

Frege's Theory of Hybrid Proper Names Extended

MARK TEXTOR

King's College London
mark.textor@kcl.ac.uk

According to Frege, neither demonstratives nor indexicals are singular terms; only a demonstrative (indexical) together with 'circumstances accompanying its utterance' has sense and singular reference. While this view seems defensible for demonstratives, where demonstrations serve as non-verbal signs, indexicals, especially pure indexicals like 'I', 'here', and 'now', seem not to be in need of completion by circumstances of utterance. In this paper I argue on the basis of independent reasons that indexicals are in fact in need of completion; I identify the completers as uses of circumstances of utterance by the speaker; and I show how these uses together with the utterance of indexical sentences express thoughts. The starting point of the paper is a criticism of Kripke's and Künne's alternative treatment of indexicals in Frege's framework.

1. Introduction: are indexicals hybrid proper names?

Frege held that in a language apt for scientific employment the 'mere wording' of a univocal assertoric sentence is the complete expression of a thought (Frege 1913, p. 23 [p. 230]). For instance, understanding the words that compose the sentence 'Every natural number has exactly one successor' and knowing their mode of composition suffices for grasping the thought expressed. The thought expressed is a complex sense 'for which the question of truth arises' (Frege 1918–19, p. 62 [p. 292]).¹ Now, the mere wording of many sentences in natural language is not the complete expression of a thought. Important examples are sentences that contain indexicals and demonstratives. Understanding the words that compose the sentence 'That dog is dangerous' and having knowledge of their mode of composition does *not* suffice for grasping the thought expressed by an utterance of this sentence. What does one need to know *in addition* to the mere

¹ Page references of translations are in square brackets.

wording in order to grasp the thought expressed by an utterance of such a sentence? Frege answers this question as follows:

[T]he mere wording, as it can be written down, is not the complete expression of the thought; the knowledge of certain [circumstances] accompanying the utterance, which are used as means of expressing the thought, is needed for us to grasp the thought correctly. Pointing the finger, hand gestures, glances, may belong here too. (Frege 1918–19, p. 64 [p. 296]; in part my translation)

Sentences with indexicals and demonstratives express thoughts *only if supplemented with the circumstances of their utterance*, used by the speaker as means of thought-expression. For example, the purely verbal sign ‘that dog’ is not a singular term; only the hybrid proper name that contains these words combined with a gesture that points out a particular dog is a singular term (Frege 1914, p. 230 [p. 213]). Following Künne’s terminology, I will call any singular term that contains words and circumstances of utterance a *hybrid proper name*.

The idea that utterances of demonstratives contain hybrid proper names is an intriguing suggestion that is of independent interest for a philosophical view of demonstratives (See Textor 2007). Finger pointings, hand gestures, and glances are non-verbal signs by means of which a speaker, in part, expresses a thought.² Why is, for example, a particular glance a non-verbal sign? Because it is an action made with communicative intentions, and as such it can be understood or misunderstood (Millikan 2004, p. 144). This observation guides semantic theorizing about demonstratives: neither verbal nor non-verbal signs are parameters of the context of utterance. Hence, pointings, and other non-verbal signs, are not context-parameters (contra Salmon 2002, p. 517).

The Fregean view of demonstratives assumes that the circumstances that complete a hybrid proper name are non-verbal signs. But Frege takes, for instance, the indexical ‘now’ also to be a hybrid proper name, and claims that the time of speaking is part of the thought-expression (Frege 1918–19, p. 76 [p. 309]). It seems natural to say further that the circumstances that complete ‘here’ and ‘I’ are the location and the producer of the utterance. However, the speaker, the time of utterance, and so forth are not non-verbal signs that have meaning (Textor 2007, p. 953). Hence, the view that the completing circumstances are non-verbal signs seems not to apply to indexicals. In view of this observation, can one hold on to the idea that

² See Kendon 2004, pp. 1–2 on non-verbal actions as utterances. See also Wharton 2009, Ch. 6.

non-verbal signs complete the utterance of a hybrid proper name and do justice to the Fregean idea that *both* indexicals and demonstratives are hybrid proper names?

Kripke (2008, pp. 201 ff.) answers 'Yes' to our question. He holds that in order to obtain a complete thought-expression the mere wording of an indexical (demonstrative) sentence must be completed by a 'piece of language'. Since, for example, the time at which 'It is raining' is uttered completes the sentence to the expression of a thought, Kripke concludes that the time of utterance is an 'unrecognised piece of language', an autonomous designator (Kripke 2008, p. 202, n. 60; p. 203, n. 62).

Künne (2010) agrees with Kripke about the completing circumstances.³ But Kripke's *modus ponens* is his *modus tollens*. Speakers, times, and so on are not 'unrecognised pieces of language'. Yet they complete indexical sentences to expressions of thoughts, so a hybrid thought-expression need not contain an autonomous designator (Künne 2010, pp. 541 ff.).

Kripke and Künne give different answers to the question whether the non-verbal part of a hybrid thought-expression is a sign or not. But both assume that the speaker (time, place of utterance) is the non-verbal part of a hybrid proper name whose verbal part is 'I' ('here', 'now'). If this shared assumption is wrong, neither Kripke's nor Künne's view is plausible. In sections 2 and 3 I will criticize this shared assumption. This criticism will pave the way for a new answer to the question posed: demonstratives and indexicals are hybrid proper names, but they are not completed by the speaker, time, or location of utterance. The right completers are indeed, as Frege tells us, *uses* of the circumstances of utterance by the speaker. These uses of circumstances are non-verbal signs like glances or pointings. I will develop this answer in sections 4 to 6.

2. Why the speakers, times, and places of utterance are not suitable completers

It is widely acknowledged that indexicals and demonstratives have a context-independent linguistic meaning that can be captured by a reference rule such as (I1):⁴

³ Künne 1983 and 1992 argue for the same view.

⁴ Letters such as 'c', 's', 'p', 't' are variables ranging over contexts, speakers, places, and times etc.

- (I1) $(\forall c, s)$ ('I' refers in context c to speaker s if, and only if, s is the speaker in c)

In (I1), the reference relation is relativized to contexts of utterance. A context of utterance is represented by an ordered tuple of objects that contains, amongst other things, the speaker, location, and time of utterance, that is, the context-parameters.

Now imagine you hear a recording of an utterance u of 'I am here', but you do not know anything else about the utterance. Your knowledge of the meaning of the words 'I', 'am', and 'here', and their mode of combination, suffices for you to come to know that the utterance is true if, and only if, the speaker of the context of utterance of u is at the location of this context at the time of the context.⁵ This propositional content is, however, not what the speaker wants to communicate with her utterance. We can safely assume that she intends to say something that is relevant to the conversation to which u is a contribution. But there is no communicative purpose to which the trivial utterance-relative content can be relevant.

Hence, we have a reason to agree with Frege that 'the mere wording is not the complete expression of the thought'. What completes the mere wording of an indexical sentence to a thought-expression? He says about the present tense:

If a time indication is needed by the present tense one must know when the sentence was uttered to apprehend the thought correctly. Therefore the time of utterance is part of the expression of the thought. (Frege 1918–19, p. 64 [p. 296]; p. 76 [p. 309])

Frege assumes that knowledge of the time of utterance and the meaning of the present-tense sentence suffices for grasping the thought expressed. Hence, the mere wording of the sentence together with the time of utterance expresses a thought completely.

Kripke takes his cue from this passage in Frege. Only 'pieces of language' can be parts of thought-expressions. Since the time of utterance is part of the expression of a thought, it must be an autonomous designator. He (2008, p. 212) models the first-person pronoun and 'here', etc., on the present tense: places and people are also autonomous designators. An indexical is an incomplete function expression that is completed by an autonomous designator to a singular term.

⁵ See Perry 2012, pp. 91 ff. For another proposal see Sainsbury 2011, p. 252.

One can specify general reference rules for pairs of indexicals and autonomous designators as follows:

- ($\forall t$) (<'now', t > refers to t)
- ($\forall p$) (<'here', p > refers to p)
- ($\forall s$) (<'I', s > refers to s)

Kripke models the complete expression of a thought as an ordered pair consisting of an indexical sentence and the time (location, producer) of utterance. For instance, (S₁) <'It is raining in London', 12.6.2013, 14.33> expresses a complete thought (Kripke 2008, p. 204).⁶ One can represent hybrid thought-expressions differently, but in the following I will use Kripke's symbolism.

Künne rejects the thesis that indexicals are function expressions, but he arrives at the same conclusion:

[T]he result of combining a word or phrase with a time, a place, a speaker or an act of demonstration is a singular term that by itself designates something. (Künne 2010, p. 545)

The object designated by such a hybrid singular term is its non-verbal part.

I will call the view that (a) indexicals such as 'I', 'here', and 'now' need to be completed by a speaker etc. in order to obtain singular terms and (b) sentences containing such indexicals need to be completed by such objects in order to obtain thought-expressions the *Object View*.

The Object View raises two basic questions. First, Kripke defines reference for ordered pairs of objects and indexicals; rules like (I₁) take the same objects to be parameters of the reference relation for indexicals. Both rules are equivalent: the hybrid proper name <'I', Claudius> refers to Claudius if, and only if, 'I' refers with respect to a context of utterance whose speaker is Claudius. But (I₁) neither suggests that the speaker is an autonomous designator nor something that contributes to the expression of a thought. Hence, one will ask:

Can it make any difference whether we say that a word plus a context designates a given object, or instead that the word designates the object 'relative to' or 'with respect to' the context? (Salmon 2002, p. 563)

If it does not make a difference, the Object View threatens either to be a mere notational variant of the standard view or to be unmotivated. Künne (2010, p. 533) raises this question, but neither he nor Kripke have an answer. In section 4 I will propose an answer to this question.

⁶ I borrow the 'It is raining' example from Künne (2010).

In this and the next section I will focus on the other question which is pertinent here.

Second, does an ordered pair such as (S₁) <‘It is raining in London’, 12.6.2013, 14.33> express a Fregean thought completely? Prima facie, the answer is ‘No’. In order to see this consider example 1: It is 12 June 2013 at 14.33. I have been tricked into thinking that I am listening to a recording of an utterance, but in fact I hear an utterance of ‘It is raining in London’ that is made at that exact time. I do not know the time or the date, but I have been told beforehand that the utterance I will hear was made on 12 June 2013 at 14.33. In this situation I know when the utterance was made and know the linguistic meaning of the sentence uttered, but I do not grasp the thought expressed by the utterance of the sentence at the time: I do not grasp the thought that it is raining in London right now, but only that it is raining at the time of utterance, that is on 12 June 2013 at 14.33. Hence, the ordered pair of utterance time and uttered sentence does not express the thought under consideration. The reason for this is that one needs to think of the time of utterance in a particular way, and this particular way is not determined by the time itself. For this time can be thought of in different ways (under different modes of presentation).

Both Kripke and Kühne agree that the audience needs to think of the time of utterance in a particular way in order to grasp the thought expressed. Kühne says:

You grasp the thought expressed by a hybrid thought-expression whose verbal part is an utterance of [‘It is raining in Jena’] if and only if you know that the thought expressed is true just in case there is rain in Jena while you are hearing the utterance. (Kühne 2010, p. 544)

If this is the truth-condition of the thought expressed by the utterance of ‘It is raining in Jena’ under consideration, the ordered pair of the sentence uttered and the time of utterance does not express this thought. For knowledge of the time of utterance and the linguistic meaning of the uttered sentence is insufficient for grasping the right thought. If the time of utterance were the right completer, knowledge of it and the linguistic meaning of the uttered sentence would enable one to think of the time of utterance in the right way. But as we have seen, one can know the time of utterance and yet fail to think of it in the right way.

Kripke proposes a response to this problem. In order to understand a sign one must at least perceive it; he talks of acquaintance. If one perceives an autonomous sign, one thereby perceives its referent.

Hence, understanding an autonomous sign requires acquaintance with its referent and if one is acquainted with the referent, one thinks of it in the right way (Kripke 2008, pp. 203–4, 212). However, even if one grants Kripke the assumption that a time is an autonomous designator, there are two problems with the acquaintance requirement.

First, it is implausible (and even counter-systematic) to impose the acquaintance requirement in the case of the first-person pronoun. Frege famously said about the first-person pronoun:

Now everyone is presented to himself in a special and primitive way, in which he is presented to no-one else. So, when Dr. Lauben thinks that he was wounded, he will probably be basing his thinking on this primitive way in which he is presented to himself. And only Dr. Lauben himself can grasp thoughts specified in this way. He cannot communicate a thought he alone can grasp. Therefore, if he now says 'I was wounded', he must use 'I' in a sense which can be grasped by others, perhaps in the sense of 'he who is speaking to you at this moment'; *when doing so he utilises the circumstances accompanying his speaking for thought expression*. (Frege 1918–19, p. 66 [p. 298]; my emphasis and in part my translation)

In soliloquy the first-person pronoun expresses a primitive mode of presentation of the thinker. This mode of presentation cannot be grasped by others. Hence, when Dr Lauben and Leo Peter both use 'I' in thinking about themselves, their uses of 'I' do not need completion. Precisely because the thinker is given to herself in a special and primitive way, no completion by circumstances is necessary.

In contrast, if one uses the first-person pronoun in communication, it requires completion by the circumstance of utterance in order to enable others to grasp a thought about the speaker. Consider an example (example 2). Dr Lauben is wounded and needs help from Leo Peter. He utters with assertoric force the sentence 'I am wounded' and when doing so projects his voice and directs his glances at Leo Peter (that is, he addresses him).⁷ Dr Lauben's glances and voice direction are non-verbal signs that contribute to him expressing a thought that Leo Peter, in turn, could express at the time of utterance by saying 'The person who is addressing me now is wounded', or 'He is wounded', where 'he' is a demonstrative that expresses a visual or

⁷ Addressing someone will involve letting her see the activity of speaking when uttering 'I'. I think this is what Wittgenstein has in mind in his lectures when he illustrates the distinction between sign and symbol 'by saying that if a man says "I am tired" *his mouth is part of the symbol*' (Moore 1955, p. 262, quoted in Künne 1982, my emphasis). Please note that it is not the speaker but his mouth that is part of the symbol. Wittgenstein would have been clearer still had he said that the *moving lips* are a non-verbal sign that is part of the symbol.

auditory mode of presentation of Dr Lauben. Leo Peter grasps these modes of presentation in virtue of understanding Dr Lauben's use of the circumstances accompanying his speaking: he singles out Dr Lauben visually because he recognizes who is purposefully looking at him when the utterance is made. His visual mode of presentation of Dr Lauben is based on his ability to track the gaze of the speaker. Hence, in the communicative case an utterance of the first-person pronoun is completed, for instance, by the speaker's glances and his voice projection. But it is not completed by the speaker, as the Object View has it. The first-person pronoun should therefore not be modelled on the present tense; rather the present tense and other indexicals should be modelled on the first-person pronoun — or so I will argue in sections 3 to 6.

Second, if times, people, and places are objects of acquaintance, one can stand to the same object in different relations of acquaintance. Consider for illustration uses of 'here'. I can be acquainted with a place in different ways — for instance, via touch and vision. Hence, even if a place is an autonomous sign and one needs to be acquainted with it in order to understand this sign, the combination of 'It is cold here' and a place does not express a thought completely. For even if I am acquainted with a location p_1 , I might not be acquainted with it *in the right way*.⁸ The ordered pair $\langle p_1, \text{'It is cold here'} \rangle$ does therefore not express the thought completely that one puts forth by uttering 'It is cold here' at p_1 .

Russell tried to avoid the problem that one can stand to the same object in different relations of acquaintance by restricting the range of objects of acquaintance 'to items which were conceived to be so fleeting and insubstantial that it seemed unintelligible to suppose a person might identify the same one twice without knowing that it was the same' (Evans 1982, p. 82). Such a restriction would, however, make Kripke's view inapplicable to standard indexicals.

To summarize: even if one imposes the acquaintance restriction, speaker, time, and place of utterance cannot be the non-verbal parts of hybrid proper names.

3. The argument from Frege cases

The conclusion that the time of utterance, etc., is not a non-verbal component of hybrid thought-expressions can also be arrived at by a

⁸ The letters ' u_i ', ' p_i ' are short-hand for singular terms referring to utterances, times, etc.

different route. I will start by rehearsing an argument concerning demonstratives.

When one makes a demonstrative use of a demonstrative pronoun, one normally accompanies one's utterance with an action that makes an object salient, that is, a demonstration. One can make an object salient by pointing to it, glancing at it, and so on.⁹

There is a good reason to hold that the demonstration (broadly understood), and not the demonstrated object, is a non-verbal sign that completes the utterance of a sentence containing a demonstrative to the expression of a thought. This view is motivated in part by the observation that there are utterances of sentences of the form 'This F is the same as this F' that express informative thoughts.

Consider a further example: example 3 (Kaplan 1989, p. 514).¹⁰ Suppose you are a very slow speaker. Pointing at the evening star at 11 p.m. you start saying 'This planet is the same as this planet'. It takes you so long to complete your utterance that you utter 'this planet' for the second time only at 5 a.m. pointing then at what is in fact the same planet you pointed at previously. Your utterance expresses a non-obvious truth and not merely an instance of the law of identity.

The important point of the example is that the sentence 'This planet is the same as this planet' contains the same complex demonstrative referring to the same referent twice. Hence, the cognitive value of the utterance cannot be explained in terms of the linguistic meaning of the complex demonstrative and/or the demonstrated object. Something needs to be added to the linguistic meaning and the demonstrated object in order to determine the cognitive value of the utterance of a demonstrative. The natural addition seems to be the demonstration accompanying the utterance. A plausible way to understand these demonstrations is to hold that they are non-linguistic signs (see references in Sect. 1). In order to understand the different demonstrations the speaker makes at different times one needs to think of the evening star in different ways. Hence, the utterance under consideration *together with the demonstrations* expresses an informative truth.

⁹ De Gaynesford (2006, § 65f.) argues that in some cases the utterance-relative uniqueness (There is only one dog in my surroundings when I say 'That dog is nice') or leading-candidacy (The dog best fits what has been said so far) determines reference. Pointings are just one instrument for raising an object to the status of a leading candidate; every action, and indeed in a limiting case the act of uttering the demonstrative pronoun, can be a demonstration. (See Roberts 1996, p. 210, who proposes a functional understanding of demonstration.)

¹⁰ See also Perry 1977, pp. 12f.

One might object that the utterance of ‘This planet is the same as this planet’ takes unusually long to complete. Is the reason why it is informative not just that we fail to remember or preserve the original mode of presentation of the evening star over time? No, in assessing the cognitive value of utterances of the form ‘ $a = b$ ’ we make the default assumption that speaker and audience are able to preserve the modes of presentation expressed over a span of time. There are independent reasons to hold that one must be able to preserve modes of presentation in memory. For example, carrying out an argument of only modest length requires one to exercise one’s preservative memory. Similar reasons are in play here. For instance, one can imagine that Kaplan’s slow speaker uses the video camera on his mobile phone to preserve and recreate his visual mode of presentation of the evening star (‘This planet (holding up his mobile phone) which I saw two hours ago is the same as this planet’).

Now if there were informative and true identity sentences in which the same *indexical* flanks the identity sign, a similar argument to the one above would apply to indexicals: the cognitive value of such utterances cannot be explained in terms of the linguistic meaning of the indexical and/or the relevant context-parameter. Are there such examples?¹¹ Yes, consider examples 4 and 5:

Example 4: Dr Lauben has arranged to meet Rudolf Lingens at the airport. It is understood that they will use their mobile phones to coordinate at the airport. When arriving at the gate, Dr Lauben telephones Rudolf Lingens. After uttering the first token of ‘I’, Dr Lauben spots Rudolf Lingens in the crowd and addresses him directly:

Dr Lauben: I [speaking to Lingens on the phone in his normal voice] am I [addressing Lingens in person]

If Rudolf Lingens accepts Dr Lauben’s utterance, he is in a position to extend his knowledge.

The Object View has it that the speaker is the non-verbal part of a hybrid proper name whose verbal part is ‘I’. On this view, the *same* hybrid proper name flanks the identity sign in the completed version of the sentence uttered by Dr Lauben:

$\langle \text{‘I’, Dr Lauben} \rangle \wedge \text{‘} = \text{’} \wedge \langle \text{‘I’, Dr Lauben} \rangle$

¹¹ Recanati (1993, p. 82) reports that he has been unable to find such examples for ‘I’, ‘here’, and ‘now’. However, in his 1990 (p. 721) he proposed an example involving ‘here’. For reasons that will emerge I side with Recanati 1990.

But this hybrid thought-expression cannot express the thought Rudolf Lingens grasps completely: it does not reveal that the different occurrences of 'I' in Dr Lauben's utterance differ in sense. Hence, one needs to look for a different completer. The example suggests that the completing circumstances involve Dr Lauben's distinctive voice-sound and his directing his gaze at Leo Peter. I will come back to this in the next section.

Example 5: Huck and Tom are lost in McDougal's cave.¹² It is pitch black in the cave with the effect that neither of them can see the other. Huck wants to make his location salient to Tom, so he shouts:

Here [the voice seems to come from p_1] is here [Huck is now visible at p_1 after lightning a torch at p_1].

When Tom understands the utterance he comes to know an informative identity. But in both utterances 'here' has the same linguistic meaning and the context-parameters are constant throughout the utterance. Hence, the thought is not completely expressed by:

<'here', p_1 > \wedge '=' \wedge <'here', p_1 >

Just like example 3, examples 4 and 5 involve utterances that take more time than many utterances we are used to making. But this seems to be a contingent feature that has nothing to do with the semantics of the words uttered. These examples suggest that demonstratives and indexicals are similar in an important respect. Just as the demonstrated object does not complete the utterance of a sentence containing a demonstrative to the expression of a thought, the relevant context-parameter for an indexical does not complete the utterance of a sentence containing it to the expression of a thought.

We have, therefore, an independent reason to reject the Object View. What is, then, the factor that completes the utterance of a sentence containing an indexical to the expression of a thought?

4. Using circumstances as means of thought expression

The examples given in the previous section all illustrate Frege's idea that the speaker 'utilises the circumstances accompanying his speaking for thought expression.' When the speaker makes an utterance of 'I was wounded' with communicative intent, *she is not using herself to express a thought*. Hence, she is not the completing circumstance. But in what sense are the circumstances of utterance *used*?

¹² Thanks go to Nils Kürbis for comments that helped me to improve this example.

We need some background to be able to answer this question. For our purposes we can assume that utterances are events in which linguistic signs are uttered. The event of uttering ‘The house is on fire!’—call it u_1 —takes place at a time, and has a location and a producer. Knowledge of the linguistic meaning of the sentence uttered in u_1 allows speakers of English to come to know that the utterance says that a contextually salient house is on fire. However, utterances of this kind are causally-nomologically correlated with the speakers who make them: u_1 is therefore a natural sign or an indicator of the presence of a speaker in the house under consideration, although the utterance does not state anything to this effect. Specific features of u_1 are also natural signs or indicators. For example, u_1 is made with a voice that has a particular re-identifiable character. The voice-character is causally-nomologically correlated with a particular speaker. Therefore the voice-character is a natural sign of this particular speaker. Furthermore, in hearing u_1 , we hear the sound coming from a particular place (see Nudds 2010, pp. 90 f.). Hence, u_1 is also a natural sign of the location of its source. Utterances naturally signify objects, etc., independently of the non-natural linguistic meaning of the sentence uttered.

Utterances not only have natural and non-natural meaning, they are also under the direct intentional control of their speakers. A speaker has a choice not only about what to say, but also when to say it, where to say it, whether he says it in his normal, ‘signature’ voice or not, and so on (Clark 2004, p. 366). For example, I can voluntarily make an utterance that carries natural meaning (and is therefore an indicator) and openly intend you to recognize that I have voluntarily made an utterance with this natural meaning. In this case the voluntary making of the utterance gives you a reason to form an attitude about the object of which the utterance is a natural sign (Grice 1989, pp. 293 f.). In this way, natural signs are ‘recruited’ for the communication of thoughts. The fact that utterances and their features are natural signs, and that utterances can be voluntarily produced, is commonly known among speakers of natural languages. Hence, speakers can count on an audience’s appreciation of the fact that their utterances carry natural meaning and therefore make communicative use of natural signs to express thoughts. I take this to be the plausible core of Frege’s point that ‘certain circumstances accompanying the utterance ... are used as means of expressing the thought’. The circumstances are non-verbal signs either in virtue of the speaker’s

communicative intention or a convention pertaining to the use of the circumstances.

If the speaker can rely on the existence of a convention, she can unthinkingly and habitually use 'I', 'here', etc., to make herself salient. Speaker and audience mutually understand that the utterance has natural meaning and that one can voluntarily make an utterance to refer to an object that is indicated by the utterance. In this situation no special communicative intentions are required. The mutual knowledge will allow them to express or grasp a thought concerning an object by making an utterance that is, among other things, a natural sign of a particular object.

Examples 2 and 4 illustrate how a speaker can use circumstances of utterances together with a sentence that contains the first-person pronoun to express a thought. In example 4, for instance, Dr Lauben intends Leo Peter first to identify him on the basis of the distinctive sound of his voice, then on the basis of hearing where the utterance comes from and seeing him speak. If the audience understands the speaker's uses of the circumstances of utterance, they will single out the same person in two different ways and grasp an informative thought. This suggests that we should take the uses of the circumstances and not the used circumstances to be part of the hybrid thought-expression. Hence, we can regiment Dr Lauben's utterance in Kripke's symbolism as follows: $\langle 'I' \wedge \text{Dr Lauben's use of his voice-quality} \rangle \wedge '=' \wedge \langle 'I' \wedge \text{Dr Lauben's directing his voice and gaze} \rangle$. This regimentation captures the informativity of the thought expressed, since *different* hybrid proper names flank the identity sign.

In the light of these considerations we can return to example 1. Why does the audience not grasp the thought the speaker expressed by her utterance of 'It is raining in London', *even though the audience knows the time of utterance and the linguistic meaning of the sentences uttered?* The utterance, an event, is a natural sign that signifies, among other things, the time of utterance, but the audience is not placed to appreciate the communicative use of this natural sign. The audience identifies the right time of utterance, but in the wrong way, namely on the basis of testimony about the time of utterance, while the speaker trusted that his speaking would serve to identify the time.

This diagnosis suggests that it is not the time itself, but *the event of uttering the sentence at a time* that is the conventionalized natural sign indicating a time. An event has a temporal location and extension. This fact can be used by a speaker to identify a time for his audience. He can voluntarily speak at a time so that the event of his speaking at

that time makes this time uniquely salient ('When does the game start?' 'Now!'). The non-verbal sign is in this case the event of uttering a sentence. The speaker produces the event of uttering a sentence intending to make the time at which it occurs salient. If the audience understands the speaker's producing her utterance of 'It is raining in London' at the relevant time and knows the meaning of the present tense, they will recognize that the utterance is true if, and only if, it is raining in London simultaneously with the utterance. The speaker's communicative use of the event may be misunderstood or be in need of further clarification. This cannot hold of the time itself. *The time itself is not a sign*. Hence, I propose to unify Frege's remarks about the first person with his remarks about the present tense, by giving the former a central role and revising the latter in the light of the former.

We can now also answer the first question raised in section 2. Why should one think of the speaker, time, and location of utterance as contributing to the expression of a thought and not merely as features of the context of utterance? There is no independent reason to take the speaker (place, time) to be part of a thought-expression. Hence, the Object View has no answer to this question. In contrast, there is a clear sense in which the use of the circumstances by the speaker is a non-verbal sign that can be understood. The speaker's *use* of a circumstance, say, producing an utterance with a distinctive sound, is an action that can be *understood*. The audience understands the use the speaker makes of a circumstance C if they recognize (i) that, concerning a non-semantic relation R, the speaker intends that they recognize that C stands in R to an object *a* and (ii) that they come to think of *a*, in part, because they recognize (i).¹³ For example, when uttering 'The race starts now' my audience understands my uttering the sentence at this time if, and only if, they recognize that I make the utterance of 'now' with the intention that they recognize that the utterance and the time at which the race starts are simultaneous, and think of the time because they recognize this intention. Hence, in order to understand my use of the circumstance one needs to think of the intended referent in a particular way. The use of the circumstance itself can, like any other object—for instance, the name 'Hesperus'—be thought of in many different ways.

Does it make a difference whether the use of the circumstances is a context-parameter or part of the total utterance? Yes, for understanding the use of the circumstances requires us to grasp a particular mode

¹³ See Berckmans 1990, p. 282.

of presentation and thereby contributes to determining the cognitive value of the utterance. This point surfaces in the examples in section 3; I will return to it in the next section.

5. The complete sense of an indexical utterance

Let us then grant that the utterance of an indexical sentence is completed to the expression of a thought by the speaker's use of the circumstances of utterance. We need therefore to consider how verbal and non-verbal signs can combine to express a thought. An answer to this question must take into account the fact that indexicals and demonstratives have a context-independent linguistic meaning. One knows this meaning if, and only if, one knows the rule that determines (or at least constrains) the reference of a particular indexical in the context of utterance. A paradigm example of such a rule is (I1). One's knowledge of the linguistic meaning of an indexical enables one to grasp an utterance-relative propositional content that can be true or false (see Perry 1993, p. 247; 2012, pp. 91 ff.). For example, when I hear a recording of 'I need help' I am in a position to know that this utterance is true if, and only if, the producer of the utterance needs help at the time of utterance. In section 2 we saw that this propositional content is not the thought expressed. So how does the propositional content that one grasps in virtue of one's hearing an utterance of an indexical sentence and knowing its linguistic meaning combine with the mode of presentation expressed by the speaker's use of the circumstances of utterance to the expression of a thought?

In her discussion of the informativity of utterances of sentences of the form 'This F = this F', Bezuidenhout (1997, p. 206) argues for the following answer to our question. An utterance of such a sentence can be informative because the propositional content expressed contains utterance-relative modes of presentation that are *enriched* with pragmatically determined modes of presentation.¹⁴ For example, a particular utterance of 'this F' expresses an utterance-relative mode of presentation (expressible by 'the F demonstrated by the demonstration of the speaker') enriched with, for example, a perceptual mode of presentation of the demonstratum. The perceptual mode of presentation that enriches the utterance-relative mode of presentation is expressed by the speaker's use of the circumstances of utterance, for

¹⁴ For my purposes an intuitive understanding of enrichment is sufficient. Garcia-Carpintero (2000, p. 138) spells this out further.

example, his intentionally glancing at the F under consideration. The enriched mode of presentation is part of the thought expressed on a particular occasion.

Heck (2002, p. 17) argues against the enrichment answer. The main thrust of his argument is that an utterance-relative mode of presentation such as ‘the producer of the (this) utterance’ is not part of what is said by an indexical utterance. Therefore, we cannot conceive of the thought expressed as an *enrichment* of such a mode of presentation. Heck’s argument is based on an observation about disagreement (Heck 2002, pp. 17–18). Consider the following exchange between Dr Lauben and Leo Peter:

Dr Lauben: I have a spot on the back of my jacket.

Leo Peter: No, you have no spot on the back of your jacket.

Intuitively, Leo Peter denies the very thought Dr Lauben put forth. But the thought Leo Peter puts forth cannot plausibly contain the utterance-relative mode of presentation in whose grasp one’s understanding of an ‘I’ utterance supposedly consists (‘the producer of this utterance’), or an enrichment of it. One arrives at the same conclusion if one allows, like Frege, that sentences containing different indexicals such as ‘here’ and ‘there’ can express the same thought if uttered in suitably related contexts (Frege 1918–19, p. 64 [p. 296]). The indexicals ‘here’ and ‘there’ contribute different utterance-relative modes of presentation to a propositional content, yet they can be used to express the same thought (You: ‘It is windy here’. I can see where you are and say ‘Indeed, it is windy there’).

However, if the utterance-relative mode of presentation (‘the location of the utterance’) is not part of the thought expressed, how is knowledge of the context-independent meaning of the indexical related to one’s grasping the thought expressed by an utterance of a sentence containing the indexical? For one certainly needs to know the context-independent meaning of an indexical and the utterance-relative mode of presentation it gives rise to in order to understand an utterance containing the indexical in the first place.

Let us work through a particular example in order to answer this question. I will follow Heck (2002, p. 18) in assuming that one knows the context-independent meaning of an indexical sentence if one knows a *conditional T-sentence* such as:

$(\forall u, p)$ (If u is an utterance of ‘It is nice here’, and if p is the location of u , then u is true iff it is nice at p)

In order to apply the conditional T-sentence to an utterance u_1 of 'It is nice here' made at a particular location, one needs to instantiate its variables ' u ' and ' p ' with constants and arrive at a **non-conditional T-sentence** for u_1 :

u_1 is true iff it is nice at p_1

One grasps the thought expressed by u_1 if, and only if, one knows the non-conditional T-sentence. The right-hand side of the non-conditional T-sentence does not contain expressions like 'the location of the utterance'; the antecedent of the conditional T-sentence does. Hence, one needs to grasp the context-independent meaning of 'here' when one applies the conditional T-sentence. But neither the context-independent linguistic meaning nor the corresponding utterance-relative mode of presentation is part of the thought expressed by a particular utterance of 'It is nice here'.

The view that conditional T-sentences capture the linguistic meaning of indexical sentences helps to explain how the linguistic meaning of such sentences and the speaker's use of circumstances of utterance combine to express a thought. In order to grasp the thought expressed by u_1 , one needs to come to know a specific truth that is an instance of the schema 'P is the location of u_1 ' (where 'P' is a schematic letter for designations of locations) and to infer from it and the conditional T-sentence a non-conditional T-sentence.¹⁵ How does one acquire the knowledge required to infer the non-conditional T-sentence from the conditional T-sentence?

Our discussion suggests that one acquires this knowledge *by understanding the speaker's use of the circumstances of utterance*.¹⁶ For instance, if the speaker S utters 'It is nice here' at a particular place, say the centre of Ajaccio, with the intention that her audience will hear and see where her utterance comes from by exercising their normal faculties, the audience's understanding of her use of the circumstances is manifest in them using sight and hearing to identify the location of the utterance. If the audience comes to know that P is the location of the utterance in this way, they must think of this place in a particular way (range of ways). For example, by hearing and seeing where the utterance comes from the audience can come to know that its location is *over there*, but not that its location is the birthplace of Napoleon

¹⁵ See Heck 2002, p. 20.

¹⁶ See **Sainsbury 2005, p. 156 for an illuminating description of how non-verbal signs 'guide' the audience in the case of demonstratives.** This section extends the basic idea to indexicals.

(the location with the coordinates $41^{\circ} 55' 36.12''$ N, $8^{\circ} 44' 12.84''$ E). The audience can use their knowledge that u_1 was made over there as a premiss and arrive at:

u_1 is true iff it is nice over there

In this way the speaker's use of the circumstances of utterance singles out some instantiations of the variables in the conditional T-sentence. The non-conditional T-sentences that contain such instantiations specify the thought expressed by the utterance.¹⁷

If the audience fails to appreciate the speaker's use of the circumstances of utterance, they may think of the right location but will not grasp the thought the utterance expressed. In order to make this plausible, consider a case where the audience forms a warranted true belief with a content of the form 'P is the location of u_1 ', but not in the way intended by the speaker, that is, not by hearing and seeing where the utterance comes from by normal means. Imagine that a spy who is several miles away and who has therefore no 'visual contact' hears S's utterance of 'It is nice here'. He listens in via a spy gadget that locates the position of the utterance on a coordinate grid. On the basis of hearing the utterance, knowing its meaning, and his justified trust in the electronic equipment, he comes to know that the utterance is true if, and only if, it is nice at $41^{\circ} 55' 36.12''$ N, $8^{\circ} 44' 12.84''$ E. The spy is able to move beyond the utterance-relative mode of presentation and get the truth-conditions of the utterance right, but he does not grasp the thought the speaker expresses with her utterance of 'It is nice here'.

To see this let us go back to the point about disagreement and consider whether the spy could deny the thought expressed by the speaker:

A (speaking at $41^{\circ} 55' 36.12''$ N, $8^{\circ} 44' 12.84''$ E and addressing her friend there): It is nice here.

Spy: No, it is not nice at $41^{\circ} 55' 36.12''$ N, $8^{\circ} 44' 12.84''$ E.

I do not necessarily deny the thought you express by saying 'Hesperus is a planet' when I utter with assertoric force 'No, Phosphorus is not a planet', although the thoughts expressed cannot both be true. Similarly, the spy does not deny the thought A expressed with her utterance *and* her use of the circumstances of utterance. In making the utterance and projecting her voice, A intended her audience to *hear*

¹⁷ This addresses the problem Evans (1981, p. 303) poses for the application of meaning-giving theories of truth to indexical languages.

and see where she was speaking by using *only their eyes and ears*. The spy is not in a position to do so and hence does not grasp the thought A expressed in part by means of her use of the circumstances. Consequently, he cannot deny the thought the speaker expressed.

While the audience must appreciate the use of circumstances in order to grasp the thought expressed, it is sometimes not the speaker's intended use of the circumstances of utterance, but common knowledge about uses of circumstances which determines, in part, which thought is expressed.¹⁸ Consider the following example (example 6). Leo Peter telephones Gustav Lauben while he is on a train. He utters the sentence 'I am on the train to Birmingham', intending Gustav Lauben to recognize that Leo Peter is on the train in virtue of the use of his voice-quality and the linguistic meaning of the uttered sentence. Rudolf Lingens is in the same train compartment as Leo Peter and unintentionally overhears the utterance. Because it is common knowledge among speakers of English that an utterance of 'I' is a natural sign of the speaker and its location, Rudolf Lingens grasps the thought that *that person* is on the train, where 'that person' expresses a visual mode of presentation of the speaker. It would be overly strict to say that Rudolf Lingens failed to grasp the thought Leo Peter expressed because **he does not think of him in the same way as Gustav Lauben does**. For example, when Rudolf Lingens says to Leo Peter: 'No, you are not on the train to Birmingham (this is the train to Derby)', he seems to straightforwardly to deny the thought Leo Peter expressed.

This kind of example suggests that there is not one thought one must grasp in order to understand what an utterance of an indexical sentence in a context of utterance said. There is **one thought expressed containing a mode of presentation graspable through understanding the speaker's use of his voice-quality; there is another thought expressed containing a mode of presentation graspable through visual awareness of the speaker's location**. Grasping one of them suffices for understanding. Consider another example: different people will understand the same utterance of the sentence 'That bottle is half full', although they think of the bottle in different ways because of differences in their perspectives on the bottle (Heck 2002, p. 21). **Heck draws the conclusion from this that understanding an utterance of a sentence with an indexical or demonstrative does not consist in the fact that the speaker and the audience grasp the same thought** (Heck

¹⁸ Thanks to Daniel Morgan for pressing this point in discussion.

2002, p. 31). I agree: **an utterance of a sentence with an indexical or demonstrative can simultaneously express different thoughts.** But, importantly, each thought is expressed by means of a hybrid proper name and a predicate. In the example of Leo Peter's phone call on the train one utterance contains two different hybrid proper names that are completed by different circumstances and express two different thoughts. In order to grasp one of the thoughts expressed, one needs to appreciate either the use of the circumstance by the speaker or the convention that governs the use of circumstance. Hence, the basic tenet of the theory of hybrid proper names is confirmed.

In sum: **knowledge of linguistic meaning and understanding the speaker's use of the circumstances of utterance both contribute to grasping the thought expressed by an utterance of an indexical sentence.** One needs to know the **context-independent meaning of the indexical and understand the speaker's use of circumstances** accompanying the utterance in order to arrive at the right way of thinking of the referent of the indexical—and thereby at the non-conditional T-sentence whose right-hand side specifies the thought expressed.

6. Two objections

The idea that indexicals are completed on an occasion of utterance by a non-verbal sign 'produced' by the speaker faces two basic objections. I will answer these objections in this section.

First objection: The previous sections uncovered analogies between demonstratives and indexicals and used them to motivate an extension of Frege's theory of hybrid proper names to (pure) indexicals. But have we not shown too much and **eradicated the distinction between indexicals and demonstratives?** This difference is supposed to consist in the fact that the linguistic meaning of indexicals is given by a general rule that determines their reference, while demonstratives require, in addition to such a rule, a demonstration to determine their reference (see, for instance, Kripke 2011a, p. 299).¹⁹

In the case of indexicals and demonstratives, the audience needs to understand non-verbal and verbal signs to arrive at the right mode of presentation of the referent. Hence, demonstratives and indexicals

¹⁹ There are independent problems with this way of drawing the distinction. For it is doubtful whether there are any words whose reference is determined *only* by a general linguistic rules. (See Nunberg 1993, pp. 11 ff.; Bezuidenhout 1997, pp. 216–17; and Roberts 1996, Sect. 3 on 'T'.) I will set these aside for the purposes of the discussion.

seem to be in the same boat. If one takes a demonstration to be a pointing or a glance, then **demonstrations are just a special case of the use of circumstances of** utterances to express thoughts. The more general notion covers both indexicals and demonstratives. Some authors have drawn the conclusion that indexicals are a particular kind of demonstrative. For instance, Bühler called 'I', 'here', and 'now' demonstratives (*Zeigeworte*).²⁰ De Gaynesford 2006 is, to my knowledge, the most detailed attempt so far to argue that the first-person pronoun is a demonstrative.

Response: There is still an important distinction between indexicals and demonstratives. Knowledge of the linguistic meaning of demonstratives consists in knowledge that a demonstration fixes the reference of a use of a demonstrative (Kaplan 1989, p. 490). In contrast, the **linguistic rules for indexicals do not make use of the notion of demonstration.** For instance, you do not fail in your understanding of the English word 'here' if you do not know which use of circumstances completes it. Yet, you fail to grasp the thought expressed by an utterance that contains 'here' if you do not understand the use of the circumstances. Demonstratives and indexicals are distinguished in virtue of the reference rules they encode.

Second objection: Indexicals and demonstratives are used in novels, autobiographies, travel reports, and telephone conversations without obvious demonstrations or other uses of circumstances. For instance, in an autobiography the indexical 'I' will be used frequently. Here the mere wording of a sentence with an indexical (demonstrative) seems to express a thought. **How can one understand such inscriptions of indexicals on the assumption that an utterance of an indexical sentence is completed by a non-verbal sign to a complete thought-expression?** Clearly the author does not accompany his utterance with non-verbal signs.

²⁰ See Bühler 1934, p. 110 [pp. 125–6], p. 112 [p. 127], p. 126 [pp. 142–3], p. 119 [p. 135]. Penco (2013, p. 65) appeals to my view (Textor 2007, p. 957) that an utterance itself can, in the limiting case, be a demonstration, and proposes that all indexicals are demonstratives. If all indexicals are demonstratives, the debate between Künne and Kripke about whether the speaker, etc., is an autonymous designator does not get off the ground. However, the assumption that all indexicals are demonstratives is implausible. Penco (2013, p. 67) takes, for example, 'I' to be synonymous with 'this speaker'. Now an utterance *u* of 'I' cannot but refer to its producer, while an utterance *u* of 'this speaker' can very well refer to someone who is not the producer of *u*. **Even if we require that the utterance itself is the demonstration, my utterance may make someone other than me salient and as such 'this speaker' may refer to her.** The challenge for someone who is sympathetic to Frege's view of hybrid proper names is to show how the use of circumstances of utterances enables the expression of thoughts *without* eradicating the distinction between demonstratives and indexicals.

Response: In such cases the role of the completing circumstance of utterance is taken by explicit or **implicit scene setting**.²¹ For example, imagine you receive the following postcard:

Verbier, 14.12.2011

Hello Darlings,

I am having the time of my life here. The weather has been great, the men so charming. I have to dash now — the next lift is leaving in a sec.

XXX Caggie

From the information on the card one can piece together a description of the circumstances of utterance of the inscribed sentences. The state of affairs described — that Caggie is in Verbier on 14 December 2011 — is the context of utterance for the indexical sentences inscribed. Hence, we understand that ‘now’ and ‘I’ were inscribed by Caggie on 14 December 2011 in Verbier. These indexicals were inscribed by Caggie to draw our attention to features of the context of utterance that she needs to describe to us.

7. Conclusion

Can one hold on to the idea that non-verbal signs complete the utterance of a hybrid proper name and do justice to the Fregean idea that *both* indexicals and demonstratives are hybrid proper names? Yes, in both cases uses of circumstances help to express a thought. The theory of hybrid proper names can and should be extended to indexicals, and so extended it contributes to our understanding of indexical communication.²²

²¹ See Bühler 1934, § 25.2, who calls this ‘shifting’ [*Versetzung*]. Klein 1978 develops this further. See also Predelli 1998, p. 406 and Sainsbury 2005, p. 160.

²² I am greatly indebted to the Editor for providing several rounds of very helpful comments that led to significant changes and improvements of the paper. Many thanks to Jessica Leech for providing constructive criticism of several drafts of this paper. Between 2011 and 2014 I have presented material related to the paper in seminars and discussion groups in London and in talks in Düsseldorf, Liverpool, Regensburg, and Santiago. Many thanks to the audiences at these occasions for their feedback. I am grateful for comments and suggestions from Jonathan Berg, Bill Brewer, John Callanan, George Darby, Richard Gaskin, Bob Hale, Keith Hossack, Tim Kraft, Clayton Littlejohn, Sebastian Löbner, Guy Longworth, Nils Kürbis, Daniel Morgan, Stefano Predelli, Dolf Rami, Gabriel Segal, Nick Shea, and Gottfried Vosgerau. I am also grateful to anonymous referees for their comments.

References

- Almog, John, John Perry, and Howard Wettstein (eds) 1989: *Themes from Kaplan*. Oxford: Oxford University Press.
- Berckmans, Paul 1990: 'Demonstrative Utterances'. *Philosophical Studies*, 60, pp. 281–95.
- Bezuidenhout, Anne 1997: 'The Communication of De Re Thoughts'. *Nous*, 31, pp. 197–225.
- Bühler, Karl 1934: *Sprachtheorie*. Jena: G. Fischer. Translated as *Theory of Language: The Representational Function of Language*, by Donald Fraser Goodwin, with Achim Eschbach. Philadelphia: John Benjamins, 1984.
- Clark, Herbert H. 2004: 'Pragmatics of Language Performance'. In Horn and Ward 2004, pp. 365–82.
- De Gaynesford, Maximilian 2006: *I: The Meaning of the First Person Term*. Oxford: Oxford University Press.
- Evans, Gareth 1981: 'Understanding Demonstratives' in his 1985, pp. 291–322. Originally published in Herman Parret and Jacques Bouveresse (eds), *Meaning and Understanding*, Berlin: Walter de Gruyter, pp. 280–304.
- 1982: *Varieties of Reference*. Oxford: Oxford University Press.
- 1985: *Collected Papers*, ed. Antonia Phillips. Oxford: Clarendon Press.
- Frege, Gottlob 1914: 'Logik in der Mathematik'. *Nachgelassene Schriften*, 219–70. Translated as 'Logic in Mathematics' in his 1979, pp. 203–50.
- 1918–19: 'Der Gedanke'. *Beiträge zur Philosophie des deutschen Idealismus*. I, pp. 58–77. Translated as 'The Thought: A Logical Inquiry', *Mind*, 65 (1956), pp. 289–311.
- 1979: *Gottlob Frege: Posthumous Writings*, tr. P. Long and R. White, ed. H. Hermes, F. Kambartel, and F. Kaulbach. Oxford: Basil Blackwell.
- 1983: *Nachgelassene Schriften*, ed. H. Hermes, F. Kambartel, and F. Kaulbach. Hamburg: Meiner Verlag. Translated by P. Long and R. White as *Posthumous Writings* (Frege 1979).
- Garcia-Carpintero, M. 2000: 'A Presuppositional Account of Reference Fixing'. *The Journal of Philosophy*, 87, pp. 109–47.
- Garrett Millikan, Ruth 2004: *Varieties of Meaning*. Cambridge, MA: MIT Press.
- Grice, Herbert P. 1989: *Studies in the Way of Words*. Cambridge, MA: Harvard University Press.

- Hatzimoysis, A. (ed.) 2011: *Self-Knowledge*. Oxford: Oxford University Press.
- Heck, Richard Jr. 2002: 'Do Demonstratives have Fregean Senses?' *Philosophers' Imprint*, 2, pp. 1–33.
- Horn, Laurence R. and Gregory Ward (eds) 2004: *Handbook of Pragmatics*. Oxford: Blackwell.
- Kaplan, David 1989: 'Demonstratives'. In Almog, Perry, and Wettstein 1989, pp. 481–563.
- Kendon, Adam 2004: *Gesture: Visible Action as Utterance*. Cambridge: Cambridge University Press.
- Klein, Wolfgang 1978: 'Wo ist hier? Präliminarien zur Untersuchung der lokalen Deixis'. *Linguistische Berichte*, 5, pp. 18–40.
- Kripke, Saul 2008: 'Frege's Theory of Sense and Reference: Some Exegetical Notes'. *Theoria*, 74, pp. 181–218.
- 2011a: 'The First Person', in his 2011b, pp. 292–321.
- 2011b: *Philosophical Troubles*. Oxford: Oxford University Press.
- Künne, Wolfgang 1983: 'Indexikalität, Sinn und propositionaler Gehalt'. *Grazer Philosophische Studien*, 18, pp. 41–74.
- 1992: 'Hybrid Proper Names'. *Mind*, 101, pp. 721–31.
- 2010: 'Sense, Reference and Hybridity'. *Dialectica*, 64, pp. 529–51.
- Moore, George E. 1955: 'Wittgenstein's Lectures in 1930–33', in his 1959. Originally published in *Mind*, 64, pp. 1–27.
- 1955: *Philosophical Papers*. London: G. Allen & Unwin.
- Nudds, Matthew 2010: 'Sounds and Space'. In Nudds and O'Callaghan 2010, pp. 69–91.
- Nudds, Matthew and Casey O'Callaghan (eds) 2010: *Sounds and Perception*. Oxford: Oxford University Press.
- Nunberg, Geoffrey 1993: 'Indexicality and Deixis'. *Linguistics and Philosophy*, 16, pp. 1–43.
- Perry, John 1977: 'Frege on Demonstratives', in his 1993, pp. 3–32.
- 1993: *The Problem of the Essential Indexical and Other Essays*. Oxford: Oxford University Press.
- 2012: *Reference and Reflexivity*, second edition. Stanford: CSLI Press.
- Penco, Carlo 2013: 'Indexicals as Demonstratives: On the Debate between Kripke and Künne'. *Grazer Philosophische Studien*, 88, pp. 55–73.
- Predelli, Stefano 1998: 'Utterance, Interpretation and the Logic of Indexicals'. *Mind and Language*, 12, pp. 404–13.

- Recanati, François 1990: 'Direct Reference, Meaning and Thought'. *Nous*, 24, pp. 697–722.
- 1993: *Direct Reference: From Language to Thought*.
- Roberts, Lawrence D. 1996: 'Are Lexical Meaning and Context sufficient to Determine Reference?' *Proceedings of the Second International Colloquium on Deixis*. Nancy: CRIN-CNRS, pp. 201–13.
- Sainsbury, Mark 2005: *Reference without Referents*. Oxford: Oxford University Press.
- 2011: 'English Speakers Should Use 'I' to Refer to Themselves'. In Hatzimoyis 2011, pp. 246–61.
- Salmon, Nathan 2002: 'Demonstrating and Necessity'. *The Philosophical Review*, 111, pp. 497–538.
- Textor, Mark 2007: 'Frege's Theory of Hybrid Proper Names Developed and Defended'. *Mind*, 116, pp. 947–81.
- Wharton, Tim 2009: *Pragmatics of Non-Verbal Communication*. Cambridge: Cambridge University Press.