

WHY ARE INDEXICALS ESSENTIAL?

SIMON PROSSER

[DRAFT – published version may differ very slightly]

Despite recent challenges, it is commonly held that certain indexical terms such as ‘I’, ‘here’ and ‘now’ have a necessary or ‘essential’ role in certain kinds of action. I argue that this is correct, and I offer an explanation. A use of an indexical term of the kind in question connotes a specific relation between the thinking subject and the reference of the indexical. The mental representation of this relation has an epistemic feature that I call *first-person redundancy*. I show through a regress argument that a mental state of this kind is essential for common kinds of action, and perhaps for all actions.

1. Introduction

Following the work of Castañeda (1966, 1967, 1969) and Perry (1977, 1979), many philosophers have held that there is something special or ‘essential’ about indexical terms, or about the thoughts that we express when we use them. But what exactly does this special role consist in, and what is the argument for its being essential? In their recent book *The Inessential Indexical* (2014), Herman Cappelen and Josh Dever argue that the doctrine of the essential indexical has not been made adequately clear, and that there are no good arguments for any clear putative version of it.¹ Consequently they argue that the common view that indexicality and the first-person perspective play an important and deep role in a variety of philosophical issues is a myth.

I do not agree; I believe that there is a clear and important distinction to be made between a first-person perspective and a third-person perspective, that the doctrine of the essential indexical can be made clear, and that the doctrine

¹ See also Magidor forthcoming for similar views, and Millikan 1990 for an earlier challenge. In fact I agree with much of what these authors say; for example, I do not think that it is indexicality *per se* that is essential, or that the phenomenon at issue involves a special category of *de se* content.

can be defended using a simple regress argument. I shall explain and defend that view in what follows. But I do agree with Cappelen and Dever that existing attempts to defend the doctrine are not adequately clear, and that the source of the essentiality of indexicals has frequently been misidentified. I agree, for example, that the essential nature of indexicals does not derive merely from any special kind of content, or from indexicality *per se*. Although I shall note some connections with their work, however, this paper is not primarily a reply to Cappelen and Dever. Instead, I shall focus on giving a positive account of what is essential about indexicals. I shall argue that each member of a certain class of indexicals is associated with a mental representation of a special kind that is essential for certain kinds of action. (By 'mental representation' I just mean any kind of mental state that can usefully be interpreted as having a representational content. My use of this expression implies no commitment to any stronger doctrine.²) The representational states in question have a unique epistemological feature that arises from the fact that each one represents a relation in which the thinking subject is one of the relata.

II. The Doctrine of the Essential Indexical

I shall start by clarifying the view that I wish to defend. The most common view about the essentiality of indexicals is that without the kind of thought normally expressed using an indexical, it is not possible to act. The claim must concern mental states rather than language, for we can perfectly well imagine a language with no indexical terms, but it is not plausible that this alone would render its speakers unable to act. I shall claim that the presence of what I shall call an *egocentric mental state*, which is essential for action, is indicated by the use of an indexical term, but this does not entail that the egocentric mental state itself is somehow indexical. In fact, in my view, the mental states in question are not indexical in any important way. *A fortiori* it is not indexicality *per se* that explains the essential nature of indexicals.

² Throughout this paper I assume without argument that mental states, including experiential states, have representational contents. This is a common assumption, but is rejected for experiences by naïve realists about perception. I suspect that a naïve realist could accept much of what I say here, however, by replacing talk of experiential representation with talk of the content of experience (construed as whatever the experience is an experience of).

Some further restrictions are needed. I shall restrict my claim to what I shall call the *egocentric* indexicals; indexicals such as ‘I’, ‘here’ and ‘now’ which, I shall argue, are associated with mental states that capture the subject’s perspective. Consider the spatially non-egocentric indexical term ‘here_{HC}’, which refers to the present location of Herman Cappelen. I do not think that advocates of essential indexicality have intended to claim that indexicals such as ‘here_{HC}’ are essential in the relevant sense (except insofar as they involve an implicit ‘now’), and neither shall I. Neither shall I claim that pure demonstratives such as ‘that’ are essential, or at least not in the same way.³ The reason for the restriction, and its scope, will become clearer in due course.

Perhaps not all possible actions require indexicals; for example, perhaps there could be a God-like creature who lived outside space, and perhaps time, who acted just by imagining the world to be in a certain state that could be specified in non-indexical terms. This is a subtle matter, and will be more easily addressed once certain other notions have been introduced. I shall return to it below. In any case I shall restrict myself to the claim that there is a class of actions, C_A , which humans commonly perform, for which egocentric indexicals are essential. I leave it open, for now, whether there are possible actions not included in C_A . Consequently I shall be arguing for a claim of the following form:

The Doctrine of the Essential Indexical

There is a class of actions, C_A , such that no action in C_A can be performed by an agent who lacks the relevant egocentric mental state, the presence of which is normally indicated by the use of an egocentric indexical.

The reason for putting this in terms of mental states whose presence is indicated, rather than expressed, by the use of an indexical will be explained in the next section.

³ John Campbell (2003) suggests that demonstrative thoughts have an essential role because they involve selecting a target object toward which an action can be directed. I do not want to rule out that there may be some such role. But I do not think this explains the essential role of indexicals such as ‘I’, ‘here’ and ‘now’. See below.

III. The Connotation Principle

Let 'IND' be any egocentric indexical term. Consider a subject, S, who expresses a thought by saying something of the form 'IND is F', where 'IND' refers to a place, person, time or object, *o*. Assuming S's utterance to be sincere, we can conclude that S believes, of *o*, that it is F. But in choosing to use the indexical term 'IND', S manifests further beliefs. For example, given that utterances of 'now' are governed by the rule that a token of 'now' refers to the time at which the token is uttered, if S uses 'now' to refer to a time *t* then the fact that S uses 'now' indicates that S believes, of *t*, that it is the time at which the token of 'now' was uttered. Similarly, S's utterance of 'here', referring to location *l*, indicates that S believes, of *l*, that it is the place in which the token of 'here' was uttered, and S's utterance of 'I', referring to person S, indicates that S believes, of S, that she or he is the person who uttered 'I' (though S would typically express this belief by saying 'I am the person who uttered 'I'; likewise, *mutatis mutandis*, for 'here' and 'now'). Let us call beliefs of this kind *indicated linguistic beliefs*, thus distinguishing them from the beliefs *expressed* by the utterances.

Notoriously, however, the linguistic belief indicated by the use of an egocentric indexical does not fully account for the psychological significance of the indexical. The point was perhaps first noticed by Arthur Prior (1959) who observed that while it makes sense to say 'thank goodness that's over' about a traumatic event, it would make no sense to thank goodness for the fact that completion of the traumatic event occurred at an earlier time than the time of the utterance; for that would have been just as true before the traumatic event as after.⁴ Prior drew controversial conclusions about the metaphysics of time, but in fact the 'thank goodness' case has close parallels with other indexicals. For example, it makes sense for me to thank goodness that the ferocious tiger is not here, and that it will not attack me, but without supplementary premises it does not make sense to thank goodness that the ferocious tiger is not at the location of some specified utterance, or will not attack the speaker of some other specified utterance. François Recanati (1993, pp. 69-72) has argued that we must thus distinguish what he calls *linguistic* and *psychological* modes of presentation; the former embody the rule that

⁴ For my positive account of the 'thank goodness' case, see Prosser forthcoming a: chapter 3.

determines the reference of a token indexical, but only the latter capture the psychological role associated with egocentric indexicals.

The need for a distinction of this kind arises because what ultimately matters for the subject's actions is a relation between the reference of the uttered indexical and the thinking subject, not a relation between the reference and the linguistic token. The latter is significant only insofar as it entails the former. I suggest, then, that an utterance of an egocentric indexical manifests a further belief – one that the subject would often have even in the absence of an utterance – which I shall call the *indicated egocentric belief*. This concerns a relation between the reference of the indexical and the thinking subject. In the case of spatial indexicals this is highly plausible. If S refers to a place *l* using the word 'here' then normally S believes that *l* is where S is located. *l* is, as S might put it, *hereabouts*. Suppose that Smith, while located at *l*, believes 'there is danger here' while Jones, located elsewhere, believes 'there is danger there', where Jones's token of 'there' also refers to *l*. Then Smith and Jones both believe that there is danger at *l*.⁵ In addition, however, Smith also believes that *l* is hereabouts, which is true if, and only if, *l* is where Smith is located. Jones might also happen to believe that *l* is where Smith is located, but this belief is not manifested by Jones's use of 'there'. Moreover, as I shall explain below, even if Smith and Jones both believe that *l* is where Smith is located, they do not believe this in the same way. Smith believes it in a way that is essential for certain kinds of action; Jones does not.

The equivalent claim about 'now' is that when Smith believes 'there is danger now', Smith believes, of time *t*, that there is danger at *t*, but Smith's use of 'now' indicates that Smith also believes that *t* is *present*. This much, I think, is hard to deny; one could not coherently make an ordinary, sincere use of 'now' while denying that the time in question was present. The temporal case is more complicated than the spatial case, however, because there is a debate in metaphysics about whether 'presentness' denotes a primitive property of times (or events), or perhaps a primitive temporal operator. If some such view is correct then insofar as 'now' thoughts have a special significance for action, this is because it makes a difference for one's actions whether or not a certain time or event is objectively present. Those of us who

⁵ For present purposes we can set aside the question of whether Smith and Jones both think of *l* under the same mode of presentation. For an argument that they can do so, however, see Prosser forthcoming b.

accept the B-theory of time, however, and who thus deny that times have properties like pastness, presentness or futurity, must instead regard pastness, presentness and futurity as relations. There is some debate concerning the relata, given that persons exist at more than one time (note that whereas 'here' might seem equivalent to 'the place where I am now', no comparable claim can be made about 'now' because I may be here at many different times). However there is much to be said for a theory according to which presentness is a relation between a time or event, and a person-stage.⁶

It might seem less clear that there is any comparable relational belief associated with 'I', but in fact there is. Consider Smith and Jones, sitting facing one another, and both wanting to raise Smith's arm. Smith and Jones can both raise Smith's arm. But they must do this in different ways, and this is because of their different relations to Smith. Smith is identical with Smith; Jones is not. But Smith stands in more relations to Smith than just identity. In particular, Smith stands in a relation to Smith such that Smith can raise Smith's arm at will. Jones does not stand in that relation to Smith. If Jones wishes to raise Smith's arm then Jones must do so by some other means, such as reaching out with Jones's own arm to lift Smith's arm. Smith is also the recipient of perceptual information acquired through Smith's sensory organs. Jones is not, and thus does not stand in that relation to Smith either. Let us gather all such relations together and jointly call them the *ι*-relation. Smith stands in the *ι*-relation to Smith, but not to Jones. Jones stands in the *ι*-relation to Jones, but not to Smith. Or perhaps there are slightly different *ι*-relations for different people, reflecting their slightly different capacities in relation to themselves. I shall leave this open, but for simplicity I shall speak as though there is a single *ι*-relation. I suggest that a person, S, who uses the word 'I', normally believes that S stands in the *ι*-relation to S. In fact any self-conscious subject does so. But, as I shall explain below, although in principle anyone could believe that S stands in the *ι*-relation to S, there is a special way of believing it that is only available to S.

The *ι*-relation is a member of a more general class of relations. These are relations between a thinking subject, S, and a person, place, time or object, *o*, where that relation determines certain possibilities for interaction between S and *o*. These relations bear similarities to those that J. J. Gibson (1979) called

⁶ For a lengthier defence of this view, see Prosser forthcoming a: chapter 3.

affordances, and to reflect this I shall sometimes call them *affordance relations*. I wish to stress, however, that I am not thereby committed to any view of Gibson's and, in particular, not committed to his anti-representationalism. I am merely discussing similar relations. I should also stress that affordance relations, as I construe them, are relations: they are subject-environment relations that determine which types of subject-environment interactions are possible. They should not be thought of as the sets of actions thus determined.

The psychologically important relations associated with 'here' and 'now' are also most plausibly thought of as affordance relations, rather than spatial or temporal relations. For example, the ways in which S can act on *o* might depend on whether *o* is *near*. But arguably the 'near' relation that is relevant to S's actions is the relation that is common between a small creature one metre from an object, a large creature ten metres from an object, and a creature that lives in a computer-generated virtual environment and stands in a functionally equivalent, but non-spatial, relation to a virtual object. A similar claim can be made in the temporal case.⁷ If, however, this is incorrect, and the relations in question are spatial or temporal, this should not affect the argument that follows. I shall henceforth refer to the relevant relations neutrally as *subject-environment relations*, or *s-e relations* for short. S-e relations include only certain relations that determine possibilities for subject-environment interactions; they do not include *all* relations between a subject and an environment.

We can summarise the claims of this section in the following principle. The word 'object' is used here to mean a place, time, person or physical object, and the word 'connotation' is used in the ordinary, non-technical sense:

The Connotation Principle

When a subject, S, uses an egocentric indexical term 'IND' in referring to an object *o*, S's use of 'IND' indicates that S believes that S stands in an s-e relation to *o*. Different indexicals connote different s-e relations.

Instead of connotations we could perhaps capture a very similar notion in terms of the built-in presuppositions of the utterance that S does or could

⁷ Arguments for thinking that the psychologically salient relations in spatial experience and thought are affordance relations are given in Prosser 2011; and the equivalent claim for temporal experience and thought is defended in Prosser forthcoming a: chapter 4.

make using 'IND'. What matters here is only what S believes. Note that pure demonstratives such as 'that' do not connote s-e relations, and consequently I am not claiming that 'that' is an essential indexical. It is true that when S uses 'that' in referring to a perceived object, S is often aware of s-e relations to the object due to the object's experienced location in egocentric space and time. In such cases S's awareness of the s-e relation may be essential for certain actions. But this is not always the case; one can talk, and arguably think, about a person or object that one hears, despite being unable to tell which direction the sound is coming from, and in such cases one can express one's thought using 'that'.

I think that the connotation principle is highly plausible, but in any case there are good independent reasons to accept it. For example, it offers a very simple account of the systematic differences in behaviour associated with different indexicals. One stands at a distance from location *l* and one thinks 'it rains constantly there'. Then one travels to *l*, thinking about it continuously, and one expresses a retained belief using the words 'it rains constantly here'. All else being equal, when one uses 'here' one opens one's umbrella, but when one uses 'there', one does not. This difference in actions suggests a difference in one's beliefs. Given the connotation principle, there is an obvious explanation: although one retains the belief 'it rains constantly at *l*' throughout, it is only when one uses 'here' that one also believes that *l* is hereabouts. It is this latter belief that leads one to open one's umbrella. It would be hard to account for both the retention of a belief and the difference in behaviour in any other way.⁸

Perhaps the suggestion that a user of an indexical term *believes* that she or he stands in the relevant s-e relation will be thought too strong. This may depend on what one builds into the notion of belief. I am assuming only a very undemanding notion of belief such that, roughly speaking, an entity can legitimately be said to believe that *p* just in case there is an explanatory

⁸ I give a full defence of this line of thought in Prosser 2005, and discuss its analogue for the case of thoughts shared between different speakers who are in different contexts in Prosser forthcoming b. I also discuss the significance of the connotation principle (though not under that name) for the phenomenon of *immunity to error through misidentification* in Prosser 2012. In my opinion, much philosophical confusion has resulted from attempts to account for indexical thoughts in terms of special, unstructured singular modes of presentation with unique inferential roles, instead of recognising that different indexicals are associated with different s-e relational beliefs.

advantage in making that assumption.⁹ There are of course far more demanding notions of belief. But, as I see it, this is a terminological issue; nothing in the explanation of essential indexicals that I am about to offer depends on whether the egocentric mental states in question are properly called beliefs. I do think it plausible to maintain that it is what S believes that determines what S says, including S's choice of indexical terms, and that, consequently, in the central cases that concern us, belief is the correct notion. Having said that, I shall sometimes speak of the subject being *aware* of an s-e relation in cases where 'belief' sounds odd, such as when discussing the content of experience. This will make no difference to the argument.

IV. Knowing How One Can Act

The Connotation Principle does not, in itself, explain what makes indexicals essential. Consider David Lewis's (1979) famous example of the two gods, who know every proposition true of their world, and thus know exactly which possible world they live in. The two gods occupy two different locations within that world. They do not, however, know who or where they are; their knowledge is only expressible in non-indexical form. If a subject, S, stands in an s-e relation, R, to an object, *o*, then the gods know this, no matter who S is (even if S is one of the gods). So if, as seems plausible, the two gods are missing something that would enable them to act in their world, what is missing cannot be knowledge of the form 'S stands in relation R to *o*', for they already know all such propositions.

Lewis's gods do indeed lack something essential for action. I shall argue in subsequent sections that what they lack is a special kind of access to their s-e relations, a particular kind of epistemic perspective on one or more propositions of the form 'S stands in relation R to *o*'. Only S can stand in that perspective to that content. First, however, let us consider why mental representations of s-e relations should be thought to play an important role in action at all.

Any entity that uses its body to perform actions on its immediate environment must be sensitive to its relations to its environment; otherwise it would not be able to act in the right way. It might, however, be questioned

⁹ For this kind of view see Dennett 1987, 1991.

whether s-e relations have an important role in the psychology of the agent. It might be suggested, for example, that such states play their role at a sub-personal level. This might seem more plausible if one does not notice that explanations can differ in how fine-grained they are. Consider, for example: I believed that I had been invited to give a talk in London, I desired to give the talk, so I travelled from St Andrews, where I live, to London. That is a perfectly good rationalising explanation of my travelling from St Andrews to London. But of course during my journey a multitude of finer-grained beliefs and desires came into play, without which I could not have made the journey. So there is a danger of moving too quickly from the possibility of explaining an action without mentioning any representations of s-e relations to the conclusion that no such representations played any role in the action.¹⁰

There may well be certain kinds of sub-personal representations that play a role in determining fine-grained bodily movements, including habitual actions and other relatively 'automatic' movements. When one reaches out to pick up an object, one typically does not consciously think about how to arrange one's fingers in order to grip the object; there is a sense in which this happens automatically. But it would be far too quick to conclude from such cases that conscious thoughts about s-e relations have no role to play in one's actions. An action, at least as I am using the word, is something that one intends to perform. When one intends to pick up an object, one typically does not intend to shape one's grip in a very specific way. But often one's intentions do place at least some constraints on how the action is performed, and this usually requires awareness of s-e relations. Moreover, one's beliefs and experiences concerning s-e relations allow one to make judgments about what kinds of actions one can perform. Can I reach that object with my left hand, or should I use my right hand? Do I need to bend down to get through that doorway? Can I get to the tennis ball before it crosses the line? Should I try to move in such a way as to receive the ball on my stronger side? The fact that such deliberations are possible shows that mental representations of s-e relations have a role in the production of many intentional actions.¹¹

¹⁰ See for example Cappelen and Dever 2014, ch. 3, where an emphasis is placed on the notion of explanation.

¹¹ If the 'two streams' hypothesis of Goodale and Milner 1992 is correct then many fine-grained bodily movements are controlled by a processing stream quite separate from that which leads to conscious experience. But that is consistent with the possibility that the relational content of conscious experience makes it possible to know which actions one can

If one knows the result that one wishes to achieve, but one is entirely unaware of one's s-e relations, then with enough luck one might be able to achieve the desired result by thrashing around at random. Even Lewis's two gods could do this. But action is not normally like this; one usually intends to move in more or less the way that one actually moves, at least at a coarse-grained level. But note that even if, contrary to what I have suggested, representations of s-e relations could only perform their function at a sub-personal level, the arguments of the next two sections would still show that such representations were essential for an important class of actions.

Are mental representations of s-e relations essential for all kinds of action performed by all possible agents? It is tempting to think not, on the grounds that there could be a god-like creature who acted just by specifying the desired state of affairs, without needing to specify anything about how that state of affairs would come about. We must distinguish some different cases. In the extreme case, perhaps there could be a god-like creature who did not exist in space or time, but could create the entire spatiotemporal world. But this is clearly not how human beings act, and perhaps should not be described as an action at all. Consider instead a god-like creature located in time, but not in space. Perhaps this god could be equipped with a complete linguistic representation of the world, including a name for every particular. The god would act by stating a complete description of how the world was to be at some future time, or perhaps just a description of whatever would change, much as one can specify a move in a chess game. We can also consider a god just like the previous one, but located in space as well as time. From the god's point of view everything would be the same; the desired outcome would be specified in the same way, but sometimes the god would move in such a way as to produce the desired outcome. But this movement would not be performed consciously or deliberately; from the god's point of view, it would just happen.

Perhaps such god-like actions are possible. If, moreover, they can be achieved by magic, without the need even for sub-personal representations of s-e relations, then the doctrine of the essential indexical must be restricted

perform and how one can perform them, and to form the intention to perform an action in a (fairly) specific way. This provides a partial response to Campbell's (2003) claim that conscious experience only enables the subject to select a target for action and has no role to play in guiding the action.

such that the relevant class of actions, C_A , does not include them. This would not undermine the claims that I wish to make, given that human action is not magically god-like. In humans there is a physical mechanism that controls the details of the action, and some of its workings and representational states may be sub-personal. But the argument that I shall give does not depend on any assumption that the representations of s-e relations are personal-level states. I do, however, think that there will be personal-level representations of s-e relations whenever there is a personal-level intention to perform the action in a specific way, such as reaching out with one's left hand rather than one's right hand, or making objects A and B closer together by moving A toward B rather than B toward A. (Note that this would still be true in the latter case even if the action were performed by telekinesis.¹² For in order to move A toward B, rather than B toward A one would have to do more than just specify the outcome that A is close to B. One would have to intend to direct one's action upon A, rather than B. To do this, one would have to be aware of standing in different relations to A and B. One might think: 'A is such that it can be moved in *this* way [imagines the relevant act of will] whereas B is such that it can be moved in *that* way [imagines a different act of will]'. If one attempted to perform the action but one found that the wrong object moved, then one was mistaken about one's s-e relations to A and B. The possibility of error implies representation. So even in cases in which one does not use one's body to act, one must still have an awareness, and thus a mental representation, of s-e relations.)

Finally, however, one might question the very idea of god-like actions. For in the imagined scenario the god-like creature must deliberately specify the desired state of affairs with the intention that this bring about that state of affairs. Whatever form this took, it would be an action, and it might be argued that there would have to be at least a minimal awareness of an s-e relation – in this case, presumably, an ι -relation – in order for that action to be performed.

So far I have argued that an awareness of s-e relations is necessary for all action, or at least all human action. But, as the case of Lewis's two gods shows, being aware that S stands in relation R to o is not sufficient to allow S to act on o . In the next two sections I explain what is missing.

¹² Telekinesis is mentioned by Millikan (1990, p. 727) in her argument against essential indexicality.

V. First-Person Redundancy

Imagine a creature, *C*, living in a one-dimensional world consisting of a single line of space. The creature eats *O*s, which are objects of a certain kind that it finds along the line. *C* captures these objects by performing an action (extending its tongue, perhaps) just when an *O* is one metre away from it. Now, normally if any creature other than *C* wished to be able to react just when an *O* was one metre from *C*, it would need to detect two things: the location of the *O*, and the location of *C*. In principle there could of course be a creature with direct conscious awareness of the distance between *C* and an *O* due to having some special kind of direct access to that parameter (by literally seeing the world through *C*'s eyes, for example). But this would not be the normal case for creatures that perceived their environments in anything like the way that humans do.

C stands in a special epistemic relation to the distance between *C* and an *O*, however. All that *C* needs to do is to react when an *O* is *one metre away*. *C* could, for example, have a form of echolocation that caused *C* to react just when the return time for the echoes dropped to a certain level, indicating that an *O* was one metre away. In other words, *C* need only be sensitive to one distance parameter, instead of having to compute that parameter from the two parameters that specify the positions of *C* and the *O*. This single parameter would also be sufficient for *C* to control *C*'s actions. Suppose, for example, that *C* had the capacity to eat *O*s at different distances by adjusting *C*'s actions in some way (*C* could extend its tongue different distances, for example). Again, only a single parameter would be required.

Suppose that *C* did in fact perceive *C* due to a reflection or refraction of some kind. This would make no difference to *C*'s interactions with *O*s. *C* would still need to respond to only one parameter, represented directly in experience, in order to interact with the *O*s. Any experiential representation of *C* would therefore be redundant in *C*'s interactions with *O*s. This would be equally true of *C*'s beliefs. *C* might believe that there was an *O* at a certain distance, and react accordingly, even if *C* did not perceive the *O*. Again, only one parameter need be involved in this. If *C*'s mental state represented *C* this would be redundant, whereas *C*'s representations of the *O*s would not be. I

shall hence say that *C*'s representation of the spatial relation between *C* and an *O* is *first-person redundant*.

It seems clear that humans make frequent use of the same kind of epistemological short cut, which is possible in certain cases in which the subject is one of the relata in an s-e relation. When I reach out to touch an object, I need only perceive that the object is nearby and to the left (say); I do not need to compare the location or orientation of the object with my own. Similarly, when I remember an event, I do not have to take account of my own location in time in order to judge how long ago the event occurred (at least in those cases in which I have a sense of whether the event was recent, a long time ago, etc.) The point generalises to many other s-e relations, including some that are not associated with the standard egocentric indexicals 'I', 'here' and 'now'. Consider a relational use of 'heavy' such that if you are stronger than me then some objects that are heavy for me are not heavy for you. This is what John Campbell (1994, pp. 41-46) has called a *causal indexical*. 'Heavy', used in this way, denotes an s-e relation. This s-e relation can be represented first-person-redundantly. When one feels the weight of an object one can judge whether it is heavy without having to compare its weight with one's own causal powers; whereas one would have to make that kind of comparison in order to judge whether the object was heavy for someone else.

I should make a few remarks about the relation between first-person redundancy and the notion that in some cases the thinking or perceiving subject is an *unarticulated constituent* of the thought or experience. The notion of an unarticulated constituent was made prominent by John Perry (1986), who described a fictional place called Z-land in which the inhabitants spend their entire lives in the same place. They do not even think about other places. Consequently they have no use for words like 'here'. Instead of saying 'it is raining here now', they just say 'it is raining now'. Perry suggests that the same could be true for the Z-landers' thoughts. They speak, and even think, as though rain were a one-place predicate of times. Yet when they say, or think, that it is raining now, this is true if and only if it is raining in Z-land now. Z-land is thus an unarticulated constituent of the proposition expressed. Similarly, if a Z-lander had made the same claim at time *t* in another place, *l*, the truth condition would have been that it is raining in *l* at time *t*. In principle the idea can also be applied to cases in which it is the thinking

subject that is unarticulated. I may, for example, say or think that object o is near to me by saying, or thinking, ' o is near'. If I am person S , then what I say is true if and only if o is near to S . Others have subsequently made similar claims.¹³

It is easy enough to make sense of the idea of an unarticulated constituent in language; it arises whenever a syntactically n -place predicate is used in dealing with what is in fact an $n+1$ -place relation. But it is less clear how this notion could be applied to thought, and still less clear how it could apply to experience. Perhaps thought has a language-like syntax, though this is a controversial issue. But presumably no one thinks that experience has a syntax of this kind. So the claim that the experiencing subject is an unarticulated constituent of the content of an experience cannot be understood syntactically. A natural next thought might be to appeal to phenomenology; an object is not an articulated constituent of the content of an experience unless there is an element of the phenomenology that represents it. Unfortunately, however, this leaves it unclear what we should say about cases of *amodal completion*, in which an occluded part of an object is arguably present in the experience. Consider the common example of a cat seen behind railings; one's visual experience seems to include the whole cat, yet only parts of the cat are visible. It might be argued that the phenomenology of the experience includes the whole cat, and merely fails to represent the surface properties of those parts of the cat that are occluded. So perhaps a comparable claim could be made about the presence of the subject in experience.¹⁴

Perhaps the nearest equivalent to the notion of an unarticulated subject in experience is first-person redundancy itself. For it appears to be a general truth that in order to judge that an n -place predicate applies, one requires n pieces of information. To judge that A is tall, I just need to know A 's height – one piece of information. To judge that A is taller than B , I need to know A 's height and B 's height – two pieces of information. This still works where there

¹³ In particular, John Campbell (1994, 2002) and Sydney Shoemaker (1994) have both suggested that the egocentric content of experience is of this 'monadic' form.

¹⁴ John Schwenkler (2014) makes precisely this claim. Schwenkler argues that the subject must, in fact, be represented in experience, or there could be no phenomenological difference between one's own motion and the motion of objects around one. I think there may be a reply to Schwenkler's argument, though it is hard to be certain until it is made clear just what it takes for the subject to be an articulated constituent of the experience. In any case, Schwenkler's argument does not appear to threaten the notion of first-person redundancy, which is all we need for present purposes.

is first-person redundancy. For example, in order to judge that Smith is near, I need only one piece of information (how far away Smith is). In the equivalent non-redundant case, in order to judge that Smith is near to S I need two pieces of information (the location of S and the location of Smith). I shall not attempt to say precisely what is meant by a 'piece' of information, but I think it is clear enough that some such claim is correct. Perhaps, then, the notion of first-person redundancy is itself the nearest equivalent to the linguistic notion of an unarticulated constituent that can be meaningfully applied to experience.

VI. Why First-Person Redundancy is Essential

I argued in section IV that in order to act on object *o* (where 'object' is construed broadly, to include places, times and persons as well as physical objects) one must be aware of one's s-e relations to *o*; otherwise, one would not know which actions one could perform, or how to go about performing them. But this cannot be the whole story, given that Lewis's two gods know every true proposition expressed in non-indexical form, and thus know every proposition of the form 'S stands in relation R to *o*', but still lack something. Knowing how to act is not the same as knowing how S can act, even if I am in fact S. Ordinary knowledge that S stands in an s-e relation R to *o* gives me the right information, but it does not give it to me in the right form. Instead, for information about my s-e relations to enable me to act, their representation must be first-person redundant.¹⁵

This can be shown by a simple regress argument. Let 'R(S, *o*)' stand for 'S stands in relation R to *o*', where the representation of S is non-redundant. Let 'R({S}, *o*)' be a first-person redundant representation with the same semantic content. Thus, if I am S, then in the ordinary case in which I act on *o* I have a first-person redundant mental representation of the form R₁({S}, *o*) (I might verbalise this as '*o* is to the left', for example). But suppose instead that this representation were non-redundant, that is, R₁(S, *o*) ('*o* is to S's left'). Then I would be in the same representational state, and the same epistemic situation, as anyone else who wanted to make a person S act on an object *o*. I would need to do so by acting on S. Given the arguments above, however, in order

¹⁵ It is implicit in the preceding sentences that the notion of first-person redundancy may also hold the key to understanding the distinction between knowing how and knowing that. I intend to elaborate on this in future work.

to act on S I would need a mental representation of some appropriate s-e relation, R_2 , that I stood in to S. To act in this way would be rather unnatural – I do not normally act on other objects by first acting on myself, to make myself move in the right way relative to the object. But perhaps there are cases in which this is possible, or even necessary.¹⁶

So, given that I am S, the mental representation required for my action upon myself (and thus to act indirectly upon o) would be either of the form $R_2(\{S\}, S)$ or of the form $R_2(S, S)$. But if it were the latter then I would be in the same representational state, and the same epistemic situation, as anyone else who wanted to make a person S act on upon S. I would thus need a further representation of another s-e relation, R_3 , between myself and S. This would be either $R_3(\{S\}, S)$ or $R_3(S, S)$. Clearly the iterations will continue until a first-person redundant representation is reached. I therefore conclude that no action (or at least no action in C_A) is possible without a mental representation that is first-person redundant.¹⁷

VII. *Why Indexicals?*

There is nothing in the account that I have put forward to suggest that indexicality *per se* makes indexicals essential.¹⁸ But consider again the notion of the unarticulated subject, discussed above, which I have suggested is closely related to the notion of first-person redundancy. Would an unarticulated subject involve a kind of indexicality, suggesting that indexicality itself is essential for action after all? The thought would be that experiences, and perhaps other mental states, have incomplete contents of the form ‘_ stands in R to o ’, and that when these contents are entertained by different subjects they form different complete propositions. Thus when Smith and Jones are in identical internal states, Smith’s state determines the

¹⁶ The case of Ian Waterman (described in Cole 1995) may illustrate something of the difficulty in acting on another object by deliberately acting on oneself. At the age of 19 Waterman lost all sense of touch and proprioception from the neck down, but was not paralysed. He was able to compensate to some degree, but with great difficulty, by using vision to tell him the configuration of his limbs. Perhaps Waterman is an example of someone who lacks the usual awareness of certain s-e relations to his own body.

¹⁷ Other philosophers have suggested that there was some kind of infinite regress associated with the first-person. See for example Ryle 1949, pp. 186-9, and also Merleau-Ponty 1962, pp. 104-5. While not the same, I think there are connections with the regress described above. Such arguments shed much light on the Humean ‘elusiveness’ of the self.

¹⁸ The next two paragraphs are influenced by Cappelen and Dever 2014, ch. 8.

content 'Smith stands in R to o ', while Jones's state determines the content 'Jones stands in R to o '.

This, however, is not indexicality. Smith and Jones have in common that their mental states represent each of them as being an x such that x stands in R to o . But an indexical is an element of the vehicle whose semantic value varies systematically with context. Nothing that has been said suggests that there is any such indexical element involved in the representations of Smith or Jones's relations to o . Perhaps this kind of error is made more tempting by a common conflation of egocentricity with indexicality. Words like 'left', 'right', 'up', 'down', and 'near' are egocentric in that they capture relations between a person and the person's environment. But unlike 'I', 'here' and 'now', they are not indexicals. Their semantic values do not vary systematically with context according to token-reflexive rules.

Lewis (1979) argued that essential indexical content was *de se* content, which he argued could be characterised in terms of sets of centred worlds, or in terms of properties that are self-ascribed. Cappelen and Dever (2014, ch. 5) make a convincing case that any centred worlds content can be expressed as a structured proposition, and therefore that there is nothing about centred worlds content *per se* that could explain essential indexicality. Instead, they argue, all of the work in Lewis's account is being done by the notion of self-ascription, yet this notion is not given an adequate explanation.

I can accept all of this. But the notion of first-person redundancy may be a distant cousin of the Lewisian notion of self-ascription. First-person redundancy involves a content that is about oneself, but judging that it obtains does not require an explicit awareness of oneself. According to Lewis, *all* belief is self-ascription, for even the belief that grass is green amounts to the self-ascription of the property of being in a world where grass is green. I do not need to make any corresponding claim. My claims concern only a special category of egocentric mental representation indicated (but not expressed) by the use of indexicals. So my account is compatible with a standard account of belief as a propositional attitude, an epistemic relation to a complete propositional content.

So why is there any connection with indexicals at all? The answer is that the references of indexicals such as 'I', 'here' and 'now' are governed by token-reflexive rules that match up closely with s-e relations. A token of 'here'

stands for the place in which it is uttered. Because the thinking subject is the speaker of the utterance, when I utter 'here' I am located at the place referred to by 'here'. So a use of 'here' connotes a relation between the subject and the place referred to by 'here'. The same goes for other indexicals. The doctrine of the essential indexical should therefore be understood as the view that the mental states that are essential for action match up with uses of indexicals. But indexicality *per se* has nothing to do with being essential for action. We could have done without indexicals; but we could not have done without the non-indexical first-person redundant mental states whose presence they indicate.

Given the arguments thus far, we can rewrite the doctrine of the essential indexical in an expanded form, as follows:

*The Doctrine of the Essential Indexical**

There is a class of actions, C_A (perhaps only the non god-like actions, or perhaps all actions), such that no action in C_A can be performed by an agent who lacks a first-person redundant mental state of the kind normally indicated by the use of an egocentric indexical.

VIII. First-Person Redundancy and The Explanatory Gap

I believe that the notion of first-person redundancy is important for issues beyond the explanation of essential indexicality. I shall end with a very brief discussion of one such issue, concerning what has come to be known as the *explanatory gap*. This refers to the apparent difficulty of explaining phenomenal consciousness in terms of physical processes, or of gaining knowledge of phenomenal consciousness just through knowledge of physical processes, no matter how complete.¹⁹ To defend a materialist theory of the mental, one must explain, in materialistically acceptable terms, why there is an explanatory gap.

Thomas Nagel (1974) offered a possible explanation in terms of different perspectives on the world; for example, neuroscience gives us a public, third-person description of brain activity, but the conscious subject experiences this

¹⁹ The expression 'explanatory gap' was first coined by Joseph Levine (1983). The apparent gap between knowledge of the physical facts and knowledge of the phenomenological facts was of course argued for by Thomas Nagel (1974) and Frank Jackson (1982).

same activity from a first-person point of view. We can use the notion of first-person redundancy to define a more precise notion of perspective that can be put to a similar use. Let a representational state be a *first-person representation*, or a representation *from the first-person perspective*, if and only if it is first-person redundant; otherwise let it be a *third-person representation*, or a representation *from the third-person perspective*. So, for example, when I see S standing in front of *o* (by seeing myself and *o* in a mirror, for example), I have a third-person representation $R(S, o)$. It is the kind of representational state that others can share. But when I see *o* in front of me in the normal way – or just *o in front*, as I might say – then I have a first-person representation, $R(\{S\}, o)$, of my relation to *o*. Only I can be in that state. Both mental states represent the same state of affairs. But possession of the third-person representation does not suffice to give me the first-person representation (or vice versa). There is no simple translation procedure that automatically gets me from one to the other, for the difference between the first and third-person perspectives is a difference of epistemic perspective on the same content.

Now, suppose that all conscious experiences had representational contents, and that all were first-person redundant. This could be the case if the phenomenal character of any conscious experience represented an s-e relation – a view that I think is independently plausible.²⁰ In that case, a conscious experience would give one a first-person representation of a state of affairs that could also be represented from the third-person perspective. Thus Mary (the colour vision scientist from Jackson 1982, who knows all the physical facts but has never experienced colour) would know about all states of affairs from the third-person perspective. So she might know, for example, that Mary stands in an s-e relation, R_{red} , to *o*, where *o* is a red object. This would be third-person knowledge, accessible to everyone. But she would never have entertained this content from the first-person perspective. And, if this line of thought is correct, then that is why Mary does not know what it is like to see something red until she has the experience. For to know what it is like to see something red requires either that one currently see something red, or that one is able to simulate the experience of something red, and Mary can do neither, prior to her first experience of red. For both of these would involve

²⁰ I argue for this view for spatial experience in Prosser 2011 and for temporal experience in Prosser forthcoming a: chapter 4. I hope to defend the more general view, that all conscious experiences are first-person redundant representations of s-e relations, in future work.

first-person redundant mental states, as described above. This, I suggest, is what Mary lacks, prior to her first experience of red.

Clearly much more must be said to turn the brief outline given in this section into a complete account. I leave this for further work.²¹

Department of Philosophy
Edgecliffe, The Scores
University of St Andrews
Fife, KY16 9AR

sjp7@st-andrews.ac.uk

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