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Token-reflexive, anaphoric and deictic functions of 'here'

Thorstein Fretheim, Nana Aba Appiah Amfo & Ildikó Vaskó

There are basically three ways in which the reference of a token of the English proximal spatial indexical *here* and corresponding terms in other languages can be resolved in the context-dependent, pragmatic phase of the addressee's determination of the propositional content of an utterance that contains this adverbial adjunct. 'Here' may refer reflexively to the place of utterance, including minimally the spot occupied by the speaker (token-reflexive reference), it may be anaphoric upon a discourse antecedent that provides information necessary for identification of the referent (anaphoric reference), or resolution of the reference depends on information derived from processing of a perceptual stimulus (deictic reference). These three pragmatic paths to resolution of the reference of proximal spatial indexicals are not mutually exclusive, so they do not warrant postulation of lexical ambiguity, at least not the traditional kind of ambiguity based on differences in conceptual meaning.

Keywords anaphora, deixis, derivational intention, (spatial) indexicals, reference, procedural meaning, Relevance Theory, token-reflexivity

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1. INTRODUCTION

1.1 Three distinguishable kinds of reference with here, but just one lexical item

According to the philosopher of language David Kaplan (Kaplan 1989), all indexical expressions have a 'character', or linguistic meaning, which constrains the addressee's search for the referent of the expression, but it is the referent of the indexical, not its character, that is a constituent of Kaplan's (truth-conditional) 'content'. To determine the reference of an indexical, the addressee only has to match its character against a context; the character is said to be a function from a context

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to content. The character of the second person pronoun *you* imposes on the referent the property of being the communicator's addressee, but being the addressee is not a constituent of the propositional content expressed by an utterance of, say, *You forgot something* (Recanati 1993:39), because the subject pronoun *you* refers *de re*, to a unique individual, not to a descriptively understood entity 'the addressee of the utterance'. Given the character of an indexical, its reference is secured by contextual parameters such as the agent, the recipient, the time, and the location of the utterance – those extra-linguistic parameters that make up the 'context' for Kaplan and his followers.

For determination of the reference of demonstratives, however, something more is believed to be needed. This extra parameter could be a pointing gesture, and it could be the communicator's intention. Kaplan (1989:490) says about demonstratives that '[t]he linguistic rules which govern [their] use are not sufficient to determine their referent in all contexts of use', in contrast with indexicals. With so-called 'pure' indexicals, the character of the term and its content coincide, given a context of utterance. The character supplies only an individual concept to content, as when the indexical *here* refers to the place of utterance. Kaplan is fully aware, however, that *here* does not always refer to the place of utterance. For him tokens of *here* which manifestly do not refer to the place of utterance are not pure indexicals but demonstratives. Some indexicals, says Kaplan, have both a pure and a demonstrative use, as *here* is a pure indexical in *I am in here* and a demonstrative in *In two weeks, I will be here*, said by someone pointing to a city on a map (Kaplan 1989:491).

Some researchers have levelled an attack on the pure indexical approach to *here* even when the referent is of the canonical token-reflexive sort. Their criticism is based on the fact that, even if *here* is used token-reflexively to include the spot occupied by the speaker, we have to depend on what we infer to be the speaker's intention to figure out how much space beyond this spot is meant to be included in the geographical area referred to. The situation is much the same as for the corresponding proximal temporal indexical *now*, which may encompass no more than a tenth of a second in one context and several centuries in a different context. According to Braun (2007:3), '[e]very utterance of "here" automatically refers to a spatial location that includes the exact location of the speaker, but the EXTENT of the spatial location can vary from utterance to utterance' [Braun's emphasis]. Thus, *here* may be a token-reflexive indexical even if the entity whose location the speaker designates does not coincide with the exact location of the speaker at the time of utterance, as when someone located in a particular part of a particular city lets *here* designate the entire country in an utterance of *We have reindeer here*. This may be a true statement even if there have never been any reindeer at the place of utterance; it suffices that there are reindeer in the country that includes the place of utterance.

In addition to the token-reflexive and deictic uses of *here*, there is also an anaphoric use, which is characterized by the fact that resolution of its reference

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depends on pragmatic interpretation of some previously expressed linguistic item or syntactic phrase, traditionally known as the antecedent of the anaphor. The linguistic antecedent may contain descriptive information which allows the addressee to identify a spatial discourse entity pragmatically derived from the antecedent with the discourse entity designated by a later spatial indexical. Occasionally there is no descriptive information in an antecedent term that could possibly help a hearer determine the reference of an anaphorically used token of *here*. This is the situation when the antecedent is itself an indexical with the same linguistic form as the later anaphor, *here*. Specifically, the antecedent may be a previously appearing token of *here* that is used deictically, implying that the speaker has an intention to refer exophorically to some entity identified on the basis of context-dependent interpretation of something perceived. Thus, the first token in a series of occurrences of *here* in a given discourse may be deictic, but any later, coreferential token of the same form *here* counts as anaphoric because resolution of its reference requires access to information obtained in the process of interpreting the earlier deictic token. In contrast to this, when a token-reflexive *here* is followed by a coreferential token-reflexive *here*, we do not call the latter anaphoric, because the referential interpretation of a token-reflexive indexical does not rely on the hearer's access to context-dependent interpretation of any antecedently expressed linguistic material.

Our answer to the question 'Is *here* ambiguous?' is that there is a single lexical item *here*, but this word can be put to three major uses, (i) as a token-reflexive term, (ii) as an anaphoric term, and (iii) as a deictic term. The contextual assumptions that an addressee brings to bear in the referential interpretation of this indexical in English and its equivalent in other languages will determine whether a given token of it is deictic, token-reflexive or anaphoric, or, as we are going to argue, a combination of two of the three categories.

One argument in support of a single lexical item *here* with multiple uses is that lexical counterparts of *here* in a number of genetically unrelated and typologically vastly different languages subsume all the uses that we are concerned with. Another argument is based on our observation that a given instantiation of *here* may be classified as both token-reflexive and anaphoric, or both token-reflexive and deictic. It appears that the only unattested and clearly impossible combination is for a token of *here* to be both anaphoric and deictic. There is a true disjunctive relation between basing one's understanding of the reference of *here* on information retrieved from an earlier part of the discourse (anaphoric *here*) and basing it on extraction of intended properties from a perceived extra-linguistic stimulus (deictic *here*).

The multifunctionality of *here* speaks against the postulation of distinct lexical items as if this were a case of homonymy, and even an analysis in terms of the polysemy notion (Falkum 2011) would be inadequate, because polysemous readings of a given lexical item are disjunctive and may combine only when the expression

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of an ambiguity is a deliberate act prompted by the speaker's intention to cause the hearer to recognize that the verbal stimulus has a dual meaning.

We believe that those cognitive mechanisms which enable speakers and hearers to tell the three uses of the English *here* apart and which also enable language users to combine two distinct uses in a single token when needed (and to be understood to be doing so by the interlocutor) must be basically the same in the other languages we have examined. Still, we hope that our attempts to make certain cross-linguistic generalizations are formulated with sufficient caution.

1.2 Procedural meaning

Here as a deictic indexical offers the information that its reference is determinable on the basis of a sensory impression, as opposed to a description appearing in a discourse antecedent. This is not conceptual information but procedural information. 'Procedural meaning' is a theoretical concept that has come to be associated primarily with the development of Relevance Theory, due to the seminal work of Blakemore (1987) and Wilson & Sperber (1993). A recent collection of papers edited by Escandell-Vidal, Leonetti & Ahern (2011) reflects how the distinction between conceptual and procedural semantics has caught on, and gives a multifaceted picture of the impact of the notion of procedural meaning on pragmatic research today.

In brief, the idea behind the distinction between conceptual and procedural semantics is that some linguistic expressions do not supply a concept to the representation of propositional content. Instead, their semantic role is to place lexically defined constraints on how the context-dependent computation of the speaker's intention to inform the hearer should proceed. Procedural information that constrains the hearer's search for the intended cognitive effects of an utterance resides not only in linguistic expressions in the narrow sense; instructions to the hearer that are meant to facilitate the derivation of implicitly or explicitly communicated thoughts may also be encoded in certain syntactic constructions and in specific intonation patterns (Fretheim 2010).

Relevance theorists use the term 'procedural semantics' rather than 'procedural pragmatics', because their semantics/pragmatics distinction is defined as the distinction between meaning that is linguistically encoded and meaning that we access through inference. An inherent lexical property of words that encode a procedural meaning is an instruction to the hearer to manipulate decoded concepts of the logical form of the sentence in a specific way. The instruction triggers context-dependent inference but is itself independent of contextual variation, and this is why it is said to belong to semantics.

On the other hand, language users' tacit knowledge of the procedural meanings of a relatively limited number of words and grammatical constructions in a language may be said to belong to what Recanati (2010) calls our pragmatic, as opposed

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to semantic competence. Such meanings have no impact on the hearers' ability to assign conceptual meaning to lexical expressions appearing in specific syntactic configurations, only on how hearers activate assumptions which either impact on the pragmatic part of the comprehension by triggering the derivation of implicatures or else enable them to modulate and extend the logical form of a sentence in an attempt to capture the speaker's explicitly communicated content and form a mental representation of it.

Pronouns, and more generally indexicals, are the most well-known examples of words which carry procedural meaning that narrows down the hearer's search for the explicit content of an utterance. The spatial indexical *here* encodes a procedural meaning that enables the hearer to select a context which directs the hearer to the intended spatial referent, but this is a tripartite procedural meaning, as the pragmatic instructions differ according to whether *here* is token-reflexive, anaphoric or deictic. The procedural meaning of other linguistic items in the sentence may offer the hearer a clue as to which of the three instructions to follow in the resolution of the reference of a given token of *here*.

The concept of 'informative intention' is central both in Gricean pragmatics (e.g. Grice 1989) and cognitively oriented post-Gricean pragmatics, especially Relevance Theory (Sperber & Wilson 1986), but George Powell proposes a new and interesting distinction between the speaker's informative intention and the speaker's 'derivational intention', as expressed in the following quotation (Powell 2010:29): 'To say that a speaker has an informative intention is just to say that she has an intention concerning which propositional representation(s) she wishes to communicate to her audience. But, separate from the informative intention itself, a speaker will have intentions concerning the route via which her audience should reach the content of her informative intention; I shall call this the speaker's *derivational* intention' [Powell's italics]. To have a derivational intention is to intend one's audience to choose a particular inferential route to pragmatic derivation of the propositional content of one's utterance. To make one's derivational intention manifest to the hearer, one may utilize linguistic markers that carry procedural meaning, either by themselves or in combination with other such markers, for instance the combination of a non-truth-conditional particle and its syntactic position in the sentence used, or the co-occurrence of a syntactic and an intonational feature that direct the hearer to the same inferential path.

'Derivational intention' as a theoretical concept implies the existence of pre-semantic pragmatic processes, that is, extra-linguistic processes whose output serves as input to semantic compositionality. This does not mean that the distinction between semantics and pragmatics is blurred but it means that the hearer's hypothesis about the speaker's explicitly conveyed propositional content, including the way the hearer saturates indexicals, depends on input of an extra-linguistic, pragmatic sort. An analysis of semantic content must take into consideration how contextual assumptions

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contribute to the hearer's hypothesis about the semantic content of a given utterance.[1]

While *here* is not ambiguous in the sense that it encodes three different concepts associated with its token-reflexive, anaphoric and deictic use, this paper argues that it is a 'procedurally ambiguous' word. Knowledge of how to use and understand *here* includes the information that there are three distinct, though not mutually exclusive, pragmatic avenues to determination of its reference in a given instance. A person who is using *here* in an utterance has one, occasionally two, of a total of three possible derivational intentions in the above-mentioned sense of Powell (2010).

1.3 Outline of the paper

In Section 2 we illustrate and comment on the English *here* as a token-reflexive term and as an anaphoric term, and on tokens of *here* that appear to be jointly token-reflexive and anaphoric. If a given token of *here* is replaceable by *there* in a context accessed by the hearer, with no change in the interpretation of the utterance, it cannot be of the token-reflexive sort. Token reflexivity requires the proximal indexical *here*, while the distribution of *here* and *there* as anaphoric indexicals depends on considerations of the spatial or mental distance between the anaphor and its antecedent anchor.

In Section 3 we turn to the special properties of the deictic use of *here* and address the question of whether deictic *here* may at the same time be token-reflexive. Something extra, a more or less distinctive pointing gesture, is often needed as an accompaniment of the production of *here* when the word is a deictic indicator of the location to be understood as its reference, and as an anonymous referee impressed on us, a pointing gesture may be more important when a deictically used token of *here* is meant to direct the hearer's attention to a minuscule scale of space, than when the referent occupies almost the entire visual space in front of the speaker and the hearer. A manual pointing or head nod in the direction of something perceived may be intended to bar the token-reflexive interpretation (otherwise the default), as it delimits the relevant spatial domain within which the referent of *here* is located to a perceived location that does not include the space occupied by the speaker at the time of utterance.

Corazza (2004:138) makes the following point about Kaplan's demonstratives compared to the so-called pure indexicals: 'Another way to understand the distinction between pure indexicals and demonstratives is to argue that the latter, unlike pure indexicals, are perception-based.' We do not wish to defend the hypothesis that resolution of the reference of all demonstratives is perception-based. The referential value of *here* may depend on antecedent information rather than perception even when this item is used demonstratively. It may be anaphoric and yet receive the emphatic stress of a demonstrative due to a communicated contrast between two

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locations. A fairly clear example of a token of *here* which is demonstrative and whose reference does not rest on interpretation of an extra-linguistic percept is seen in the following sequence of sentences where *here* is anaphoric and therefore by necessity not deictic: *We drove down to Ålen. Here, however, the road was flooded, and we had to return to Røros*. We agree with Corazza that resolution of the reference of a demonstrative *here* used as DEICTIC indexical always rests on perception but for us the term 'demonstrative' has a wider extension than the term 'deictic', and it may not have the same extension for Corazza as it does for us (see Diessel 1999). When there might be some doubt about its intended import and extension, we will henceforth avoid using the label 'demonstrative'.

As we will argue in Section 4, there are cases of reference with *here* and its counterparts in other languages that are genuinely deictic, as opposed to token-reflexive, but where the reference of *here* happens to coincide with the speaker's location at the time of utterance. This is true of the doctor–patient dialogue which will occupy us through much of Section 4, where the domain of reference is restricted to the patient's body. A patient may inspect his own body and may use the word *here* to refer to the place where his hand is in contact with his body. We hold that this is deictic, not token-reflexive, reference, because the domain of reference does not include the speaker as a sentient agent. Because the domain of reference is restricted to the speaker's body, *here* does not refer to where the speaker is, only to a designated part of the speaker's body. However, when a doctor who is palpating the patient's body asks the question *Does it hurt here?*, we contend that, if the patient's affirmative answer to this question contains a spatial indexical, this is anaphoric use of the indexical, not deictic use.

The type of question–answer pair examined in Section 4 is familiar from other researchers' work on the demonstrative systems of English and some other European languages (see Janssen 1993), but we propose what we believe to be a novel analysis of the empirical facts and widen the perspective by considering a number of other languages spoken in Europe, Africa and Asia. We also compare this doctor–patient dialogue with a dialogue where one speaker first uses *here* to refer to a place on a map and the interlocutor then refers to the same place with an indexical used as an anaphoric item.

Section 5 discusses the use of *here* in an utterance of *We're here* with the meaning of 'We have arrived at our destination'. It is argued that, although this is a token-reflexive *here*, reflexivity is a necessary but not a sufficient condition for the appropriateness of this use of *here*. The referent must in addition have a special psychological salience for speaker and hearer. One might think that, unlike the token-reflexive, anaphoric and deictic uses of the proximal spatial indexical discussed in previous sections, the use of *here* explored in Section 5 is a language-specific phenomenon. However, it will be demonstrated that a similar use of the proximal spatial indexical is also found in two languages that are genetically unrelated to

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English, namely Hungarian and Akan, the respective native languages of two of the authors of this paper.

Section 6 is the conclusion. The token-reflexive, anaphoric and deictic uses have important properties in common, yet the three distinct uses also have their proprietary characteristics which guide the search for those contextual premises that will direct the addressee to the intended reference of *here*. We have found no reason to protest against the intuitions of those who might harbour a feeling that the distinct properties associated with the token-reflexive, anaphoric and deictic strategies do call for the recognition of some kind of ambiguity, and we are making explicit attempts to cater for this sentiment by defending the hypothesis that *here* is 'procedurally ambiguous', as the hearer's pragmatic job is to recover the speaker's derivational intention as a step toward recognition of the speaker's informative intention.

2. TOKEN-REFLEXIVE AND ANAPHORIC USES OF *HERE*

2.1 Token-reflexives

An occurrence of the proximal spatial indexical *here* is traditionally said to be token-reflexive if its reference includes the place where a given utterance with this word is being produced, whether the place is meant to be just the space occupied by the speaker, the neighbourhood where the speaker is at the moment of speaking, the province or the country in which the conversation is taking place, or the earth as opposed to other planets, etc. (see e.g. Braun 2007). We can imagine a token of (1) being produced as part of a telephone conversation.

(1) The weather is beautiful here.

The speaker of (1) is simply saying that the weather experienced at the moment is beautiful; the geographical boundaries of the region favourably affected by this weather will usually not be something for the addressee to worry about. Sometimes the referent of *here* may simply be identified as 'where the speaker is at the time of utterance', which we may call the context-insensitive, description-based denotation of any occurrence of *here* used token-reflexively. Interpreting the reference of *here* in an utterance of *I can see two lakes from here* does not involve any context-sensitive estimation of the speaker's referential intention, though it does require the hearer's perception of the location of the speaker. On the other hand, resolution of the reference of *here* in the question *Is this your first visit here?* depends on the hearer's consideration of how much space the speaker intends to include in the reference of the indexical – a hotel, a village, a country?

With the exception of the data to be discussed in Section 5, the token-reflexive *here* cannot be replaced by *there*, as the domain of discourse relevant to determination of the reference of *there* may not include the location of the communicating agent

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at the time of utterance.[2] This distinguishes the token-reflexive use of *here* from its anaphoric as well as its deictic use, both of which allow the speaker to use *there* when it would also be acceptable to use *here*, but not vice versa. There is a special proximity requirement that any token of the English indexical *here* must fulfil, whether the requisite shortness of the distance is assessed in terms of perceived length or circumference, in terms of the textual distance between an anaphoric token of *here* and its inferred antecedent, or in terms of a more elusive mental distance within the communicator's 'context space' (Gundel, Hedberg & Zacharski 1993), as when the linguistically represented entity is a metarepresented thought presented as a part of a fictional text, and not a situated public utterance.[3]

In (2) below, the intended extension of the term *here* used token-reflexively is constrained by the fact that the meaning of the verb causes us to immediately think of the speaker's dwelling as the most likely referent of *here*, though it is also conceivable that the speaker regrets the direction in which her country is heading politically, in which case *here* stands for something considerably more extensive than the house in which she lives, a plausible implicature being that she considers leaving the country for good.

(2) I simply can't live here any longer.

Speaker B's response to A's question in (3) also contains a token-reflexive *here*, but here it is natural to suppose that interlocutor A may have expected a more accurate description of the location of the cathedral.

(3) A: Where in this city is the cathedral?
B: The cathedral is here.

Speaker B's utterance does not mean that A and B are now inside the cathedral, though it is pragmatic considerations, not the linguistic semantics or logical form of B's sentence, which will normally exclude that interpretation. The token-reflexive use of *here* only requires that the space occupied by the interlocutors and the space occupied by the cathedral referred to are within the same circumference. What is not made clear by speaker B is whether she means 'this neighbourhood', 'this side of the river', etc., but speaker A's specification *in this city* constrains A's own search for the referent of B's indexical *here*.

In (3′), speaker A's added disjunctive specification *on this side or the other side of the river* serves as a constraint on the referential interpretation of *here* in B's response. Thanks to A's afterthought specification of what the *wh*-word *where* is meant to signify, B can safely choose the proximal spatial term *here* with no risk of being misunderstood.

(3′) A: Where in this city is the cathedral – on this side or the other side of the river?
B: The cathedral is here.

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As we have no problem inferring that B's utterance in (3′) means 'The cathedral is on our side of the river', the prepositional phrase *on this side* in A's utterance is seen to play the role of an antecedent providing information needed to saturate the reference of *here* in context. B's utterance in (3′) exemplifies a token-reflexive use of *here* but at the same time it is also anaphoric, as its referential interpretation depends on an inferred link between the token of *here* and the earlier use of the proximal demonstrative determiner *this* of *this side* (of the river). However, it differs from the anaphoric use to be discussed in Section 2.2 below, in that its token reflexivity excludes the use of *there* as an alternative term. If B had said *there* instead of *here* in (3′), interlocutor A would have a reason to believe that B intended to tell A that the cathedral is on the other side of the river. The jointly token-reflexive and anaphoric use of *here* in B's utterance in (3′) also deviates from an anaphoric *here* which is not concomitantly token-reflexive, in that speaker B does not have to worry about what we are going to refer to as the speaker-activation condition on appropriate use of *here*, a discourse constraint that will be introduced in Section 2.2. *Here* is in order in (3′), even though the antecedent phrase that is the most important determinant of its reference was not uttered by B but by interlocutor A.

We assume that speaker B in (3′) intends the hearer A to handle the word *here* pragmatically both as a token-reflexive and as an anaphoric indexical, because this will lead A to successful resolution of its reference. Whereas distal *there* is the default English spatial indexical when it is the anaphor in an antecedent/anaphor relation, an anaphoric spatial indexical which is at the same time token-reflexive must obey the rule that token reflexivity demands the proximal indexical *here*. Following Powell's (2010) terminology, we will say that it is B's derivational intention in producing (3′) that A undertakes a dual pragmatic processing of B's indexical and associates this token with the properties pertaining to spatial anaphora as well as the properties pertaining to spatial reflexives.

Apart from the fact that speaker B in (3′) would have produced a less relevant utterance if she had made the extremely unlikely decision to topicalize the spatial indexical and produce the sentence *Here is the cathedral* instead of *The cathedral is here*, B did not exploit any linguistic device that would have overtly signalled to A how *here* in (3′) should be treated in the pragmatic process of saturation of the indexical, that is, determination of its semantic value in the propositional content of the utterance (e.g. Recanati 2004). There is no specific procedural clue in B's utterance which is intended to inform A of B's derivational intention, no overt indication that *here* is to be processed as a token-reflexive and at the same time an anaphoric indexical. A will understand B's derivational intention on the basis of accessed contextual assumptions rather than procedural information encoded in B's verbal stimulus. In Section 3 it will be demonstrated how the inverted word order illustrated by a sentence like *Here is the cathedral* does provide procedural information about the speaker's intention to signal that resolution of the reference of *here* must rely on the inference that the indexical is

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used for a deictic purpose. An utterance-initial *here* is often less suitable for token-reflexive reference than a token of *here* in a post-verbal position, though contextual matters may occasionally neutralize or nullify the normal procedural effect of the difference between a pre-verbal and a post-verbal position for *here* (cf. examples (6) and (7) below, where *here* is fronted but token-reflexive).

In (4) the use of *here* is strictly token-reflexive but the geographical area referred to is restricted by the disjunct (*or*) *west of here*.

(4) Is the cathedral here or west of here?

Here and *west of here* offer only a rough indication of the intended extension of *here*, but the second term of the disjunction divides a diffusely delimited geographical area into two complementary parts, thus restricting the reference of *here* westwards from the spatiotemporal vantage point of the interlocutors.

There are exceptions to the rule that the reference of a token-reflexive *here* must coincide with the location of the communicator. The possible existence of a note posted on an office door which reads as shown in (5) – an example discussed by Recanati (2010), among others – shows that token-reflexive *here* does not require the presence of the communicator at the place referred to at the time when the message is received and interpreted.

(5) I am not here now.

Now and *here* in (5) must be interpreted as indexicals whose reference is respectively the time of reception and the place of reception of the message, not the time and place at which the message was produced (which would make the utterance of (5) self-contradictory). The place referred to is the place where the post-it containing (5) is, but no communicative act is performed until some individual, preferably an intended addressee, reads the note. Fillmore (1997:83) makes the point that *here* cannot normally refer to where the addressee is unless the communicator is there too, but the written negative declarative of (5) posted outside an office is a counterexample to that generalization.

Here may be used to refer token-reflexively to that point in the text where the word occurs. It is then a meta-discursive pointer to a mutually manifest set of contextual assumptions at the time of utterance, something that might be paraphrased as 'at this point in the current discourse'. The sentence-initial position is then quite normal; the indexical serves as a link between the context retrieved on the basis of the preceding discourse and the content of the sentence it introduces. In the case of (6), one might consider classifying the fronted token of *here* as a cataphoric indexical, as the utterance suggests that the addressee has the right to anticipate that the immediately following discourse will include a demonstration of the sort described.

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(6) Here it will be demonstrated why we have to be extremely cautious.

Here in (6) would be an anaphor if its referential interpretation depended on access to some antecedent information, an assumption that the predicate *will be demonstrated* rules out, but is *here* a true cataphor in (6)? (7) illustrates a use of *here* that we intuitively equate with its use in (6) but there is no 'postcedent' specification of what *here* is supposed to entail in (7), so *here* cannot be cataphoric in (7).

(7) Here one might have expected to find a demonstration of why extreme caution is necessary, but no such demonstration is offered.

We believe there is no need for a special 'cataphoric' subcategory of uses of *here*. The indexical is token-reflexive in (6) and (7) alike. That *here* may be linked to subsequent information in a discourse that includes an utterance of (6) is a consequence of the future temporal reference indicated by the expression *will be demonstrated*.

The proximal spatial indexical in the West African language Ga is *biɛ*, which may be used sentence-initially with the meaning of 'at this point in the discussion'. One attested example is (8) (where the lengthy content of the response is immaterial and is therefore left out).

(8) *Ga*
Biɛ ni mantsɛ lɛ tse naa akɛ . . .
here FOCUS *chief* DEF *tear mouth* COMPL
'Here, the chief responded that . . . '

Ga *biɛ* 'here' refers token-reflexively in (8) but there is also a signalled link to the immediately preceding part of the discussion, and we get the impression of a causal link between what the chief responds to and his response. This makes the use of *biɛ* in (8) rather similar to anaphoric uses of *here* and we are tempted to conclude that the proximal spatial indexical in this example is on the one hand token-reflexive but on the other hand anaphoric.

Due to the inextricability of a speaker's place and time coordinates, an expression that literally refers to the place here-and-now will sometimes be found to substitute for what would appear to be more logically represented by a temporal term, in written as well as spoken discourse. Metaphorical use of spatial terms for temporal reference appears to be a very widespread phenomenon, as the following two statements confirm (see also Haspelmath 1997):

> For a long time, linguists have noted that the spatial and temporal terms in English and other related languages overlap considerably. (Clark 1973:48)

> [T]he incontrovertible fact that temporal expressions, in many unrelated languages, are patently derived from locative expressions. (Lyons 1977:718)

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Here in the utterance of (9), produced by a teacher who finds it necessary to end her class on this note, is token-reflexive, but the reference is temporal, not spatial, in spite of the lexical meaning of the indexical.

(9) Let's stop here.

When a spatial indexical is employed for temporal reference, it is invariably of the token-reflexive sort.

Hungarian discourse is characterized by an extensive token-reflexive use of spatial *itt* 'here' where other languages might prefer a temporal term because the reference point is clearly temporal. The following is a sentence appearing in the Hungarian translation of a Norwegian novel. The direction of the arrow (←) indicates that the Hungarian sentence is a translation of the Norwegian sentence.

(10) *Hungarian*
Minden itt zsong körülöttem.
everything here buzzes around.me
← *Norwegian*
Nå surrer alt rundt.
now buzzes everything around
'Now everything is swirling.'
(Erlend Loe, *Naiv Super* [Naïve Super], translation by I. Vaskó)

The first person protagonist is relating what he is experiencing at a particular moment. Conceptually, the emphasis does not seem to be on the place where he is situated. Nevertheless the most idiomatic Hungarian rendering of Norwegian *nå* 'now' requires what appears to be a linguistic shift from the temporal domain in Norwegian to the spatial domain in the Hungarian translation. The same phenomenon is illustrated by (11), from the same novel as (10). The reader is invited to follow the man's temporally successive moves, step by step, and at the point where (11) occurs, he informs the reader that he has just entered the Volvo showroom, and yet the proximal spatial term *itt*, rather than its proximal temporal counterpart *most* 'now', is the preferred choice in Hungarian.

(11) *Hungarian*
Itt állok a Volvo-üzletben.
here stand.I DEF Volvo-shop.in
← *Norwegian*
Nå står jeg i Volvo-butikken.
now stand I in Volvo-shop.DEF
'Now I'm standing in the Volvo showroom.'

It was natural for the translator to change from the temporal indexical in the source text to a spatial one in the translation, in spite of the fact that the later phrase *a Volvo-üzletben* 'in the Volvo showroom' literally specifies the location of the protagonist.

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This seems to make the spatial term *itt* cataphoric but the derivational intention of the translator is that the reader should interpret the reference of *itt* as temporal in spite of the lexical meaning of this indexical. Hungarian usage makes this mental shift to a temporal reference unproblematic, while the corresponding Norwegian sentence structure of ?*Her står jeg i Volvo-butikken* 'Here I am standing in the Volvo showroom' would be severely unidiomatic.

As noted above, the use of a proximal spatial indexical like *here* for what should be interpreted as reference to the time of utterance presupposes token reflexivity. When *here* is used as an anaphoric term or as a deictic pointer to a sensory image, it cannot ever be replaced by *now*, and while *here* as anaphoric or deictic term may be replaced by *there*, the substitution of *there* for *here* is impossible not only in cases of regular spatial token reflexivity but also when the intended reference of the spatial indexical must be sought in the temporal rather than the spatial sphere.

2.2 Anaphoric use of 'here'

Both proximal *here* and distal *there* can be used as anaphoric terms whose context-dependent semantic value depends on how the anaphor is saturated, that is, on the addressee's retrieval of antecedent information needed in the reference resolution process. There are no special grammatical constraints on the use of distal *there* when it is used as a pro-adverbial anaphor. When it is an anaphoric term, *there* does not contrast paradigmatically with *here* but is a distance-neutral indexical. *There* in (12) and the phrase *in it* in (13) can be used interchangeably as long as the first sentence includes a nominal constituent, here *the second short story*, which is seen to fulfil the role of discourse antecedent enabling the addressee to saturate *there* and *it*, respectively.

(12) The second short story is probably the best one. There's a kind of intensity there which is lacking in the others.
(13) The second short story is probably the best one. There's a kind of intensity in it which is lacking in the others.

Due to the topicality of the short story referred to and the temporal proximity of the antecedent and the spatial anaphor in (12), it is also possible to use proximal *here* anaphorically. The example in (14) includes an alternative linguistic form that seems to impart the communicator's personal engagement better than the unmarked anaphoric indexical *there* in (12), though the truth-conditional content is the same in (12), (13) and (14).

(14) The second short story is probably the best one. There's a kind of intensity here which is lacking in the others.

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A prerequisite of the acceptability of proximal *here* in data like (14) is that *here* and its antecedent are produced by the same communicator, what is called the 'speaker-activation condition' on the use of proximal demonstratives in Gundel et al. (1993). These authors were primarily concerned with nominal demonstratives like proximal *this*/*these* vs. distal *that*/*those*, but we will show in Section 4 that their speaker-activation condition applies equally to the proximal adverbial indexical *here* in many languages. The condition is not met in (15), which is why B_1 with *there* is in order but B_2 with *here* is felt to be deviant by some native speakers of English.

(15) A: The second short story is the best one, don't you think?
B_1: Yes. I agree. There's an intensity there which is lacking in the others.
B_2: Yes. I agree. (#)There's an intensity here which is lacking in the others.

Observe that the speaker-activation condition does not apply to the token-reflexive use of the proximal spatial indexical. This is why the use of *here* is in order in the utterance of (3′) B in Section 2.1 above.

The speaker-activation condition on the use of proximal demonstrative anaphora seems to be more strictly observed in some languages than in some others. Russian (Gundel et al. 1993) is a language that is said to tolerate the use of proximal demonstratives to a larger extent than English when one speaker activates the referent and another speaker refers, anaphorically, to the same thing a moment later. If this is correct, we witness here a property of Russian that may shed light on a potential difference between the patterns of distribution of the spatial indexicals in the Slavic languages compared to the distributional ranges of the corresponding indexicals in most other European languages, an issue that will be discussed in Section 4.

The use of *here* in the following attested, written example appearing in Predelli (1998) is anaphoric, but here – another example of the anaphoric use of the term *here*! – we are invited to accept the make-believe that the writer is actually reporting from a position in the Mount Washington district.

(16) If an entire neighbourhood could qualify as an outdoor museum, the Mount Washington district would probably charge admission. Here, just northwest of downtown, are several picture-book expressions of desert culture within a few blocks.

(Predelli 1998:407)

The reader of (16) is caused to undertake a mental journey from the page in the text that includes (16) to what is described as the Mount Washington district. This is an example of what has sometimes been called 'Deixis am Phantasma', a concept introduced by Bühler (1934).

In (17) is an announcement heard by London Underground's Victoria Line passengers just before the train stops at Warren Street Station.

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(17) The next station is Warren Street. Change here for the Northern Line.

The voice could have said *there* instead of *here*, but proximal *here* is the standard form for all announcements of next stops in the London Underground system. If one is a passenger who needs to change from Victoria Line to the Northern Line at Warren Street, then the Warren Street station has a special significance for that person. The advice *Change here* ... in (17), in contrast to the neutral anaphoric indexical *there* of *Change there* ..., underscores the special salience of the referent Warren Street Station for those passengers who need to change to the Northern Line, a procedurally conveyed salience that dovetails with the descriptive meanings of the declarative and the following imperative in (17). The word *here* is no token-reflexive indexical there, because the intended referent of *here* is not the place where the speaker or the hearer is at the time when the voice producing (17) is being heard. Resolution of the reference of *here* depends on the hearer's interpretation of the meaning linguistically encoded in the preceding sentence, so *here* is an anaphor saturated by the previously given information that the next station is Warren Street. At the time of utterance, the train must be somewhere between Oxford Circus and Warren Street if the train is northbound and somewhere between Euston and Warren Street if it is southbound. Less than half a minute later, when the train comes to a standstill at Warren Street Station, the same voice announces: *This is Warren Street Station. Change here for the Northern Line*. This time the use of *here* is token-reflexive, like *this* in the preceding utterance, and may therefore not be replaced by *there*, but it is nevertheless also an anaphoric indexical whose antecedent is the noun phrase *Warren Street Station* in the preceding sentence. When the train is in motion and approaching Warren Street Station, as in (17), the reference is strictly anaphoric, not at the same time token-reflexive.

3. DEICTIC 'HERE': THE JOINT EFFECT OF A LINGUISTIC AND A NON-LINGUISTIC STIMULUS

In this section we will first show how the position of *here* in an English sentence tells the addressee how to choose between a token-reflexive and a deictic processing strategy. Then we will consider cases where *here* can be used as a token-reflexive and a deictic indexical simultaneously. We will also consider the use of *here* when the indexical is modified by an expression that reduces the exactitude of the target spot referred to and its use when there is an asymmetry between the speaker's and hearer's perspective. Finally we will examine the special use of *here* by a TV reporter when the perceptual field is a football ground shown on viewers' TV screens, or just that part of it which the cameramen are zooming in on at a given moment during a televised match.

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3.1 *The relevance of the syntactic position of* here

It will be shown that the position of *here* in a sentence typically offers procedural information that facilitates the hearer's inference about the communicator's derivational intention, as defined in Section 1.2 above. Specifically, a token of *here* (and corresponding spatial indexicals in many other languages) that appears initially in an utterance prepares the hearer for a resolution of its intended reference that depends on the interpretation of an extra-linguistic sensory stimulus. This is what is meant by 'deictic' reference. When the syntactic position of *here* is post-verbal, a contrastive stress on this indexical is needed in order to alert the hearer to the fact that a deictic interpretation is intended, in spite of the fact that a post-verbal position otherwise indicates token-reflexivity or anaphoricity.

The deictic use of *here* is not reducible to either the reflexive or the anaphoric use of this proximal spatial indexical.[4]

According to Corazza (2004:6), 'when "now" and "here" are not used as indexicals picking out the time and location of the utterance, they work in an anaphoric way', and according to Corazza (2004:156), 'they [i.e. the terms *here* and *now* – our insertion] do not have referential independence; they work as anaphors inheriting their value from an antecedent to which they are linked and coindexed'. We feel that this does not tally with Corazza's view, reported in Section 1.3 above, that the interpretation of demonstratives is perception-based. A deictically used spatial indexical is perception-based, an anaphoric one is not. It would surely be possible to define 'anaphoric' in such a way that any occurrence of *here* which is not of the reflexive sort is anaphoric in the sense that its referential interpretation depends either on information found in a linguistic antecedent (endophoric reference) or on information based on extra-linguistic perception (exophoric reference). Only the latter type can be signalled by means of a deictic gesture in conjunction with the indexical item, and sometimes the indexical may not be interpretable unless there is an accompanying gesture. A pointing gesture in the direction of the spatial referent conveys what derivational intention governs the speaker's use of *here*. It offers the hearer the procedural information that the referent must be identified through perceptual recognition of the target of the pointing. Resolution of the reference of an anaphoric *here* that depends on recognition of a discourse antecedent is a different cognitive process than resolution of the reference of a deictically used *here* that rests on interpretation of an extra-linguistic stimulus. A terminological conflation is therefore not advisable.

Inverted word order with a fronted *here* in a copula sentence is a procedural device that may be used in order to direct the hearer to a deictic as opposed to a reflexive interpretation. While the utterance-final position of *here* in (18) below supports a reflexive interpretation, the utterance-initial *here* in (19) will normally serve as a deictic pointer to where the spatial referent is. There is a potentially

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important information-structural difference between the word orders of (18) and (19), which may even affect the truth-conditional contents of utterances of these sentence forms.

(18) The cathedral is here.
(19) Here's the cathedral.[5]

We are deliberately using the cautious expressions 'potentially important' and 'may … affect', because the speaker's choice of intonation is bound to be a key provider of procedural information about how the spatial indexical is supposed to be processed. A contextually appropriate prosodic signal may even override whatever procedural information could otherwise be derived from the syntactic configuration of elements. It is important that the verb is the copula, which freely permits the subject–verb inversion pattern shown in (19), which again causes the subject noun phrase to end up in the sentence-final focus position.

The pragmatic processing required for the right interpretation of a token of (19) is very different from what is needed to understand the thought conveyed by a token of (18). The post-verbal subject phrase *the cathedral* is not an utterance topic in (19). There is no topic in (19), because an utterance-initial *here* in a predication with the English verb (*to*) *be* will invariably be interpreted as an all-news information structure, as a thetic judgment as opposed to the categorical judgment of (18) (Kuroda 1972 1992; Lambrecht 1994).

Compare the initial position of *here* in (20) with its final position in (21).

(20) Here are the members of the board, #but they are in the west wing of the building.
(21) The members of the board are here, but they are in the west wing of the building.

The clausal conjunct after *but* is odd in (20) because the implicit information we receive there is that the people referred to are out of sight at the time of utterance, and this is inconsistent with the procedural information conveyed by the fronting of *here* in combination with the inverted word order in the first conjunct. *Here are the members of the board* displays a constituent order that instructs the hearer to treat *here* as a deictic indexical that requires the visual presence of the people described as members of the board. The same 'but'-conjunct is fine in (21), though, because the final position of *here* in (21) directs the hearer's attention to the default token-reflexive interpretation of the indexical, which implies that the referent of *here* is the entire building, not just the room where the conversation is taking place. In (21) the extension of *here* encompasses the west wing as well as the room where the interlocutors are at the time of utterance.

An utterance of *Here are the members of the board, but they are in the west wing of the building* could conceivably be a relevant stimulus if the speaker is pointing to

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a group of people in a photo, where the background details are such that the room might easily be mistakenly believed to be in a different part of the building than the west wing. The utterance would then be a correction of the addressee's belief about where the photo was taken: the location is the west wing, despite appearances. *Here* is in the initial position, which indicates that the indexical is not token-reflexive but a deictic term that refers to what can be seen in the photo.

Having now shown that the speaker's placing *here* at the beginning of the copula sentence gives the hearer the procedural information that the word is to be processed pragmatically as a deictic indexical, we see that it would be rash to conclude that deictic reference with *here* is invariably signalled by an accompanying gesture that is intended to delimit a specific visible space as the referent of the term. The pointing index finger is meant to facilitate the hearer's pragmatic processing of an occurrence of *here* and computation of its reference, but the co-occurrence of the indexical with a particular syntactic form, like 'Here is *X*' (distinct from '*X* is here'), can reveal the speaker's derivational intention without the extra help of a gesture. What matters more than anything else is that the speaker whose derivational intention is to guide the hearer to a deictic processing of the indexical is looking in the direction of the place referred to, and a bodily gesture is often a convenient way to buttress the thought that information about the space which includes the referent of *here* is where the speaker is looking, and pointing.

The kind of information conveyed by means of (segmental or non-segmental) formal devices of the strictly procedural sort is information that is typically not mandatory to avoid violation of a rule of grammar, but when it is left out there is a risk that the hearer will misunderstand the speaker's intention or that the pragmatic processing of the linguistic stimulus and computation of its intended cognitive effects will be more effortful. Thus, if the speaker intends the word *here* to be processed deictically and the word is nevertheless put in the sentence-final position that disfavours a deictic interpretation, the lack of relevant procedural information in the syntactic form must normally be counterbalanced by the presence of a demonstrative gesture that coincides in time with the production of the spatial indexical. No matter whether there is, or is not, a deictic gesture that accompanies the production of the indexical, identification of the referent always depends on recognition of an extra-linguistic stimulus and the speaker's ostensive direction of the hearer's attention to this stimulus.

The difference in procedural information between a sentence-initial yet non-topic token of the proximal spatial indexical and a sentence-final token may lead the hearer to major truth-conditional differences that even have an impact on the hearer's comprehension of the truth-conditional content of the rest of the sentence. Consider the syntactic differences between the Norwegian sentences in (22) and (23a–b).

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(22) *Norwegian*
Her har vi Jens.
here have we Jens
'Here's Jens.'/'Here we have Jens.'

(23) *Norwegian*
a. Vi har Jens her.
we have Jens here
'We have Jens here.'

b. Jens har vi her.
Jens have we here
'Jens we have here.'

In (22), we have an example of deictic use of the indexical. An utterance of (22) would be appropriate at a moment when Jens, a physical object, has caught the speaker's eye (the speaker and the hearer may have been waiting for him to arrive), or when the speaker is pointing to Jens in a picture. *Her* 'here' in (23a) will be interpreted as a token-reflexive indexical. The hearer will interpret the verb *ha* 'have' as 'keep' if the context of utterance permits this reading, or possibly even 'detain'. The direct object *Jens* is topicalized in (23b). Depending on contextual input the sentence-final *her* in (23b) will be processed either as a token-reflexive or a deictic term, but the sentence-final position of *her* in (23b) does not strengthen the inference that the speaker's derivational intention is for the indexical to be processed as a deictic term. The sentence-initial position of *her* in (22) is an important procedural indicator of the speaker's derivational and informative intention when the physical appearance of Jens is new information not only to the hearer but also to the speaker who is describing what she has just observed. In contrast to how we interpret (22), the syntactic topicalization of *Jens* in (23b) makes it unlikely that the appearance of Jens has just now impinged on the speaker's perceptual apparatus and has caused the speaker to describe what she is experiencing. All of (22), (23a) and (23b) will be relevant stimuli in distinct sets of contexts.

Locative predications that involve the use of the contrasting distal demonstrative *there* behave in much the same way as proximal *here* in terms of the procedural information provided by the syntactic position of the indexical. As long as there is sufficient linguistic and gestural evidence that the speaker has the derivational intention that *there* be processed as a deictic indexical, the sensory accessibility condition on deictically used spatial indexicals, which requires that the speaker, but not necessarily the hearer, perceives the place referred to, will even hold for the reference of the utterance-initial distal *there*. The predication in (24) is about a uniquely identifiable referent described as a cathedral. The referent of *there* in (24) is a location some distance from where the interlocutors are, and this location is not necessarily identifiable through direct perception. The referent of the utterance-initial *there* in (25), however, is a perceived object, or possibly a pictorial representation of it.

(24) The cathedral is there.
(25) There's the cathedral.

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An utterance of (25) is an all-news utterance which normally demands that the cathedral is visually present, even if it may be a kilometre or more away from the place of utterance. Alternatively the cathedral may only have a map-scale presence, its location being represented as a spot on a city map where the map designer has placed a church icon. The reference of *there* in (24) is deictic if the space referred to is visible to the interlocutors and the indexical is supported by a gestural demonstration, but if *there* in the utterance of (24) is de-accented, after an accented subject noun phrase, then it is most likely to be an anaphoric item, the reference being to a discourse-given place to be identified via information found in an antecedent phrase. Obviously, use of deictic *there* as opposed to *here* is disallowed when the speaker's derivational intention is for the hearer to realize that token-reflexivity combines with deixis.

The declarative after the indicated pause in (26) is an attested example uttered by President Barack Obama at a press conference on 10 December 2009, the day he received the Nobel Peace Prize in Oslo (the Norwegian television channel NRK1). It illustrates the procedural effect of a token of *here* positioned before the subject and the finite verb in a copula sentence. The straight word order of the alternative sentence form of *You are here, Ben* would have been truly odd.

(26) Is Ben here?
(then five seconds of visual search across the room for the American journalist that President Obama has just referred to as 'Ben')
Oh, here you are, Ben!

Notice the referential difference between the first and the second token of *here* in (26). The token of *here* in the interrogative *Is Ben here?* refers reflexively to the room where the press conference is taking place. Exactly two questions were permitted to be given to the Nobel Laureate, one by a Norwegian and one by an American journalist. When the Norwegian had asked her question and received the President's answer, Mr. Obama was apparently trying to spot one specific person among the audience, the second person who had been selected in advance to be given the opportunity to address the Nobel Laureate. The President was evidently familiar with the American journalist who had been given this honour and with the fact that he had been selected. The sentence-initial *here* in the utterance following the pause, however, offers the procedural information that it is not token-reflexive but deictic.

Here in the utterance *Oh, here you are, Ben!* could have been replaced by distal *there*: *Oh, there you are, Ben!*. As the TV camera was facing Mr. Obama at the rostrum, the utterance was accompanied by a simultaneous indexical pointing in the direction of someone the viewers of the television programme could not see, not until one camera was turned towards this man as he started to speak. The addressee of the utterance *Oh, here you are, Ben!* is this American journalist, and the speaker's use of

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the proximal term *here* as a deictic indexical is motivated by the fact that he had now been spotted.

The difference between the linguistic expression of spatial token-reflexivity and the expression of spatial deixis is not limited to the syntagmatic difference between a fronted *here* and *here* in a post-verbal position. In (27) we have a straightforward example of *here* used as a token-reflexive term. The basement referred to is where the conversation is taking place; (28) on the other hand has a syntactic form that supports a deictic processing of the indexical.

(27) We used to have scout meetings here in the basement.
(28) We used to have scout meetings in the basement here.

The prepositional phrase *in the basement* constrains the set of possible interpretations of the reference of the preceding token of *here* in (27). Grouping the indexical and the descriptive phrase *in the basement* together as shown in (27) gives the hearer the procedural information that *in the basement* is a modifier of *here* and that the speaker's derivational intention is that *here* be processed as a token-reflexive term: the interlocutors are in the basement at the time of utterance. *Here* in (28), however, is a modifier of the descriptive phrase *in the basement* with which it forms a syntactic constituent. An anonymous reviewer reminded us that, if we front the adverbial phrase *in the basement* in (28), *here* must be fronted together with it, which proves that *in the basement here* is a single constituent. *Here* in (28) specifies which perceptually accessible basement the speaker has in mind. The adverbial adjunct conveys the procedural meaning that, at the time of utterance the interlocutors are not located in the basement referred to. The interlocutors are likely to be outside the house whose basement the speaker is directing the hearer's vision to, presumably with a concomitant pointing gesture that reveals the speaker's derivational intention to make the hearer process *here* as a deictic indexical that delimits the visible space singled out for reference sufficiently for successful identification of the referent.

The syntactic difference between (29) and (30) does not appear to be directly comparable to the difference between (27) and (28). While the grammatical and semantic relationship between *the cathedral* and *here* in (30) seems to be of the same kind as the relationship between *the basement* and *here* in (28), the sentence-final *here* in (29), which is not grouped together with *the cathedral*, does not correspond syntactically to anything found in (27) or (28).

(29) The cathedral is quite something here.
(30) The cathedral here is quite something.

A cathedral is something one will only find in a city, whether or not it has a sizeable population. In (29), where the position of *here* is sentence-final, the token-reflexivity interpretation seems to be the only one accessible. We understand the extension of *here* to be the city where the interlocutors are located. In contrast to this, the role

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of *here* in (30) may be to constrain the hearer's search for the referent described as a cathedral to a site that is close by, maybe a couple of blocks away, in the very neighbourhood where the interlocutors are now walking. In contrast to its procedural meaning in (29) where the sentence-final position of *here* and its independence as a syntactic constituent virtually secures a token-reflexive interpretation, the syntactic position of *here* in (30) makes it a post-nominal modifier just as in (28). Depending on the actual physical setting, the post-nominal position of *here* in (30) may cause the hearer's perceptual attention to be directed to a visible building, typically in conjunction with a gesture.

Due to our knowledge of the world, the noun *cathedral* in (30) does not have the same impact on the reference resolution process as the noun *basement* in (28), so the hearer's decision to identify *here* in (30) either as a token-reflexive or as a deictic indexical is a direct consequence of the hearer's pragmatic calculation of what contextual premises yield the most relevant interpretation of the utterance. What is indisputable is that the syntactic positions of *here* in (29) and (30) do not give the hearer the same procedural information about the speaker's derivational intention. While an utterance of (29) supports a token-reflexive interpretation of *here* and rules out a deictic interpretation, an utterance of (30) supports a deictic interpretation, but if there is no simultaneous pointing, a token-reflexive result may be computed instead, provided there is no contrary contextual evidence.

On our understanding of the concept of deixis in relation to the proximal indexical *here*, this word is a deictic term in (30) if it is accompanied by a pointing gesture in the direction of the site of the cathedral, but a pointing gesture is not a necessary accompaniment of absolutely all instances of the deictic use of *here*. A necessary condition is that it is possible to perceive the object referred to from the place where the utterance is produced. In (29), in contrast to (30), the hearer's inference about the extension of *here* will not lead him to anything smaller than the city as referent. In particular, the reference is not constrained to some visible object as figure in a figure–ground relation, and it is therefore not of the deictic sort. It is difficult, in fact, to imagine a context that makes a manual gesture a natural accompaniment of the token of *here* in an utterance of (29).

There is a conspicuous formal difference between how speakers of Hungarian may indicate that the proximal spatial term *itt* 'here' is to be interpreted either as a token-reflexive or as a deictic indexical. If a Hungarian wants to express that the cathedral of the local diocese is a stunning piece of architecture, one suitable linguistic form with *itt* is the sentence in (31).

(31) *Hungarian*
Nem semmi itt a katedrális.
not nothing here DEF *cathedral*
'The cathedral is quite something here.'

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However, if the Hungarian speaker's intention is to convey the same as when the English definite description *the cathedral here* picks out a perceived building, she may add the adjective-forming suffix *-eni* to the stem *itt-*, resulting in the prenominal adjectival form *itteni* placed between the definite article *az* and the noun *katedrális*. This particular adjective provides the hearer with the procedural information that the location referred to is an attribute of the object described as a cathedral.

(32) *Hungarian*
Nem semmi az itteni katedrális.
not nothing DEF *here.*ADJ *cathedral*
'The cathedral here is quite something.'

The word *itt*, without the suffix *-eni*, covers token-reflexive, anaphoric and deictic uses of the proximal spatial indexical in Hungarian, but the formal differentiation between *itt* in (31) and *itteni* in (32) may be said to reflect the cognitive significance of the distinction between spatial reflexivity in the former and spatial deixis in the latter.[6]

3.2 The dual function of here as a token-reflexive and a deictic indexical

In a sentence like (28) above, the basement referred to is visible from the place of utterance, and the sight of the object picked out is what matters in most instances of deictic reference with *here*. However, senses other than vision may be important, or even decisive. The perceived source of information may be auditory. Returning to English (30) or Hungarian (32), we can imagine that the chiming bells of the tower of the cathedral tell the hearer approximately where the cathedral is. The edifice may not be visible from the place of utterance.

The hearer's identification of the referent of *here* in (33) depends on non-linguistic (perceptual) information derivable from an auditory stimulus. The utterance in (33) may have been produced in response to the addressee's previous utterance of *Where are you?* or *I can't see you*.

(33) I am HERE!

The use of *here* in (33) is token-reflexive, because it does refer to the place where the speaker is. Why, then, is (33) not tautological, given the fact that the proposition expressed appears to be necessarily true? (33) is informative because the indexical is not just token-reflexive; this is at the same time an example of the deictic use of *here*, as the hearer's auditory impression of where the voice is coming from is the extra-linguistic demonstration necessary for correct reference resolution. Even if the hearer can see the speaker of (33) simply by turning around, the speaker's voice sample is the relevant perceptual clue that causes him to turn around. The sheer

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acoustics of the auditory stimulus provides procedural information without which the utterance would not be relevant to the hearer. Indeed, the speaker could have achieved the same by yelling *Hullo!* or using the addressee's name, or even emitting a non-linguistic exclamation instead of producing the full sentence in (33). When *here* refers to a narrowly delimited space identifiable via auditory perception, the voice itself substitutes for the gestural demonstration typically needed to identify the referent of *here* when the source of information is a visual stimulus.

Taking stock, we may say that the sound of a voice serves a function similar to that of gestural pointing in an act of deictic reference. We do not agree with Kaplan's claim (Kaplan 1989:491) that *here* is a 'pure' indexical in an utterance of *I am in here* cited at the beginning of this paper. Our position is that *here* is deictic as well as token-reflexive when the interlocutors cannot see one another, because one would only say *I am in here* when it is the acoustic signal that reveals where the speaker is. This is an exact parallel to the church bells example and the illustration in (33). It involves the hearer's identification of a perception-based source of information similar to what happens when a pointing index finger in an act of deictic reference directs the hearer's attention to a visual stimulus. The acoustic image produced by the voice is the sensory input that enables the hearer to locate the speaker, which is the entire point of uttering *I am in here*.

The fact that the proximal indexical in (33) is deictic and at the same time a token-reflexive term explains why *here* in (33) cannot be replaced by *there* and why *I am in here* cannot be replaced by *I am in there* in an utterance addressed to someone in an adjacent room who cannot see the speaker. This is impossible because the speaker is surely referring reflexively to the place of utterance. In contrast to this, a token of *here* which is deictic but not token-reflexive may be replaced by distal *there* without changing the conditions for spatial referent identification, provided the referent is not too close to the speaker. One can leave a newspaper on a table for the hearer to pick up and read, saying either *Here's the newspaper* or *There's the newspaper*, because the referent is the spot now being occupied by the newspaper, in conjunction with a word order that supports a deictic interpretation.

We have emphasized that the sentence-final position of *here* fails to offer the hearer the procedural information that a deictic interpretation is intended, so why do we classify the use of the sentence-final *here* in (33) as not only token-reflexive but also deictic? Why is (33) the normal syntactic form when the hearer cannot see the speaker? Why is use of the inverted word order of *Here I am* unnatural in that context? Data like (33) shows that our generalization about the procedural information conveyed by the contrast between a pre-copular and a post-copular *here* is in need of modification. The generalization expressed earlier is valid only when the spatial perceptual target is visible to the hearer. It may be counterproductive to put *here* in the initial position when the perceptual impression important for reference resolution is based on hearing rather than vision. To what extent these general observations are

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valid for language codes cross-linguistically is not known to us, but similar constraints on the use of a sentence-initial proximal spatial indexical as a guide to pragmatic processing do exist in other Germanic languages than English.

The example in (34) is a caption accompanying a photo that appeared in a Norwegian newspaper article.

(34) *Norwegian*

Jean Cocteau (1889–1963)	var	et	fantasirikt	'multimediemenneske'.	Her	ser	vi	ham	til
Jean Cocteau	*was*	*an*	*imaginative*	*multimedia.person*	*here*	*see*	*we*	*him*	*to*
venstre	under	et	blomsteropptog	i	Cannes,	der	han	var	juryformann
left	*under*	*a*	*flowerparade*	*in*	*Cannes*	*where*	*he*	*was*	*jurychairman*
under	filmfestivalen	i	1954.						
under	*film.festival.*DEF	*in*	*1954*						

(Bokmål corpus, University of Oslo, AV/BT95/01)

'Jean Cocteau was a highly creative "multimedia person". Here we see him on the left during a flower parade in Cannes, where he was the chairman of the jury at the film festival in 1954.'

Although this is deictic use of Norwegian *her* 'here', there is no pointing, obviously, as the text is meant to direct the reader to the image and to a designated person represented in the image. The description uniquely singles out the right individual, Jean Cocteau, and the photo uniquely delimits the perceptible domain of reference, just as the visibly present map is the domain of reference when someone touches a map of Poland with her forefinger while producing an utterance of the sentence *Krakow is HERE* (categorical statement with a topic followed by a comment) or *Here's KRAKOW* (thetic statement with no topic).

One striking property of photo captions like (34) is that proximal *here* may not be replaced by distal *there*, even though the proximal indexical is used deictically. We observed that Barack Obama could have said *Oh, there you are, Ben!* instead of *Oh, here you are, Ben!* when spotting Ben in example (26). Is it just proximity that guides the producer's choice of proximal *here* at the expense of distal *there* in the caption presented in (34)? No, what distinguishes (34) from (26) is that *here* in (34) is both token-reflexive and deictic, unlike *here* in the President's utterance, which is exclusively deictic.

Imagine that the caption under the photo from 1954 contained just the information that Jean Cocteau was the chairman of the jury at the Cannes film festival that year. Someone may then point to the photo and say either *Here we see Jean Cocteau on the left* or *There we see Jean Cocteau on the left*. When the singling out of the location of Jean Cocteau in the photo is done orally by means of *here* in combination with the description *on the left*, the reference to the space occupied by Jean Cocteau is purely deictic, not deictic as well as token-reflexive, which implies that *here* may be replaced by *there*. A caption like (34), however, invites the reader to interpret the image and the text as one unit from a cognitive point of view. The non-existence

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of the distal alternative *there* in such settings shows that intuitively, the indexical is token-reflexive. But the purpose of the written expression *Here we see him on the left* ... is equally to cause the reader to find out where in the photo Jean Cocteau is. A sentence-initial *here* supports deictic processing of the indexical and causes the reader's immediate perceptual attention to the photo, and then the descriptive information *on the left* helps to uniquely pick out Jean Cocteau in the photo.

We believe the inability of a text writer to exploit deictic gesturing in the direction of the relevant space partly accounts for why *there* is impossible in (34). When a gesture is available as a procedural clue to identification of a space in front of the speaker (or possibly a space behind the speaker if the thumb is used to point backwards above the speaker's shoulder to something visible to the hearer that the speaker knows to be there), there is no need to indicate the hearer's proximity to the spatial referent by linguistic means, as the hearer is simply supposed to imagine a trajectory from the speaker's position to the position of the referent of the spatial indexical. The intended trajectory is iconically indicated by the speaker's gesture. In the absence of pointing, as in (34), the addressee has no procedural evidence available that enables him to anchor the distal *there* to an external stimulus. On the other hand, proximal *here* indicates that the reference of the indexical should be viewed as token-reflexive, as if the context visually represented in the photo that the caption comments on is one that the reader is included in.

Another illustration of how *here* may be used in captions is offered in (35), which is our English translation of a text appearing under a portrait of the King of Sweden in the Norwegian daily *Dagbladet*, 25 May 2011.

(35) HUNT: King Carl Gustav has allegedly taken part in 'sex dinner parties' with young women. Here it is pheasants he is chasing.

There are no pheasants in the image, just the King's face and his chest and a sporty hat suited to the occasion, the pheasant hunting event. A superficial glance at (35) and the photo it comments on may cause a reader to conclude that there is a lack of coherence between the first declarative and the next declarative starting with the indexical *here*, whose fronted position indicates that the reader is supposed to engage in a deictic processing of the indexical. It is in principle possible to test out an analysis of *here* in (35) as an anaphoric indexical, though the outcome of that pragmatic processing cannot possibly satisfy a reader's expectation of a relevant stimulus. If we replace *here* in (35) by *there*, the token-reflexive interpretation is ruled out, and an anaphoric reading of the indexical seems to be the only one available. Resolution of the designatum of an anaphorically used *here* in (35) as something like 'during those dinner parties' would be informed by antecedent information in the preceding sentence, and we would then arrive at the unlikely interpretation 'The King is chasing pheasants while he is partying with young women'. The alternative

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processing of *here* in (35) as both token-reflexive and deictic stands a better chance of satisfying one's expectation of relevance. The King had for some time been in the media's searchlight because he was believed to have been chasing young women, in contrast to his chasing pheasants at the time when the photo session that included the photo appearing in *Dagbladet* was shot. Again, if the caption had not contained the Norwegian equivalent of the follow-up cleft sentence *Here it is pheasants he is chasing*, someone might point to the photo and say *There he is chasing pheasants* as an alternative to *Here he is chasing pheasants*, because the speaker's use of the spatial indexical would then be strictly deictic, not deictic and simultaneously token-reflexive as in the caption.

It appears that a similar combination of a token-reflexive and a deictic interpretation is necessary to resolve the reference of *here* in a very different kind of contextual frame. The written instruction *Leave your tray here* in a cafeteria invites the customer to look for the designated place, which may be a hole in the wall that the guest will discover after a brief visual search. The reference is deictic, because the guest is not supposed to leave the tray just anywhere close to the instruction, and it is token-reflexive because *here* could not have been replaced by *there*.

We conclude that if *here* is used in an act of deictic reference but cannot be replaced by its distal counterpart *there* without changing the import of the utterance or the grammatical well-formedness of the sentence, then its use is token-reflexive as well as deictic. It was shown in Section 2.2 that there are uses of *here* which cause the interpreter to adopt a token-reflexive and an anaphoric processing strategy that operate in tandem. The fact that the three uses are not mutually exclusive permits us to conclude that *here* has a unitary lexical meaning. By virtue of its procedural meaning, the indexical *here* encodes a relation of 'spatial proximity' between the source of information that enables an interpreter to resolve the reference of the indexical and the place where a token of it is produced, or the point in a written text where it appears. Resolution of the reference of *here* depends both on the hearer's knowledge of the lexical meaning of this word and on the interpreter's choice of a pragmatic processing strategy that takes contextual constraints on interpretation into account. Three strategies, the token-reflexive, the anaphoric and the deictic processing strategy, are available, and it is sometimes pertinent to combine two of them. A variety of procedural devices like the syntactic position of *here*, or its prosodic handling, or a gesturing that accompanies the indexical may facilitate the interpreter's choice of a single processing strategy in conformity with the communicator's derivational intention, but occasionally a combination of the token-reflexive and the deictic strategy is required.

It was shown that the information needed to identify a spatial referent by means of a deictic strategy may be acquired through hearing rather than vision. The chiming church bells is a source of information that the indexical *here* in an utterance of *Here's the cathedral* will direct the hearer's perceptual apparatus to. *Here* in that

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utterance is therefore deictic both for the speaker and the hearer. In contrast to this illustration, when someone says *I am in here* to an addressee who cannot see the speaker, the hearer's reference resolution process is based on his realization that the token-reflexive and the deictic processing strategy work in tandem. But what exactly do we mean when we say that *here* in *I'm in here* is both token-reflexive and deictic? Our answer is that it is token-reflexive for the speaker, and the hearer has to recognize this, but it is deictic for the hearer, who is observing which room the speaker's voice is coming from.

What we have claimed to be a combination of deixis and token-reflexivity in the written use of *here* in a caption that accompanies and comments on an image may be harder to account for. In regard to the Norwegian Jean Cocteau example in (34) above, we suggest that *her* 'here' is token-reflexive in the sense that the perceptual field indicating the frame of reference is limited to the image representing Jean Cocteau among a group of people participating in a parade in Cannes, but it is deictic in the sense that the indexical *her* in conjunction with the description 'on the left' directs the reader's visual perception to the location of a unique individual. The indexical is deictic because it does not refer indiscriminately to the space delimited by the pictorial frame but picks out a specific location. The King of Sweden example in (35) differs from (34) in that the King's face, the upper part of his body and his headgear dominate the image, so there is no need for a description of where the King is located. *Here* is token-reflexive in (35) because the frame of reference is limited to what can be observed in the image, but it is deictic for the reader of the newspaper, who is sure to read the caption and then look at the image. As the caption does not tie the King to a specified location, the reference of *here* is not *de re* but *de dicto*, to wherever the King had his portrait taken. The deictic aspect of the referential process is due to the fact that the pragmatic interpretation of the indexical involves visual perception.

3.3 Approximative modifiers of a deictic 'here' vs. a token-reflexive 'here'

If the speaker adds the approximation marker *somewhere* to *there*, as in (36) below, the reference may still be deictic if the phrase *there somewhere* is accompanied by a gestural demonstration, and the statement will be true if the speaker is pointing in what is basically the right direction. Use of *there* in a deictic demonstration does not require a spatial referent that can be viewed or heard from the place of utterance.

(36) The cathedral is there somewhere.

Observe that there is no corresponding deictic use of the expression *here somewhere*. *Here* can only receive a token-reflexive interpretation in (37).

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(37) The cathedral is here somewhere.

Somewhere suggests that the cathedral is not visible from the place of utterance. This is in order if the spatial term is distal *there*. One can point while uttering (36) and thus perform a successful act of deictic reference. We have argued that any deictic interpretation of *here* is constrained by what we called the sensory accessibility condition, so our prediction is that, when *somewhere* combines with *here*, the phrase *here somewhere*, in (37) above, does not satisfy this constraint on deictic use. While one may point in a particular direction while uttering (36), one will not point when uttering (37). This all adds up: the adverbial phrase *here somewhere* only permits the token-reflexive reading 'somewhere around here'.

3.4 Differences between speaker's perspective and hearer's perspective

Imagine someone who is trying to locate a particular distant object by using binoculars. Having moved her gaze, through the binoculars, from right to left, she suddenly exclaims (38).

(38) Here it is!

The spatial referent is not within the hearer's perceptual range, and indeed, the communicated thought will not be fully relevant to the hearer before he is handed the binoculars so that he can look for himself and locate the object that is the referent of *it*. However, *here* – i.e. deictic *here* – is acceptable as long as the speaker, but not necessarily the hearer, is able to perceive the place where the object searched for is located.

The Norwegian lexicon contains an interesting, morphologically complex lexical item – *her borte* ('here away').. Its function approximates that of the English expression *over here*. Given our view of the semantic properties and pragmatic consequences of a deictically used proximal spatial indexical, the existence of a lexical item like Norwegian *her borte* is not surprising. *Her borte* indicates either that the referent is at some distance from where the speaker is, due to *borte*, but visible, so that the accessibility condition on deictic use is met, or that the referent is at some distance from where the hearer is, but close to the speaker. While its lexical counterpart *der borte* (literally 'there away') may be used with reference to something beyond the speaker's perceptual range at the time of utterance, the contextual appropriateness of *her borte* in an utterance of (39) normally hinges on the speaker's visual perception of the escalators referred to.

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(39) *Norwegian*
Rulletrappene er her borte.
escalators.DEF are here away
'The escalators are over here.'

The escalators may be seen from a vantage point shared by speaker and hearer, or the speaker of (39) may be located close to the escalators but at some distance from the hearer. In the latter situation, the speaker might be said to be taking the interlocutor's perspective, using the seemingly paradoxical combination of proximity and distance encoded in *her borte* in order to indicate that the referent can be perceived from the interlocutor's vantage point. The English expression *over here* has similar properties but the item *over* does not indicate distance as transparently as the Norwegian item *borte* 'away, gone, disappeared'.

3.5 Here's Essien – *deferred (metonymical) reference to the ball possessor, or spatial reference to where the ball is?*

One use of *here* which is a bit tricky to classify may be characterized as a conventionalized feature of the speech of sports journalists' reporting from televised football matches. There is a tendency for English-speaking football reporters to use an initial *here* in an utterance whose purpose is to point out which player possesses the ball at the moment. There is no deictic demonstration in such a case, here exemplified by (40), but observe that the condition for appropriate use of this conventionalized, genre-specific syntactic construction is that the player singled out by name must be the player in control of the ball.

(40) Here's Essien.

Thus, the visible location of the ball is, we think, a condition for legitimate use of deictic *here* in (40). Is the location of the ball also the referent of *here*? The addressee's, i.e. the viewer's, interpretation guided by the image of the TV screen enables him to form a representation of the Chelsea player Michael Essien from Ghana as the one who is in possession of the ball at the moment. The speaker's intention is not to inform the addressee that the player with the ball is called Essien. The information structure, and the content, is not the same as when someone utters *This player is Essien* or *Essien is here*. The explicitly communicated proposition may be paraphrased as 'The ball is now with Essien' or 'The current ball possessor is Essien'. Thus, it looks as if the truth-conditional content has little in common with the syntactic form of (40); there can be no direct mapping from the encoded logical form of (40) to the proposition expressed. The proposition depicts the changed situation involving Essien as the new possessor of the ball. *Here* is not a constituent of the proposition of (40) *qua* locative adjunct, though it is significant to note Essien's position vis-à-vis the players of the opposing side and the players on his own side as

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well as the distance to the opponent's goal and the continuously changing distance between the ball and Essien's body as long as he remains in control of the ball.

What if we imagine that the real semantic value of *here* in (40) is the current ball possessor rather than a location? If this is our analysis, the use of *here* in (40) is a case of deferred reference (Nunberg 1979, 1995, 2004a, b), because the deictic indexical points the addressee to where the ball is, and the ball is metonymically associated with the possessor of the ball referred to by means of his name. The current location of the ball might be analyzed as Nunberg's index (1995) of the speaker's act of deferred reference to Essien as the man with the ball. *Here* would then draw the TV viewers' attention to this visible index, which serves as a metonym for the intended referent, the attributively understood entity 'the current possessor of the ball'.

On the analysis outlined in the preceding paragraph, there is a very considerable gap between the syntactic form and sentence meaning of (40) and the proposition that an utterance of (40) communicates. A competing analysis that reduces this gap makes the true referent of *here* the location of the football at the time of utterance. The communicated information would then be that the location of the ball and the location of Essien coincide at the time of utterance. *Here* refers to the former and the noun phrase *Essien* to the latter. The utterance tells us about the relationship between the football and a specific player. Essien is where the ball is, which implies that Essien is the current possessor of the ball. This analysis does not involve a deferred interpretation of *here* as a necessary component. That the locations of Essien and the football coincide is probably not literally true, because the ball possessor is only intermittently where the ball is, just when there is physical contact between the player and the ball. Still, we have a sufficient number of indicators of what inferential processes will make the grammatical form of (40) relevant. This analysis is arguably simpler than its competitor and less uncongenial relative to more standard thinking about the relationship between linguistic meaning and communicated thought/proposition – which may be considered a good enough reason to adopt it.

Viewers of a televised football match will automatically follow the ball with their eyes and observe who is in possession of the ball at any moment, just like the reporter who produced (40). An utterance of (40) will not be relevant to the audience unless it is meant to describe the relationship between the location of the ball and the particular player who is in control of the ball, or who is passing the ball, at the time of utterance. This means that *here* either refers metonymically to the ball possessor or to where the ball is, the latter being our preferred analysis.

3.6 Summing up

Based on what we believe our examples of the strictly deictic use of *here* in the present section to have in common, we now propose to define the special conditions

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pertaining to deictic *here* in the following way: The interlocutors' perspective on the referent is projected from the speaker's here-and-now to a deictically singled out, designated location within the speaker's perceptual (most frequently visual) field. The location referred to does not coincide with the spot occupied by the communicator but is projected to a place close enough to be seen, or otherwise perceived, from the spatiotemporal vantage point of the speaker. Since the deictic demonstration is normally performed for the benefit of the addressee, the location to be identified as the referent of *here* will typically also be within the addressee's perceptual field. While perceptibility as a prerequisite may be said to apply only to the speaker's ability to see or hear the place referred to, some of the stimuli presented in this section are clearly irrelevant unless the addressee can also perceive the spatial referent. However, stimulus relevance should be judged in relation to the speaker's belief about what information is accessible to the addressee, so when the addressee of an utterance of *I am in here* fails to hear that an utterance is being directed to him, the utterance will still be relevant if the speaker is justified in believing that he was speaking loud enough and clearly enough for the delivered message to be within the addressee's perceptual range (see Sperber & Wilson 1986).

We hope that the content of Section 3.2 has justified our claim that a token of *here* may be intended to be processed pragmatically as a deictic indexical whose reference must be resolved with the help of the interpreter's perception of the location of a designated object but at the same time as a token-reflexive indexical because it refers reflexively to the location of the perceptual target, whether this is the location of an object represented in a picture or the location of a person whose voice indicates where he is at the moment of utterance.

4. THE DISTRIBUTION OF 'HERE' AND 'THERE': SOME APPARENT PUZZLES

4.1 The doctor's 'here' and the patient's 'there'

While several philosophers of language have cited the pointing-at-a-place-on-a-map phenomenon as a case where *here* is a demonstrative rather than a 'pure' indexical, some linguists have cited an invented conversation between a doctor and her patient as an interesting counterexample to the hypothesis that 'proximal' is invariably to be understood as close to the speaker, an attribute that the referent of both medial and distal demonstratives is supposed to lack. This invented doctor–patient conversation caught our interest and was an important impetus for the writing of this paper.

The scenario is this: a GP has started palpating points on her patient's body, and is asking the question *Does it hurt here?* While the patient could answer affirmatively

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by simply saying *Yes* or negatively by saying *No*, it is also possible for him to produce a full sentence, as shown in (41). The English-speaking doctor will then have a choice between *here* and *there* but the patient will use distal *there*, or so the argument goes, even though the referent is a part of the patient's own body.

(41) Doctor: Does it hurt here? / Does it hurt there?
Patient$_1$: Yes, it hurts there. / # . . . here.
Patient$_2$: No, it doesn't hurt there. / # . . . here.

We hold that the important thing to notice if one wants to understand the principle that governs the distribution of *here* and *there* in (41) is that the person who introduces the discourse referent represented by the spatial indexical is the one who defines the target of the referential act. Psychologically the patient as a sentient being is not a legitimate referent, as the domain of reference is restricted to the patient's body, or maybe more narrowly to his torso. The patient's indexical does not assume the role of a token-reflexive term, because the doctor has decided that the domain of reference is the body examined, and the reference is therefore restricted to the point on the body which is deictically singled out by palpation.

Janssen (1993) observes that Dutch spatial indexicals operate in the same way as the English ones. One likely version of the Dutch conversation is seen in Janssen's illustration presented in (42).

(42) *Dutch*

Doctor:	Doet	het	hier	zeer?
	does	*it*	*here*	*hurt*
	'Does it hurt here?'			
Patient:	Ja,	daar. /	#Ja,	hier.
	yes	*there*	*yes*	*here*
	'Yes, there.'			

Janssen's comment is that, 'the differentiation between the domain of *hier/deze* "here/this" and *daar/die* "there/that" cannot be characterized as "in the vicinity of the speaker" and "not in the vicinity of the speaker"' (Janssen 1993:768, quoting Lyons 1968:275).

Janssen lists the following three features as the only factors relevant to the understanding of the distribution of *hier* 'here' and *daar* 'there' in an exchange like (42): (i) the speaker's vantage point, (ii) the salience of the place in question with regard to the speaker's vantage point, and (iii) the speaker's referential concern for the salient place with regard to his vantage point (Janssen 1993:768). These three points are believed by Janssen to account for not only the data above but also the difference between licit use of *hier* and *daar* used anaphorically, as in (43), where the Dutch narrator is said to present the event from the point of view of Fred's parents in Montreal, compared to (44), where the narrator 'sees the event at hand from his actual situation outside of Montreal' (Janssen 1993:770).

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(43) *Dutch*
Fred arriveerde in Montreal. Hier hadden zijn ouders al lang naar hem uitgezien.
'Fred arrived in Montreal. His parents had long been awaiting him here.'

(44) *Dutch*
Fred ging naar Montreal. Daar moest hij zijn voor een conferentie.
'Fred went to Montreal. He had to attend a business meeting there.'

Janssen's three points cited above may shed some light on the distribution of the proximal and the distal spatial indexicals when they are used as anaphors, but we believe the difference between the doctor's deictic *here* and the patient's anaphoric *there* to require a somewhat different handling. In our opinion the presence vs. absence of a manual behaviour accurate enough to uniquely determine the referent is the most important parameter for an adequate analysis of (41)/(42) and similar data from other languages.

What needs to be accounted for in (41)/(42) is the doctor's ability to use the proximal spatial indexical without violating any principle governing the use of this item, and also, more remarkably, the constraint that rules out the patient's use of the same indexical, *here*/*hier*, even if the referent is a point on the patient's own body, and even if the referent introduced by the doctor is a maximally salient entity at the time when the patient produces his answer. The indexical is not used token-reflexively by the patient in such a case. Indeed, the fact that the proximal alternative is very unnatural, if not prohibited (in Dutch as well as English) shows that the patient's reference to a point on his body has nothing to do with token reflexivity. The domain of reference was determined by the doctor activating the spatial referent for the patient. If the patient is able to see the place referred to, he will identify it on the basis of two simultaneous and independent sensory impressions, a visual stimulus and a tactile stimulus; if the palpated point is somewhere on the patient's back, the tactile sensation is the only source of information leading to the patient's resolution of the reference of the doctor's *here*. The fact that the reference is only made accessible to the patient via perception makes it deictic, even if the patient, as interpreter, is unable to see the place referred to. Although the palpated spot belongs to the patient's body, we do not think of the place singled out by the doctor as the place where the patient is located at the time of utterance. After all, that spot is an inalienable part of this person wherever he goes. For this reason the patient cannot be using *here* as a token-reflexive indexical in his response to the doctor.

By analogy with a number of illustrations offered in Section 3, we notice that it is possible to shift the reference from the spatiotemporal centre of the conversation taking place in the doctor's office to a precisely delimited domain of reference. This is what the doctor achieved by letting his proximal term be accompanied by an extra-linguistic demonstration directed to a point on the patient's body. In his act of referring to the same place that the doctor's *here* referred to, the patient is not engaged in deictic reference. Because that place was already introduced as a

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discourse referent, any ensuing reference to the same place is a case of anaphoric use of the spatial indexical. On a more general note, the antecedent that a hearer must activate in order to resolve the reference of an anaphoric demonstrative will not necessarily be a proper name or a descriptive noun phrase. The linguistic antecedent may be an indexical just like the later anaphor. An indexical can be anaphoric upon an antecedent indexical whose referential interpretation is perceptually grounded, and the deictically used proximal indexical in the doctor's utterance serves the role of antecedent for the anaphoric, non-proximal demonstrative in the patient's answer.

We hold, with Janssen, that it is not the nearness of the doctor to the referent that allows her to use English *here* or Dutch *hier*, but unlike Janssen we believe that the speaker's perception of the spatial referent is a sufficient condition for deictic use of *here*/*hier* accompanied by ostensive extra-linguistic indication of the spatial reference. As long as the patient is not himself touching the object first picked out for reference by the doctor, the patient is not engaged in an act of deictic reference. He is then using his spatial indexical for anaphoric reference to the spot referred to by the doctor, and this, we hold, is why the patient will use the distal member *there*.

Use of proximal indexicals across participants in a conversation appears to be problematic in many languages, and this is not only true of spatial indexicals. As Robin Lakoff says (Lakoff 1974:349), '[*t*]*his* may be used only if the two sentences are uttered by the same speaker', and '*that* can be used by a speaker to comment on an immediately prior remark by another'. There is a speaker activation constraint on proximals which causes a responding hearer to avoid a proximal indexical like *here* when it is anaphoric upon the first speaker's deictic reference with the proximal member of the pair *here*/*there*, and to use the corresponding distal term *there* instead, not because the distal term necessarily signifies a geographical distance between speaker and referent but because distal *there* is the neutral member of the pair.

The speaker activation constraint on appropriate use of the proximal term obviously does not apply to token-reflexive uses. A question like *Do you like it here?* cannot be answered by #*Yes, I like it there*, even though *Does it hurt here?* should be answered by *Yes, it hurts there* when no gesture accompanies the indexical.

We believe the difference between the two pragmatically distinct phenomena of deixis and anaphora to offer us an explanation for the distribution of the spatial indexicals in (41)/(42). The doctor's *here* stands for 'the place that I now single out (by deictic demonstration)', but the patient's *there* stands for 'the place that you have singled out (by deictic demonstration)'. Although the doctor's referent and the patient's referent are the same spatial entity and the two different modes of presentation of the reference is truth-conditionally irrelevant, the two indexicals *here* and *there* are cognitively distinct items. They represent distinct psychological modes of presentation in Recanati's sense (1993), and this difference is reflected directly by the doctor's choice of the proximal term for deictic reference and the patient's choice

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of the distal term for anaphoric reference to the object antecedently picked out by the doctor.

The conditions governing the use of *here* are not satisfied in the patient's case. This generalization holds at least for those languages that respect the speaker-activation condition on the anaphoric use of proximal demonstratives. It turns out, however, that not all languages behave like English and Dutch with regard to the distribution of spatial indexicals in the doctor–patient dialogue, and we are interested in this difference between languages that obey the speaker-activation condition and those that do not. Russian (Gundel et al. 1993) is claimed to belong to the latter group of languages. In Russian, one speaker may use a proximal term which is then echoed by a different speaker's use of the same item in a subsequent utterance to indicate coreference with the first speaker's indexical. With regard to the doctor–patient dialogue, we hold that an English patient's use of a distal spatial indexical and a Russian patient's use of a proximal spatial indexical under the same contextual conditions should not cause us to conclude that the speaker of English treats the indexical as anaphoric upon the doctor's previous use of the proximal option and activation of the selected spot as discourse referent, while the speaker of Russian chooses a production strategy which implies that the patient's indexical does not qualify as anaphoric, thus permitting him to use the same proximal item as the doctor. Rather, the patient's indexical is anaphoric in both languages, but while the speaker-activation condition on the use of proximals applies to the English language, it is much less certain that it applies to Russian (see the discussion in Section 4.3.2 below).

4.2 Looking at maps

The following illustration shares certain important elements with the doctor–patient dialogue but differs from it in some interesting respects. Suppose two individuals A and B are looking for the city of Ravenna on a map of Italy. A discovers where Ravenna is, points to where the name 'Ravenna' appears on the map, and utters *Here it is*, alternatively *Ravenna is HERE*, which causes B to react as shown in (45).

(45) A: Here it is.
B: I didn't know it was there.

Speaker A could have used the alternative forms *There it is* or *Ravenna is there*, but #*I didn't know it was here* or #*Is it really here?* would not be an option for B in (45). A's use of *here* is based on a projection from the point where her fingertip is to a mini-domain of reference restricted to the opened map on a table in front of the interlocutors. Speaker B will use *there*, because for B this is anaphoric reference to something antecedently referred to by A. One difference between (45) and the conversational exchange between the doctor and the patient is that the patient was

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as close to the spatial referent as he could possibly be, while person B in (45) does not have to be as near to the referent as A. Provided B is able to see where on the map of Italy A's index finger is placed, it is irrelevant how close to the map or far from the map B's eyes are at the time of utterance. As one reviewer pointed out, A and B could be equidistant from the map with both of them looking at it, or B could even be holding the map. The reason why the proximal indexical *here* is not an option for B in the context of A's previous utterance is that it would have violated the speaker-activation condition on anaphoric use of proximal indexicals.

It is possible to use the proximal term *here* even if one is looking at a map without an accompanying gestural demonstration, but uttering (45) with no manual gesture would not be an act of telling the interlocutor where Ravenna is. It would rather be equivalent to an act of A's telling B that A has located Ravenna on the map, an alternative to an utterance of *I've found it*. If one's intention is to tell someone where in Italy Ravenna is, one has to make sure that the hearer can see the map of Italy and see the point that his or her index finger is pointing to or touching. The proximal term *here* of *Here it is!* is motivated by the fact that the speaker is looking directly at the name 'Ravenna' discovered a moment earlier. *There it is!* would have expressed the same proposition as *Here it is!*, because deictic *there* is the neutral term that may be used freely even in contexts where deictic *here* is permitted. Even though B can see the point on the map which A is referring to, B is not free to choose between *here* and *there* as spatial indexicals in (45), because A is the speaker who picked out Ravenna on the map. B's item *there* is coreferential with A's item *here*, which we identify as the linguistic antecedent of B's later anaphoric indexical. We call A's *here* the antecedent of B's *there*, even though *here* is not a descriptive phrase but is itself an indexical. The information needed to resolve the reference of B's *there* is not information encoded in A's antecedent *here*, obviously, because *here* is a deictically used indexical whose referent can only be resolved through an act of interpretation grounded in visual perception.[7]

Observe that in uttering (46), a speaker who is pointing to the name Ravenna on a map of Italy may perform a relevant utterance even if the hearer knows that he is in Ravenna. In fact, it is rather unlikely that the hearer does not know which city he is in.

(46) We're here.

On its most natural interpretation, the meaning of the utterance of (46) produced by someone who lets her index finger pick out the name Ravenna on the map is not 'We are in Ravenna'. Rather, the reference of *here* in (46) will be determined in terms of where in Italy the city is located relative to certain other Italian cities or regions that the hearer may already be familiar with. The meaning of (46) is that the interlocutors are where it says *Ravenna* on the map. Although *here* is an indexical that encodes no description of the referent, it does not refer *de re* to Ravenna in (46) uttered in the specified context. Rather, the referent is 'where my forefinger is touching the map'.

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It is possible, however, that the hearer does not know the name of the city they have arrived in. In that kind of context, the indexical *here* in an utterance of (46) has a dual function. On the one hand the utterance informs the hearer that Ravenna is the name of the city they are in, because it says *Ravenna* where the tip of the speaker's forefinger is; on the other hand the utterance of (46) informs the hearer of the location of Ravenna on a map of Italy.

4.3 A cross-linguistic examination of deictic and non-deictic (anaphoric) uses of spatial indexicals

4.3.1 The situation in Norwegian

We carried out a production test with twelve native speakers of Norwegian, using for this purpose the exchange between the doctor and the patient described in Section 4.1 above. The informants were asked to fill in the slot ____ with the Norwegian proximal term *her* 'here', or with the distal term *der* 'there', or with both in case either alternative was judged to be acceptable, through the four successive stages of (47a–d), completing one task before being introduced to the next one.

(47) *Norwegian*

a. Doctor: Gjør det vondt ____? 'Does it hurt ____?'
(Context: The doctor is touching the patient's body while producing her utterance.)

b. Patient: Ja. Det gjør vondt ____. 'Yes. It hurts ____.'
(Context: The patient is not moving a muscle while producing his utterance.)

c. Patient: Ja. Det gjør vondt ____. 'Yes. It hurts ____.'
(Context: The doctor has removed her fingers from the spot she was touching and the patient is now touching the same spot while producing the indexical.)

d. Patient: Nei. Det gjør vondt ____. 'No. It hurts ____.'
(Context: The patient is touching a different spot than the one referred to by the doctor.)

The number of proximal *her* 'here' responses and distal *der* 'there' responses are shown in (48a–d).

(48) *Norwegian*

a.	Gjør det vondt her?	12
	Gjør det vondt der?	11
b.	Ja. Det gjør vondt her.	0
	Ja. Det gjør vondt der.	12
c.	Ja. Det gjør vondt her.	12
	Ja. Det gjør vondt der.	1
d.	Nei. Det gjør vondt hér.	9
	Nei. Det gjør vondt dér.	8

All informants marked the proximal term as acceptable in (48a), and all except one informant accepted the distal alternative as well. This situation contrasts sharply

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with what we found for (48b), where the distal term was unanimously chosen at the expense of the proximal one. The contextual difference between (48b) and (48c) resulted in a nearly complementary pattern of distribution of the proximal and the distal term. When the informants were told that the patient was touching the place where the pain was, there was an almost unanimous selection of proximal *her* at the expense of distal *der*. The contrast between the doctor's spatial referent and the patient's spatial referent in (48d) presumably accounts for the increased acceptance of distal *der* uttered when the patient answers the doctor's question negatively and identifies the real trouble spot. Five of the eight informants who accepted distal *der* under the conditions specified in (48d) also accepted proximal *her*, but three preferred *der* to *her*.

We believe that the differences in the conditions we are proposing for deictic use of the proximal indexical compared to the conditions pertaining to anaphoric use of the same proximal indexical account in large part for the Norwegian test results presented above.

4.3.2 The Slavic case

The Slavic languages seem to deviate from the pattern of distribution described here. Ewa Wałaszewska (p.c.) informs us that Polish *tu* or *tutaj* 'here' would be the right form for the patient as well as the doctor, and this judgment is supported by three other speakers of Polish. Similarly, the Bulgarian proximal spatial indexical is judged to be the preferred term in both the doctor's and the patient's utterance (Mila Vulchanova, p.c.).

Russian speakers seem to distribute the spatial indexical terms in the same way as our Polish and Bulgarian informants. Proximal *zdes* appears in the patient's as well as the doctor's turn (Masja Koptjevskaja-Tamm, p.c.):

(49) *Bulgarian*
Doctor: Zdes bol'no?
here it.hurts
'Does it hurt here?'
Patient: Da. Bol'no zdes. (no gesture!)
yes it.hurts here
'Yes. It hurts here.'

The intuitive judgment that the proximal indexical is the only right one for the patient as well as the doctor has been confirmed by another eight speakers of Russian.

Alexei Shmelev (p.c.) has informed us that *zdes* (and the other proximal term *tut*) is used deictically by the patient as well as the doctor and that *tam* 'there' is the only Russian spatial indexical that may be used anaphorically, but he adds that the patient's answer would not normally be a full sentence with a spatial term echoing the doctor's term, because that would be redundant information in the context of the

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doctor's question. What this shows is that Shmelev's notion of deixis and ours are not the same. An indexical that can be freely dropped because it represents retrievable information in a given context is for us an indexical of the anaphoric sort. A deictic indexical may not be replaced by zero.

The Czech spatial term *tady* 'here' is distributed in compliance with the rules said to apply in Russian, Polish and Bulgarian (pace Barbara Schmiedtovà and two native informants she contacted on our behalf). However, the judgments of Czech speakers are not uniform. We are particularly grateful to Marie Postma for obtaining responses from six native speakers of Czech residing in The Czech Republic. Their reactions, presented in (50), were far from uniform:

(50) *Czech*
1: doctor – *tady* 'here'/*tam* 'there'; patient – *tady*/*tam*
2: doctor – *tady*; patient – *tady*/*tam*, with a preference for *tam*
3: doctor – *tady*; patient – *tady*/*tam*
4: doctor – *tady*; patient – *tady*/*tam*, with a preference for *tam*
5: doctor – *tady*; patient – *tam*
6: doctor – *tady*/*tam*; patient – *tady*/*tam* (*tam* if the patient does not touch his own body)

Those speakers of Czech who find proximal *tady* acceptable in the patient's answer probably intuit in accordance with a less strict constraint on the use of the proximal term as anaphor in the Slavic languages than what is found in the rest of the languages in our survey. Speakers of Slavic languages typically allow themselves to employ the proximal term anaphorically under alleviated conditions, but the pattern shown in (49), where the Russian patient uses the proximal term, is possibly less stable in Czech.

The observed tendency to maintain the proximal anaphoric term across speakers is consistent with Gundel et al.'s observation (1993:287) that the use of proximal demonstratives in Russian does not require that the speaker is the same as the speaker who introduced the referent in the discourse. Russian, they say, lacks the speaker-activation condition on the proximal term.

Example (45) in Section 4.2 above was a conversational exchange between two interlocutors A and B whose locative referent was that point on a map of Italy which shows where the city of Ravenna is. How does this exchange translate into the Slavic languages that allow the patient to use the same proximal term as the doctor? If B is free to use a proximal term in telling A that he is surprised to learn that Ravenna is where the name *Ravenna* appears on the map, then we have strong evidence that the physical proximity condition is too simple to account for the empirical facts. Barbara Schmiedtová (p.c.) says she would have used the Czech proximal indexical *tady* (or the synonym *zde*) not only if she were speaker A showing B where Ravenna is but also if she were speaker B looking at the map over A's shoulder. The distribution is

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reported to be the same in Russian, where 'here' in (51) is the best gloss for *tut* and *zdes* alike (Masja Koptjevskaja-Tamm, p.c.).

(51) *Russian*
A: Ravenna tut.
Ravenna here
'Ravenna is here.'
B: Oj, ja ne znal, chto ona zdes.
oh I not knew that it.is here
'Oh, I didn't know that it is here.'

This judgment lends support to our position: speakers of Russian permit themselves to be freer, more lenient, in their use of a proximal spatial indexical as discourse anaphor, than speakers of English. The proximal term is fine even if it is the speaker's interlocutor who activated the locative referent. Again, we insist that the form *zdes* in B's answer does not have a deictic, but an anaphoric function. The entire complement clause *chto ona zdes* 'that it is here' is superfluous after the answer *ja ne znal* 'I didn't know' in the exchange of (51), which means that *zdes* is not a deictic but an anaphoric item there, in spite of the established terminological practice that recognizes *tam* 'there' as the only Russian spatial indexical that can assume an anaphoric function.

4.3.3 The distribution of spatial indexicals across the world

In Greek the proximal spatial indexical is εδω 'here', and the distal one is εκει 'there'. According to our informant (Marina Terkourafi) the former is the doctor's most natural choice when the referent is a palpated point on the patient's body but the patient will shift to the latter if his affirmative or negative answer includes a reference to the point referred to by the doctor. Consulted speakers of a host of European languages seem to prefer to distribute their spatial indexicals in a similar way, in keeping with what has been observed for English and Dutch, and now corroborated by our Norwegian test (Section 4.3.1 above), but in a way different from the judgments of the speakers of Slavic languages that we have consulted. However, for these other European languages we only have judgements from a very restricted number of native informants, often a single person, and never more than a handful of speakers. This list of the other languages includes Danish, Swedish, German, French, Spanish, Portuguese, Italian, Romanian, Irish, Albanian, Finnish and Hungarian.

In some languages, in Europe as well as in other parts of the world, there is a more complex system of demonstratives, including spatial indexicals, with a third lexical value, medial, in addition to the lexical contrast between proximal and distal. The use of the medial spatial indexical, which is associated with what is near to the hearer, is likely to substitute for what is the distal term in the simpler, two-valued system. Spanish is a language with a three-way distinction between proximal, medial and distal. According to Manuel Padilla Cruz (p.c.) the doctor will use proximal *aquí*

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and the patient will use medial *ahí* if he makes no deictic movement himself but proximal *aquí* if he has removed his hand from the patient's body and the patient touches the point where the pain is. Our informant's intuitions were later confirmed by four other native speakers of Spanish.

Speakers of Portuguese will apparently distribute the proximal and medial spatial indexicals in a way that does not differ radically from the way Spanish-speaking people do, but Diana Santos has informed us that it might make a difference whether the doctor is palpating the patient's back, so that he cannot see the place that the doctor is referring to, or else his chest or stomach, giving him eye contact with where the doctor is touching him. In the latter situation, she would not rule out the proximal *aqui* in the patient's response when the patient's spatial term is coreferential with the doctor's. In her Ph.D. thesis, Santos (1996:71) calls proximal *aqui*, medial *aí* and distal *ali* deictic place adverbials, and she adds that Portuguese also has two anaphoric items *cá* 'here' and *lá* 'there', which fall outside the three-valued demonstrative system with a proximal, medial, and distal members. She did not provide us with an argument showing that *aqui*, *aí* and *ali* cannot also be used anaphorically, as when *aí* in the Portuguese sentence of (52) is the term used to refer to the spot represented by the doctor's prior deictic use of *aqui* in the utterance that (52) is a reaction to.

(52) *Portuguese*
Não, aí não dói – aqui é que dói.
no there.MEDIAL not it.hurts here it.is that it.hurts
'No, it doesn't hurt there (medial *aí*) – here (touching a different spot) is where it hurts.'

The doctor's antecedently used proximal *aqui* 'here' and the patient's medial demonstrative in the answer of (52) are coreferential. This pattern of distribution of spatial indexicals across two speakers indicates, on our analysis, that Portuguese respects the speaker-activation constraint on anaphoric use of demonstratives. The doctor's proximal demonstrative *aqui* is deictic, and the patient's coreferential medial demonstrative *aí* is anaphoric, but after the denial the patient is introducing a new discourse referent by means of a deictically used demonstrative (and simultaneous gesture) in the following affirmative declarative, where proximal *aqui* is the focussed element of a cleft sentence with a fronted focus constituent.[8]

It appears that speakers of a large number of languages outside Europe also respect the speaker-activation constraint on anaphoric use of spatial demonstrative indexicals. We asked speakers of the eleven African languages, Akan, Ga, Dangme and Ewe (Kwa, Niger-Congo – Ghana), Dagaare (Gur, Niger-Congo – Ghana), Amharic and Tigrinya (Semitic, Afro-Asiatic – Ethiopia), Luganda and Rutooro (Bantu, Niger-Kordofanian – Uganda), Edo (Benue-Congo – Nigeria) and Egyptian Arabic (Semitic, Afro-Asiatic), to translate the English conversation between the doctor and the patient into their respective languages, filling in the open slots with

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the most appropriate spatial term, or terms. The informants were told what the doctor was doing while asking the question.

While some of these African languages have a more complex system of demonstratives than English, a three-valued system with a medial term that contrasts with the proximal and distal alternatives, the judgments were rather similar across the languages. Most informants said that the doctor had a choice between the proximal term and a non-proximal one but the patient could not use the proximal term. Our Edo and Egyptian Arabic informants were the sole exceptions, as they offered the proximal form as the correct choice of indexical not only in the doctor's question but also in the patient's answer, in accordance with the Slavic pattern described in Section 4.3.2 above. However, the number of informants for each language was often limited to a single person and was never more than five, so it would be premature to draw any general conclusion about a difference in use conditions between the deictic demonstrative in the doctor's question and what we take to be an anaphoric demonstrative in the patient's answer.

Our African informants were also asked if the patient's options would be the same or different if the doctor removed his hand from the patient's body and the patient himself touched the spot singled out by the doctor when producing his utterance. We were informed that under those conditions, the patient not only had the right to use the proximal term but doing so would conform to the discourse conventions of the language.

We do not have much data on the distribution of 'here' and 'there' in our doctor–patient dialogue from outside Europe and Africa, but native judgments from at most two native speakers of four Asian languages – Chinese, Japanese, Korean and Sinhalese (Sinhala) – accord with the majority of European and African languages included in our survey: the doctor will preferably use a proximal term but the patient has to use the medial counterpart. On the other hand, two native speakers of Urdu and the Dravidian language Telugu, respectively, opted for the proximal term in the patient's answer as well as the doctor's question.

5. *HERE* AND THE INTERLOCUTORS' INTEREST IN THE REFERENT: PSYCHOLOGICAL PROXIMITY

Non-proximal *there* is subject to much the same contextual constraints as proximal *here* when it is used for a deictic purpose. One can refer to a building on the far side of a square in front as *the green building here to the right of the fountain* or as *the green building there to the right of the fountain*, and *here* and *there* would appear to be interchangeable in that kind of situation, though the speaker's estimation of the distance between the place of utterance and the referent may have some influence on the choice of indexical term. However, there are situations where what at first glance

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looks like deictic reference with *here* is a use of the proximal term that is solely due to the speaker's subjective interest in the object referred to. Our conclusion is that the reference is not deictic under such circumstances. Token-reflexivity is a necessary condition for the use of *here* that we have in mind, but in addition, the locative referent must have a special cognitive status for the interlocutors, which all other possible candidate referents lack.[9]

Before we begin to examine data where the use of proximal *here* is grounded in the locative referent's special psychological salience for speaker and hearer, we want to stress that we believe this use of *here* to be a language-specific phenomenon, in contrast with the universal validity of the distinction between token-reflexive, anaphoric, and deictic uses of the proximal spatial indexical. English is one language that allows its speakers to say *We're here* and mean 'We have arrived at our destination'. Norwegian is another such language. As suggested to us by Salvador Pons, there are some idiom-like features that characterize this use of *We're here*, which probably explains why there are apparently languages in which it is unidiomatic and downright impossible to say *We're here* and mean 'We have arrived at our destination'.

Imagine two friends who are travelling to a town called Wrenford by coach, a journey that takes four hours from the town where they entered the coach. Both of them fall asleep during the travel, but one of the men suddenly wakes up when the coach stops somewhere, he looks up and reads 'Wrenford bus station' written on a sign on the wall outside, then wakes his sleeping friend and tells him (53).

(53) Wrenford is HERE.

This is a regular token-reflexive use of *here*: 'Wrenford is where we are now'. Compare this to the alternative utterance of the sentence already presented as (46) above (repeated here), but this time produced in the same context as (53).

(46) We're here.

What motivates the speaker's use of *here* in (46) produced in the bus station setting? What is the propositional content of the utterance? If we say that this is a reflexive *here*, we are obliged to address the question of how an utterance of (46), on a reflexive reading of *here*, could be relevant to the hearer. The speaker's intention is not to communicate the *a priori* true statement 'We are where we are at the moment', but as they both know what their destination is, the hearer will understand that the speaker of (46) means they have now reached Wrenford and have to alight before the coach starts moving again. On its referential interpretation, *here* in (46) means 'in Wrenford'. As the interlocutors are in Wrenford at the time of utterance, what could possibly stop us from concluding that *here* in (46) is token-reflexive?

Recall that we analysed the locative prepositional phrase *in the basement* in the adjunct *here in the basement* in example (27) above as a modifier of a token-reflexive

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here. It would be unnatural for the speaker of (46) to shake his fellow traveller awake and produce the alternative utterance of (54).

(54) #We're here in Wrenford.

The referring expression *here in Wrenford* in (54) is of the canonical token-reflexive sort just like *here in the basement* in (27). Its unsuitability as a vehicle of the message 'We have arrived at our destination' shows that *here* in (46) is not the regular token-reflexive use of the proximal spatial indexical, so what pragmatic processing does (46) with the meaning of 'We have arrived at our destination' require?

When used idiomatically to express that this is the end of the journey, the linguistic form of (46) seems to impose an additional constraint on the referential interpretation of *here*, a constraint that does not attach to the identical sentence form if *here* is used deictically with reference to a place on a map. Being their destination, Wrenford, *qua* bus stop, has a unique position in the consciousness of our travelling companions. For this reason we may expect to find that it is acceptable for the speaker to designate this location by using a spatial indexical that requires a higher cognitive status for its referent than any alternative locative expression, namely the proximal indexical *here*. 'Proximity' should be interpreted not just as what is located close to the speaker but also as what is psychologically closest to the speaker in the sense that she takes a particular subjective interest in it, an interest that she shares with her companion. You can use the proximal term *here* to represent something that belongs to your own interest sphere (see Kuno 1987; Kamio 1997).

Does the psychological interest perspective mean that we can present an adequate analysis of the reference of *here* in (46) interpreted as 'We have arrived at our destination' even if we dispense with the reflexivity condition? Definitely not. Although the destination Wrenford has a cognitive status or psychological salience for the two passengers that is not matched by any other place where the coach makes a stop, it will nevertheless be impossible to use proximal *here* with reference to Wrenford in an utterance like (55) produced, say, approximately thirty minutes before arrival in Wrenford.

(55) We'll be here in half an hour.

Here in (55) refers to where the coach is at the time of utterance, and (55) can only mean that the passengers are going to return to this point half an hour later.

Token-reflexivity is a necessary condition for our passengers' use of *here* in (55) as well as in (46) interpreted in our bus station context, but if reflexivity were also a sufficient condition in the case of (46), it should be acceptable to say *We're here!* at any stop on the way to Wrenford with reference to where the coach has currently made a halt. *Here* in (46) can only refer to where the speaker is, but in our stipulated bus station context the reference is restricted to the destination Wrenford.

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We have not yet presented specific evidence for the analysis of *here* in (46) as a non-deictic indexical. One interesting difference between *here* in (53) and *here* in (46) emerges when we try to substitute *there* for *here*. The utterance in (57) would not be meaningful in the context described, but (56) is a fully acceptable alternative to (46).

(56) We're there.
(57) #Wrenford is THERE.

Since (46) and (56) may both be used to communicate that the travellers have arrived at their destination, we have detected one feature that proximal *here* in (46) shares with the deictic use of spatial indexicals. A purely deictic *here* may always be replaced by *there*, but we showed in Section 3 above that a token of *here* which is jointly reflexive and deictic may not be replaced by *there*. On the other hand, we have argued in the present section that *here* in (46) is indeed token-reflexive. How, then, can we account for the fact that (46) and (56) appear to be interchangeable in the going-to-Wrenford scenario?

Suppose the coach driver announced that they were soon to arrive in Wrenford, and that the speaker of (46) heard this but his sleeping friend did not. Thus, (46) would be uttered truthfully without information derived from perception. The speaker's awakening his friend and telling him (46) differs from the speaker's ostensive derivational intention when she is restricting the domain of reference by means of a gestural demonstration like pointing with the index finger or nodding in the direction of the location singled out. The reference would be deictic only if the speaker had pointed to the sign saying 'Wrenford bus station' while producing the indexical, causing the interlocutor to look at the name of the town written on the sign. The name would then be a metonymic pointer to the actual referent, the town of Wrenford. In the absence of a gestural demonstration of the source of information needed to figure out the reference of *here*, there is no solid argument that supports classification of the indexical as deictic in (46). The hearer may still keep his eyes shut at the time when he wakes up, hears his friend saying (46), and understands that they have to leave the coach because their journey is over.

Spoken English requires the same prosodic pattern, *We're HERE*, no matter whether the speaker is informing the addressee where to look to locate the referent of *here*, or pointing at a map, or saying that they have arrived at their destination. While a pitch accent on *here* might be interpreted as a sign of deixis, there are languages in which *here* must be unstressed when the intended message is 'We have arrived at our destination'. In Norwegian, the pitch accent then obligatorily falls on the verb, which enables the speaker to leave *her* 'here' unstressed. *Vi ER her* 'We ARE here' is the only right accentual pattern if the speaker's intention is to say that they have come to the end of their journey. The obligatory de-accenting of the indexical, in spite of the

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fact that the utterance is discourse-initial, testifies to the special contextual salience of Wrenford for speaker and hearer and to an analysis of the proximal term in this construction as non-deictic.

What distinguishes the reference act in (46) from ordinary cases of spatial reflexivity is the fact that Wrenford as our travellers' destination occupies a privileged place in their minds which evidently permits the speaker to refer to this town by means of either spatial indexical: *here* as in (46) or *there* as in (56).

As noted at the beginning of the present section, *here* in (46) may have special semantic properties attributable to certain idiomatized features of the linguistic form *We're here*. The grammatical subject is *we*, and this pronoun must be interpreted inclusively so that the addressee is included in the reference. The kind of formal changes to the syntax of (46) that will preserve the idiomaticity of *We're here* are apparently very few. The interrogative of *Are we here?* does preserve its idiomatic flavour, but an attempt to inform the sleeping travel companion by telling him *You are here!* would be a much less acceptable way to inform him that he is now in Wrenford. Having realized that the coach is soon going to stop at Wrenford bus station, one might think it should be acceptable for the speaker to shake his friend awake and utter (58), but this is also not fully idiomatic English in our context.

(58) (#)We're here in a few minutes.

On the other hand, an utterance of (58) without the complement *in a few minutes*, i.e. (46), would work even if it was produced somewhere in the outskirts of Wrenford some minutes before arrival at the bus station. In that context, too, the form with *there*, in (56), would be an acceptable alternative to (46).

While the first person reference is obligatory, the subject pronoun is not necessarily plural, and speaker and hearer may be in different places, as in a telephone conversation. Hungarian is a language that uses the proximal spatial indexical – *itt* 'here' – in the way described here, with token-reflexive reference to a particularly salient place. Imagine a Hungarian speaker who is driving through the main street of her home town and is calling her Mom to tell her she will very soon be parking in front of the house where her parents are still living. The example in (59) is her mobile phone utterance. (The morpheme *-od* present in this example represents the so-called definite verbal inflection in Hungarian.)

(59) *Hungarian*

Itt	vagyok,	nyit-hat-od	a	kaput.
here	*am.I*	*open-COND-DEF*	*DEF*	*gate*

'I'm here, you may open the gate.'

The car driven by the speaker of (59) is in constant movement, so the place of utterance is not the same immediately before and immediately after the production of this utterance, but the reference is still token-reflexive, because the city referred

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to is the same. It is crucial that this city is the speaker's destination. Otherwise the proximal term *itt* would not be acceptable. The speaker's Mom will infer that they are going to meet within a few minutes.

A similar use of the proximal spatial indexical is seen in the following mobile phone exchange conducted in the Akan language, a conversation between Nana and her sister Ekua whose flight from the UK has just brought her back to Kotoka International Airport in Accra, Ghana. (Among the annotations here are MP = '(proximal) motional prefix' and CONS = 'consecutive marker'.)

(60) *Akan*
Ekua: Hallo, Nana.
Nana: Hallo, ɛ-wɔ he?
hallo you-be.at where
'Hello, where are you?'
Ekua: Me wɔ ha. Me-a-duru airport. Kwesi re-bɛ-fa-m a-ba fie.
I be.at here I-PERF-arrive airport Kwesi PROG-MP-take-me CONS-come home
'I'm here. I have arrived at the airport. Kwesi is coming to take me home.'

Ekua's use of *ha* 'here' informs Nana that Ekua is back on Ghanaian soil. Her use of the proximal spatial indexical is dictated by exactly the same rule of usage as the English and Hungarian counterparts in the examples analyzed above. *Ha* refers to Ghana, not more narrowly to the airport where Ekua is at the time of utterance, a place referred to in the next sentence. Still, *ha* is not just token-reflexive in (60). The spatial referent must have a special salience for speaker and hearer. The fact that the speaker is justified in believing the hearer to understand her to be calling because she is back in Ghana is the contextual premise that licenses *ha* in (60).

6. CONCLUSIONS

A pure indexical, in the sense of Kaplan (1989), is a context-sensitive term whose referential value can be resolved provided the contextual parameters of agent, time and location are fixed. *Here* would be a pure indexical if its use had always been token-reflexive. As a pure indexical its conventional lexical meaning is that it refers to the place of utterance. It is plainly true, however, that not all tokens of *here* refer to the place of utterance. Some tokens of *here* are used as deictic terms that are intended to delimit the domain of reference by picking out the location of a perceivable object. Provided the speaker can perceive the place referred to, it is acceptable to project the reference of *here* from the place of utterance and its context-dependent circumference to a specific location that can be perceived from the speaker's vantage point. Other tokens of *here* are anaphoric and depend for their reference resolution on information extracted from a textual antecedent. These apparently spatial anaphoric items may have a temporal rather than a spatial reference.

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In order for deictic reference with *here* to be immediately recognized as a deictic act by the hearer, the speaker typically lets the indexical occupy the sentence-initial position and sees to it that it is accompanied by an extra-linguistic indicator of the direction of the location singled out. The extra-linguistic and the linguistic indicator of deixis work in tandem as devices that convey procedural information which offer the hearer ostensive evidence of the speaker's 'derivational intention', a theoretical concept introduced by Powell (2010) that concerns how the speaker intends the hearer to contextualize and draw otherwise potentially less accessible inferences that fall within the speaker's informative intention (as defined by Sperber & Wilson 1986). Ostensive evidence of the speaker's derivational intention is intended to minimize the risk of misunderstanding between speaker and hearer and to reduce the processing effort for the hearer.

When the proximal spatial indexical is used deictically in written texts, for example in a caption next to a picture, the deictic demonstration may be replaced by a description drawing the reader's attention to the location of some object in the picture, as in *Here we see Jean Cocteau taking part in a flower parade in Cannes*. The communicator's initiative to activate a new discourse referent by using a proximal spatial indexical when the referent's identity can be determined via perception is likely to be due to a strong cognitive mechanism that works independently of individual grammars.

According to Recanati (1993:123), 'the information which is relevant to my *here*-thoughts is whatever information I gain in virtue of occupying the place where I am'. This crucially includes information gained through a mental processing of what I am able to perceive when occupying a given place. To the extent that I judge such information to be relevant to someone present, whether companion or bystander, I can turn my '*here*-thought' into an ostensive *here*-message where my deictic use of proximal *here* indicates that the place referred to may be perceived from the place I am occupying at the time of utterance.

When the proximal spatial indexical is used anaphorically, its reference depends on information found in a discourse antecedent, whether the antecedent is interpreted against a set of discourse-based contextual assumptions or against a perceived place that the antecedent represents. The antecedent of a spatial indexical used anaphorically does not have to be a linguistic form that provides a description of the referent. A token of *here* or *there* used for deictic reference to the location of a perceived object is good enough as antecedent of a later anaphoric indexical, because the information needed to resolve the reference of the two coreferential terms then comes from interpretation of a sensory stimulus, not from interpretation of a linguistic description.

What we have referred to as the speaker-activation condition on the distribution of the proximal spatial indexical *here* as an anaphor applies strictly in some languages,

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while other languages are more lenient with regard to the possibility of employing the proximal alternative across the participants in a conversation, and there may be languages that do not observe the speaker-activation condition at all. We have found reasons to believe that the linguistic restrictions governing the distribution of the proximal spatial indexical as anaphor are more lenient in the Slavic languages than in English, Norwegian, Dutch and apparently numerous other languages. It has not been our objective to plot language areas around the world where the speaker-activation condition holds and where it appears not to hold. What we hope to have demonstrated is that the spatial term used by the patient in the doctor–patient dialogue discussed in Section 4 is not a deictic or token-reflexive indexical but one that is anaphoric upon the doctor's earlier deictic reference to a specific location. The doctor's indexical is deictic, occurring alongside a gestural demonstration in an act of introducing a new discourse referent. If a spatial proximity relation between the locative referent and the speaker were the only parameter determining the patient's use of the spatial indexical, we would have no explanation for the fact that, in a large number of the world's languages, the patient is denied use of the same proximal spatial indexical that the doctor used.

We have pointed out that the rules governing the distribution of the English anaphor *here* are not the same as the rules governing the distribution of the deictic *here*, but those languages that do not obey the speaker-activation condition on anaphora permit, and possibly favour, use of the proximal spatial indexical as an echo of the interlocutor's previous deictic use of the same term. This fact does not warrant the conclusion that *here* is not an anaphoric term for the second speaker in those languages. While it may look as if the patient in our dialogue is 'closer to' the location he refers to than the doctor is, this is an illusion rising from a failure to appreciate the difference between deictic, token-reflexive and anaphoric use of proximal spatial indexicals. In the example where Ravenna is identified on a map (Section 4.2), the second speaker may be further removed from the map of Italy as domain of reference than the first speaker, so we might expect the second speaker to employ a medial or a distal spatial term in that context. Nevertheless, our Czech and Russian informants' remarks on the distribution of proximals and distals in the exchange on Ravenna showed that they felt the proximal term was the right choice for the second speaker even in the map of Italy context. We do not need different accounts of the distribution of spatial indexicals in the doctor–patient dialogue compared to the map dialogue. Intuitively it is the same cognitive mechanisms that are at work in both instances, even for native speakers of a language that does not adhere to the speaker-activation condition on proximals.

Kaplan (1989) was aware that neither spatial *here* nor temporal *now* necessarily refers to the place of utterance and the time of utterance, respectively, and that resolution of the reference of non-token-reflexive uses of *here* depends upon the

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communicator's intention to refer to a unique entity that is not located at the spatiotemporal centre. Its referential interpretation may rest on the retrieval of information expressed in a linguistic antecedent (anaphoric use of *here*) or on a demonstrative indication of the location of a perceivable referent (deictic use of *here*). Kaplan made a terminological distinction between demonstratives and indexicals (in the sense of 'pure' indexicals, of which the first person singular is the epitome). Although we have not complied with this terminological practice ourselves, we have no substantive objection against it. We insist, however, that all uses of *here* – token-reflexive, anaphoric and deictic, plus the use of *here* to indicate psychological proximity discussed in Section 5 – pertain to the same lexical item. The fact that we have not come across a single language that consistently uses one linguistic form for the basic token reflexivity and some other linguistic form for the anaphoric or the deictic use of the proximal spatial indexical has convinced us that English *here*, like corresponding proximal terms in other languages, is a single lexical item that can be put to different uses due to a cognitively motivated link between the reflexive function and the other uses to which this word may be put. A linguistic ambiguity analysis of the different uses of *here* would also fail to explain why two uses may combine, as in an utterance of *I'm here* spoken by someone who is letting the sound of her voice (source of information identified by deictic means) draw attention to her whereabouts (reflexivity).

An analysis of the different uses of the proximal spatial indexical in terms of lexical homonymy has no explanation to offer, but what about lexical polysemy? An analysis in terms of polysemy would imply that *here* is a word with more than one sense, although the senses are conceptually related in some way, maybe metaphorically, maybe metonymically. Received opinions on polysemy do not support an analysis of *here* as a polysemous word. Indexicals are words whose semantic interpretation is entirely context-dependent, so they are not polysemous. They lack the conceptual structure of polysemous members of an open lexical category.

Nevertheless, there are certain proprietary conditions of a pragmatic sort that apply to licit token-reflexive, as opposed to deictic or anaphoric, use of *here* and its counterparts in other languages, and special contextual conditions are also tied to the deictic and the anaphoric use. A given token of the proximal spatial indexical may be interpreted token-reflexively, deictically or anaphorically, and the hearer's choice of a derivational strategy that eliminates two, occasionally just one, of these options does involve some kind of context-dependent disambiguation task. We have tried to account for our intuitive feeling of the existence of some sort of 'pragmatic ambiguity' in this word in terms of the speaker's derivational intention. The hearer has to compute what inferential strategy matches the speaker's intention to inform, in our case to refer to a unique place, and both gesturing and the syntactic configuration

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of linguistic elements may be important as context-building indicators, in other words as indicators of the speaker's derivational intention.

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NOTES

1. Within certain schools of cognitive pragmatics today, this view of the interface of semantics and pragmatics is far from controversial. There are contextualists who believe in massive pragmatic input to the determination of truth-conditional content in both the linguistic and the philosophical camps (e.g. Carston 2002; Recanati 2004; see also the volumes edited by Preyer & Peter 2007 and Baptista & Rast 2010).
2. Not all languages are like English in this respect. A speaker of German may use *da* as opposed to proximal *hier*, and a speaker of French may use *là* as opposed to proximal *ici*, for token-reflexive 'here'.
3. A metarepresentation is a representation of a representation, as in a report of someone else's thought or mimicking what someone said on a particular occasion, and a thought expressed

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in a work of fiction is the author's metarepresentation of a thought entertained by one of the fictitious characters the author has created (e.g. Noh 2000; Sperber 2000; Fretheim 2010).

4. Cornish (1999) emphasizes that deixis serves to introduce a new discourse referent into the discourse model and that anaphora signals 'a continuity of reference in terms of a referent which is already resident in that discourse model' (Cornish 1999:68). This implies that demonstrative pronouns and determiners are anaphoric, and not deictic, when their semantic value depends on information introduced in the previous discourse, but demonstratives are deictic, and not anaphoric, when their semantic value is determined through interpretation of an extra-linguistic stimulus. It also implies that the deixis/anaphora distinction is generally not encoded but depends on the use that a speaker makes of a given indexical or other referential term. We have no problems with this terminological practice.
5. This is not what has been referred to as 'deferred reference' or 'metonymical reference' (see Nunberg 1979, 1995, 2004a, b; Ward 2004) but it resembles it in a superficial way. Nunberg (1995) asks us to imagine a restaurant patron who is showing a key to a valet, saying *This is parked out back*. Here the key visible to the addressee is what Nunberg calls the 'index', while the speaker's car, whose location is described in the predicate phrase, is the referent. The vantage point of a speaker's utterance of *Here's the cathedral* appears to have something in common with Nunberg's index. The referent is the cathedral that is visible from the place of utterance and *here* would not have been used appropriately without the perceptual link between the place of the utterance, comparable to Nunberg's 'index', and the referent located at some distance from the place of utterance. There is one significant difference, though. The reference of *here* would arguably have been deferred if there was no option available to us other than calling *here* in *Here's the cathedral* a token-reflexive term, but this is deictic reference to a church that is visible from the place of utterance, it is not at all reference to the place where the speech act is performed. With Nunberg's example *This is parked out back* there appears to be a deictic reference to the key in the speaker's hand, at least at the level of encoded logical form, but this reference cannot possibly play any role in the semantics resulting from the combination of the content of the subject noun phrase *this* and the content of the predicate phrase *is parked out back*. A key in the speaker's hand cannot be parked in the backyard. It is only when the key is recognized as a metonym for the car the key belongs to, that the compositional rules which combine the content of the subject and the content of the predicate yield a propositional result that conforms to our beliefs about what can possibly be true and what has to be false. None of this is present in the utterance of *Here's the cathedral* by someone located a block away from the cathedral.
6. Hungarian *itteni* is not always used deictically, so it is not mandatorily accompanied by a pointing gesture or by an ostensive look in the direction of the referent. The word can also be an anaphoric expression, and then it is often most suitably translated into English by the context-sensitive word *local*, as when the complex demonstrative phrase *az itteni gyógyvíz* (DEF *here*.ADJ *thermal.water*) of the Hungarian sentence *Hévíz legfőbb vonzereje az itteni gyógyvíz* found in a tourist brochure is translated as 'the local thermal water', the meaning of the entire sentence being 'The main attraction of Hévíz is the local thermal water/the thermal water here'. Proximal *itteni* as anaphor may be said to invite the reader to experience a mental transportation to the town of Hévíz as a destination for tourists.
7. Were we to follow Cornish (1999), A's *here* in (46) would not be the antecedent of B's *there* but would rather be the 'antecedent-trigger', a linguistic item that triggers the hearer's inference needed to identify the intended antecedent. We have not adopted this terminological practice. In our opinion it conflates the two concepts of 'antecedent' and 'referent'.

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8. Maria Luiza Cunha Lima, native speaker of Brazilian Portuguese, reports that when a speaker touches a spot on her own body, using it as a model in an act of asking if it hurts in the corresponding part of the interlocutor's body, she can say *Aqui lá?* 'here there', where *aqui* deictically picks out the particular body part that the speaker is touching and *lá* is used deictically to turn the hearer's attention to the corresponding area on the hearer's body. It is apparently impossible (Diana Santos, p.c.) to use *lá* deictically in European Portuguese.
9. Here we are not using 'cognitive status' as a technical term made familiar through Gundel and colleague's publications on the Givenness Hierarchy (see e.g. Gundel et al. 1993).

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