Philosophers' Imprint

VOLUME 25, NO. 11

JULY 2025

FIRST-PERSON PROPOSITIONS

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doi.org/10.3998/phimp.3481

1. Introduction

A central dispute in discussions of self-locating attitudes concerns which of the following two accounts we should accept:[1]

PROPOSITIONALISM
Attitude relations such as belief and knowledge are two-place relations between a subject and a proposition, an abstract object that does not vary in truth value across individuals.

PROPRIETISM
Attitude relations such as belief and knowledge are two-place relations between a subject and a property, an abstract object that may vary in truth value across individuals.

Lewis famously argued that self-locating attitudes should lead us to reject PROPOSITIONALISM in favour of PROPRIETISM, while Stalnaker argued, to the contrary, that the phenomenon of self-locating attitudes does not motivate rejecting PROPOSITIONALISM.[2] In what follows, we'll argue that there are good reasons to prefer PROPOSITIONALISM to PROPRIETISM, and we'll show that there are natural accounts of self-locating attitudes that one can provide by appeal to the propositional relations of belief and knowledge.

In §2, we provide our primary argument against PROPRIETISM and in support of PROPOSITIONALISM. As a generic label, we'll refer to the objects of belief and knowledge as *contents*. Given PROPOSITIONALISM contents are propositions, while given PROPRIETISM contents are prop-

1. These two accounts are clearly not exhaustive. In particular, some deny that belief and knowledge are *binary* relations at all. Indeed some, such as Perry, have maintained that the phenomenon of self-locating attitudes motivates treating attitudes such as belief and knowledge as three-place relations between a subject, a proposition, and something else (a *role* or a *belief state*); see John Perry, "Frege on Demonstratives," *Philosophical Review* 86/4 (1977), John Perry, "The Problem of the Essential Indexical," *Noûs* 13/1 (1979). We'll have little to say about such views here, and will take as a standing assumption for our discussion that such attitudinal relations are binary.
2. David K. Lewis, "Attitudes *De Dicto* and *De Se*," *Philosophical Review* 88/4 (1979), Robert Stalnaker, "Indexical Belief," *Synthese* 49/1 (1981).

erties. In this section, we show that, given PROPRIETISM, there is a large class of cases in which it is impossible for one agent to know, of any content, that their believing it would suffice for agreement with another agent's belief. We argue that this implies that there are many cases in which the proponent of PROPRIETISM incorrectly predicts that a given agent's beliefs must be in principle incommunicable to another agent. These sorts of limitations are not, however, imposed given PROPOSITIONALISM. Since we take it that the limitations on successful communication imposed by PROPRIETISM are not, in fact, witnessed, this seems to us to provide a strong argument against PROPRIETISM and in favour of PROPOSITIONALISM.

In §3, we develop two versions of PROPOSITIONALISM and consider their respective merits. While we think that there is good reason to endorse PROPOSITIONALISM, and so good reason to deny that *belief* and *knowledge* are relations between an agent and a property, we argue that there is also good reason to maintain that there are important psychological relations—which we call *doxastic* and *epistemic self-ascription* respectively—whose objects are properties. Our two versions of PROPOSITIONALISM provide two different accounts of how the propositional relations of belief and knowledge are related to the proprietal relations of doxastic and epistemic self-ascription. According to our first account, for an agent x to doxastically (epistemically) self-ascribe a certain property p just is for them to believe (know) the de re proposition that x has property p, while, according to the second account, for an agent x to doxastically (epistemically) self-ascribe a certain property p just is for them to believe (know) a particular de dicto proposition. We argue that, on balance, the latter provides a more attractive PROPOSITIONALIST account of self-ascription.

2. Agreement and Communication

One common argument in favor of PROPOSITIONALISM is that PROPRIETISM yields an inadequate account of interpersonal cognitive relations like agreement and communication.[3] In this section, we'll argue that PROPOSITIONALISTS are right about these shortcomings of PROPRIETISM. Indeed, we'll argue that the problem of providing an adequate PROPRIETIST account of agreement and communication is, in fact, much more severe than has been appreciated.

We begin by stating certain assumptions that we will hold fixed through the remainder of the paper.

First, we'll assume that propositions form a complete, atomic Boolean algebra. We'll call the atoms of this algebra "world propositions" or "worlds" for short. Any proposition that is not an atom may be represented as a set of worlds. Note that, given this view, a proposition is necessary, in the broadest sense, just in case it is identical to the unique proposition that is true at all worlds. We'll assume a standard S5 logic for this broad form of necessity. We'll also assume the necessity of identity; given S5, this implies the necessity of distinctness.

Second, we'll assume that properties also form a complete, atomic Boolean algebra. The atoms of this algebra can be represented by pairs $\langle w, a\rangle$ consisting of a world w and an individual a that exists at w. Sometimes we'll refer to such atoms as "centered-possibilities". We'll assume that it is non-contingent which individuals exist, and so we take the class of atoms to be simply the set of pairs $\langle w, a\rangle$ such that w is a world and a is an individual. Properties that are not atoms can be represented by sets of atoms.

Third, we restrict our discussion to agents whose beliefs and states of knowledge are closed under logical consequence. In a certain sense, such agents know everything that they are in a position to know. Our restriction to such agents, then, will allow us to trade in claims about

3. See, for example, Stalnaker, *op. cit.*, Robert Stalnaker, *Our Knowledge of the Internal World* (Oxford: Oxford University Press, 2008), Robert Stalnaker, "The Essential Contextual," in Jessica Brown and Herman Cappelen (eds.), *Assertion: New Philosophical Essays* (Oxford: Oxford University Press, 2011), and Robert Stalnaker, "Modeling a Perspective on the World," in Manuel García-Carpintero and Stephan Torre (eds.), *About Oneself:* De Se *Attitudes and Communication* (Oxford: Oxford University Press, 2016).

what individuals could come to know by inference for claims about what agents in fact know.

Note that it follows from this latter assumption together with our preceding assumptions that if PROPOSITIONALISM is true, then an agent's doxastic (epistemic) state may be represented by a single proposition—the strongest propositions she believes (knows)—while if PROPRIETISM is true, then an agent's doxastic (epistemic) state may be represented by a single property—the strongest property she believes (knows).

Finally, we'll assume that if PROPRIETISM is true, then agents may fail to know or to correctly believe, first-personally, who they are. Proponents of PROPRIETISM standardly assume that such ignorance is possible, and we think that this is well-motivated.

We now turn to the principal topics of this section: communication and agreement. We begin with the mundane observation that individuals are able to successfully communicate their beliefs—both first-personal and non-first-personal—to one another. For example, if Sam believes that Paris is the capital of France, while you are ignorant of this fact, then Sam can communicate this belief to you, and, as a result, you may come to believe an appropriate content, such that, given your respective beliefs, you and Sam agree. And similarly, if Sam believes first-personally that they are sick, while you are ignorant of this fact, then it would seem that Sam can communicate this belief to you, and, as a result, you may come to believe an appropriate content, such that, given your respective beliefs, you and Sam agree.

Successful communication is a means to agreement. While it is natural to talk about agreement as a relation between individuals, such a relation holds between individuals given particular beliefs that they have. We can think of agreement, then, as a relation that holds between possible states of affairs in which given individuals have beliefs with particular contents. We can represent this relation by introducing a binary sentential connective: $\equiv_A$. Letting $Bel(y, q)$ mean that y has a belief with content q, we can then take $Bel(y, q) \equiv_A Bel(x, p)$ to mean that y's having a belief with content q constitutes agreement with x's having a belief with content p. Note that, as we're understanding this relation, $Bel(y, q) \equiv_A Bel(x, p)$ may obtain even if y doesn't in fact have a belief with content q or x doesn't in fact have a belief with content p. Instead, $\equiv_A$ is a relation that may hold between the possible states of affairs $Bel(y, q)$ and $Bel(x, p)$, independent of whether or not they obtain, and that explains why y agrees with x if, in fact, y has a belief with content q and x has a belief with content p.

What is required in order for the relation $\equiv_A$ to obtain? The proponent of PROPOSITIONALISM has a natural and simple answer to this question. In particular, given our assumptions about the structure of propositions, we suggest that the proponent of PROPOSITIONALISM should maintain that for two agents to have beliefs that are in agreement just is for them to have beliefs with the same content. That is, the proponent of PROPOSITIONALISM should endorse:

PROPOSITIONAL AGREEMENT
Necessarily, for any agents x and y and propositions p and q, $Bel(y, q) \equiv_A Bel(x, p)$ just in case $p = q$.

Clearly, believing the same proposition is sufficient for agreement. And, given our assumptions about the nature of propositions, if p and q are distinct, then there is some possibility in which one holds and the other fails to hold. But if p and q may come apart in truth-value, then it would seem that believing one can't constitute agreement with believing the other. Given PROPOSITIONALISM, then, for two agents to have beliefs that are in agreement just is for them to have beliefs with the same content.

It is much less clear, however, what the proponent of PROPRIETISM should say is required for the relation $\equiv_A$ to obtain. Consider, for example, the minimal proprietal variant of PROPOSITIONAL AGREEMENT:

PROPRIETAL AGREEMENT (FIRST INCORRECT VERSION)
Necessarily, for any agents x and y and properties p and q, $Bel(y, q) \equiv_A Bel(x, p)$ just in case $p = q$.

To see that this misfires, let p and q each be the property of being Hume. The above principle then tells us that the state of Hume first-personally

believing that he is Hume would constitute agreement with the state of some other individual—say Mad Heimson—also first-personally believing that *he* is Hume. But this is clearly incorrect. For, given the actual facts, Hume's possible belief is correct—he is Hume—while Heimson's is not—he is not Hume. But an obvious minimal condition on agreement is that if two individuals' possible beliefs would be in agreement then it can't be that one of these beliefs is true and the other false.[4]

In light of this sort of counterexample, a natural thought is that, given PROPRIETISM, agreement should be understood as the guaranteed absence of divergence in truth value. Thus, one may be tempted to endorse:

PROPRIETAL AGREEMENT (SECOND INCORRECT VERSION)
Necessarily, for any agents x and y and properties p and q, $Bel(y, q) \equiv_A Bel(x, p)$ just in case necessarily, y has property q just in case x has property p.

But this too misfires. While the guaranteed absence of divergence in truth value is, we think, a necessary condition for agreement, it would not seem to be sufficient. Given the necessity of distinctness, note that if neither Heimson nor Marcus is Hume, it follows that, necessarily, Heimson has the property of being Hume just in case Marcus has the property of being Hume. And so the above principle tells us that Heimson's believing first-personally that he is Hume constitutes agreement with Marcus's believing first-personally *he* is Hume. But this strikes us as wrong. For just as Hume and Heimson would disagree about who is Hume, were each to believe, first-personally, that he is Hume, so too would Heimson and Marcus also seem to disagree about who is Hume were each to have such a first-personal belief.

It isn't at all obvious to us what the proponent of PROPRIETISM should say about the conditions under which two agents count as agreeing in virtue of their beliefs. We need not, however, survey all of the possible options. For we can show that any account of agreement that the proponent of PROPRIETISM may provide will have a significant flaw. In particular, we can show that, given PROPRIETISM, there are guaranteed to be certain in principle limitations on the extent to which agents can know, first-personally, that their belief is in agreement with that of another individual. And this, we'll argue, incorrectly predicts that there is a large class of cases in which successful communication is, in principle, precluded. PROPOSITIONALISM, in contrast, doesn't predict the same sorts of in-principle limitations on successful communication. This thus provides a good reason to prefer PROPOSITIONALISM to PROPRIETISM.

We begin by stating two plausible principles concerning agreement and communication.

The fact that agents, in general, can successfully communicate their beliefs to others motivates the claim that, in general, for any belief that one agent may have there is some other possible belief that another agent may have that would suffice for the two to be in agreement. Given PROPRIETISM, then, it seems quite plausible that the following principle holds:

PROPRIETAL AGREEMENT EXISTENCE
For any agents x and y, and any property p, there exists some property q such that $Bel(y, q) \equiv_A Bel(x, p)$.

Successful communication, of the sort that is standardly achieved, does not, however, merely require that there be some content such that the addressee's adopting a belief with that content would suffice for

4. This basic worry for PROPRIETISM was first raised by Stalnaker, "Indexical Belief," *op. cit.*, though he concentrated on the notion of communication rather than agreement. Most of the subsequent literature has likewise focussed on the notion of communication, rendering it of limited relevance to our present concerns; see, for example, Irene Heim, Lectures Notes on Indexicality, 2004, Dilip Ninan, "*De Se* Attitudes: Ascription and Communication," *Philosophy Compass* 5/7 (2010), Stephan Torre, "Centered Assertion," *Philosophical Studies* 150/1 (2010), Sarah Moss, "Updating as Communication," *Philosophy and Phenomenological Research* 85/2 (2012), Allan Gibbard, *Meaning and Normativity* (Oxford: Oxford University Press, 2013), Appendix 1, Max Kölbel, "The Conversational Role of Centered Contents," *Inquiry* 56/2-3 (2013), and Clas Weber, "Centered Communication," *Philosophical Studies* 166/1 (2013).

agreement with the speaker's communicated belief—it also requires that the addressee know, of some content, that their believing that content suffices for agreement with the speaker's communicated belief. We assume, then, that the following provides a natural constraint on successful communication:

SUCCESSFUL COMMUNICATION
In a case of successful communication, there is a communicated content p and a content q such that the addressee knows first-personally that their believing q constitutes agreement with the speaker's believing p.

This much we take to be clear. There are, however, two natural ways of understanding the requirement imposed by SUCCESSFUL COMMUNICATION. On one interpretation, the addressee must have de re knowledge of the speaker. According to this interpretation, if x is the speaker, then successful communication between x and their addressee requires that the addressee know, of some content, that their believing this content suffices for agreement with x's believing the communicated content. On a second interpretation, the addressee must have a piece of de dicto knowledge concerning the speaker. According to this interpretation, successful communication between a speaker and their addressee requires that there be some appropriate mode of presentation of the speaker f such that the addressee knows, of some content, that their believing this content suffices for agreement with f's believing the communicated content.

We won't try to adjudicate between these two ways of understanding the requirement imposed by SUCCESSFUL COMMUNICATION. Instead, we'll argue that, given either interpretation, the proponent of PROPRIETISM incorrectly predicts that there are certain significant limitations on successful communication.

Let's begin by considering the de re interpretation of SUCCESSFUL COMMUNICATION:

SUCCESSFUL COMMUNICATION (DE RE)
In a case of successful communication between a speaker x and an addressee y, there is a communicated content p and a content q such that y knows first-personally that their believing q constitutes agreement with x's believing p.

For the time being, we'll assume that successful communication requires this condition to be satisfied. Given PROPRIETISM, though, we can show that there is a large class of cases in which this condition is guaranteed to fail. That is, for many agents x and y and propositions p, there is no proposition q such that y can know that their believing q constitutes agreement with x's believing p. And so PROPRIETISM predicts that there is a large class of cases in which it is, in principle, impossible for one agent to successfully communicate their belief to another.

To see this, first consider the following two extremely plausible principles:

PROPRIETAL ALETHIC AGREEMENT
Necessarily, for any agents x and y and properties p and q, if $Bel(y, q) \equiv_A Bel(x, p)$, then y has property q just in case x has property p.

PROPRIETAL SELF-AGREEMENT
Necessarily, for any agent x and properties p and q, $Bel(x, p) \equiv_A Bel(x, q)$ just in case $p = q$.

We've already had occasion to appeal to PROPRIETAL ALETHIC AGREEMENT, and it strikes us as being clearly correct. In particular, this was what established that Hume and Heimson do not agree by each believing that he is Hume. The natural thought here is that any divergence in truth value between two beliefs is sufficient to show that the agents in question are not in agreement in virtue of holding those beliefs.

PROPRIETAL SELF-AGREEMENT also strikes us as being clearly correct. Obviously, the right-to-left direction holds. Each agent agrees with their own belief by having that belief. And the left-to-right direction also seems to be clearly true. For, given our assumptions about properties,

any two distinct properties have different possible patterns of application. But if something could instantiate a property p but not a property q or vice versa, then taking oneself to have property p would seem to constitute a different opinion from taking oneself to have property q.

Given these minimal constraints on agreement, we can now show that PROPRIETISM imposes a significant limit on successful communication.

Given PROPRIETISM, for an agent to know first-personally that they have some property just is for the agent to stand in the knowledge relation to that property. We'll use the standard device of lambda abstraction to form property-denoting terms. Given PROPRIETISM, then, for y to know, first-personally, that their believing some content q constitutes agreement with x's believing some content p just is for y to know $\lambda z.Bel(z,q) \equiv_A Bel(x,p)$.

Our first result establishes that, given PROPRIETISM, for many agents x, y, and contents p, there is no content q such that y knows $\lambda z.Bel(z,q) \equiv_A Bel(x,p)$. In particular, we can show that if an agent y doesn't know whether they are some agent x in one world or some other agent z in another, then there are many contents that x may believe such that there is no content that y could know would suffice for agreement with x's belief.

FIRST LIMITATIVE AGREEMENT RESULT

Let y's epistemic state include the following centered-possibilities: $\langle x, w_1\rangle, \langle u, w_2\rangle$, where $x \neq u$, and let p be such that $\{\langle x, w_1\rangle, \langle u, w_2\rangle\} \subseteq p$ but $\langle x, w_2\rangle \notin p$. Given PROPRIETAL SELF-AGREEMENT and PROPRIETAL ALETHIC AGREEMENT, it follows that, for each property q, y does not know $\lambda z.Bel(z,q) \equiv_A Bel(x,p)$.

PROOF: We consider two cases:

Case 1: $q \neq p$. Since $q \neq p$, it follows from PROPRIETAL SELF-AGREEMENT that $Bel(x,q) \not\equiv_A Bel(x,p)$ at w_1. So x lacks the property $\lambda z.Bel(z,q) \equiv_A Bel(x,p)$ at w_1. Since $\langle x, w_1\rangle$ is an element of y's epistemic state, it follows that y does not know $\lambda z.Bel(z,q) \equiv_A Bel(x,p)$.

Case 2: $q = p$. Since $q = p$ and $\langle u, w_2\rangle \in p$, it follows that u has property q at w_2. Since $\langle x, w_2\rangle \notin p$, it follows that x lacks property p in w_2. So given PROPRIETAL ALETHIC AGREEMENT, it follows that $Bel(u,q) \not\equiv_A Bel(x,p)$ at w_2. Since $\langle u, w_2\rangle$ is an element of y's epistemic state, it follows that y does not know $\lambda z.Bel(z,q) \equiv_A Bel(x,p)$.

The above result shows that if an agent y doesn't know whether they are some agent x in one world or some other agent z in another, then there are many contents that x may believe such that there is no content that y could know would suffice for agreement with x's belief. And given this, it follows from SUCCESSFUL COMMUNICATION (DE RE) that if y doesn't know whether they are some agent x in one world or some other agent z in another, then there are many beliefs that x may have that, in principle, x cannot successfully communicate to y.

This strikes us as a bad prediction. For, given PROPRIETISM, there should be many possible cases in which an agent is unsure about who they are. And yet it would not seem that there are, in such cases, significant limitations on the extent to which an agent x may successfully communicate with an agent y, when x happens to be one of the individuals that y thinks that they could be.

Here is an example that illustrates the sort of limitation that holds given the above result. Suppose that the famous amnesiac Lingens is in the Stanford library in the actual world @, and that another amnesiac Lauben is also in this library in @. Suppose, moreover, that it's compatible with what Lingens knows that he is Lauben in @ and that it's also compatible with what Lingens knows that he is some other amnesiac Harold in the Harvard library in a world w. And suppose that Lauben believes, first-personally, that either he is Lauben in @ or that he is Harold in w. The above result tells us that, given PROPRIETISM, there is no content that Lingens could know, first-personally, would suffice for agreement with this belief of Lauben's. And so, assuming SUCCESSFUL COMMUNICATION (DE RE), it follows that Lauben's belief that he is Lauben in @ or that he is Harold in w cannot, in principle, be

successfully communicated to Lingens.

It seems to us, though, that even if Lingens and Lauben are ignorant of their identities in the manner that we're imagining, they may still successfully communicate their respective beliefs to one another. For example, if Lingens and Lauben were to speak to one another in the Stanford library, it would seem that Lauben could inform Lingens that he thinks that he is either Lauben in @ or Harold in w, and, given this, Lingens could know what sort of belief would suffice to agree with his interlocutor.

How should the proponent of PROPRIETISM respond to the preceding limitative result? One possibility would be for the PROPRIETIST to maintain that SUCCESSFUL COMMUNICATION (DE RE) doesn't capture the true interpretation of SUCCESSFUL COMMUNICATION. In particular, they may maintain that successful communication between a speaker and their addressee doesn't require the sort of de re knowledge required by SUCCESSFUL COMMUNICATION (DE RE), but instead it merely requires that there be some appropriate mode of presentation of the speaker f such that the addressee knows, of some content, that their believing this content suffices for agreement with f's believing the communicated content.

Formally, we can think of a mode of presentation f as a function that picks out a unique individual in a possible world. We'll say that f is a mode of presentation of an individual x just in case f as a matter of fact picks out x. In what follows, we'll let $Bel(y,q) \equiv_A Bel(f,p)$ mean that y's having a belief with content q constitutes agreement with f's having a belief with content p. This proposition is true at a world w just in case the unique u such that $f(w) = u$ is such that $Bel(y,q) \equiv_A Bel(u,p)$ holds at w. Given PROPRIETISM, then, for y to know, first-personally, that their believing some content q constitutes agreement with f's believing some content p just is for y to know $\lambda z.Bel(z,q) \equiv_A Bel(f,p)$.

If, then, the proponent of PROPRIETISM is inclined to reject SUCCESSFUL COMMUNICATION (DE RE), we suggest that they should instead accept the following weaker principle:

SUCCESSFUL COMMUNICATION (DE DICTO)
In a case of successful communication between agents x and y, there is a communicated content p, a content q, and a mode of presentation f of x such that y knows first-personally that their believing q constitutes agreement with f's believing p.

Given this alternative principle, however, the proponent of PROPRIETISM still incorrectly predicts that there is large class of cases in which one agent's belief is, in principle, incommunicable to another agent. Indeed, we can show that there are such limitations, even in cases in which an agent knows who they are and knows that they are distinct from their interlocutor.

To show this, we'll appeal to a third plausible principle concerning agreement:

MODALIZED PROPRIETAL ALETHIC AGREEMENT
Necessarily, for any agents x and y and properties p and q, if $Bel(y,q) \equiv_A Bel(x,p)$, then, necessarily, y has property q just in case x has property p.

MODALIZED PROPRIETAL ALETHIC AGREEMENT is a strengthening of PROPRIETAL ALETHIC AGREEMENT, but it follows from that weaker principle given the plausible principle that truths of the form $Bel(y,q) \equiv_A Bel(x,p)$ are necessary.[5]

Now given just this minimal constraint on agreement, we can show that PROPRIETISM implies that there are a number of limitations on the

5. Proof: Suppose $Bel(y,q) \equiv_A Bel(x,p)$ holds at an arbitrary world w. Assume that, for any world w', if $Bel(y,q) \equiv_A Bel(x,p)$ holds at w', then it is necessary that $Bel(y,q) \equiv_A Bel(x,p)$. So it is necessary that $Bel(y,q) \equiv_A Bel(x,p)$. PROPRIETAL ALETHIC AGREEMENT tells us that it is necessary that if $Bel(y,q) \equiv_A Bel(x,p)$, then y has property q iff x has property p. Given our assumptions about the logic of necessity, it follows from this that if it is necessary that if $Bel(y,q) \equiv_A Bel(x,p)$, then it is necessary that y has property q iff x has property p. Since it *is* necessary that $Bel(y,q) \equiv_A Bel(x,p)$, it follows that it is necessary that y has property q iff x has property p. So if $Bel(y,q) \equiv_A Bel(x,p)$ holds at w, then it is necessary that y has property q iff x has property p. Since w was arbitrary, MODALIZED PROPRIETAL ALETHIC AGREEMENT follows.

conditions under which an agent can know, first-personally, that they are in agreement with another agent under a given mode of presentation. In particular, our second result establishes that, given PROPRIETISM, for many agents x, y, properties p, and modes of presentation f of x, there is no property q such that y knows that their believing q constitutes agreement with f's believing p.

SECOND LIMITATIVE AGREEMENT RESULT

Let y's epistemic state include the following centered-possibilities: $\langle u, w_1\rangle, \langle u, w_2\rangle$, where $w_1 \neq w_2$. And let f be a mode of presentation of x and p a property such that: $\{w : \langle f(w_1), w\rangle \in p\} \neq \{w : \langle f(w_2), w\rangle \in p\}$. Given MODALIZED PROPRIETAL ALETHIC AGREEMENT, it follows that, for each property q, y does not know $\lambda z.Bel(z, q) \equiv_A Bel(f, p)$.

PROOF: Consider the two epistemic centered-possibilities for y: $\langle u, w_1\rangle$, $\langle u, w_2\rangle$. Letting q be an arbitrary property, if y knows that they have the property $\lambda z.Bel(z, q) \equiv_A Bel(f, p)$ then it must be that this property is had by u at w_1 and by u at w_2. We can show that this can't be so, given MODALIZED PROPRIETAL ALETHIC AGREEMENT.

Given MODALIZED PROPRIETAL ALETHIC AGREEMENT, for u to have the property $\lambda z.Bel(z, q) \equiv_A Bel(f, p)$ at w_1 it must be the case that $\{w : \langle f(w_1), w\rangle \in p\} = \{w : \langle u, w\rangle \in q\}$. And for u to have that same property at w_2 it must be the case that $\{w : \langle f(w_2), w\rangle \in p\} = \{w : \langle u, w\rangle \in q\}$. But given that $\{w : \langle f(w_1), w\rangle \in p\} \neq \{w : \langle f(w_2), w\rangle \in p\}$, it follows that at least one of these identities must fail, and so there must be at least one epistemic centered-possibility for y such that the individual in that centered-possibility lacks the property $\lambda z.Bel(z, q) \equiv_A Bel(f, p)$ at the world of that centered-possibility. It follows that, for arbitrary property q, y does not know $\lambda z.Bel(z, q) \equiv_A Bel(f, p)$.

The above result shows that there is no property q such that an agent could know, first-personally, that their believing q would suffice for agreement with f's believing p, for any mode of presentation f that varies between two of the agent's epistemic centered-possibilities that are alike with respect to their center, and any property p whose pattern of instantiation differs between the two relevant individuals that may be picked out by f at the worlds of those centered-possibilities.

This imposes quite severe constraints on knowledge of agreement. If an agent is certain of who they are but uncertain which individual f picks out, then there is large class of properties p for which there is no property q that the agent could first-personally know would suffice for agreement with f's belief with content p. In particular, if an agent is certain of who they are but uncertain which individual f picks out, then any property p whose possible pattern of instantiation differs between any two individuals will be such that there is no property q that the agent could first-personally know would suffice for agreement with f's belief with content p. But, plausibly, any qualitative property p will be such that, for any two individuals x and z, there is some possibility in which x has p but z lacks p. It follows that if an agent is certain of who they are, but uncertain which individual f picks out, then, for any qualitative property p, there is no property q that the agent could first-personally know would suffice for agreement with f's belief with content p.

This strikes us as a bad prediction. For example, suppose that Lingens is again speaking to Lauben. But this time suppose that Lingens knows that he is Lingens but does not know whether his interlocutor is Lauben or Harold. If Lauben believes that he has some qualitative property—e.g. the property of being tired—then that seems to be the sort of thing Lauben could successfully communicate to Lingens in this scenario. But the above result shows that, given SUCCESSFUL COMMUNICATION (DE DICTO) and MODALIZED PROPRIETAL ALETHIC AGREEMENT, PROPRIETISM conflicts with this possibility.

The proponent of PROPRIETISM, then, predicts that there are significant limitations on the extent to which agents can communicate with each other—limitations that do not seem to be witnessed. The propo-

nent of PROPOSITIONALISM, however, is not forced to predict the same sorts of limitations on successful communication. For the proponent of PROPOSITIONALISM does not predict the same sorts of in principle limitations on the extent to which agents can know, first-personally, that their belief is in agreement with that of another individual, either de re or under a given mode of presentation. Suppose a speaker x utters something which thereby reveals that they believe proposition p. Is there a proposition q such that addressee y knows that their believing q constitutes agreement with the speaker's believing p? The answer to this question is 'yes', for proposition p will itself be such a q. For recall that the PROPOSITIONALIST accepts the following principle:

PROPOSITIONAL AGREEMENT
Necessarily, for any agents x and y and propositions p and q, $Bel(y, q) \equiv_A Bel(x, p)$ just in case $p = q$.

Thus, even if y doesn't know who they are or who their interlocutor is, if y knows that their interlocutor believes p, then y knows that their believing p will constitute agreement with their interlocutor's believing p. This is because, given PROPOSITIONAL AGREEMENT, y knows that *for any pair of agents a* and b, b's believing p constitutes agreement with a's believing p. Given this, the proponent of PROPOSITIONALISM can endorse SUCCESSFUL COMMUNICATION, on either way of understanding this principle, without predicting the sorts of limitations on successful communication predicted by the proponent of PROPRIETISM.

3. Two Versions of Propositionalism

We take the preceding to constitute a strong argument for PROPOSITIONALISM—the claim that *belief* and *knowledge* are propositional relations. However, despite there being good reason to maintain that these particular psychological relations have propositions as objects, we don't want to deny that there are important psychological relations whose objects are properties. For we think that agents do have distinctive first-personal beliefs and states of knowledge. And while an agent's first-personal beliefs and states of knowledge have propositions as their objects, such beliefs and states of knowledge nonetheless determine certain relations to properties. We'll say that an agent "doxastically (epistemically) self-ascribes" a property p just in case they believe (know) first-personally that they have p.[6]

In the remainder of the paper, we develop two accounts of which propositions play the role of being the objects of such first-personal beliefs and states of knowledge, and we develop two corresponding accounts of doxastic and epistemic self-ascription. On both accounts, facts about which properties an agent doxastically (epistemically) self-ascribes are determined by facts about which propositions the agent believes (knows), *together with certain additional facts*. A more ambitious project would be to reduce facts about about which properties an agent doxastically (epistemically) self-ascribes solely to facts about which propositions the agent believes (knows). We think, however, that such a project must fail. To see this, consider the following case described in Stalnaker, 2016, *op. cit.*:

> Albert is in the kitchen and Boris is in the basement. Each knows who and where he is, and who and where the other is, so there is no self-locating ignorance. They each know all the same objective facts about their respective locations in the house, but there is still a difference in their epistemic states, a difference in their

6. Some question whether we have distinctive first-personal beliefs and states of knowledge, while others question whether the fact that we do motivates any revision to PROPOSITIONALISM. For discussion of these issues, see Herman Cappelen and Josh Dever, *The Inessential Indexical* (Oxford: Oxford University Press, 2013), Ofra Magidor, "The Myth of the *De Se*," *Philosophical Perspectives* 29/1 (2015), Dilip Ninan, "What Is the Problem of *De Se* Attitudes?," in Manuel Garcia-Carpintero and Stephan Torre (eds.), *About Oneself:* De Se *Attitudes and Communication* (Oxford: Oxford University Press, 2016), Dilip Ninan, "De Se Attitudes and Action," in Stephen Biggs and Heimir Geirsson (eds.), *The Routledge Handbook of Linguistic Reference* (Routledge, 2020), Stephan Torre, "In Defense of *De Se* Content," *Philosophy and Phenomenological Research* 97/1 (2018), James R Shaw, "De Se Exceptionalism and Frege Puzzles," *Ergo, an Open Access Journal of Philosophy* 6 (2019), and Stephan Torre and Clas Weber, "What is Special about De Se Attitudes?," in Stephen Biggs and Heimir Geirsson (eds.), *The Routledge Handbook of Linguistic Reference* (Routledge, 2020).

> perspectives on the world. To see that this difference is not reflected in their impersonal beliefs, consider any representation of the contents of their common state of belief... All that matters for the point is that propositions are things with absolute truth conditions. That is, they are things whose truth conditions are invariant with respect to time, place, and person. Suppose such a representation contained all the information about the beliefs of any person who is in the cognitive state that Boris and Albert are both in. Let x be any person in that state. Where does x believe himself or herself to be? It is clear enough from the description of the scenario that Boris believes he is in the basement and Albert believes he is in the kitchen, but these are further facts that are not reflected in the common set of propositions that is what each of them believes, or in the set of possible worlds that are compatible with the way they take the world to be. (Stalnaker, 2016, *op. cit.*, 70)

Stalnaker's point here is that if propositions are common currency between agents, then it would seem that there may be two agents, such as Albert and Boris, who believe (know) all the same propositions while differing with respect to which properties they doxastically (epistemically) self-ascribe. Given this, the minimal conclusion to draw is that which propositions an arbitrary agent believes (knows) doesn't itself determine which properties they doxastically (epistemically) self-ascribe.

This point strikes us as being both correct and important. The proponent of PROPOSITIONALISM may, however, accept this conclusion but still maintain that the facts about which properties an agent doxastically (epistemically) self-ascribes are determined by the facts about which propositions they believe (know) *together with certain additional facts*. The two versions of PROPOSITIONALISM that follow will appeal to different sets of additional facts to determine which properties a given agent doxastically (epistemically) self-ascribes given the facts about which propositions they believe (know).

While we think that the PROPOSITIONALIST should allow that there are proprietal relations of doxastic and epistemic self-ascription, there is good reason to think that the PROPOSITIONALIST will accept certain constraints on these relations that PROPRIETISTS will not generally accept. In particular, both of the accounts we develop below entail the following substantive constraint on self-ascription:

SELF-ASCRIPTIVE SYMMETRY
Necessarily, for any agents x and y and property p, if p is the strongest property that x self-ascribes and the strongest property that y self-ascribes, then x has p iff y has p.

PROPRIETISTS, we take it, will generally reject this claim. For example, Lewis, *op. cit.*, 525–526 takes it that when two agents x and y get their heads into 'perfect match'—that is, when they are, in a certain sense, psycho-functional duplicates—we should say that the strongest property x self-ascribes is identical to the strongest property y self-ascribes. Given this, we should expect that it is possible for there to be two agents x and y such that p is the strongest property each self-ascribes though one has p and the other lacks p.

However, while PROPRIETISTS will naturally reject this principle, PROPOSITIONALISTS are well-motivated to endorse it. For this principle follows from three principles which we think PROPOSITONALISTS are well-motivated to accept.

We'll say that two agents x and y *completely agree* just in case (i) for every content p that x believes there is a content that q that y believes such that x and y are in agreement given these beliefs, and (ii) for every content q that y believes there is a content that p that x believes such that x and y are in agreement given these beliefs. Then, given this definition, PROPOSITIONAL AGREEMENT entails:

COMPLETE BELIEF AGREEMENT
Necessarily, for any agents x and y, x and y completely agree just in case the strongest proposition that x believes is the same as the strongest proposition that y believes.

In addition, we think that the proponent of PROPOSITIONALISM should accept the following two principles:

STRONGEST PROPOSITION

If p is the strongest property x self-ascribes, then $p' = \{w : \langle y, w\rangle \in p \text{ for some individual } y\}$ is the strongest proposition x believes.[7]

COMPLETE PROPRIETAL AGREEMENT

Necessarily, for any agents x and y, and properties p_1 and p_2, if p_1 is the strongest property that x self-ascribes and p_2 is the strongest property that y self-ascribes and x and y completely agree, then x has p_1 iff y has p_2.[8]

Together these three principles entail SELF-ASCRIPTIVE SYMMETRY. Each of the two versions of PROPOSITIONALISM developed below provides a natural explanation of why self-ascriptive states are subject to this additional constraint.

Both versions of PROPOSITIONALISM discussed below are parametric on an initial version of PROPRIETISM. In keeping with our initial assumptions, the version of PROPRIETISM that we'll assume takes the class of propositions to form a complete, atomic, Boolean algebra, and the class of properties to be isomorphic to the class of sets of ordered-pairs $\langle x, w\rangle$, where x is an individual and w is an atomic proposition. To have useful labels, we'll call these classes the "base propositions" and "base properties", and we'll call the propositions that are atoms amongst the class of base propositions "base atoms".[9]

In §4.1, we describe a version of PROPOSITIONALISM that agrees with our initial version of PROPRIETISM about what the space of propositions looks like. According to this account, for an agent x to self-ascribe some property p just is for that agent to believe a particular base proposition. In §4.2, we describe a second version of PROPOSITIONALISM that admits more propositions than our initial version of PROPRIETISM admits. According to this account, it will not in general be true that for an agent x to self-ascribe some property p just is for that agent to believe a particular *base* proposition. While we're inclined to think that both accounts have their merits, we think that there are certain reasons to prefer the second version of PROPOSITIONALISM to the first.

3.1 *De Re Propositionalism*

Our first version of PROPOSITIONALISM agrees with PROPRIETISM about the space of propositions and properties. According to both accounts, these are just the classes of base propositions and properties. This version of PROPOSITIONALISM offers a very simple treatment of first-person belief and knowledge: for an agent x to believe (know) first-personally that they have property p just is for x to believe the proposition that x has property p. A first-person belief is just a certain kind of de re belief

7. To see why the PROPOSITIONALIST should accept STRONGEST PROPOSITION, let p be the strongest property that x self-ascribes. First, suppose that $w \in p'$. Then there is a y such that $\langle y, w\rangle \in p$. But, given this, w must be compatible with the strongest proposition that x believes. For, otherwise, there would be a first-personal belief that the agent has, viz., the first-personal belief that they are such that w isn't the case, such that the property that the agent thereby self-ascribes is incompatible with every pair $\langle y, w\rangle$. But then p, the strongest property that x self-ascribes, must be incompatible with every pair $\langle y, w\rangle$, contradicting our supposition that there is a y such that $\langle y, w\rangle \in p$. Next, suppose that $w \notin p'$. Then there is no y such that $\langle y, w\rangle \in p$. But, given this, it must be that for each y, the individual x has some first-personal belief that is incompatible with them being such that they are y in w. We assume that the conjunction of these propositions must be incompatible with w. It thus follows that w must be incompatible with the strongest proposition that x believes. See, also, Stalnaker, 2011, *op. cit.*, 119.

8. COMPLETE PROPRIETAL AGREEMENT is, in effect, a consequence of PROPRIETAL ALETHIC AGREEMENT which we discussed in the previous section. This principle, moreover, follows given the minimal assumption that, necessarily, if an agent x self-ascribes a property p by believing a proposition q then q holds just in case x has property p.

9. See Michael Caie, Being Hesperus and Being Phosphorus for a way of intrinsically characterizing the classes of "base propositions" and "base properties".

about oneself.[10]

This view yields a simple account of doxastic and epistemic self-ascription:

DE RE SELF-ASCRIPTION
Necessarily, an agent x doxastically (epistemically) self-ascribes a property p just in case x believes (knows) the proposition that x has property p.

On this approach, self-ascribing a property just amounts to believing the de re proposition that ascribes that property to oneself. According to this account, while we can't simply read off of an agent's beliefs (state of knowledge) which properties they doxastically (epistemically) self-ascribe, once we add in the fact about which individual has the beliefs (state of knowledge) in question, we have enough to determine the relevant facts about self-ascription.

Given DE RE SELF-ASCRIPTION, the strongest proposition that an agent believes determines, together with their identity, the strongest property that they self-ascribe. More precisely, DE RE SELF-ASCRIPTION entails the following principle:

STRONGEST PROPERTY (DE RE)
Necessarily, for any agent a and proposition p, if p is the strongest proposition that a believes, then the strongest property that a self-ascribes is:

$$\{\langle y, w\rangle : w \in p \text{ and } y = a\}.$$

CLAIM: DE RE SELF-ASCRIPTION entails STRONGEST PROPERTY (DE RE)
PROOF: Let p be the strongest proposition a believes. Given DE RE SELF-ASCRIPTION, we can show that a self-ascribes

$$\{\langle y, w\rangle : w \in p \text{ and } y = a\}.$$

by showing that a believes

$$\{w' : \langle a, w'\rangle \in \{\langle y, w\rangle : w \in p \text{ and } y = a\}\}.$$

And a believes this proposition iff a believes p, which they do. To see that $\{\langle y, w\rangle : w \in p \text{ and } y = a\}$ is the strongest property a self-ascribes, suppose that a self-ascribes q. It then follows from DE RE SELF-ASCRIPTION that a believes $\{w' : \langle a, w'\rangle \in q\}$. Since p is the strongest proposition a believes, $p \subseteq \{w' : \langle a, w'\rangle \in q\}$. So suppose $w \in p$ and $y = a$. Since $w \in p$, $\langle a, w\rangle \in q$. Since $y = a$, $\langle y, w\rangle \in q$. So $\{\langle y, w\rangle : w \in p \text{ and } y = a\} \subseteq q$.

Earlier we observed that the proponent of PROPOSITIONALISM should accept SELF-ASCRIPTIVE ASYMMETRY. The present account validates this principle. For given this account, it follows that no two agents can be such that the strongest property that one self-ascribes is the same as the strongest property that the other self-ascribes. But, given this, the antecedent of SELF-ASCRIPTIVE ASYMMETRY is guaranteed to fail, and thus this principle is guaranteed to be satisfied.

The present account doesn't, however, just entail that no two agents can be such that the strongest property that one self-ascribes is the same as the strongest property that the other self-ascribes. In fact, the present account implies the following stronger joint constraint on self-ascription:

DISJOINTNESS
Necessarily, for any agents x and y and properties p and q, if $x \neq y$ and p is the strongest property that x self-ascribes and q is the strongest property that y self-ascribes, then p and q are disjoint.

CLAIM: DE RE SELF-ASCRIPTION entails DISJOINTNESS
PROOF: Let $SA(x, p)$ mean that p is the strongest property that x self-ascribes. Suppose $x \neq y$, $SA(x, p)$, and $SA(y, q)$. And suppose, for *reductio*, that $\langle z, w\rangle \in p \cap q$. Since x believes $\{w : x = x\}$,

10. Stephen Schiffer, "The Basis of Reference," *Erkenntnis* 13 (1978) defends a view along these lines, though he is working within a different theoretical framework.

it follows from DE RE SELF-ASCRIPTION that x self-ascribes the property of being x. Since $SA(x, p)$, anything that has property p has the property of being x. Since $SA(y, q)$ it follows via a similar argument, that anything that has property q has the property of being y. Since $\langle z, w\rangle \in p \cap q$, $z = x = y$ which contradicts our assumption that $x \neq y$.

While this version of PROPOSITIONALISM is attractively simple, it also has certain features that one might find objectionable.

We can approach this issue by first observing an important consequence of the present version of PROPOSITIONALISM: for each agent x, there will be many pairs of distinct base properties p and q such that for x to self-ascribe p just is for x to self-ascribe q. For, given our assumptions about propositions, it follows that if p and q are such that, necessarily, x has p just in case x has q, then the proposition that x has p just is the proposition that x has q. And so, given the above account of self-ascription, for any two properties p and q that necessarily agree with respect to x, necessarily x self-ascribes p just in case x self-ascribes q. But, given our plenitudinous assumptions about the space of properties, for any agent x, there will be many distinct properties p and q such that necessarily, x has p just in case x has q. Such properties will differ with respect to how they treat certain individuals at certain possible worlds, though they will not differ with respect to how they treat x at any world.

A particularly notable consequence of this is that a certain type of first-personal ignorance of one's identity is impossible.[11] Given that there is more than one individual, it follows that, for each individual x, their haecceity, $\{\langle z, w\rangle : z = x\}$, is distinct from the unique necessarily universally instantiated property $\{\langle z, w\rangle : z = z\}$. However, given our assumptions about propositions, it follows that the proposition that x has $\{\langle z, w\rangle : z = x\}$ is identical to the proposition that x has $\{\langle z, w\rangle : z = z\}$—both are identical to the unique necessary truth. Thus, since each agent believes and knows the unique necessary truth, it follows, given this account of doxastic and epistemic self-ascription, that each agent x is such that they doxastically and epistemically self-ascribe the property of being identical to x. And so, given DE RE SELF-ASCRIPTION, it is, in a certain sense, impossible for an agent to be first-personally ignorant about who they are.

This marks a significant difference between this version of PROPOSITIONALISM and PROPRIETISM. For, in general, the proponent of PROPRIETISM may maintain that, for any agent x and any distinct base properties p and q, what is for x to self-ascribe p differs from what is for x to self-ascribe q. And, in particular, proponents of PROPRIETISM standardly maintain that first-personal ignorance of one's own identity is possible—that is, x may fail to self-ascribe the property of being x.

It's also worth observing that, not only does this version of PROPOSITIONALISM imply that there are non-trivial constitutive connections between an agent's self-ascriptions of distinct properties, it also implies that which constitutive connections there are differs between different agents. On this account, then, the nature of proprietal self-ascription for an agent x is essentially different than it is for any distinct agent y.

To see this, let's say that two properties p and q are "x-alike" just in case necessarily x has property p just in case x has property q. The relation of being x-alike is an equivalence relation. We've seen that if two properties p and q are in the same x-alike equivalence class, then, given the present account, necessarily for x to self-ascribe p just is for x to self-ascribe q. If, however, x and y are distinct agents, then the x-alike equivalence classes will differ from the y-alike equivalence classes. For example, the haecceity of x, though not the haecceity of y, is x-alike to $\{\langle w, z\rangle : z = z\}$, while the haecceity of y, though not the haecceity of x, is y-alike to $\{\langle w, z\rangle : z = z\}$. Thus, given this account, which self-ascriptions are necessarily equivalent will differ from agent to agent. This version of PROPOSITIONALISM, then, differs substantially from PROPRIETISM with respect to which sorts of self-ascriptions are

11. Weber makes this point as part of a broader case against a similar version of PROPOSITIONALISM. See Clas Weber, "Indexical Beliefs and Communication: Against Stalnaker on Self-Location," *Philosophy and Phenomenological Research* 90/3 (2015), 651

possible for a given agent.

DE RE SELF-ASCRIPTION provides one natural way of characterizing the relationship between the proprietal relations of doxastic and epistemic self-ascription and the propositional relations of belief and knowledge. But, as we've been discussing, the resulting account also has certain features that one may find objectionable. For example, if one is inclined to think that an agent may be first-personally ignorant of which individual they are, then one has reason to reject this version of PROPOSITIONALISM. And if one is inclined to think that the nature of proprietal self-ascription for an agent x is not essentially different from that of any distinct agent y, then one also has reason to reject this account. However, if one is inclined to reject the present account for these reasons, one need not reject PROPOSITIONALISM altogether.[12] For there is another version of PROPOSITIONALISM that doesn't have these features.

3.2 *De Dicto Propositionalism*

It is natural for the proponent of PROPRIETISM to maintain that, in principle, an agent may believe any base proposition while being ignorant of which individual they are.[13] The proponent of PROPOSITIONALISM, though, maintains that a first-personal belief about which individual one is must be a belief whose content is a proposition. The natural conclusion to draw, then, for the proponent of PROPOSITIONALISM who agrees with the proponent of PROPRIETISM that an agent's beliefs in base propositions do not determine their haecceitistic self-ascriptions is that the propositions that play such self-ascriptive roles must be additional propositions not included amongst the class of base propositions.

We'll begin our characterization of the second version of PROPOSITIONALISM by isolating the class of propositions belief in which serves to determine which individual a given agent first-personally takes themself to be. It is worth stressing at the outset that while we will pick out this class of propositions in terms of certain roles that they play for certain individuals—in particular, in terms of the roles that these propositions play as the objects of certain first-personal attitudes for certain individuals—these particular roles are ones that the propositions in question only play contingently. It will emerge shortly why this is so.

Our second version of PROPOSITIONALISM assumes that, for any individuals y and z, there is a unique proposition—which we will label "$I_y = z$"—such that, as a contingent matter of fact, for y to doxastically (epistemically) self-ascribe the haecceity of z just is for y to believe (know) $I_y = z$. We'll say that any proposition $I_y = z$ is a "first-personal haecceitistic proposition".

Officially, "$I_y = z$" is a mere label for the proposition that, as a contingent matter, plays the role of being the proposition such that for y to believe this proposition is for y to self-ascribe being identical to z. The labelling, however, suggests a certain decomposition that our account will ultimately sustain and that is useful to bear in mind. Unofficially, one can think of "$I_y = z$" as being composed of the haecceity of z, $\lambda x.x = z$, and a mode of presentation that we can denote by "I_y". $I_y = z$, then, may be thought of as the proposition that is true in a given possibility just in case z is the individual picked out by I_y in that possibility. One can think of I_y as the mode of presentation that, as a contingent matter of fact, plays the role of picking out the individual that y first-personally takes themself to be in a given possibility. We'll call I_y a "first-personal mode of presentation". We assume that, for each individual y, there is a unique first-personal mode of presentation I_y.

Note that it follows from this that if both $I_x = y$ and $I_x = z$ hold at a world w, then $y = z$. For if $I_x = y$ holds at w, then y is the individual picked out by I_x at w, and if $I_x = z$ also holds w, then z is also the individual picked out by I_x at w, and so $y = z$.

Now, a function f from the class of first-personal modes of presentation to the class of individuals naturally determines a class of first-personal haecceitistic propositions—namely, the class of propositions

12. One might also (or alternatively) be inclined to reject DE RE SELF-ASCRIPTION for the reasons discussed in Dilip Ninan, "Counterfactual Attitudes and Multi-Centered Worlds," *Semantics and Pragmatics* 5/5 (2012), 3-4 and Weber, *op. cit.*, 650ff..
13. See, for example, Lewis, *op. cit.*.

$I_y = z$ such that $f(I_y) = z$. Consider, then, such a class determined by an arbitrary *bijective* function between the class of first-personal modes of presentation and the class of individuals. Such a class contains a proposition $I_y = z$, for each individual z and each first personal mode of presentation I_y, and does not contain propositions $I_x = z$ and $I_y = z$, for distinct individuals x and y. If, for example, there were just two individuals, a and b, we would have two such classes, namely the class containing $I_a = a$ and $I_b = b$, and the one containing $I_a = b$ and $I_b = a$. We'll call the conjunction of such a class a "first-personal specification". Such a proposition determines first personally, for each individual, which individual they are. In our two-individual example, one might think of the first-personal specification $I_a = b \wedge I_b = a$ as the proposition a might express to b by saying, "I am b and you are a."

A class of propositions forms a partition just in case, when represented as sets of world propositions: (i) each member of the class is non-empty, (ii) the union of the members of the class is identical to the set of world propositions, and (iii) the intersection of any two members of the class is empty. We can now state a general principle that determines the logical relations amongst first-personal haecceitistic propositions:

FIRST-PERSONAL PARTITIONALITY
The class of first-personal specifications forms a partition.

This principle entails a number of obviously desirable claims about the possibility and compossibility of certain propositions.

First, it entails that, for any individuals y and z, the first-personal haecceitistic proposition $I_y = z$ is possible in the broad sense of being entailed by some world proposition. This is desirable insofar as one wants to allow that, in principle, any individual y may self-ascribe being identical to z, for any individual z, without thereby believing a contradiction.

This principle also entails that, for any individuals $y \neq y'$ and $z \neq z'$, the first-personal haecceitistic propositions $I_y = z$ and $I_{y'} = z'$ are compossible in the broad sense of being jointly entailed by some world proposition. We take it that this too is clearly desirable. For just as it would seem that y may believe first-personally that they are z, and some distinct individual y' may believe first-personally that they are some distinct z', without either thereby believing a contradiction, it would also seem that there need be no contradiction between their respective beliefs. Indeed, in principle, it would seem that they could pool their beliefs without either thereby believing a contradiction.

More generally, this principle entails the compossibility of any class of first-personal haecceitistic propositions that associate distinct haecceities with distinct first-personal modes of presentation. We take it that this is an obvious generalization of the two individual case and may be motivated in exactly the same way.

FIRST-PERSONAL PARTITIONALITY, then, delivers a number of desirable positive verdicts about the possibility and compossibility of first-personal haecceitistic propositions. This principle, however, also imposes constraints on the compossibility of first-personal haecceitistic propositions. In particular, given this principle, it follows that, for any distinct individuals x and y, although both $I_x = z$ and $I_y = z$ are individually possible, they are not compossible. Thus, $I_x = z$ and $I_y = z$ hold at a world w only if $x = y$.

As we'll shortly see, this constraint is required in order for first-personal haecceitistic propositions to play their role in an adequate account of doxastic and epistemic self-ascription. This constraint, though, can be also be motivated more directly. For it ensures that if, for example, Heimson believes first-personally that he is Hume, and Hume also believe first-personally that he is Hume, then the propositions that they believe are incompatible. And this, we think, is quite plausible. For there is a natural sense in which such first-personal beliefs would seem to be incompatible. And this can be explained in a simple and principled manner by appealing to the incompatibility of the contents that are so believed.

Having determined the logical relations amongst first-personal haecceitistic propositions, let us now turn to describing their relations to the class of base propositions. Along with the proponent of PROPRIETISM,

the present account assumes:

BASE PARTITIONALITY
The class of base atoms forms a partition.

Let us say that two classes of propositions are "orthogonal" just in case any two members of the respective sets are consistent. In addition to the above two principles, the present account assumes:

ORTHOGONALITY
The class of base atoms and the class of first-personal specifications are orthogonal.

Recall that the proponent of PROPRIETISM maintains that, for each agent, an arbitrary base atom doesn't provide any first-personal information about which individual that agent is. If the proponent of PROPOSITIONALISM accepts this claim, then they should allow that, for any individuals y and z, $I_y = z$ is consistent with each base atom. Furthermore, if an arbitrary base atom doesn't provide us with any information that would, for example, rule out one of us, first-personally, being Hume, or the other, first-personally, being Heimson, so too it would seem that an arbitrary base atom does not rule out the conjunction of these two claims. More generally, insofar as an arbitrary base atom would not seem to provide any first-personal information about which individual a given agent is, such a proposition would also not seem to provide any information about which consistent conjunctions of first-personal haecceitistic propositions are true. Given this, we should allow that the conjunction of any base atom and any first-personal specification is consistent. This is exactly what ORTHOGONALITY ensures.

Having introduced this account of first-personal propositions, we can now turn to providing an account of what it is for an individual to doxastically or epistemically self-ascribe a given property by appeal to the propositional relations of belief and knowledge.

Our accounts of doxastic and epistemic self-ascription will tell us that for an individual y to doxastically or epistemically self-ascribe a property p just is for y to believe or know the unique proposition

satisfying some condition. Formally, we can represent this by a three place function, $\Sigma(y, p, w)$, mapping an individual, a property, and a world proposition to the proposition that uniquely satisfies the relevant condition for y and p at w. Fixing y and p, if this function maps world propositions w and w' respectively to the propositions q_w and $q_{w'}$, then, at w, y doxastically (epistemically) self-ascribes the property p by believing (knowing) q_w, while, at w', y doxastically (epistemically) self-ascribes the property p by believing (knowing) $q_{w'}$. If q_w and $q_{w'}$ are the same proposition, then w and w' are alike with respect to which proposition plays the role of being the proposition such that for y to believe (know) it is for y to doxastically (epistemically) self-ascribe the property p, while if q_w and $q_{w'}$ are distinct propositions, then w and w' differ with respect to which propositions play this role.

Before we provide a general account of self-ascription, let's begin by considering what it is for an individual y to doxastically (epistemically) self-ascribe being a particular individual z. We've said that $I_y = z$ is the proposition that an individual y in fact believes (knows) when they doxastically (epistemically) self-ascribe being z. Whatever our account of doxastic (epistemic) self-ascription is, then, it must deliver this verdict. A natural way to do so is to maintain that for y to doxastically (epistemically) self-ascribe being a particular individual z just is for y to believe (know) $I_y = z$. According to this partial account, we have:

RIGID HAECCEITY SELF-ASCRIPTION
For every individual x, haecceity $\lambda y.y = z$, and world proposition w, $\Sigma(x, \lambda y.y = z, w) = (I_x = z)$.

This partial account, however, misfires. To see this, it suffices to note that, if there are at least two distinct individuals, RIGID HAECCEITY SELF-ASCRIPTION is incompatible with:

MATERIAL TRUTH
For every individual x, property p, and world-proposition w, $\Sigma(x, p, w)$ holds at w just in case x has property p at w.

To see the incompatibility, suppose $x \neq z$. Given FIRST-PERSON PARTION-

ALITY, there is a world proposition w at which $I_x = z$ holds. Given the necessity of distinctness, $x \neq z$ at w. So x lacks the property $\lambda y.y = z$ at w, and so it follows from MATERIAL TRUTH that $\Sigma(x, \lambda y.y = z, w)$ does not hold at w. Since $I_x = z$ holds at w, $\Sigma(x, \lambda y.y = z, w) \neq (I_x = z)$, contradicting RIGID HAECCEITY SELF-ASCRIPTION. Since MATERIAL TRUTH seems clearly true to us, RIGID HAECCEITY SELF-ASCRIPTION must be false.[14]

Given this, we should conclude that while $I_y = z$ is the proposition that, as a matter of fact, plays the role of being the proposition such that for y to believe (know) it is for y to doxastically (epistemically) self-ascribe $\lambda x.x = z$, this proposition only plays this role contingently.

Let @ be the unique true world proposition. To see what non-rigid condition a proposition must satisfy in order for it to play the role of being the proposition such that for y to believe (know) it is for y to doxastically (epistemically) self-ascribe $\lambda x.x = z$, let's begin by noting a few facts about @. First, as a basic constraint on Σ, we have that for every individual y and haecceity $\lambda x.x = z$, $\Sigma(y, \lambda x.x = z, @) = (I_y = z)$. Second, we also have that, for any individuals r and y, $(I_r = y)$ holds at @ just in case $r = y$. Given these two facts, it follows that we have:

@-RESTRICTED HAECCEITY SELF-ASCRIPTION
For every individual y and r, and haecceity $\lambda x.x = z$, $\Sigma(y, \lambda x.x = z, @) = (I_r = z)$ just in case $I_r = y$ holds at @.

Thus, if I_r is the first-personal mode of presentation that in fact picks you out, then $I_r = z$ is the proposition that you believe (know) when you first-personally believe (know) that you are z.

Now, we claim that this property should be satisfied not just for the actually true world proposition @, but for every world proposition w. That is, we should have:

HAECCEITY SELF-ASCRIPTION
For every individual y and r, haecceity $\lambda x.x = z$, and world proposition w, $\Sigma(y, \lambda x.x = z, w) = (I_r = z)$ just in case $I_r = y$ holds at w.

To see why this principle is plausible, consider the following line of thought. Heimson is not Hume. Thus, if Heimson believes the first-personal proposition that they are Hume, then they would mistakenly self-ascribe being Hume. However, suppose that the proposition that Heimson believes when he believes that he is Hume is true. Under this supposition, it seems that if Hume were to believe this very proposition, then Hume would correctly self-ascribe being Hume.

This line of thought, appropriately generalized, supports the claim

14. Note also that MATERIAL TRUTH is entailed by the following principles:

SELF-ASCRIPTION CORRECTNESS
For every individual x, property p, and world proposition w, if x doxastically self-ascribes p at w, then x's self-ascription is correct at w just in case x has property p at w.

CONTENT CORRECTNESS
For every individual x, property p, and world proposition w, if x doxastically self-ascribes p at w, then x's self-ascription is correct at w just in case $\Sigma(x, p, w)$ holds at w.

We take it that SELF-ASCRIPTION CORRECTNESS properly characterizes the condition for a given self-ascription to be correct, while CONTENT CORRECTNESS provides a basic constraint on an adequate PROPOSITIONALIST account of doxastic self-ascription.
Another way to see the problem with RIGID HAECCEITY SELF-ASCRIPTION is that, given the preceding principles, it entails the following falsehood:

$(*)$ For every individual y, haecceity $\lambda x.x = z$, and world proposition w, if y doxastically self-ascribes $\lambda x.x = z$ at w, then the proposition $I_y = z$ holds at w if and only if $y = z$ holds at w.

We can establish the falsity of $(*)$, given the following plausible assumptions. First, that there are at least two distinct individuals y and z. Second, that it is possible for y to doxastically self-ascribe $\lambda x.x = z$. And, third, that a base atom determines which haecceities y doxastically self-ascribes. Given our first assumption and the necessity of distinctness we have that $y \neq z$ holds at every world proposition. FIRST PERSONAL PARITIONALITY, however, implies that for any y and z, $I_y = z$ holds at some w. Moreover, ORTHOGONALITY establishes that this proposition is compossible with any base atom. Given our second assumption, we have that it is possible for y to doxastically self-ascribe $\lambda x.x = z$. It follows from this fact, together with the compossibility of $I_y = z$ with each base atom that there is some world proposition w such that y doxastically self-ascribes being z at w and $I_y = z$ holds at w. However, since we have that $y \neq z$ holds at w, it follows that $(*)$ must be false.

that while $I_r = z$ as a matter of fact plays the role of being the proposition such that for r to believe (know) it is for r to doxastically (epistemically) self-ascribe $\lambda x.x = z$, were it to be the case that $I_r = z$ is true, then this proposition would no longer play this role for r, but would instead play this role for z. And this is exactly what HAECCEITY SELF-ASCRIPTION tells us.

Having answered the restricted question of what it is for an individual y to doxastically (epistemically) self-ascribe being a particular individual z, we can now generalize this account and say what it is for an individual y to doxastically (epistemically) self-ascribe an arbitrary property p. In particular, the following principle provides the natural generalization of HAECCEITY SELF-ASCRIPTION:

DE DICTO SELF ASCRIPTION

For every agent y, property p, and world proposition w, $\Sigma(y, p, w) = \{w' : \langle x, w' \rangle \in p,$ where $w' \in (I_z = x)\}$, where $I_z = y$ holds at w.

HAECCEITY SELF-ASCRIPTION tells us that for an individual y to doxastically (epistemically) self-ascribe a haecceity $\lambda x.x = z$ just is for y to believe (know) that the world is such that the individual picked out by the first-personal mode of presentation I_r, which in fact picks out y, is z. DE DICTO SELF ASCRIPTION tells us, more generally, that for an individual y to doxastically (epistemically) self-ascribe a property p just is for y to believe (know) that the world is such that the individual picked out by the first-personal mode of presentation I_r, which in fact picks out y, has property p.

Note that in order for this account to deliver a univocal verdict about which proposition plays the role of self-ascribing p for y at w, it must not be the case that there are distinct first personal modes of presentation I_r and I_q such that both $I_r = y$ and $I_q = y$ hold at w. Thus, this constraint, which is ensured by FIRST-PERSONAL PARTITIONALITY, may be motivated not just by appeal to the plausible thought that such propositions are inconsistent, given that agents who respectively believe them have incompatible beliefs, but also by appealing to the distinctive role in thought that, according to this account, is played by first-personal modes of presentation.

According to the version of PROPOSITIONALISM discussed in §3.1, the facts about which propositions an agent believes (knows) and the facts about the agent's identity together determine all the facts about which properties the agent doxastically (epistemically) self-ascribes. This is not so on the present account, at least given certain plausible assumptions.[15] Instead, on the present account, which properties an agent x doxastically (epistemically) self-ascribes, given a world proposition w, is determined by three things: (i) the facts about which propositions they believe (know), (ii) the facts about x's identity, and (iii) and the facts about which first-personal haecceitistic propositions hold at w. To see this, it suffices to note that, given DE DICTO SELF-ASCRIPTION, the following holds:

STRONGEST PROPERTY (DE DICTO)

Let p be the strongest proposition that x believes in w, and let $w \in (I_z = x)$. Then the strongest property x self-ascribes in w is:

$$\{\langle y, w' \rangle : w' \in p \text{ and } w' \in (I_z = y)\}.$$

CLAIM: DE DICTO SELF-ASCRIPTION entails STRONGEST PROPERTY (DE DICTO)

PROOF: That x self-ascribes the above property in w follows from DE DICTO SELF-ASCRIPTION, given that p is the strongest proposition x believes in w, and given that $I_z = x$ holds at w. To see that this is the strongest property that x self-ascribes, suppose x self-

15. To see this, let x be some fixed agent whose identity is given, and let y be distinct from x. Let p be a contingent proposition that entails both $I_x = x$ and $I_y = y$ (FIRST-PERSONAL PARTITIONALITY ensures that there is some such p). Finally, assume that there are at least two world propositions w, w' such that: (i) p is the strongest property that x believes in w and in w', (ii) $w \in (I_x = x)$, and (iii) $w' \in (I_y = x)$. Then according to DE DICTO SELF-ASCRIPTION, in w, x self-ascribes being x, since x believes $I_x = x$ in w and I_x picks x out in w. But in w', x instead self-ascribes being y, since x believes $I_y = y$ in w' and I_y picks x out in w'. Since $x \neq y$, x self-ascribes different properties in w and w', even though x believes all the same propositions in w and w'.

ascribes q, and let $\langle y, w' \rangle$ be such that $w' \in p$ and $w' \in (I_z = y)$. We want to show that $\langle y, w' \rangle \in q$.
Since x self-ascribes q in w, it follows from DE DICTO SELF-ASCRIPTION that, in w, x believes:

$\{w'' : \langle r, w'' \rangle \in q$, where $w'' \in (I_z = r)\}$.

Since p is the strongest proposition x believes in w and since $w' \in p$, it follows that $\langle r, w' \rangle \in q$, where $w' \in (I_z = r)$. Since $I_z = r$ and $I_z = y$ both hold at w', it follows that $y = r$. Thus, $\langle y, w' \rangle \in q$, which is what we needed to show.

The foregoing result also ensures that the present account entails DISJOINTNESS and, thus, the weaker SELF-ASCRIPTIVE SYMMETRY.

CLAIM: Given FIRST-PERSON PARTITIONALITY, STRONGEST PROPERTY (DE DICTO) entails DISJOINTNESS
PROOF: Suppose $x \neq y$. Let p be the strongest proposition x believes in w, and let q be the strongest proposition y believes in w. By STRONGEST PROPERTY (DE DICTO), the strongest property x self-ascribes in w is:

$\{\langle x', w' \rangle : w' \in p$ and $w' \in (I_z = x')\}$, where $w \in (I_z = x)$.

And the strongest property y self-ascribes in w is:

$\{\langle y', w' \rangle : w' \in q$ and $w' \in (I_r = y')\}$, where $w \in (I_r = y)$.

To see that these are disjoint, suppose for *reductio* that $\langle s, w'' \rangle$ is in both. Then $w'' \in (I_z = s)$ and $w'' \in (I_r = s)$. It follows from FIRST-PERSON PARTITIONALITY that $r = z$. Since $w \in (I_z = x)$, $w \in (I_r = x)$. Since $w \in (I_r = y)$, it follows that $x = y$, which contradicts our assumption that $x \neq y$.

In the previous section, we noted that, given DE RE SELF ASCRIPTION, it follows that, for each agent x, there are distinct base properties p and q such that for x to self-ascribe p just is for x to self-ascribe q. As a particular instance of this phenomenon, we noted that, given this

account, it follows that, for each agent x, for that agent to self-ascribe the haecceity of x just is for that agent to self-ascribe the unique universally instantiated property—in each case, the self-ascription is trivial and is equivalent to believing the unique necessary proposition. This marks a sharp difference between that account and PROPRIETISM, and constitutes possible lines of objection to that account.

At first glance, parallel points apply to the present account. But on deeper inspection, the present account's treatment of self-ascription is more closely aligned with the PROPRIETIST's. To appreciate this point, it pays to attend closely to the distinction between the class of base properties and the class of properties *tout court*. Let us focus first on the latter.

Given the present account, relative to a world w, for each agent x there are distinct properties p and q such that for x to self-ascribe p just is for x to self-ascribe q. As a particular instance of this phenomenon, for each agent x, if I_r is the first-personal mode of presentation that picks out x at w, then for that agent to self-ascribe, at w, the property of being the individual picked out by I_r just is for that agent to self-ascribe, at w, the unique universally instantiated property—in each case, the self-ascription is trivial and is equivalent to believing the unique necessary proposition. To see this, suppose that $I_r = x$ holds at w. Then, if we let $p = \{\langle a, w \rangle : w \in I_r = a\}$, and let $q = \lambda z.\top$, it follows, given DE DICTO SELF ASCRIPTION, that $\Sigma(x, p, w) = \{w' : \langle y, w' \rangle \in p$ where $w' \in I_r = y\} = \{w : w = w\} = \Sigma(x, q, w)$.

But matters are different when we turn to the class of base properties; here the present account looks rather different from the previous one.

First, given the present account, for any agent x and any distinct base properties p and q, the proposition that x believes in self-ascribing p is distinct from the proposition that x believes in self-ascribing q. Thus, unlike the previous account, the present account does not postulate any constitutive connection between an agent's self-ascribing one base property and any logically independent base property.

To see why this is so we first need to say how we can identify base properties in the larger space of properties postulated by our

new account. There is a natural way of doing so. The proponent of PROPRIETISM will represent a given base property p by a set of ordered-pairs whose $\langle x, b\rangle$, whose second element b is a base atom and whose first element x is an individual. Let p' be the set of pairs that the proponent of PROPRIETISM takes to correspond to p. We take p in our new space be to correspond to the set of ordered pairs $\langle x, w\rangle$, where w is a world proposition and x is an individual, such that there is some $\langle x, b\rangle \in p'$ such that w is compossible with b. This mapping provides a natural bijection from the class of sets that represent the base properties, according to the proponent of PROPRIETISM, to a sub-class of the class of properties countenanced by our present account. In our new space, then, the base properties may be identified with those properties whose extensions don't differ between world propositions that agree with respect to which base atom they entail.

Given this identification, it is easy to establish that, given the present account, for any agent x and any distinct base properties p and q, the proposition that x believes in self-ascribing p is distinct from the proposition that x believes in self-ascribing q.[16] In this respect, the present version of PROPOSITIONALISM is similar to PROPRIETISM.

This result is related to a second notable difference between the present account and the preceding one, namely that the present account predicts that an agent x may be ignorant of their identity, in the sense of failing to self-ascribe the base property of being x. For x to self-ascribe, in world w, the property of being x is for x to believe $I_z = x$, where $w \in I_z = x$. Thus, for x to fail to believe this is simply for some world w' to be compatible with x's beliefs in w to be such that $w' \notin I_z = x$. FIRST-PERSONAL PARTITIONALITY ensures the existence of such a w', and nothing in the present account precludes such a world from being compatible with x's beliefs in w. Note also that the present account allows that an agent x may coherently self-ascribe being y, even when $y \neq x$, i.e. x may self-ascribe being y $(y \neq x)$ even when the strongest property x self-ascribes is contingent. On the preceding account, if x self-ascribes being y $(y \neq x)$, then the strongest property x self-ascribes is the necessarily uninstantiated property. In these respects, the present version of PROPOSITIONALISM is again similar to PROPRIETISM.

A third notable difference between this version of PROPOSITIONALISM and the preceding version concerns whether there are essential differences between the nature of proprietal self-ascription for distinct agents. In §3.1, we noted that, for each agent x, if two properties p and q are in the same x-alike equivalence class, then, necessarily for x to self-ascribe p just is for x to self-ascribe q. We then noted that since the equivalence relation of being x-alike is distinct from the equivalence relation of being y-alike, for distinct individuals x and y, on this account, then, the nature of proprietal self-ascription for an agent x is essentially different than it is for any distinct agent y. While there are some similarities, given the present account, the picture that emerges is importantly different.

Let us say that two properties p and q are "I_r-alike" just in case $\{w' : \langle w', x\rangle \in p \text{ where } w' \in (I_r = x)\} = \{w' : \langle w', x\rangle \in q \text{ where } w' \in (I_r = x)\}$. Given the present account, if I_r is the first-personal mode of presentation that plays the self-ascriptive role for x—that is if $I_r = x$—then, as a contingent matter of fact, if p and q are I_r-alike then the proposition by which x self-ascribes p is the same as the proposition by which x self-ascribes q, and so, as a contingent matter of fact, x's self-ascription of p is the same as $x's$ self-ascription of q. Moreover, given the present account, for any distinct individuals x and y there

16. To see this, let p and q be distinct base properties, and let I_r be the first-personal mode of presentation that plays the self-ascriptive role for x. Given their distinctness, it follows that p and q have distinct extensions at some atom w, and since p and q are base properties, it follows that their extensions are the same for all w' that agree with w about which base atom they entail. Let this set be W. Without loss of generality, let z be in the extension of p but not q at w. Thus, z is in the extension of p but not q at all $w' \in W$. Now, given FIRST-PERSONAL PARTITIONALITY, BASE PARTITIONALITY and ORTHOGONALITY, it follows that I_r picks out z at some world $w' \in W$. Given DE DICTO SELF ASCRIPTION, then, it follows that the proposition that x believes in self-ascribing p is true at this world w', while the proposition that x believes in self-ascribing q is false at w'. Thus it follows, for arbitrary distinct base properties p and q and arbitrary individual x, that the proposition that x believes in self-ascribing p is distinct from the proposition that x believes in self-ascribing q.

will be distinct first-personal modes of presentation that play the self-ascriptive role for each of these individuals. And, for any two distinct first-personal modes of presentation, I_r and I_z, the equivalence relation of being I_r-alike will be distinct from the equivalence relation of being I_z-alike. Thus, for any distinct agents, there will be contingent differences between those agents concerning which properties they may independently self-ascribe. However, since for each individual x and each first-personal mode of presentation I_r, there is some possibility where I_r plays the self-ascriptive role for x, it follows that the possible patterns of which properties may be independently self-ascribed is the same for each agent. The present account, then, unlike the preceding account, does not entail that there are any essential differences between the nature of proprietal self-ascription for distinct agents.

4. Conclusion

We began with an argument in favor of the thesis that the contents of the attitudes of belief and knowledge are propositions rather than properties. While proponents of the former view can give a very simple account of agreement, proponents of the latter would not seem to be able to provide any similarly simple and principled account. Even worse, we argued that, given some plausible assumptions, PROPRIETISM predicts that successful communication cannot take place in certain cases in which there would not, in fact, appear to be any such limitations. PROPOSITIONALISM, on the other hand, results in no similar predictions.

We then examined two versions of PROPOSITIONALISM according to which both facts about epistemic and doxastic self-ascription may be determined by facts about propositional knowledge and belief, together with certain other facts. These two versions of PROPOSITIONALISM, however, differ in important ways. DE DICTO PROPOSITIONALISM allows that an agent x might be ignorant of their identity in the sense of failing to self-ascribe the property of being x, while DE RE PROPOSITIONALISM does not. And DE DICTO PROPOSITIONALISM implies that there are no essential differences between the nature of proprietal self-ascription for distinct agents, while DE RE PROPOSITIONALISM implies that there are. These differences arguably favor DE DICTO PROPOSITIONALISM over DE RE PROPOSITIONALISM.[17]

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17. Thanks to an anonymous reviewer for *Philosophers' Imprint*, the Cogito working group at the University of Bologna, and to an audience at the Dublin Language Workshop held at University College Dublin. DN's contribution to this article benefited from a FIAS fellowship at the Paris Institute for Advanced Study. He received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 945408, and from the French State programme "Investissements d'avenir", managed by the Agence Nationale de la Recherche (ANR-11-LABX-0027-01 Labex RFIEA+).

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