The many ways of the basing relation

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Abstract

A subject S's belief that Q is well-grounded if and only if it is based on a reason of S that gives S propositional justification for Q. Depending on the nature of S's reason, the process whereby S bases her belief that Q on it can vary. If S's reason is non-doxastic—like an experience that Q or a testimony that Q—S will need to form the belief that Q as a spontaneous and immediate response to that reason. If S's reason is doxastic—like a belief that P—S will need to infer her belief that Q from it. The distinction between these two ways in which S's beliefs can be based on S's reasons is widely presupposed in current epistemology but—we argue in this paper—is not exhaustive. We give examples of quite ordinary situations in which a well-grounded belief of S appears to be based on S's reasons in neither of the ways described above. To accommodate these recalcitrant cases, we introduce the notion of enthymematic inference and defend the thesis that S can base a belief that Q on doxastic reasons P1, P2, …, Pn via inferring enthymematically Q from P1, P2, …, Pn.

KEYWORDS: basing relation, doxastic justification, well-grounded belief, propositional justification, inference, enthymematic inference

1. Introduction

A subject S's belief that Q is well-grounded if and only if it is based on a reason of S that gives S propositional justification for Q. Depending on the nature of S's reason, the process whereby S bases her belief that Q on it can vary. If S's reason is non-doxastic—like an experience that Q or a testimony that Q—S will need to form the belief that Q as a spontaneous non-inferential response to that reason. If S's reason is doxastic—like a belief that P—S will need to infer her belief that Q from it. The distinction between these two ways in which S's beliefs can be based on S's reasons is widely presupposed in current epistemology but—we argue in this paper—it is not exhaustive. We give examples of quite ordinary situations in which S's well-grounded beliefs appear to be based on S's reasons in neither of the ways described above. To accommodate these recalcitrant cases, we

introduce the notion of enthymematic inference and defend the thesis that S can base a belief that Q on doxastic reasons P1, P2, … Pn via inferring enthymematically Q from P1, P2, …, Pn.

The paper is structured as follows: in Sect 2 we detail the key principle of the orthodox view about the relation between propositional justification and well-grounded belief, and describe cases that are not accounted by it. In Sect 3 we introduce the concept of enthymematic inference and correlated notions. By relying on this notional background, in Sect 4 we expand the key principle of the orthodox view about propositional justification and well-grounded belief into a more comprehensive principle and show that it accounts for the recalcitrant cases. In Sect 5 we draw our conclusions.

2. Justifying and grounding

Epistemic justification is—very roughly—justification for believing that a proposition is true.[1] Our approach to epistemic justification throughout this paper will be *internalist.* The internalist endorses the intuitive thesis that all the factors that provide S with epistemic justification are accessible to S by mere reflection or introspection.[2] The *externalist* denies this claim. It is customary to distinguish between *propositional* justification and *doxastic* justification.[3] Roughly, a subject S has propositional justification for a proposition Q when S has a reason *for believing* Q (whether or not S believes Q and does so for that reason). S has doxastic justification for Q when S *justifiedly believes* Q. A widely accepted or implicitly presupposed principle that links together these two types of justification says that if (1) S has *propositional* justification for Q in virtue of some mental state or

[1] Although the property of being epistemically justified can be predicated of propositional attitudes other than belief, for the sake of simplicity, in this paper we focus only on belief. Throughout this work we also assume that the claim that S has justification (or reason) for believing P and the claim that P is justified for S are substantially equivalent in meaning.

[2] This is specifically the internalist position called *accessibilism*. A less popular and more controversial form of internalism—called *mentalism*—states that all the factors that provide S with epistemic justification are *mental* states of S.

[3] Whenever we speak of justification or reason, unless otherwise specified, we mean *prima facie* justification or *prima facie* reason.

set of mental states X, and (2) S does believe Q *on the basis of X*, then (3) S's belief Q is *doxastically* justified.[4] For example, Jonathan Kvanvig states that:

> Doxastic justification is what you get when you believe something for which you have propositional justification, and you base your belief on that which propositionally justifies it. (Kvanvig 2003: 8),

Furthermore, according to John Pollock and Joseph Cruz:

> To be justified in believing something it is not sufficient merely to have a good reason for believing it. One could have a good reason at one's disposal but never make the connection. [In such a case] what is lacking is that you do not believe the conclusion on the basis of those reasons. (Pollock and Cruz 1999: 35-36)

Since the term 'doxastic' can be used to refer to different things in different contexts, to avoid confusion, hereafter we prefer to follow the epistemologists who replace the expression 'doxastically justified belief' with the equivalent expression 'well-grounded belief' (see for instance Conee & Feldman 2004).

Most epistemologists take epistemic reasons to divide into two broad categories: non-doxastic and doxastic (cf. Pollock and Cruz 1999: 87). A doxastic reason of S for believing Q is (a belief of S in) a proposition P or a set of propositions P1, P2, …, Pn that counts for S as evidence for Q. A non-doxastic reason of S for believing Q is any cognitive mental state of S that supports her believing Q but that is *not* in turn a belief or set of beliefs (cf. Weisberg 2009). Such a mental state could for instance be a perceptual experience that Q or an apparent memory that Q of S. For the sake of simplicity, we will take perceptual experience to be a paradigmatic instance of the broader category of non-doxastic reasons.

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[4] Turri (2010) has found apparent counterexamples to this general principle. This is not the place where to assess Turri's arguments. Since Turri's cases have no direct bearing on the questions we deal with in this paper, we prefer to set the whole issue aside. Furthermore, we tend to agree with Silva (2015), that a very modest revision of the above general principle would suffice to make it survive Turri's objections.

In accordance with this dichotomy between types of reasons, S's propositional justification for Q can flow from either S's experiences or from S's beliefs. In particular, in virtue of having an experience with content Q, S would have propositional justification for believing Q, and in virtue of justifiedly believing P1, P2, …, Pn, S would have propositional justification for believing any proposition Q that S is aware it is an inductive or deductive consequence of P1, P2, …, Pn jointly.

With this distinction in mind, let's go back to the general principle introduced before concerning the relation between propositional justification and well-grounded belief. We can now clarify that the way in which (2) is satisfied depends on whether the mental state X referred to in (1) is an experience or a belief (or set of beliefs). When X is an experience that Q, saying that S's belief that Q is based on X is saying (2.1) that S has formed the belief that Q as a spontaneous, immediate response to her entertaining the experience itself. When X consists of S's justified beliefs that P1, P2, …, Pn for any P1, P2, …, Pn such that S is aware[5] that Q is an inductive or deductive consequence of them jointly, saying that the belief that Q is based on X is saying that (2.2) S has inferred Q from P1, P2, …, Pn.

Here are some examples of how condition (2) can be fulfilled in the two alternative ways described by (2.1) and (2.2). Suppose John has propositional justification for believing that (P) Jan is riding a bike in virtue of his experience that P, and that John does form the belief that P as a spontaneous and immediate response to his having that experience. In this way, John acquires a well-grounded belief that P. Alternatively, suppose that John has propositional justification for believing that (Q) Jan has learned to ride a bike in virtue of his perceptually justified belief that P

[5] From an internalist point of view, this type of awareness should not be thought of as factive. For the internalist, S can have inferential justification for believing Q from P even if it is false that Q is a consequence of P, though it *appears* to S that Q is a consequence of P. (See for Huemer 2016 for discussion.) The type of awareness required for S can be cashed out in terms of S's entertaining an *inferential seeming* that P supports Q, or S's *being disposed* to entertain such a seeming. More on this below.

and his awareness that Q is an inductive consequence of P. Also, suppose that John actually infers[6] that Q from her belief that P. In this way, John comes to entertain a well-grounded belief that Q.

By availing ourselves of the distinction between these two ways to satisfy condition (2), we can re-state the general principle that relates propositional justification to well-grounded belief as follows:

> (P-WG)
> IF
> (1.1) Q is propositionally justified for S in virtue of her having a perceptual experience with content Q, and (2.1) S forms the belief that Q as a spontaneous and immediate response to her having that experience,
> OR
> (1.2) Q is propositionally justified for S in virtue of her justifiedly believing P1, P2, …, Pn and her being aware that Q is an inductive or deductive consequence of P1, P2, …, Pn jointly, and (2.2) S carries out an inference from P1, P2, …, Pn to Q.
> THEN,
> (3) S's belief that Q is well-grounded.

In what follows we shall argue that (P-WG) cannot accommodate all possible cases in which it is intuitive that S has a well-grounded belief that Q. We will describe quite ordinary situations that—somewhat surprisingly—have not attracted much attention in the epistemological literature.[7] These are situations in which it is intuitive that S has a well-grounded belief that Q though neither the conjunction (1.1) & (2.1) nor the conjunction (1.2) & (2.2) is fulfilled. We will present cases of two general types. In the first, S has an *experience* that P and is aware that Q is a consequence of P. However, S doesn't form a belief that P, and so doesn't *infer* Q from P. Rather, S directly forms the belief that Q in response to her entertaining the experience that P. In the second case-type, S is aware that Q is a consequence of P1 in conjunction with other premises P2, ..., Pn but not from P1 alone. Furthermore, S justifiedly believes P1 and has reasons for believing P2, ..., Pn, and yet she doesn't come to believe P2, ..., Pn. Thus, she doesn't *infer* Q from P1, P2, ... Pn jointly. Rather, S directly switches from P1 alone to Q.

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[6] Whenever we say that a subject infers a proposition from some other, we mean that the subject *competently* does so.

[7] Pryor (2005: 183) consider cases of this type but in a different context.

Before moving forward, we pause to pre-empt a possible criticism of (P-WG) appealing to the epistemological view known as *conservatism* (cf. Wright 2007, Silins 2007 and Silva 2013). The conservative contends that when S has *propositional* justification for believing Q in virtue of a perceptual experience that Q, this can happen only if S also possesses antecedent justification for believing that (R) S's experience is reliable.[8] On the conservative view, S's perceptual belief that Q is *well-grounded* when it is based on *both* S's experience that Q *and* S's belief that R (cf. Silins 2007). This might motivate a concern about (P-WG). For (P-WG) doesn't seem able to account for the way in which S's belief that Q is based, specifically, on S's belief that R. This is so because the belief that Q, when formed as a spontaneous response to S's having the experience that Q isn't simultaneously *inferred* from R. To attenuate this concern, it helps noting that the most plausible form of conservatism construes the contribution of S's experience that Q to S's justification for Q *inferentially* (cf. White 2006 and Silins 2007). On this view, S's experience that Q contributes to S's justification for believing Q via producing S's *introspective belief* that (P) she has the experience that Q. So, when S is said to form the belief that Q on the basis of the experience that Q, S is *not* spontaneously responding to her having that experience. Rather, S is *inferring* Q from her introspective belief that P and the additional premise R. The way in which S's belief that Q can be well-grounded, in accordance with the most plausible form conservatism, is thus fully captured by (2.2).

Let's now inspect the cases—anticipated before—that appear unaccountable by (P-WG). In the epistemological literature it is customarily assumed that a proposition X can be relevant for a subject S's *propositional* justification for believing another proposition Y, when S is aware that Y is a consequence of X, even if S doesn't actually believe X but has only evidence for believing X (cf. Pryor 2005: 183). For instance, those who claim that propositional justification can *transmit* across known entailment are committed to this assumption. Suppose X entails Y. S's justification *for*

[8] Or that relevant sceptical conjectures are false (depending on the variant of conservatism).

believing X transmits to Y just in case S has justification *for believing* Y in virtue of both her justification *for believing* X (whether or not S actually believes X) and her awareness that X entails Y (cf. Moretti and Piazza 2013). Our cases also exploit this assumption.

Here is an example of the first, mono-premise type. Suppose Andrea sees that (P) the little hand of her watch points to 3 and the big hand points to 12. Also, suppose that Andrea *doesn't* form the belief that P, so that she doesn't infer from P the conclusion that (Q) it's 3 o'clock. Rather, Andrea responds to her having the *experience* that P by directly forming the belief that Q. In these circumstances it is intuitive that Andrea has *propositional* justification for Q. For whether or not Andrea forms the belief that P, her experience gives her propositional justification for believing P, and Andrea is aware that Q follows from P. It is intuitive, moreover, that Andrea's belief that Q, based on her experience that P, is well-grounded. For instance, Andrea doesn't seem epistemically blameworthy for holding this belief on the basis of her experience that P. Indeed, Andrea's belief looks perfectly rational or reasonable in these circumstances. This fact, however, is not accounted for by (P-WG). Recall that Andrea doesn't form a belief that P, so she doesn't infer her belief that Q from the belief that P. This shows that neither (2.1) nor (2.2) is satisfied. Note, furthermore, that Q is not (part of) the content of Andrea's experience that P. So, Andrea doesn't form the belief that Q as a spontaneous, immediate response to her having that experience. Thus, neither (1.1) nor (1.2) is satisfied. Nevertheless—as said—it appears true that (3) Andrea's belief that Q is well-grounded. (P-WG) leaves this fact unexplained.

Here is another example of the same type. Kurt is driving his car from Innsbruck heading to Salzburg. He knows very well the geography of this part of Europe. At a certain time, he spots a sign indicating an exit to Rosenheim. As a spontaneous response to his having the experience that (P) there is a sign on the highway indicating an exit to Rosenheim, Kurt forms the belief that (Q) he is now in Germany and no longer in Austria. It is intuitive that Kurt has *propositional* justification for believing Q. For whether or not Kurt forms the belief that P, his experience gives him

propositional justification for believing P, and Kurt is aware that Q is a consequence of P. It is also intuitive that Kurt's belief that Q, based on his experience that P, is perfectly rational and thus well-grounded. This fact, however, is unaccounted by (P-WG). Recall that Kurt doesn't form the belief that P, so he doesn't infer the belief that Q from the belief that P. Thus neither (2.1) nor (2.2) is satisfied. Note, moreover, that Q is not even a fragment of the content of Kurt's experience that P. Thus, Andrea doesn't form the belief that Q as a spontaneous, immediate response to his having an experience that P. Thus, neither (1.1) nor (1.2) is satisfied. Again, (P-WG) leaves the intuitive fact that S's belief that Q is well-grounded unexplained.

Here is an example of the second, multi-premise type.[9] Suppose Terence knows that John and Jack are indistinguishable twins. Imagine that while walking to his office, Terence receives a call from his secretary who tells him that (P1) a gentleman who looks like either twin is waiting for seeing him. Terence justifiedly believes P1. Terence also apparently *remembers* that yesterday Jack flew to Sydney (on the opposite side of the globe), where he intended to spend some months. So Terence's apparent memory *disposes* him to believe (P2) that the gentleman who is waiting for him is not Jack. Suppose that, without bothering to form the belief that P2,[10] Terence directly transitions from his apparent memory and his belief that P1 to confidently believing (Q) that John is waiting for him.

Intuitively, Terence has propositional justification for believing Q. In fact, Terence justifiedly believes P1 and—though he doesn't believe P2—Terence's apparent memory gives him propositional justification for believing P2. Furthermore, Terence is aware that Q can be inferred from P1 and P2 jointly. It is also intuitive that Terence's belief that Q, based on his justified belief that P1 and his apparent memory, is well-grounded. This intuition, however, is not accounted for by (P-WG). In fact, Terence doesn't form the belief that P1 *and the belief that P2*, from which

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[9] Suggested by a similar example described in Wright (2013).

[10] One might contend that an apparent memory that P is nothing but a *belief* that P. But this is implausible because one can have an apparent memory that P while *disbelieving* P.

conjunction he could *infer* the belief that Q. Thus neither (2.1) nor (2.2) is satisfied. Also, Terence doesn't have an experience that Q. So, he doesn't form the belief that Q as a spontaneous, immediate response to her having that experience. Hence neither (1.1) nor (1.2) is satisfied.

3. Plain inferences and enthymematic inferences

The last three examples detailed above show that, in certain cases, well-grounded beliefs don't owe their epistemic status to the satisfaction of either (1.1) & (2.1) or (1.2) & (2.2). To account for these and similar cases, we will need to complement the two disjuncts in (P-WG) with a third one that describes a third possible way in which S's belief that Q can rationally be based on mental states of S. So, we will lay down three alternative sets of conditions whose satisfaction suffices to make a belief that Q of S well-grounded. The third set of conditions explains why the subject's belief that Q is well-grounded in the former examples and suggests that also in cases of these types there is a sense in which the mental state (or set of mental states) of S that makes S's belief that Q well-grounded is the same state (or set of states) that gives S propositional justification for believing Q.

To get started we need to do some preliminary work. So far, we have relied on a standard notion of inference widely adopted in epistemology according to which a belief in the conclusion can only be inferred from a *belief* in the premise or a set of *beliefs* in the premises. We think that we can accommodate the recalcitrant cases considered before if we put in use a more liberal notion of inference.

Let's first introduce the notion of a subject's *perspective*. In the way we use this notion, S's perspective is constituted by the totality of the mental states of S in virtue of which S represents reality as being in a certain way. S's beliefs, apparent perceptions and apparent memories are for instance constituents of S's perspective. A proposition P *is true from S's perspective* just in case either the belief that P is a constituent of S's perspective or there is some mental state M constitutive of S's perspective—e.g. a perceptual experience that P—such that S's having M disposes S to

believe P in appropriate circumstances. Suppose for example Mary believes that there are three bottles of beer in the fridge. Since this belief is a constituent of Mary's perspective, the proposition that there are three bottles of beer in the fridge is true from this perspective. Moreover, Mary's belief that there are three bottles of beer in the fridge disposes Mary to believe many different propositions she doesn't actually believe which, for this motive, also count as true from Mary's perspective. These propositions include, for instance, the one that the fridge is not empty, that there is some alcoholic drink in her house, that Mary is not in urgent need to buy beer, etc. With this notional background in place, we can now characterize a very general notion of inference.

(INFERENCE)

S carries out an *inference* from P1, P2, …, Pn to Q if and only if S forms a belief that Q because (a) P1, P2, …, Pn are true from S's perspective, and (b) S takes Q to be a consequence of P1, P2, …, Pn jointly.

To fully understand the content of (INFERENCE), some clarifications are in order. First, P1, P2, …, Pn can be true *from S's perspective* even if they are false. For instance, suppose Mary's belief that there are three bottles of beer in the fridge is false. In this case the propositions that there are three bottles of beer in the fridge, or that she is not in urgent need to buy beer, are both false but still true from Mary's perspective. Furthermore, S can take Q to be a consequence of P1, P2, …, Pn, even if Q is *not a consequence* of P1, P2, …, Pn. So, in our liberal sense of inference, S can *infer* Q from P1, P2, …, Pn even if P1, P2, … Pn are false, and Q is not a consequence of P1, P2, …, Pn.

Second, P1, P2, … Pn can be true from S's perspective even if S has no justification for P1, P2, … Pn. For instance, suppose Mary believes that there are three bottles of beer in the fridge out of her wishful thinking. In this case the propositions that there are three bottles of beer in the fridge and that she is not in urgent need to buy beer are both unjustified for Mary, but still *true from her*

perspective. Of course, a proposition can be *justifiedly* true from S's perspective. This happens either when the belief that P is a constituent of S's perspective and this belief is justified or when the mental state M of S disposing S to believe P gives S propositional justification for believing P. For instance, suppose Mary believes that there are three bottles of beer in the fridge because she clearly remembers seeing them in the fridge five minutes ago. In this case the propositions that there are three bottles of beer in the fridge and that she is not in urgent need to buy beer are both justifiedly true from Mary's perspective.

Third, S can take Q to be a consequence of P1, P2, …, Pn even if S is unable to grasp notions such as deductive consequence, inductive consequence, and their ilk. In order for S to take Q to be a consequence of P1, P2, …, Pn, it is sufficient (and necessary) that Q be available to her as a consequence of P1, P2, … Pn in McCain (2014)'s internalist sense. That is to say, it is sufficient (and necessary) that S entertain the *appearance* or *seeming* that if P1, P2, …, Pn are jointly true, then Q is true or probable,[11] or be at least disposed to entertain it whenever S is explicitly invited to consider the question.

Inference as just characterized is a genus that can be differentiated in different species depending on how condition (a) is fulfilled. If S forms the belief that Q because (a1) P1, P2, …, Pn are true from her perspective *in the sense that S actually believes that* P1, P2, …, Pn, and (b) S takes Q to be a consequence of P1, P2, …, Pn, then S performs a *plain* inference. This is the standard interpretation of 'inference'—the one presupposed in condition (2.2) of (P-WG).

If S forms the belief that Q because (a2) P1, P2, …, Pn are true from her perspective in a way that *S doesn't actually believe at least some of these P1, P2*, …, *Pn* though some constituents M1, M2, …, Mm of S's perspective *dispose* S to believe the non-believed premises, and S takes Q to be a consequence of P1, P2, …, Pn, then S performs an *enthymematic* inference. This inference is not an inference in the standard sense presupposed in (2.2). It also deserves emphasis that the

[11] For theories of *inferential* appearances of this type see for instance Chudnoff (2014), Brogaard (2016) and Huemer (2016).

transition described by condition (1.2) is not an inference in this enthymematic sense. One might believe the contrary because when S has a perceptual experience that Q and forms the belief that Q as a spontaneous response to her having that experience, S is forming a belief in a proposition Q that she (trivially) takes to be a consequence of the experience's content (that is to say, Q itself). Crucially, however, in this case S doesn't form her belief that Q *because* S takes Q to be a consequence of itself. Rather, as many epistemologists nowadays contend, S forms the belief that Q in response to her perceptual experience that Q's distinctive *phenomenological character* (which many describe as its *phenomenal force*) of presenting S with the fact or the truth that Q.[12]

To further illuminate the notions of plain and enthymematic inference we need to clarify what it takes for S to form the belief that Q *because* condition (a) and condition (b) are fulfilled. Let's first address this question in relation to (a1) and (b). In this case the question is what it takes for S to form the belief that Q *because* S believes that P1, P2, …, Pn are true and considers Q to be a consequence of P1, P2, …, Pn. This is the same as asking what it takes for S to *plainly* infer Q from P1, P2, …, Pn. The fact that S believes Q because (a1) is satisfied involves—trivially—that S believes Q because S believes P1, P2, …, Pn. The fact that S forms the belief that Q because (b) S takes Q to be a consequence of P1, P2, …, Pn involves—less trivially—that S forms the belief that Q because S's beliefs that P1, P2, …, Pn cause the belief that Q in a way that *is shaped* by S's taking Q to be a consequence of P1, P2, …, Pn.

We think that the difference between a causal relation from S's beliefs that P1, P2, …, Pn to S's belief that Q that is shaped by S's taking Q to be a consequence of P1, P2, …, Pn and a causal relation from S's beliefs that P1, P2, …, Pn to S's belief that Q that is not shaped by S's taking Q to be a consequence of P1, P2, …, Pn should be intuitively clear, at least to some extent. However, an analogy with Ryle (1949)'s distinction between an action that is intelligently executed and an action that isn't intelligently executed might further illuminate this difference. S's digesting a sandwich or

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[12] See mainly instance Pryor (2000) and Huemer (2001).

winning a fair lottery are not actions intelligently executed by S, while S's carefully folding a sheet to make a paper ship or S's driving a car are actions that S could only intelligently carry out. Actions of these types are sustained by causal processes that occur at some level. The processes that underwrite the actions that are not intelligently executed by S are not shaped by S's knowledge of how to perform those actions, while the processes that underwrite the actions that are intelligently executed by S are shaped by S's knowledge of how to perform those actions. In a similar way, the transitions whereby some beliefs of S cause another belief of S can be executed by S more or less intelligently depending on whether or not the underlying causal processes are shaped by S's taking the latter belief to be a consequence (deductive or inductive) of the former beliefs.

Some philosophers—e.g. Boghossian (2014) and Siegel (forthcoming)—hold that the causal process whereby S forms a belief that Q from the beliefs that P1, P2, …, Pn can count as an inference even if the process is shaped by S's taking Q to be a consequence of P1, P2, …, Pn at a *sub-personal* level. When the causal relation from S's beliefs that P1, P2, …, Pn to S's belief that Q is shaped by S's taking Q to be a consequence of P1, P2, …, Pn at a *personal* level, S is self-aware or potentially self-aware that Q is a consequence of P1, P2. …, Pn. If the same causal relation is shaped by S's taking Q to be a consequence of P1, P2, …, Pn at a *sub-personal* level, then S *isn't* even potentially self-aware that Q is a consequence of P1, P2, …, Pn (cf. Boghossian 2014).

The internalist view of epistemic justification that we have adopted in this paper imposes that S can acquire inferential justification for Q from P1, P2, …, Pn only if S is *self-aware* or *potentially self-aware* that Q is a consequence of P1, P2, …, Pn. In fact, as clarified above, on this view, S can take Q to be a consequence of P1, P2, …, Pn only if S entertains or is disposed to entertain the *appearance* that if P1, P2, …, Pn are jointly true, then Q is true or probable. Accordingly, saying that S's beliefs that P1, P2, …, Pn cause S's belief that Q in a way that is shaped by S's taking Q to be a consequence of P1, P2, …, Pn is just saying that S's beliefs that P1, P2, …, Pn cause that belief in a way that is shaped by S's having or being disposed to have the *appearance* that Q is a

consequence of P1, P2, …, Pn. On this view, the causal process whereby S forms the belief that Q from the beliefs that P1, P2, …, Pn can count as a plain inference only if the process is shaped by S's taking Q to be a consequence of P1, P2, …, Pn at a *personal* level.

To summarize, it appears true that:

(PLAIN INFERENCE)

S carries out a *plain* inference from P1, P2, …, Pn to Q if and only if S's beliefs that P1, P2, …, Pn jointly cause S's belief that Q through a process shaped by S's taking Q to be an inductive or deductive consequence of P1, P2, …, Pn at a personal level.

One might wonder whether there is a *criterion* for ascertaining whether psychological causal processes of the type described in (PLAIN INFERENCE) are actually shaped by S's taking the conclusion to follow from the premises *at a personal level.* We suggest this criterion:

(PERSONAL LEVEL)

S's beliefs that P1, P2, …, Pn jointly cause S's belief that Q through a process shaped by S's taking Q to be a consequence of P1, P2, …, Pn *at a personal level* if and only if S's beliefs that P1, P2, …, Pn jointly cause S's belief that Q, and S would adduce the reasons that P1, P2, …, Pn and that Q is a consequence of P1, P2, …, Pn in response to a request to explain why she believes Q.

Boghossian (2014) criticizes a principle *in the neighborhood of* (PERSONAL LEVEL). The principle says that, roughly, a subject S counts as taking a set of premises to support a conclusion if and only if S would offer the premises as her reasons when asked why she believes the conclusion. According to Boghossian, this principle is implausible because it commits their advocates to

claiming that what S is disposed to say in response to the question about why she has formed a given belief *makes it the case* that she has formed that belief for a particular reason. But this claim is very odd and implausible, and so is the principle. Adapted to (PERSONAL LEVEL), the objection would say that this principle commits us to the implausible view that the fact that S would adduce P1, P2, …, Pn in response to the question why she has formed the belief that Q *makes it the case* that the causal link from S's beliefs that P1, P2, …, Pn to S's belief that Q was shaped by S's taking Q to follow from P1, P2, …, Pn. To pre-empt this possible criticism, we emphasize that (PERSONAL LEVEL) is not proposed as an *analysis* of what it takes for the causal link from S's beliefs that P1, P2, …, Pn to S's belief that Q to be shaped at a personal level by S's considering Q to follow from P1, P2, …, Pn. (PERSONAL LEVEL) is only meant to be a *criterion* that interprets the truth of its right-hand side as *signal* (or *symptom*) of the truth of its left-hand side. Hence, (PERSONAL LEVEL) doesn't commit us to accepting the odd claim that the satisfaction of the counterfactual embedded in its right-hand side *makes it the case* that its left-hand side is true.

So far, we have focused on plain inference. We have (hopefully) clarified what it takes for S to form the belief that Q because condition (a1) and condition (b) are fulfilled. Let's now turn to enthymematic inference, the execution of which by S depends on the satisfaction of (a2) and (b). An inference of this type differs from a plain inference only because of (a2)—namely, only because the subject S who performs it doesn't move from believing *all* its premises to believing its conclusion. More precisely, the difference consists in the fact that when drawing an enthymematic inference, S doesn't believe at least some of the premises, though certain constituents of S's perspective do dispose S to believe the non-believed premises. An inference from P1 … Pn to Q can be *fully* enthymematic or *partly* enthymematic. It is fully enthymematic if S believes no premise at all, and partially enthymematic if S believes some but not all its premises. More accurately:

(FULLY ENTHYMEMATIC INFERENCE)

S carries out a *fully enthymematic* inference from P1, P2, …. Pn to Q if and only if S doesn't believe P1, P2, …. Pn but these premises are true from S's perspective because S's mental states M1, M2, …, Mm dispose her to believe P1, P2, …. Pn, and M1, M2, …, Mm jointly cause S's belief that Q through a process that is shaped by S's taking Q to be a consequence of P1, P2, …, Pn at a personal level.

(PARTLY ENTHYMEMATIC INFERENCE)

S carries out a *partly enthymematic* inference from P1, P2, …. Pn to Q if and only if S believes only some of the premises P1, P2, …, Pn but the other premises are also true from S's perspective in virtue of S's mental states M1, M2, …, Mm which dispose S to believe them, and M1, M2, …, Mm together with the premises believed by S jointly cause S's belief that Q through a process that is shaped by S's taking Q to be a consequence of P1, P2, …, Pn at a personal level.

These two characterizations raise a question: suppose M1, M2, … Mm together with any premise believed by S jointly cause S's belief that Q through a process shaped by S's taking Q to a consequence of P1, P2, …, Pn. Is there any criterion to ascertain whether or not, in this process, S takes Q to a consequence of P1, P2, …, Pn *at a personal level*? We suggest the following principle, which parallels (PERSONAL LEVEL):

(PERSONAL LEVEL*)

S's mental states M1, M2, …, Mm and any premises believed by S, among P1, P2, ..., Pn, jointly cause S's belief that Q through a process shaped by S's taking Q to be a consequence of P1, P2, …, Pn *at a personal level* if and only if M1, M2, …, Mm and any premise

believed by S, among P1, P2, ..., Pn, jointly cause S to believe Q and S would adduce the reasons that P1, P2, …, Pn and that Q is a consequence of P1, P2, …, Pn in response to a request to explain why she believes Q.

4. Expanding (P-WG) and accounting for recalcitrant cases

Let's return to (P-WG). Before expanding this principle with the addition of a third disjunct capable of accounting for recalcitrant cases like those described in Sect 2, we would like re-phrase its second disjunct, that is to say,

(1.2) Q is propositionally justified for S in virtue of her justifiedly believing P1, P2, …, Pn and her being aware that Q is an inductive or deductive consequence of P1, P2, …, Pn jointly, and (2.2) S carries out an inference from P1, P2, …, Pn to Q,

into an *equivalent* statement, which exploits the notions of a subject's perspective and plain inference, introduced previously. This is the re-formulation:

(1.2*) Q is propositionally justified for S in virtue of P1, P2, …, Pn being justifiedly true from her perspective because S justifiedly believes P1, P2, …, Pn, and in virtue of her being aware that Q is an inductive or deductive consequence of P1, P2, …, Pn jointly, and (2.2*) S carries out a plain inference from P1, P2, …, Pn to Q.

(1.2*) is equivalent to (1.2), for saying that Q is propositionally justified for S in virtue of P1, P2, …, Pn being justifiedly true from S's perspective because S justifiedly believe P1, P2, …, Pn is the same as saying that Q is propositionally justified for S in virtue of S's justifiedly believing P1, P2,

…, Pn. Furthermore, as already clarified, 'inference' in (2.2) stands for 'plain inference', used in (2.2*).

Suppose now that S doesn't believe at least some of the premises P1, P2, …, Pn but that all these premises are *justifiedly* true from S's perspective. This means that the premises that S actually believes, if any, are *justifiedly* believed by S, and that the mental states M1, M2, …, Mm that dispose S to believe the premises that she actually doesn't believe give S propositional justification for them. Furthermore, suppose that S is aware that Q is a consequence of P1, P2, …, Pn. It is intuitive that when these two conditions are satisfied, S has *propositional* justification for believing Q in virtue of the premises that she justifiedly believes, among P1, P2, ..., Pn, and in virtue of the mental states M1, M2, … Mm that dispose S to justifiedly believe the premises that she doesn't believe, among P1, P2, ..., Pn. Imagine that, in these very circumstances, S carries out an enthymematic inference from P1, P2, …, Pn to Q. (Where the inference is fully or partly enthymematic depending on, respectively, whether S doesn't believe any P1, P2, …, Pn or believes only some of them.) It is intuitively plausible that S's belief that Q will be well-grounded in this case. We have just determined a new third set of conditions, unaccounted by (P-WG), whose satisfaction makes S's belief that Q well-grounded.

We are now in position to supplement (P-WG) with a third disjunct.

(P-WG*)
IF
(1.1) Q is justified for S in virtue of her having an experience with content Q, and (2.1) S forms the belief that Q as a spontaneous and immediate response to her having that experience,
OR
(1.2*) Q is propositionally justified for S in virtue of P1, P2, …, Pn being justifiedly true from her perspective because S justifiedly believes P1, P2, …, Pn, and in virtue of her being aware that Q is an inductive or deductive consequence of P1, P2, …, Pn jointly, and (2.2*) S carries out a *plain* inference from P1, P2, …, Pn to Q.
OR
(1.3) Q is propositionally justified for S in virtue of P1, P2, …, Pn being justifiedly true from her perspective, though S doesn't believe at least some P1, P2, …, Pn, and in virtue of

S being aware that Q is an inductive or deductive consequence of P1, P2, …, Pn jointly, and (2.3) S carries out a (fully or partly) *enthymematic* inference from P1, P2, …, Pn to Q.
THEN
(3) S's belief that Q is well-grounded.

Let's have a look at the third disjunct of (P-WG*). When condition (2.3) is satisfied, the constituents M1, M2 … Mm of S's perspective that dispose S to believe any premise, among P1, P2 … Pn, and S's actual beliefs (if any) in P1, P2, …, Pn jointly cause S's belief that Q in a way that is shaped by S's taking Q to be a consequence of P1 … Pn at a personal level. That much follows from (ENTHYMEMATIC INFERENCE). Moreover, when condition (1.3) is satisfied, the mental states M1, M2 … Mm that dispose S to believe any P1, P2 … Pn also give S propositional justification for so believing. So, for any premise P1, P2, …, Pn, S either justifiedly believes it or has justification for believing it. Since S is also aware that Q is a consequence of P1, P2, …, Pn, S has propositional justification for believing Q in virtue of any premise she justifiedly believes, among P1, P2, ..., Pn, and in virtue of the mental states M1, M2, ..., Mm that dispose S to justifiedly believe the premises that she doesn't believe. In conclusion, the joint satisfaction of (1.3) and (2.3) guarantees that S's mental states M1, M2 … Mm and S's actual beliefs (if any) in any P1, P2, …, Pn, which jointly cause S to believe Q in a way that is shaped at a personal level by S's taking Q to follow from P1, P2 … Pn are the same mental states in virtue of which S has propositional justification for believing Q to begin with. In this sense, episodes of belief formation involving enthymematic inferences that meet conditions (1.3) and (2.3) can still be regarded as cases in which what provides S with propositional justification for Q is also what rationally grounds S's beliefs that Q. With this general moral on the table, let's move to examine how conditions (1.3)-(2.3) accommodate the examples introduced in Sect 2 to challenge the completeness of (P-WG).

Consider one more time Andrea's case. She sees that (P) the little hand of her watch points to 3 and the big hand points to 12. Andrea doesn't form the belief that P. Rather, Andrea responds to her having the experience that P by directly forming the belief that (Q) it's 3 o'clock. In this case,

Andrea has propositional justification for Q in virtue of P being justifiedly true from her perspective—Andreas's experience that P gives her propositional justification for believing P—and in virtue of Andrea's awareness that Q is a consequence of P. Hence condition (1.3) is satisfied. Furthermore, (2.3) is also satisfied. For Andrea comes to believe Q from her entertaining the experience that P by carrying out a fully enthymematic inference. In fact, her experience that P causes her belief that Q through a process that is shaped by her taking Q to be a consequence of P at a personal level. (This is revealed by the fact that Andrea would certainly cite the reason that P and that Q is a consequence of P in response to a request to explain why she believes Q.) In conclusion, (P-WG*)—in particular its third disjunct—accounts for the intuition that Andrea's belief that Q is well-grounded in the case envisaged.

Kurt's case can be accounted for by (P-WG*) in quite a similar way. Kurt sees that (P) there is a sign on the highway indicating an exit to Rosenheim. As a spontaneous and immediate response to this, Kurt forms the belief that (Q) he is now in Germany. Kurt has propositional justification for Q in virtue of P being justifiedly true from her perspective—Kurt's experience that P gives him propositional justification for believing P—and in virtue of Kurt's awareness that Q is a consequence of P. Hence, condition (1.3) is satisfied. Furthermore, (2.3) is also satisfied. For Kurt arrives at believing Q from his having the experience that P via performing a fully enthymematic inference. Indeed, his experience that P causes his belief that Q through a process that is shaped by his taking Q to be a consequence of P at a personal level. (This is revealed, again, by the fact that Kurt would surely cite the facts that P and that Q is a consequence of P in response to a request to explain why he believes Q.) Therefore, (P-WG*)—specifically its third disjunct—accounts for the intuition that Kurt's belief that Q is well-grounded in the imagined scenario.

Let's now turn to Terence's case. Terence knows that John and Jack are indistinguishable twins. On his way to the office, Terence takes a call from his secretary who tells him that (P1) a gentleman who looks like one of the twins has just asked to meet him. Terence forms the justified

belief that P1. Terence also remembers that yesterday Jack flew to Sydney. Since Terence's memory is a reason for believing (P2) that the gentleman waiting for him is not Jack, Terence forms the belief (Q) that John has just asked to see him. In this case, Terence has propositional justification for believing Q in virtue of his being aware that P1 and P2 jointly imply Q, and in virtue of P1 and P2 being justifiedly true from Terence's perspective. This is so because Terence justifiedly believes P1 and his memory gives him propositional justification for believing P2. Hence condition (1.3) is fulfilled. (2.3) is also fulfilled too. For Terence comes to believe Q from his belief that P1 and his entertaining the memory that disposes him to believe P2. Terence thus carries out a partially enthymematic inference. Indeed, his belief that P1 and his memory jointly cause his belief that Q through a process that is shaped by his taking Q to be a consequence of P1 and P2 at a personal level. (Terence would adduce P1 and P2, and that Q is a consequence of P1 and P2 to explain why he believes Q.) In conclusion, (P-WG*)—specifically its third disjunct—accounts for the intuition that Terence's belief that Q is well-grounded in this example.

5. Concluding considerations

In this paper we have defended the view that there are more ways in which a subject S can form a well-grounded belief that Q than epistemologists have been able to identify. In particular, we have defined a notion of inference more liberal than the one typically presupposed in the epistemological literature, and we have shown that by putting in use this more liberal notion of inference we can accommodate many cases in which a subject intuitively forms a well-grounded belief. Interestingly, the account we have proposed is a natural extension of the standard account that we aimed to complement. For all the cases involving a well-grounded belief we have reviewed still count as cases in which what supplies S with propositional justification for believing Q is the ground of S's belief that Q.

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