.) In such a case, merely accepting the testimony (without thinking about it for himself) will enable Hardy to make the inference. But that is no more plausible than the idea that a belief acquired by (pure) testimony without intervening neuroscientists or the like can enable Hardy to make the inference.<sup>16</sup> To sum

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<sup>15</sup>Notice that even if Ramanujan’s inference is enthymematic and has suppressed premises, it is implausible that any of these premises is (P2). After all, it is difficult to see how Ramanujan could possibly come to believe something like (P2)—or that if a number is 1729, then it is the smallest number expressible as the sum of cubes in two different ways—without inferring it by conditional proof. But if he can do that, he doesn’t need (P2).

<sup>16</sup>According to some recent views on understanding-why, we might express this by saying that the ‘taking’ patterns with cognitive achievements like understanding-why and not with knowledge-that (see [Carter and Pritchard, 2014](#); [Hills, 2016](#)).

up, ‘takings’ are not the kind of thing that can be acquired by accepting someone’s testimony that the premises support the conclusion.

Putting my point differently, it is a criterion of adequacy on accounts of the ‘taking’ involved in inference that such ‘takings’ are not transmissible via testimony, i.e. CRIT2 above. The view that ‘takings’ are beliefs does not meet that criterion.

## 4 The Force Account

We have seen that the ‘takings’ involved in inferring are neither intuitions nor beliefs. It can seem that we have painted ourselves into a corner by rejecting the only two plausible options for understanding ‘takings’ and most contemporary accounts of inference. The problem is that what we want these ‘takings’ to do pulls in two apparently opposite directions. On the one hand, the ‘taking’ must be like an intuition in that it cannot be shared via testimony. On the other hand, it must be like a belief in that it commits the reasoner to the goodness of her inference, in a way that is transparent to the reasoner herself (insofar as she is conscious of the inference).

One option would be to adopt a conjunctive account of the following kind: inferring requires the subject to believe that her inference is good, *and* it requires that this belief is based on an intuition. The more complicated the condition on inferring gets, however, the higher is the burden of explaining why inferring requires that such a complicated condition holds. Having to answer such questions is a cost we should avoid if possible.<sup>17</sup> And this is possible, namely by adopting the positive view

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<sup>17</sup>Another option would be to say that the taking involved in inference is an understanding-why. As Alison Hills (2016) has argued, understanding-why cannot (easily) be transmitted via testimony. However, Hills explains understanding-why in terms

advanced in this section. I shall not try to give conclusive arguments for that view. Rather, I want to present it as an attractive option that solves the problems discussed above.

#### 4.1 Statement of the Force Account

The views criticized above conceive of inference as a collection of more familiar acts and attitudes that are appropriately, typically causally, related. The question what ‘takings’ are thus appears as the question what extra ingredient must be added to premise-attitudes and a conclusion-attitude that stand in the right causal relation in order to get an inference. I suggest a different kind of account. We should see inference not as a collection of acts and attitudes but as a single act that must be understood in a way parallel to the way in which we understand other mental acts, like judging.

We can understand judging as the act of attaching what we may call “doxastic force” to a judgable content, where doxastic force is the mental analog of assertoric force. Frege expresses the act of attaching doxastic force by the judgment stroke. He says that “one judges by acknowledging (*anerkennen*) a thought as true” (Frege 1967, p. 38n). An act of judging is a ‘taking-to-be-true.’ Following Frege, I think that this ‘taking-to-be-true’ is not another judgment. Rather, the ‘taking-to-be-true’ characterizes one’s relation to the judged content.<sup>18</sup> In particular, it characterizes the

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of the ability to make certain inferences. Hence, we cannot appeal to Hills account at this point.

<sup>18</sup>According to a tradition that stretches from Aquinas to Kant and Frege, it is essential to acts of the intellect that they understand themselves as living up to the norms that govern them qua the acts they are (see Coope, 2013). This understanding is not something additional over and above the act itself. As Frege puts it with respect to judging:

The connections that constitute the essence of thinking differ in a distinctive way from associations of ideas. The difference does not lie in a mere

aspect of this relation in virtue of which someone who judges cannot be indifferent towards the truth of what she judges. If you consciously judge that  $P$  while consciously believing that it is false that  $P$ , what you are doing is transparently irrational from your own perspective. That is how the directedness at truth of your judgment shows up from your own perspective. And that is what gives rational criticism a foothold in your psychology. If I convince you that  $P$  is false, you will necessarily feel some rational pressure to not judge that  $P$ . And you will admit that something is wrong with your mental state if you nevertheless judge that  $P$ . For that to hold, you need not possess the concepts of truth and falsity. I may convince you that  $not-P$ , and that will work just as well. What matters is that in order to consciously judge that  $P$ , you must experience a rational tension upon consciously believing  $not-P$ , or that  $P$  is false, or the like. That is part of what it means to take  $P$  to be true, i.e., to attach doxastic force to  $P$ .

In analogy to this view on judging, we should understand inferring as an act of attaching what I call “inferential force.” Just as ‘taking- $P$ -to-be-true’ is attaching doxastic force, so ‘taking- $P$ -to-support- $Q$ ’ is attaching inferential force. Now, the contents involved in inferences are not individual propositions but the premises and the conclusion, as a structured collection. I call such structures “arguments.” Ignoring order effects and

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ancillary thought [*Nebengedanke*] that is also present and that adds the justification for the connection. (Frege, 1969, NS, p. 189)

A similar idea can be found in Aquinas’s account of judgment.

To know this relationship of conformity [of thought and reality, i.e., to ‘take’ one’s thought to be true] is nothing other than to judge [*nihil est aliud quam iudicare*] [...]. (Aquinas, *Commentary on De Interpretatione*, Lesson 3, section 9)

I am transferring these ideas to inference.

repetitions of premises, we can think of arguments as ordered pairs of a set of premises and a conclusion. Given this terminology, my view is this:

**FORCE ACCOUNT**     Inferring is the act of attaching inferential force to an argument.<sup>19</sup>

Some unpacking is in order: First, I say that inferring is an act, rather than a state, because inferring stands to the state of holding an attitude on the basis of further attitudes—like believing for reasons—as judging stands to believing.<sup>20</sup>

Second, attaching inferential force is modeled on attaching doxastic force. Attaching inferential force is a relation to an argument; it is not a propositional attitude. The description of this relation as “taking-*P*-to-support-*Q*” highlights that reasoners cannot be indifferent to the quality of their inferences. If you infer *Q* from *P* while believing that *P* doesn’t support *Q*, what you are doing is transparently irrational from your own perspective. That is how rational criticism of your inferences gains a foothold in your psychology.<sup>21</sup> If I convince you that *P* doesn’t support

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<sup>19</sup>For simplicity, I am ignoring that there are different kinds of inference (perhaps deductive, abductive, etc.) and, hence, different kinds of inferential force. If we want to take this into account, we can reformulate the Force Account as follows: To make an inference of kind *k* from  $A_1, \dots, A_n$  to *C* is to attach inferential force of kind  $f(k)$  to  $\langle \{A_1, \dots, A_n\}, C \rangle$ , where  $f(k)$  is the force characteristic of inferences of kind *k*.

<sup>20</sup>Wedgwood (2012; 2015) has presented an account of inference that is in this respect similar to my view. He holds that what he calls “accepting an argument” is an attitude toward an argument, which is a pair consisting of a set of premises and a conclusion. He uses “drawing an inference” for the event of forming, or coming to have, such an attitude. However, Wedgwood can be understood as claiming that inference is just the coming to be in a state of conditionally believing the conclusion of the inference. Unless he goes beyond this minimal view, it is neither clear whether he can handle the INFA-phenomenon nor whether he can explain why inferential ‘takings’ cannot be transmitted via testimony.

<sup>21</sup>That is how the directedness of inference at good inference shows up from the subject’s perspective. I am agreeing with McHugh and Way (2017) that inference (or reasoning, in their terminology) is a goodness fixing kind. As I argue elsewhere, however, contrary to McHugh and Way’s assertion, their account cannot explain INFA.

$Q$ , then you will necessarily feel some rational pressure not to infer  $Q$  from  $P$ . And you will admit that something is wrong with your mental state if you nevertheless infer  $Q$  from  $P$ . For that to be true, you need not possess the concept of support or good inference. It suffices that if you infer  $P$  from  $Q$ , then this act is such that you experience a rational tension if you believe that  $Q$  and  $P$  have nothing to do with one another, that it may be that  $P$  and not- $Q$ , or the like.

Third, the act of attaching inferential force can generate new acts of attaching doxastic force. That is one major difference between doxastic force and inferential force. I claim that it is metaphysically impossible to attach doxastic force to the premises of an argument to which one attaches inferential force and also fail to attach doxastic force to the conclusion of the argument. Attaching inferential force leaves open only certain combinations of forces one can attach to the premises and conclusion. The modality here is metaphysical and not normative. It may happen that it is forbidden but possible to believe  $P$  and that  $Q$  follows from  $P$  without believing  $Q$ . But that is not our case. The case I claim is impossible is one where you believe  $P$ , you infer  $Q$  from  $P$ , you don't change your mind about  $P$ , but you don't come to believe that  $Q$ . Analogous constraints hold for premises one accepts under suppositions. In this way, attaching inferential force ensures that one of several patterns of attaching doxastic (and similar) forces to the premises and the conclusion is actualized. That is why attaching inferential force to an argument can bring one to believe the conclusion.

These three points must suffice here as an initial account of what it is to attach inferential force: it is an act in which we relate to whole arguments in a way that is analogous to the way in which we relate to propositions in judgments and that act forces our attitudes towards the premises and the conclusion into certain patterns. Much more can be

said about inferential force, but that must wait for another occasion. Fortunately, we can already appreciate some attractive features of the Force Account.

## 4.2 Attractions of the Force Account

The Force Account meets the desiderata for accounts of inference that we've uncovered above. These are:

- (i) to explain the Inferential Absurdity in a way that accounts for the rational strength of 'taking'; and
- (ii) to do so in a way that explains why the 'taking' involved in inference can't be transmitted by testimony.

The Force Account meets desideratum (i). To attach inferential force to an argument is to relate to the argument in such a way that it would be transparently irrational to believe that the premises don't support the conclusion. The situation is parallel to one in which you judge that  $P$  but you also believe that  $P$  is not true. To relate to the proposition  $P$  in the way characteristic of judging is a way of taking\*  $P$  to be true. Similarly, to relate to the argument with premise  $P$  and conclusion  $Q$  in the way characteristic of inference is a way of taking\*  $P$  to support  $Q$ . The absurdity is not explained by pointing to incompatible contents of our thoughts. Rather, the absurdity arises because of the interplay of the contents of our thoughts and the way in which we relate to these contents.

Regarding (ii), the Force Account explains why inferential 'takings' cannot be transmitted via testimony. In giving testimony we utter propositions and thereby make it the case (if all goes well) that the recipient is justified in attaching doxastic force to that proposition. But attaching doxastic force to a proposition can never amount to attaching inferential force

to an argument. This is so because, in general, accepting testimony that  $P$  never suffices to take-it-that- $P$  in a way that constitutes the attachment of a force, whether the force is doxastic, inferential, or any other kind. It is not just that accepting testimony that  $P$  supports  $Q$  never amounts to taking  $P$  to support  $Q$  in the way constitutive of attaching inferential force. Accepting testimony that it is true that  $P$  also never amounts to ‘taking’  $P$  to be true in the way constitutive of attaching doxastic force. Rather, in accepting such testimony, one takes it to be true that it is true that  $P$ . In general, ‘takings’ cannot be shared via testimony. So the Force Account meets desideratum (ii).

An additional attractive feature of the Force Account is that it is not vulnerable to Lewis Carroll-style regresses, i.e., regresses that arise if we hold that ‘takings’ must be inferentially justified (see [McHugh and Way, 2016](#); [Wright, 2014](#)). According to the Force Account, to say that a ‘taking- $P$ -to-support- $Q$ ’ is justified means nothing but that the subject is rational in inferring  $Q$  from  $P$ . After all, the ‘taking’ and the inference are the same act. Hence, it is false that in order to be justified in inferring  $Q$  from  $P$  one must be antecedently justified in taking- $P$ -to-support- $Q$ . No regress threatens. The grain of truth in the kind of inferential internalism that gives rise to threats of vicious regresses is that if one has justification for the claim that  $P$  doesn’t support  $Q$ , that can undermine one’s rationality in inferring  $Q$  from  $P$  ([Fumerton, 2015](#)). Where such views go wrong is the claim that the rationality of an inference must be explained in terms of the justification of ‘takings.’ We can and should reverse this order of explanation.

## 5 Conclusion

I have argued against a broad spectrum of extant views of inference. Accounts that reject the T-Condition fail to explain the Inferential Absurdity. Views on which ‘takings’ are intuitions also cannot explain the absurdity. And those who hold that ‘takings’ are beliefs cannot explain why these ‘takings’ are not transmissible via testimony. I have sketched a view that meets all these criteria of adequacy. I hold that inferring is an act of attaching inferential force to an argument.<sup>22</sup>

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