A critical look at the notion 'pro-form'. Evidence from indexical markers, spoken discourse and (French) child language

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ABSTRACT

The notion and term 'pro-form' are widely used in current Linguistics, in particular in studies of anaphora. They represent a generalisation based on the etymology of the term 'pronoun', extended thereby to 'pro-verbs', 'pro-VPs', 'pro-NPs', 'pro-APs' and 'pro-sentences'. The conception underlying such a usage is evidently that of the substitution of some already-mentioned textual expression by an attenuated expression (the 'pro-form'), thereby avoiding a redundant repetition of the antecedent expression at that point in the evolving co-text. The present article's goal is to show that this account is inaccurate as well as misleading as a representation of what actually goes on in extended texts, by focusing on three areas of investigation: first, a characterisation of the range of indexicals purportedly operating as 'pro-forms', together with the three major types of indexical referring procedure which they help to realise (anaphora, deixis and 'anadeixis'); next, a study of their functioning in adult unplanned interactive spoken discourse; and finally, a brief survey of the acquisition of certain French indexicals by very young children. The article proposes an alternative conception of indexical reference in discourse.

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1. Introduction

In the literature on indexical reference (discourse anaphora in particular), the central preoccupation tends to lie predominantly with the resolution of indexicals (context-bound referring expressions) as a contribution to the **representation** of the states of affairs designated: it is often a question of a truth-conditional approach to these markers, that is, of specifying which amongst a set of candidate referents is the one to be assigned to a particular indexical. Yet without denying the significance of this factor, it by no means exhausts the area. For there is also the crucial interpersonal dimension (both interlocutive and intersubjective), as well as the contribution indexicals make to the structuring of the discourse associated with a given text in conjunction with a relevant context (cf. Cornish, 2011, pp. 761–765).

As we shall be seeing (§2), each indexical expression type has a particular set of discourse-referential properties, which are not derived from any 'textual antecedent' or potential 'substitutum' in context. They are *sui generis*. In actual fact, it is the

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indexical referring procedure (deixis, anaphora, or 'anadeixis') which the speaker/writer chooses to deploy at a given point in an ongoing discourse that determines its discourse functioning, not the choice of indexical *per se*.

Now, the term 'pro-form' is widely used in current work in Linguistics, in particular in studies of anaphoric reference within texts. Indeed, University students both of language and languages are encouraged to use it in analysing occurrences of indexical expressions within texts, whether these be deictics or anaphors. The purpose of this paper is to re-examine this usage, and to assess its accuracy and relevance. Such an assessment is important, since it is clear that the technical terms used in the analysis of language data are a reflection of the point of view adopted by the analyst—in short, the theoretical framework underlying and implied by the details of the analysis itself. We shall be proposing an alternative, more proactive conception of indexical reference in discourse.

The term 'pro-form' clearly signifies via its morphological makeup 'a form used in place of something else', which implies that the 'something else' could otherwise have occurred in its place. A means, then, of ensuring greater concision and economy, avoiding unnecessary repetition and hence redundancy. Translated into theoretical terms, this is tantamount to a relation of substitution. Hence according to this conception, as far as the phenomenon of anaphoric reference in texts is concerned, a 'pro-form' will be used in order to avoid repetition of an 'antecedent', a textually-occurring lexically-complete expression whose referent the 'pro-form' in question also targets (thereby realising a relation of coreference with it).

Yet there are several arguments that can be levelled against such a conception, and hence against the use of a term which directly reflects it. The first stems from an examination of the semantics and pragmatics of the (indexical) expression types which are habitually ranged under the heading of 'pro-form', and from the ways in which they connect with their referents in actual texts. Members of this diverse set of form types—3rd person pronouns, null anaphors, demonstrative expressions, definite and possessive NPs and so on—have highly specific indexical properties that are peculiar to each such type, properties which cannot simply be attributed to those of the supposed informationally explicit expressions for which they are claimed to substitute as 'pro-forms'. See §2.3.3 below for characterizations of the discourse-pragmatic properties of a range of English and French indexical markers.

However as Keizer (2012) indicates, virtually all the existing accounts of so-called 'pro-forms' in the literature characterise these as (semantically) 'empty', or 'nearly empty' (2012: 401) markers, which as such clearly need to be 'infused' with the sense and (where relevant) reference of the 'textual antecedent expression' for which they are said to substitute. There are also instances (more widespread in actual usage than is often allowed for) where there are no 'textual antecedents' to be 'substituted' at all: for example, so-called exophoric or 'indirect' occurrences (cf. Cornish, 1999, 112–148, 2005 and Sections 2–4 below).

The second type of argument stems from an examination of unplanned speech.[2] Here, the use of each subtype of such expressions is in response to the need to express a particular discourse-pragmatic, interactional value at the point of use, values which quasi-repetitions of the 'textual antecedent' (where there is one) in place of the indexical actually used, could never assume: see §3 for a consideration of a variety of indexical expression types as used in unplanned interactive speech.

A third area from which critical evidence may be drawn is that of (here, French) child language acquisition, where it is apparent that clitic pronouns and demonstratives occur early in the child's developing mastery of its native language. The different functions which they assume contrast with those of lexically explicit expressions from the onset onwards. Indexicals are first articulated in dialogue and joint attention before entering coreferential sequences in monological discourse. Hence very young children would be highly unlikely to 'substitute' such expressions at the point of retrieval by the inexplicit indexical forms which they acquire so readily at a very early age (see §4).

Let us look at each of these areas in turn, starting with the range of indexical form types themselves.

2. The range of indexical expression types: *sui generis*, or 'pro-forms'?

2.1. Some previous critiques of the (strict) substitutional, text-based conception of indexical reference

We begin by summarizing several key critical treatments of the purely text-based, substitutional account of indexical reference, in order to contextualize our own contribution within certain earlier critiques: we have chosen three representative discussions, namely, Brown and Yule (1983, Ch. 6), Jones (1995) and Keizer (2012).

2.1.1. *Brown and Yule (1983, Ch. 6)*
Brown & Yule (henceforth B&Y) (1983, Ch. 6) provide a convincing critical survey of Halliday & Hasan's (henceforth H&H) (1976) classic account of indexical reference in terms of their conception of Cohesion, involving five subtypes: 'reference', 'substitution', 'ellipsis', 'conjunction' and 'lexical cohesion'. Here we concentrate on what they term 'reference'.

Broadly speaking, for H&H (1976, p. 2), a text is such if it contains explicit marking of binary 'cohesive relations', whereby "the interpretation of some element in the discourse is dependent on that of another. The one presupposes the other in the sense that it cannot be effectively decoded except by recourse to it" (1976, p. 4). This conception is purely intra-textual, or 'endophoric', and does not involve any appeal to information from sources outside the text itself. The relation of "reference"

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[2] See e.g. Miller and Weinert (1998).

(i.e. anaphoric coreference) involves the anaphor actually "referring back to" (1976, p. 2) the 'textual antecedent' (*qua* linguistic expression) within the co-text.

B&Y counter this conception by invoking the following problematic factors for it. First, there can be no "reference" in H&H's sense and hence no cohesive relation whenever there is no 'antecedent' expression available in the co-text for a given anaphor. See the authors' example (35) (1983, p. 215): ((A large dog approaches A and B. A says to B:) *I hope it's friendly*). Such examples, which are by no means marginal or marked, function anaphorically in just the same way as canonical, so-called 'endophoric' instances.

Second, H&H's (1976, p. 52) view that in a text containing an 'antecedent' reference expressed, for example, by a proper noun followed by a sequence of coreferential 3rd person pronouns, thereby forming a "chain" of coreferences, "each occurrence [is] linked to all its predecessors up to and including the initial reference" runs totally counter to the way in which the addressor or reader operates in processing such sequences in real time. As B&Y (1983) rightly observe, rather than checking back laboriously through the co-text[3] to find the correct 'textual antecedent', the understander constructs a mental representation of the referent at issue, and then expands this representation subsequently with the information predicated of it via each of the pronominal continuations. Such a representation is left entirely out of account by H&H (1976), all "cohesive" phenomena being assumed to operate entirely within the domain of the (co-)text.

Third, in connection with change of state predicates such as cooking verbs in recipes, the operations required to be carried out in relation to the initially raw ingredient(s) mean that any pronoun or other anaphor used in realising such utterances cannot be understood as referring back to or via the initial antecedent expression evoking the relevant raw ingredient(s), prior to any culinary operation carried out on it. Instead, their interpretation will evidently need to take into account the relevant change of state predicated of the anaphor's referent via the verbal or other predicate of the host clause. Again, it is the existence of the mental representation of the evolving situation at issue (what we are calling 'discourse': see §2.2 below) which will be best placed to accommodate these changes: see B&Y's (1983, p. 202) examples (16) (*Kill an active plump chicken. Prepare it for the oven, cut it into four pieces and roast it with thyme for 1 hour*) and (17) in this regard.

Fourth, the 'antecedent' expression under H&H's (1976) conception would need to be syntactically as well as semantically parallel to the (structure underlying the) anaphor. Yet current usage as reflected by corpora of utterances reveals that this is by no means always the case (cf. the phenomenon of indirect anaphora). See B&Y's (1983, p. 203) example (18) *The child may set the pace. Since the literature is mostly anecdotal, we don't mind offering* one *of our own*. According to H&H's account, 'substitution' by the indefinite pronoun *one* could not occur here, since there is no parallel noun '*anecdote*' in the surrounding co-text to enable it to do so, but only the adjectival form *anecdotal*. See also B&Ys' similar example (19) on p. 204. In all such instances (and they come in many and varied types), it is the speaker's conception of the referent at issue at the point of retrieval, driven via what is predicated of it, which determines and motivates the superficially inconsistent markings. This is yet further justification for the need to invoke an evolving, revisable mental discourse representation operating in parallel with the production and processing of the text associated with a relevant context, within which such changing conceptions may be represented (see §2.2 below).

Fifth and finally, it is by no means the case, as the Cohesion model implies, that the antecedent expression, when it exists, provides all the information required to interpret the anaphor (see the discussion of change-of-state examples above). B&Y rightly lay great emphasis on the role in this respect of what is predicated of the anaphor's referent for its complete interpretation. We have incorporated this within what we call the 'host predication' (see §2.3.3 below), which we argue is the discourse unit which functions to integrate the relevant parts of the co-text via an anaphoric or other indexical relation, and not the anaphor in and of itself.

2.1.2. *Jones (1995)*

Jones (1995) is a thoroughgoing critique of the notion of 'substitution' in terms of an epistemological frame of reference, seeking to determine what it reveals as to the object, nature and methodology of linguistics, as distinct from those of other, related disciplines. Unlike Brown and Yule (1983), Jones does not devote attention to the particulars of indexical expressions, though he does consider a certain type of what the Cohesion model as well as a range of Chomskyan Generative ones would consider as potential 'antecedents' (namely, various types of proper names: see the discussion of his examples (1) and (2) on p. 15, of (A)–(D) on p. 16, and of (E) on p. 17). The use of these proper names, whether forename alone, surname alone, or complete proper name, is shown to be closely bound up with the **genre** of text at issue—an all-important ingredient of the context associated with an utterance: see §2.2 below—and are not absolute, context-independent expression types.

The upshot of this discussion is that the invented examples offered for analysis by upholders of the classic text-based account of indexical reference (from H&H, 1976 to Chomskyan Generative Grammar and beyond) are conceived in terms of what Lyons (1977) calls "system sentences", pure representatives of the grammatical system of a given language; as such they have none of the attributes of his "text sentences", that is potential utterances, used by a speaker/writer as units of communication in some particular context in order to effect some change in their addressee/reader's store of pragmatic information. As such, according to Jones, the all-important framing **genre** of language use at issue is ignored; yet without taking this into account, the 'antecedent' expressions invoked cannot be seen, according to the (sub)genre at issue, as

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[3] Something which is in any event only conceivable in the written mode.

relatively independent or dependent to different degrees, rather than as otherwise intrinsically autonomous constructs. Reference, including anaphoric and other indexical reference, is clearly an utterance-level phenomenon, and cannot be conceived uniquely in terms of the language system. It is speakers/writers who refer, in cooperation with their addressees/ intended readers, not linguistic expressions (noun phrases) as such.

There is much in common here with the criticisms which B&Y (1983) level against the Cohesion model of anaphoric reference (see §2.1.1), in terms of binary relations involving discrete individual expressions occurring within a homogeneous, normative text which would appear to reflect the canonical written mode.[4]

However, in subsection 2.2 (pp. 23–26), Jones appears less convincing in dismissing certain linguists' invocations, over and above the text itself, of the concepts of discourse models or 'universes of discourse'. His rejection of such constructs is motivated by the (apparent or real) lack of connection in the case of some such proposals with the concrete details of the text itself, together with its inevitable associated context. But as we have seen in connection with B&Y's (1983) account of anaphoric reference in discourse, a mental representation of the discourse associated with a given text and its context is indispensable for a realistic account of what is going on in indexical reference—for all the reasons given in §2.1.1 above (see also §2.2 below on this topic). By eschewing the 'discourse' dimension (in our sense), Jones is in effect reverting to the classic text-dependent conception of anaphora which he argued cogently against in the first part of his article, whereby the entire form, meaning and discourse-pragmatics of indexical reference are handled at the single level of the text (albeit augmented with the contextual aspects noted by the author).

2.1.3. *Keizer (2012)*

Keizer (2012) purports to be a critique of the notion 'pro-form' in current and older accounts of anaphora in terms of the substitution of a semantically and syntactically parallel antecedent expression in the surrounding co-text—and in particular, of the standard Functional Discourse Grammar (FDG) conception (see Hengeveld and Mackenzie, 2008). The author selects a number of English indexical markers for detailed study, using as a basis examples drawn from corpora of utterances: namely, the indefinite pronoun *one*, the predicate indexical *do so*, the demonstrative pronouns *that* and *those*, and certain (non-) anaphoric uses of the 3rd person pronouns *he, she* and *they*. Her section 2 provides a concise but helpful survey of a large number of traditional as well as theoretical accounts of the phenomena at issue in terms of substitution, and section 3 is a critical discussion of the standard FDG treatment of them.

Keizer herself, however, remains fairly traditional in her approach, retaining the term "proform", even though she is at pains to point out the invalidity of a strictly substitutional operation of the forms concerned within actual texts. Like B&Y (1983), Keizer gives examples ((27a,b), p. 406 and (28a,b), p. 407) where there is no relevant nominal constituent ('antecedent expression') in the co-text to justify the "proforms" *she, they, they* and *it*, respectively. See also B&Y's example (35), cited in §2.1.1 above: first counter-argument to the Cohesion model. Yet Keizer's solution to this and other problems for the substitutional account of "proforms" is to propose that "anaphoric proforms need not have an exact antecedent" (2012, p. 407). By this she has in mind instances where there is (usually) a relevant 'textual antecedent' available within the co-text, but "where this antecedent does not form a unit in underlying structure". In her section 5, the author presents for analysis a number of illustrative attested examples from two English corpora: the British National Corpus (BNC) and the Corpus of Contemporary American English (COCA). These demonstrate the validity of her claim that "proforms do not serve to replace semantic or syntactic units" (Keizer, 2012, p. 407). However, the term "replace" is nonetheless used in analysing all these problematic examples.

As a contribution to the current development of the FDG model, Keizer proposes the following definition of "proforms" (2012: 412, items (58a,b)):

(a) Proforms correspond to elements at the Interpersonal or Representational Level which do not contain lexical information: as such they are themselves semantically (nearly) empty. For their interpretation proforms therefore rely on information provided elsewhere (the previous discourse or the immediate discourse situation). The elements they correspond to need not form a separate unit (or layer) at the Interpersonal of Representational Level

(b) At the Morphosyntactic Level proforms are grammatical words filling an obligatory position in the selected template, either at the level of the Clause (typically Subject) or at the level of the Phrase (typically the head)

The key formulations in these definitions, which we will endeavour to counter in the remainder of the article, are as follows: (i) the notion that "proforms" are "semantically (nearly) empty" (definition (a)); and (ii) the idea that "proforms" rely (solely) on "information provided by the previous discourse [by which is in effect meant the co-text] or the immediate discourse situation" (also definition (a)). Regarding point (i), if all "proforms" are semantically (nearly) empty expression types, then they should in principle all be capable of fulfilling the entire range of anaphoric or other indexical functions. However, this is plainly absurd. Furthermore, the 'content' of the personal pronouns in English given in item (14) (p. 404) is (apart from the symbol "+id", indicating the fact that the intended referent is assumed to be identifiable by either the Speaker or the

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[4] See Linell (2005) for cogent arguments against the tacit modelling by linguists of their analyses in terms of this mode of expression—a procedure reflected in the frequent use by linguists of invented, maximally decontextualised examples that are often presented for analysis.

Addressee) purely denotational in character, and does not characterize their potential discourse-pragmatic referring properties (cf. the criticisms of Linell, 2005, p. 78). The picture painted of the "proform" types at issue is of a passive, purely representational set of markers: they are "(nearly) empty semantically", and need to "retrieve lexical information from elsewhere" (p. 414). This latter requirement means that the only place from which such information can be retrieved (within the framework of the FDG model) is the preceding or following co-text. So in fact we are still dealing with an essentially text-based, quasi-substitutional account of the forms concerned.

In her §6.1.2, Keizer sketches the discourse-pragmatic dimension of the "proforms" she is concerned with, adopting Chafe's (1976: 30) three-way distinction in terms of memory partitions amongst "active" (concepts currently "in a person's focus of consciousness"), "semi-active" (concepts "in a person's peripheral consciousness"), and "inactive" (concepts "currently in a person's long-term memory, neither focally not peripherally active") statuses. Unaccented 3rd person pronouns have referents of the "active" subtype, but may (in cases of indirect anaphora) also have "semi-active" ones which may be "inferred from accessible information" (Keizer, 2012: 413). "Deictic pronouns"[5] also have "semi-active" ones. The author characterizes all these "proform" subtypes as functioning "to instruct the Addressee to retrieve information (of a particular kind…) from either the focus or the periphery of their consciousness".

This is a distinct improvement over the definition given in (a) above (Keizer's (58a)), where "proforms" were characterized as needing to access information deriving from "the previous discourse [i.e. co-text] or the immediate discourse situation" (Keizer does not draw a distinction, as we do (see §2.2 below), between "discourse" and "text"). However, the two-part definitions given in (58a,b) on p. 412 are not revised accordingly, and are simply reproduced as such in the Conclusion (p. 419).

Thus Keizer's (2012) conception of (pronominal) indexical reference —though she does not in fact use this term—, while it is critical of strictly substitutional accounts of pronominal reference in texts, is still essentially text-dependent and substitutional in the way the system operates. The characterization of its discourse-pragmatic dimension, which would enable the analyst to provide a realistic, user-based account of its functioning in discourse, is not fully worked out.

2.2. Some useful concepts and distinctions in the study of indexical reference: anaphora, deixis and textual/discourse deixis ('anadeixis')

At the outset, it is necessary to draw a fundamental distinction amongst the dimensions of *text*, *context* and *discourse*, as a preliminary to the discussion which follows. Very briefly, *text* refers to the ongoing physical, perceptible trace of the discourse participants' communicative and expressive activity: this includes the verbal content of an utterance, but also prosody, pausing, semiotically-significant gestures (non-verbal signals), and of course punctuation, layout and other graphic devices in the written form of language. The addressee or the reader exploits these textual features in order to infer the *discourse* being co-constructed by the participants.

Discourse, in this sense, is the ever-evolving, revisable interpretation of a particular communicative event, which is jointly constructed mentally by the discourse participants as the text and a relevant context are perceived and evoked (respectively). See also Haberland (1999) and Renkema (2009, pp. 9–10) for similar distinctions between *text* and *discourse*.

Context is also conceived here in cognitive terms in relation to the mental representations which speaker and addressee are jointly developing as the communication proceeds, and as such it is continuously evolving. The context in terms of which the addressee or reader creates discourse on the basis of text comprises at least seven aspects: the domain of reference of a given text, the co-text, the discourse already constructed upstream, the genre of speech event in progress, the socio-cultural environment assumed by the text, the interactive relationships holding between the interlocutors at every point in the discourse, and the specific utterance situation at hand. The most central of these aspects is the context of utterance of each discourse act: this functions as a default grounding 'anchor' for the discourse being constructed as each utterance is produced. The context is subject to a continuous process of construction and revision as the discourse unfolds. So context is the mediating, anchoring or grounding dimension of any act of communication. Note also that both the prior text and the already-constructed discourse may and do act as context for upcoming utterances. *Text, context* and *discourse* are interdependent, interactive and inter-defining.

The relevance of this distinction for the study of indexical reference lies in the fact that there is a complex interaction in all such instances amongst the dimensions of *text*, *context* and *discourse*: thus the text itself is not the sole, unique factor at work in this. This interaction involves an initial occurrence of a relevant *antecedent trigger* (a verbal fragment, non-verbal signal or percept: see §2.3.1 below) at the *textual* level, which will then give rise to a contextually-determined *antecedent* (a discourse representation providing a provisional description in terms of what is predicated or inferred of the discourse referent to which it relates: see §2.3.2 below) associated with its referent on the *discourse* plane. This representation will be updated as information is predicated of the referent involved, inferences drawn, etc., so that when a given anaphor or other indexical together with its host predication back at the *textual* level retrieves it at some later point in the ongoing discourse, its character will be rather different than when it was initially constructed.

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[5] By which Keizer means 1st and 2nd person pronouns; however, this category should also include accented 3rd person pronouns as well as demonstrative ones.

Now, taking *discourse anaphora* first, this constitutes a procedure (realized via the *text*) for the recall of some discourse representation previously placed in discourse memory and already bearing a high level of attention activation. It is essentially a procedure for the orientation of the interlocutor's attention, which has as essential function the *maintenance* of the high level of cognitive activation which characterizes a discourse representation already assumed to be the subject of an attention focus by the interlocutors at the point of utterance.

Deixis, by contrast, is a referring procedure which relies by default on the utterance context to re-direct the interlocutor's attention towards something associated with this context (hence which is potentially familiar to him or her), but to which s/he is assumed not already to be attending. As Kleiber (1994) and other pragma-semanticists have observed, *deixis* causes a break in the continuity of the discourse at the point where the deictic procedure is used, so that in effect the interlocutor is invited to 'step out' of this discourse context to grasp a new referent in terms, by default, of the actual use of the indexical expression within the current situation of utterance. So deixis serves to introduce a new entity into the discourse, on the basis of certain features of the context of utterance.

Now, *textual* (see example (3) in §2.3.3 below) as well as *discourse deixis* (see (1) below) provide what we might call, following Ehlich (1982), an 'anadeictic' transition between the notions of deixis and anaphora, since they consist in using the deictic procedure to point to part of a pre- or post-existing textual or memory representation, but which is not necessarily highly activated. In the case of discourse deixis, the interlocutor will therefore need to exert a certain cognitive effort in order to retrieve it. This interpretative effort will actually involve **constructing** a partially new discourse entity via an inference, on the basis of the discourse representation in question, in order for it to be the subject of a predication, an anchor for the introduction of new information.[6] In English, it may be realized by both *this* and *that*, whether as determiners or pronouns. As an example, see the use of the distal demonstrative NP *those words* in (1) (line 2):

(1) The brash, boorish Pub Landlord, Al Murray's most enduring comic creation, would probably have a thing or two to say about the Al Murray we see blinking back tears in *Secrets from the Asylum. Those words* might include "man up", "wuss", and "not what made Britain great"… ("Lock her up. When Al Murray began to research his ancestors, he vowed not to cry — but then he discovered Laura's fate". *Radio Times* 16–22/08/14, p. 24)

Here, an inference is required at the point where the distal demonstrative NP *those words* occurs in line 2, to the effect that "saying a thing or two" (the antecedent trigger here is the entire initial sentence-utterance) entails using "words" in order to do so—though the lexeme 'word' has not actually occurred in the surrounding co-text. Note that the habitual interpretation of 'having a thing or two to say about someone or something' is in terms of the **content** as well as the illocutionary force with which such an utterance is produced, not the **form** of what is said; hence it is this interpretation which is highlighted via this antecedent trigger. The distal rather than proximal variant of the demonstrative determiner is used, since the writer assumes the inference from "saying things" to "words" requires a degree of cognitive effort on the part of the reader, and is not immediately present mentally. Note that the definite article in its place would be less than fully felicitous (#*the words*), and the plural pronoun *they* would also not be natural.

2.3. Three essential ingredients in the operation of indexical reference: 'antecedent-trigger', 'antecedent' and 'indexical marker' (anaphor, deictic or 'anadeictic')

2.3.1. The antecedent trigger

The '*antecedent trigger*' is not necessarily only an explicit, textual expression (a phrase of some kind). It may also be a textual fragment, a percept or a non-verbal signal: see Cornish (1999, p. 112–148). Hence the discourse entity to be retrieved and/or boosted via the indexical may well have been introduced into the discourse by a variety of indirect means (as well as by more direct ones, of course), endowing it thereby with a sortal category (an indication of the type of entity involved); but the discourse representation to which it corresponds once it is so installed is by no means totally equivalent to the in-context interpretation of a relevant indexical occurring later in the co-text. This is yet another reason why the notion of 'substitution', as reflected by the invocation of the technical term 'pro-form', is inadequate as a characterization of what is going on in the process of indexical reference in discourse.

In (1), as we have seen, the antecedent triggers are the preceding sentential utterance *The brash, boorish Pub Landlord, Al Murray's most enduring comic creation, would probably have a thing or two to say about the Al Murray we see blinking back tears in* Secrets from the Asylum; and in (2) (see §2.3.2 below), the object noun phrase *a lesser-spotted ptarmigan*.

The broader notion of '*antecedent trigger*', in relation to the traditional, canonical textual 'antecedent' of normative written prose, which is required to be morpho-syntactically and semantically parallel to the anaphor, is useful in that it enables us to include both 'exophora' and 'indirect anaphora' as well as 'anadeixis' within the purview of indexical reference.[7]

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[6] See Lyons (1977), Himmelmann (1996) and Diessel (1999) on this topic.
[7] See Cornish (1999, p. 41–3, 2005, 2010) on indirect anaphora. For examples of 'anadeixis', see (1) above and (3) and (4) below.

2.3.2. The 'antecedent'

In the traditional view, an 'antecedent' has in effect a dual role: it is both a textually co-occurring expression, often a full noun phrase, and has a semantic interpretation. It may also have a referent.[8] Under this conception, it is this referent or interpretation (according to the type of anaphor used to maintain it) which the anaphor serves to continue—either via 'internal' coreference or cosemy, respectively. We have subdivided this dual role into two components: the *antecedent trigger* (see §2.3.1), a linguistic expression, non-verbal signal or percept used in some text (as defined in §2.2), and the *antecedent*, a discourse representation associated with the discourse referent (where this exists) introduced via the antecedent trigger. The introduction into a discourse of new discourse entities is always carried out in terms of a particular (set of) attribute(s) (what we are calling the *antecedent*) associated with these entities, in particular those which may be derived via the text and its associated context. As we have seen, this representation will subsequently assume further such attributes as the communication process proceeds.

In our conception, then, the 'antecedent' is a psychologically salient **discourse representation** in terms of which the anaphor refers, denotes or signifies, but not an explicit, co-textually-occurring expression together with its inherent sense and denotatum, as traditionally envisaged. As this characterization suggests, it is a unit of *discourse*, not of *text* (see the distinction drawn earlier in §2.2), and may be constructed via direct interpretation of the co-text in terms of a relevant context, or in terms of the context alone in conjunction with relevant aspects of mutual knowledge, or in terms of inferences from either of these. See also Dahl and Hellman (1995) and Langacker (1996) for similar views, as well as Cornish (1999, 44–7, 2010).

A given antecedent trigger may give rise to several distinct *antecedents* (in this sense), as a function of the possible drawing of inferences, of what is predicated of the former's referent, and/or of the functioning of the type of anaphor chosen to target it. (2) below provides an example, where the antecedent–trigger *a lesser-spotted ptarmigan* in the first sentence gives rise to different 'antecedents' characterizing the referents targeted by the pronouns *they* in the first anaphoric continuation, *it* in the second, and *one* in the third; while in the penultimate and final anaphoric continuations in this example, the entire initial sentence acts as antecedent-trigger for the antecedents created, respectively, via the anadeictic and anaphoric tokens *it* and *that*, in conjunction with what is predicated of these referents:[9]

> (2)   John saw a lesser-spotted ptarmigan when walking on the moors one day. *They* are really beautiful birds./*It* flew off when *it* heard *him* coming./Bob saw *one* too./*It* happened last week./Yet Arthur found *that* rather hard to believe.

2.3.3. The indexical (anaphor, deictic or 'anadeictic')

This is a referentially-dependent indexical (context-bound) expression. The relation does not hold exclusively between antecedent-trigger and indexical—except in the case of metalinguistic occurrences, as in this example:

> (3)   A: Psephology isn't ever completely rigorous, you know.
>   B: Sorry, but what does *that* mean, exactly?

But these in any case, as Lyons (1977) points out, are instances of *textual deixis*, not *anaphora per se*.

First, then, the indexical refers, not to its 'antecedent' (trigger), but in terms of whatever its 'antecedent' (trigger) refers to (see Lyons, 1977, vol. 2, p. 660)—though as noted earlier, in reality this only provides the sortal category of the entity being evoked, since the *antecedent* representation will evolve as the ongoing discourse unfolds.

Second, the discourse referent evoked via the antecedent trigger will not be the same at the point of retrieval via the anaphor as it was at the point of introduction: minimally, what will have been predicated of the referent concerned within the antecedent-trigger predication (and potentially within subsequent predications) will have altered that referent's representation – perhaps even radically.

Third, as already noted, it is not simply the indexical on its own which retrieves the (updated) discourse referent at the point where it occurs in the co-text, but the indexical or 'host' predication as a whole: see the alternative indexical continuations in example (2) above in particular in this respect. So what is predicated of the referent of the indexical acts as a filter, ruling out theoretically possible referents or denotata, and as a pointer, targeting and selecting a salient discourse representation which is compatible with what is predicated of the indexical's referent (see also Yule, 1981; Brown and Yule, 1983, Ch. 6; Dahl and Hellman, 1995).

There are a variety of types of indexical expression—null anaphors, ordinary 3rd person pronouns, demonstrative pronouns, reduced proper names, demonstrative, reduced definite and possessive full NPs, ellipses of various kinds, and so

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[8] Proponents of the text-based conception of anaphoric reference (cf. H&H, 1976: see the definition of "Cohesion" quoted from this work at the very beginning of §2.1.1 above) often confuse the notions 'antecedent' (in its formal manifestation) and 'referent', by describing a given anaphor in some text as "referring back to the antecedent". In our view, it is the discourse referent, associated with the discourse representation constructed via processing a text within a relevant context, which is "referred back to" by the anaphor or other indexical.

[9] Note that the alternatives following the slashes are each intended to follow the initial, thematic sentence, and are not continuations of what immediately precedes them.

on—which each have distinct indexical properties. As such, each functions to realise different kinds of discourse-anaphoric or '-anadeictic' structures and procedures, and each is sensitive to specific types of discourse context and function. See Cornish (1999, pp. 51–68) for some discussion. On the use of demonstratives in narrative discourse, see in particular Himmelmann's (1996) typological study as well as Diessel (1999).

To take the demonstratives first, the proximal forms *ce N-ci, celui-ci* in French, and *this (N)* in English are the marked members of the pairs at issue, the distal members (*ce N-là, celui-là* and *that (N)*) being unmarked. When used in context, nominal demonstratives displaying the 'proximal' distinction present the information conveyed within the NP in question as non-presupposed of the referent targeted. Rather, their head noun (whether accompanied or not by modifiers, complements, etc.) serves to classify the referent targeted in terms of the speaker's subjective perspective upon it.

By hypothesis, the use of proximal demonstrative forms more generally[10] expresses a sense of personal, subjective involvement on the speaker's part with their referent (see the 'strict-anadeictic' *these* in (4) below); while that of distal forms (*là, alors, ce N-là, celui-là* in French, and *there, then, that (N)* in English) presupposes either the speaker's personal dissociation with regard to the referent, or an alignment between speaker and addressee in this respect, whereby the entity targeted is construed as already-negotiated information, in interactional terms. See as illustrations *those words* in (1) and *that* in (2) as well as (3). Example (4) illustrates the 'strict'-anadeictic use of the proximal demonstrative:

> (4)   …The Office for National Statistics, which offers a more comprehensive view [of the market in London house prices] as it is based on mortgages agreed by a cross-section of the market, has only released figures for June. *These* show prices rose by 0.5% in the month to an average of £265,000… (Extract from 'London falling? Why the capital's housing boom may not be over yet', *The Observer*, 24.08.14, p. 41)

'Strict' anadeixis involves the subsequent reference to an entity which may have been evoked earlier in a discourse, but which is no longer —or is not yet, as in (4)— topical at the point of reference: the referent thereby targeted exists in the surrounding discourse, but is not readily accessible; hence the involvement of the deictic dimension. In (4), the referent of the proximal demonstrative pronoun *these* (line 3) ('the figures for London house prices released by the ONS for June 2014'), though already introduced, is less than fully topical at the point of retrieval. In this regard, the ordinary pronoun *they* would not have been fully natural in its place.

By contrast with the lexical component of demonstrative NPs, head nouns (together with their possible expansions) within definite or possessive NPs do not normally represent speaker-based classifications: for the category of entity which they denote is normally presupposed of their referent. Moreover, definite expressions refer inclusively, while non-neuter demonstratives do so exclusively: their use implies that there are other entities of the same type that are not included in the set of entities which they denote. This makes the former NP type, but less so the latter, suitable for realising (pure) anaphora: see the relative positioning of each type of indexical in the Scale in Fig. 1 below.

Referential 3rd person pronouns, for their part, carry the presupposition that their intended referent is currently at the forefront of the communicators' attention: hence there is no need to engage in a cognitive search procedure in order to locate it. Such indexicals, then, are markers of discourse continuity as well as integration: see the occurrences of *him* (line 2), *they* (line 1) and *one* (line 2) in (2) and of *it* in both (2) (line 2) and (4) (line 3).

Fig. 1 (see below) ranges 10 broad categories of indexical markers in the form of a scale of their intrinsic indexical properties.

The *raison d'être* of this Scale lies in the degree of indexicality intrinsic to each individual indexical category retained. What motivates the positioning of the categories and their characteristic markers on the Scale is not only their relative frequency of occurrence in realising the various indexical referring procedures, as manifested in extant corpora, but also, and especially, their morpho-syntactic, semantic and discourse-pragmatic properties which make each of them suitable for doing so.

The two poles are filled, respectively, by 1st and 2nd person personal pronouns, which are intrinsically deictic (functioning 'token-reflexively') and which as such cannot be used anaphorically —i.e. as referentially-dependent expressions; and by 3rd person clitic (in French) reflexive pronouns, which, prototypically, only function anaphorically in terms of binding— what is more within the confines of a minimal clause (so the context in which they operate is highly constrained). Notice that the reference of these two types of polar markers is realised quasi-automatically, without the understander needing to go through a process of 'resolution' via the context.

Regarding the span of the Scale marked 'Anadeixis', this involves for the most part a range of **demonstrative-based expression types**, distributed in between the two polar categories. These demonstrative expressions (adverbs, NPs and pronouns) are ordered as a function of the proximal (marked) vs. distal (unmarked) distinction which they carry morpho-logically—the marked variant possessing a higher degree of deicticity than the unmarked one (cf. Langacker, 2002, p. 34; Lyons, 1975). The demonstrative adverbs (e.g. French *maintenant/alors, ici/là*,[11] and English *now/then, here/there*) are placed at a higher position (i.e. closer to the 'Deixis' pole) than the lexical NPs, and the lexical NPs higher than the corresponding

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[10] *Ici, maintenant, ce N-ci, celui-ci* in French and the equivalent English expressions *here, now, this (N)*.

[11] See De Mulder and Vetters (2008) for the temporal adverb *maintenant* 'now', and Kleiber (2008) on *ici* 'here' and *là* 'there'. For De Mulder and Vetters, the proximal adverb *maintenant* realises only deixis, and its distal temporal counterpart, *alors*, is more suited to functioning anaphorically—or, as we would say, "anadeictically". For Kleiber, the same is true of the pair of spatial adverbs *ici* (proximal) and *là* (distal). For English *now*, see Schourup (2011); and for *then*, Schiffrin (1990).
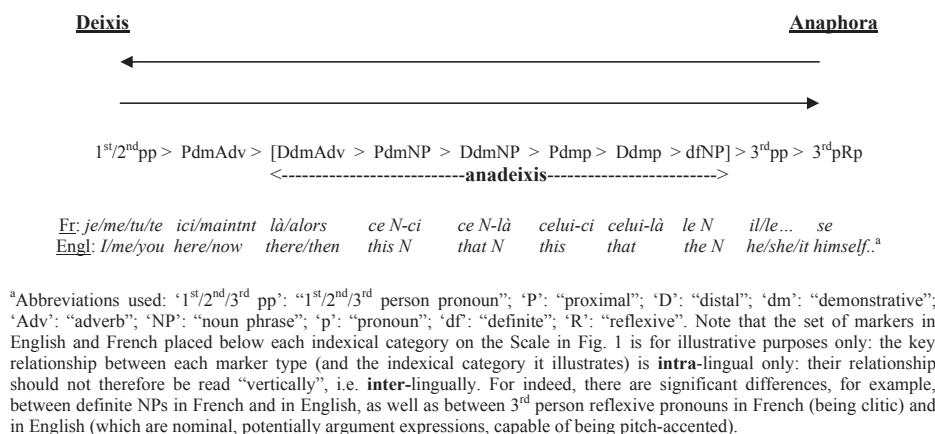
Deixis   **Anaphora**

$1^{st}/2^{nd}pp > PdmAdv > [DdmAdv > PdmNP > DdmNP > Pdmp > Ddmp > dfNP] > 3^{rd}pp > 3^{rd}pRp$
<----------------------------**anadeixis**----------------------->

Fr:	*je/me/tu/te*	*ici/maintnt*	*là/alors*	*ce N-ci*	*ce N-là*	*celui-ci*	*celui-là*	*le N*	*il/le…*	*se*
Engl:	*I/me/you*	*here/now*	*there/then*	*this N*	*that N*	*this*	*that*	*the N*	*he/she/it himself..*[a]	

[a]Abbreviations used: '$1^{st}/2^{nd}/3^{rd}$ pp': "$1^{st}/2^{nd}/3^{rd}$ person pronoun"; 'P': "proximal"; 'D': "distal"; 'dm': "demonstrative"; 'Adv': "adverb"; 'NP': "noun phrase"; 'p': "pronoun"; 'df': "definite"; 'R': "reflexive". Note that the set of markers in English and French placed below each indexical category on the Scale in Fig. 1 is for illustrative purposes only: the key relationship between each marker type (and the indexical category it illustrates) is **intra**-lingual only: their relationship should not therefore be read "vertically", i.e. **inter**-lingually. For indeed, there are significant differences, for example, between definite NPs in French and in English, as well as between 3rd person reflexive pronouns in French (being clitic) and in English (which are nominal, potentially argument expressions, capable of being pitch-accented).

Fig. 1. Scale of indexicality coded by certain categories of indexical markers, with illustrations from French and English (Fig. 1 in Cornish, 2011: 755—revised).

pronouns. All the demonstrative-based categories are located above the category of definite NPs on this Scale: we have placed the definite NPs at the lower limit of the 'anadeictic' span in Fig. 1, since even if they do not always function indexically,[12] they may nonetheless have **deictic**, **'strict' anadeictic** or **anaphoric** uses in context. See Cornish (2011) for a more detailed discussion.

3. The distribution and functioning of indexicals in unplanned speech

This section examines the ways in which indexical expressions (as briefly outlined in §2.3.3 above) operate in creating discourse via text and context, as used in informal, interactive speech.

Miller and Weinert (1998, p. 140) summarize their data drawn from English, German and Russian corpora of unplanned spoken language, by noting that

> All our spontaneous texts contain relatively high proportions of noun phrases consisting of a personal pronoun. In the spoken English narrative the proportion is 44.9%, in the conversation 48.9%.… In the German telephone conversation single pronoun NPs account for 43.9% of NPs. In the German face-to-face conversation they account for 38.7% and in a Map Task dialogue for 52.4%. In a newspaper text only 6.6% of the NPs were single pronouns.

The authors later (pp. 140–141) go on to indicate that an even higher proportion of NPs in their corpora consisted of numerals, demonstrative pronouns, possessive pronouns, quantifiers (e.g. *some, each*) and *wh*-pronouns. Many of these one-constituent NPs would appear to be indexical in referential function, though no separate figure is given for this subcategory.

Miller and Weinert (1998, p. 156) present a Table (Table 4.1) of the types and numbers of NPs used in an oral interactive narrative spoken by a woman in her mid-twenties about (among other things) her experience ordering a beef sandwich in a hotel in Los Angeles (cf. "The Great American Sandwich" corpus). Yet these NP types were not distinguished in terms of whether they were referent-introducing or referent-maintaining in function, so we have not reproduced it here.

However, thanks to Jim Miller, one of the co-authors of this work, we have obtained the transcript of the recorded (interactive) narrative to which their Table 4.1 relates. Hence it is now possible to make a number of distinctions within the subset of indexical NP types within this set, according to the various types of markers, whether referential or not, and whether they are functioning anaphorically, anadeictically or pure-deictically.

Looking in detail at Table 1 (see below), it is clear that the first subcategory of indexical NPs ('indefinite', non-referring 3rd person pronouns) may in no sense be said to 'substitute' for any fuller, lexically-headed NP. An attested, spoken example is given in (5):[13]

(5) [On trying to order a whisky and lemonade in a hotel in Los Angeles]
<x c7> (…) eventually i cottoned on to it but i and *they* couldn't get over the fact that i didn't like ice in whisky (uh huh) and of course *they* either gave me ice whether i wanted it or not or *they* stacked the glass up right up to the level that you would normally have if you had ice in your drink anyway and consequently you got ploughed frequently (Extract from "The great American sandwich" corpus)

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[12] Indeed, they may refer independently in terms of their lexical content, when this is sufficient to identify their referent unequivocally.

[13] The extracts from this oral source are presented without punctuation or capital initial letters for proper names and the 1st person pronoun: for these latter conventions all relate to the written form of language.

Table 1
Proportions of various types of indexical NPs in 'The great American sandwich' corpus.

	N° of NPs	% of total
TOTAL	249	
1. Indef 3rd pers. pronoun (*they/them*)	25	10.04
2. Non-ref. (expletive) 3rd pers. pronoun	6	2.40
3. Textually-licensed ref. 3rd pers. pronoun	89	35.74
4. Indirect 3rd person pronoun	15	6.02
5. Locative pronominal adverb (*there*)	10	4.01
6. Indef. pronoun (*one*)	3	1.20
7. Proximal dem. pronoun	4	1.60
8. Distal dem. pronoun	24	9.63
9. Proximal dem. NP	6	2.40
10. Distal dem. NP	4	1.60
11. Reduced definite NP (Def art/poss det + N)	63	25.30

At all events, the *raison d'être* behind this use of such an expression type (*they/them*) is the relative inaccessibility at the point of use of any specific, identificational expression, and the fact that such specific naming is not warranted, or is unimportant in the context at issue. So in any case, a specific identificational expression in place of the pronoun would be counter-productive and would 'go against the grain' of the discourse-pragmatic value intrinsic to this type of marker and its characteristic uses.

Regarding the second subcategory in Table 1 (also 3rd person pronouns, but singular inanimate ones), these are purely structural devices ('expletive' pronouns) and have no reference. As such, no fuller, lexically-based expression could ever substitute for these forms which occur in the text solely in the subject function—for purely structural reasons, then.[14] (6) illustrates:

(6)   [On a short stay in Las Vegas]
        <x c29> *it's* so boring when these films come on television and you know they show you caesar's palace and you say i've been there it was fabulous
        (Extract from "The great American sandwich" corpus)

As for the third subcategory (textually-licensed referential 3rd person pronouns), this constitutes the largest grouping (89 instances, 35.74% of the total). However, substituting (retrospectively, as it were) a copy of their textual antecedents for these pronouns would be problematic, on several counts. Here is a simple example where a pronoun (*it*) is interpreted partly in terms of its antecedent trigger (*irish coffee*, line 2 in (7) below), but where (a) its reference is distinct from that of the latter (reference to a particular token of the type evoked via the antecedent trigger), and (b) the repetition of the latter in place of the pronoun would result in incoherence. Compare (7) with (7a) below:

(7)   <x c8> …one of the barmen….would rush up and sort of shovel so many glasses underneath the hot water tap and start doing the rigmarole for irish coffee *it* was very good irish coffee (uh huh) (Extract from "The great American sandwich" corpus)
(7) a. …and start doing the rigmarole for irish coffee **ø/#the irish coffee* was very good irish coffee…

Now, taking the fourth subcategory in Table 1 (indirect 3rd person pronouns: 15 occurrences), these are all inanimate in the text of the oral narrative corpus "The great American sandwich". The extracts in (8a,b) illustrate:

(8) a. [On trying to order a whisky and lemonade in a hotel in Los Angeles]
        <x c5> (…) i found my drink was a great problem with them because at that time i drank whisky and lemonade (uh huh) and i would go and ask for whisky and lemonade and i would get whisky and lemon
        <x k6> oh yes
        <x c6> because you had to ask for whisky or scotch and seven up
        <x k7> yes
        <x c7> eventually i cottoned on to *it* but (…) (Extract from "The great American sandwich" corpus)

The occurrence of the inanimate pronoun *it* in the first line of turn <x c7> targets an inference from the exchange preceding this turn, namely that since the bar in the hotel in question did not serve cocktails consisting of whisky and lemonade (which was the speaker's usual preferred combination at the time), the closest order to this which would be served there had to be 'scotch and seven up'. (8b) is a further such example. Here, the textual antecedent trigger is a predication (a verb phrase), but where the pronoun picks up a 3rd-order (conceptual) rather than a 2nd order (eventive) referent:

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[14] In addition, neither the first nor the second of these subtypes of pronoun has a potential 'textual antecedent".

(8) b. [On doing the sights of New York]
        <x c49> and all the major stores madison park and eh i can't remember now *it* fades very quickly (Extract from "The great American sandwich" corpus)

The referent of *it* here is clearly 'speaker <x c49>'s memory of going round the sights of New York at the time reported'. But this is determined via the discourse context, and in particular via the antecedent trigger *and eh I can't remember now*, as well as by the host predication (predicating of the intended referent of *it* the property of 'fading very quickly'). There is no canonical 'textual antecedent' for which the pronoun *it* could be said to 'substitute'. Indeed, it is the pronoun itself together with its host predication which actually create the discourse referent at issue, via an inference based on the immediate discourse context (the antecedent trigger predication).

Now let us look at the 5th subcategory in Table 1, namely locative pronominal adverbs (here represented by *there*: 10 instances). An example, from the same source:

(9) [On a cocktail called 'marguerita', ordered during the speaker's stay on the West coast of the US]
     <x k16> it's a mexican drink absolutely beautiful i really liked it
     <x c17> were you *there* for a holiday (Extract from "The great American sandwich" corpus)

In extract (9), it might appear that the pronominal adverb *there* is interpreted locally, in terms of a (morphologically driven) inference via the attributive adjective *Mexican* to 'the country Mexico' (i.e. an indirect anadeictic reference). However, the subsequent text shows that it is interpreted (and intended by the speaker) globally, or macro-discursively:

(9) a. [Continuation of (10)]
        <x k17> yes last summer
        <x c18> where san francisco
        <x k18> eh los angeles (uh huh) just outside los angeles

The fact that speaker k's interlocutor c suggests interrogatively that the place where k stayed the summer before the time of speaking was a well-known city on the West coast of the US and not in Mexico, clearly indicates that the 'there' of c's turn 17 in (9) must have been located in a place in the former, and not the latter country. And indeed this interpretation is entirely in line with the preceding context of the interaction, where events in cities in the US had been being recounted. So this is an interesting instance where the hierarchical structure of a discourse takes priority over its local structure in determining the reference of an indexical marker (cf. Fox, 1987).

Now to the 6th subcategory of indexicals in Table 1, indefinite pronouns: the pro-nominal *one* (3 occurrences).[15] We have already presented an illustration in the third alternative continuation in example (2) (§2.3.2 above). This would in fact appear to be the **only** form type amongst those listed in this Table which may be said to operate in terms of a relation of 'textual (lexical) substitution' (indeed, this would seem to be this form type's veritable *raison d'être*, on condition of course that the noun or noun group for which it substitutes, if it does, is or may be interpreted as countable). However, see Keizer's (2012: 408–9) examples (34)–(36), drawn from various corpora. To illustrate, example (35a) (p. 408) is as follows: *Poetry class was just about the only* one *Remi liked* (COCA). Here, in Keizer's words, "the pronoun *one* picks up part of a compound" (p. 408). These attested examples demonstrate her claim that even this "predicative" (Keizer, 2012, p. 407), or perhaps more accurately, 'type-denoting', pronoun does not require its denotatum to correspond to a (parallel) syntactic constituent, or even to a semantically coherent unit. See also Brown and Yule's (1983: 203) apparently attested example reproduced in §2.1.1 above, which violates the former criterion. So this form type may well not be an exception after all. We may say that its inherent 'countable type-denoting property' performs an operator-like function which seeks out a relevant type property from within a salient discourse representation in the immediate discourse context, compatible with its denotative character, and places this representation within the current, updated discourse model.

As for the 7th subcategory in Table 1 (proximal demonstrative pronouns), there are four occurrences in the "American sandwich" corpus. The first (see (10) below) occurs quasi-deictically within a free indirect speech segment, referring in terms of a representation of the speaker's internal thoughts on the situation she was then encountering (see the prefacing phrase '*and i thought oh my god…*'):

(10) [On finding a hotel in Los Angeles]
      < x c19> (…) i sailed into the holiday inn and i took one look at the outside and i thought oh my god *this* is going to cost me an arm and a leg… (Extract from "The great American sandwich" corpus)

The referent of *this* in line 2 of this extract is a 2nd-order situational one, namely 'my prospective stay in the Holiday Inn in Los Angeles at the time narrated'. There is no explicit 'textual antecedent' for which this demonstrative pronoun could be said to be 'substituting' here; indeed, the use of this indexical is instrumental in actually evoking the referent (note again the filtering function performed by the host predication in this). The choice of *this* rather than its distal counterpart *that* is clearly motivated by the highly subjective context in which it occurs (see §2.3.3).

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[15] See Payne et al. (2013) for detailed discussion of this marker type, regarding both its semantic type and its distribution within texts. See also Keizer (2012: 407–409).

Regarding its distal counterpart *that*, there are many more instances in the text in question (some 24 tokens in all: 9.63% of the total), as befits its unmarked status. One example is given in (11):

(11) <x c16> were you there for a holiday
   <x k17> yes last summer
   <x c17> where san francisco
   <x k18> eh los angeles (uh huh) just outside los angeles
   <x c18> *that*'s a busy city (Extract from "The great American sandwich" corpus)

The choice of distal *that* over proximal *this* in turn <x c18> in (11) is motivated by the fact that the previous turn has secured a joint attention span between the two interlocutors, so there is an alignment between speaker and addressee here (see §2.3.3 above). This selection, like the choice of *that* over *it* in this context, reflects the fact that it is an anadeictic and not purely anaphoric reference which is called for here, as also in the case of the occurrence of *this* in (10). Neither of these values could be justified on the basis of the antecedent trigger *los angeles* in turn <x k18> *per se*.

Looking now at the 9th subcategory of indexical in Table 1, proximal demonstrative NPs, there are six instances in the "Sandwich" corpus. The choice of three of these is motivated by the fact that the context in which they occur is that of free indirect speech, the speaker placing herself vicariously in the situation she is recalling.[16] So they are anadeictic instances rather than pure-deictic ones. And two others are instances of the use of so-called 'indefinite-*this* N' (cf. Prince, 1981a), which is discourse-introductory rather than discourse-retrieving in function. As such, there could be no question of any potential relation of 'substitution' here. (12) below represents this use:

(12) [Checking in at the Holiday Inn in Los Angeles]
   <x c19> … and i sailed into the holiday inn and i took one look at the outside and i thought oh my god this is going to cost me an arm and a leg and i walked up to *this terribly elegant creature behind the desk* and she said eh are you paying by cash cheque card or whatever… (Extract from "The great American sandwich" corpus)

The 10th subcategory (distal demonstrative NPs) is represented in the Sandwich corpus by four occurrences. (13) illustrates (see *that guy* in turn <x c48>, line 1):

(13) <x c45> …well i was staying in new jersey but *a friend of mine* showed me round new york because my relatives flatly refused to do so you know they were all middle-aged and they were a bit worried and even *this guy* wouldn't take me down to harlem i innocently asked if it would be possible to go down and see it but he said that eh they didn't even send white policemen down there so he was not going to take me
   [5 intermediate turns occur, in none of which is this particular individual mentioned]
   <x c48> new york's an incredible place *that guy* i don't know if i liked it or not i was impressed by it but i think it was possibly *charlie* that was instilling a sense of fear you know *he* took me to the very outskirts of central park… (Extract from "The great American sandwich" corpus)

The intended referent of *that guy* in line 1 of turn <x c48> in this extract relates back to the one introduced as *a friend of mine* by speaker c six turns prior to this one, and who is presented as having shown her round New York. The use of the distal demonstrative NP in turn <x c48> is clearly intended to re-establish, after six intervening turns, the reference initially introduced by the indefinite NP *a friend of mine* in the very first line of <x c45>'s turn, a reference which was itself reinstated via the proximal demonstrative three lines below (since the referent would still be fresh in the interlocutors' working memory at that point).

As for the 11th and final subcategory of indexical in Table 1, reduced definite NPs consisting of possessive determiner or definite article and head noun, there are 63 occurrences in the "American sandwich" corpus (i.e. 25.30% of the total). The majority of these are 'inferrables' (see Prince's, 1981b typology of NP types according to the assumed hearer-new/old typology):[17] 46 in all; of these, 10 are anaphoric, and the rest (36) convey discourse-new information. Of the remaining reduced definite NPs, 10 are anaphoric, and 7 discourse-new. So it is by no means always the case that reduced definite NPs are anaphoric in function. Indeed, two (*last summer* in turn <x k17> and *last year*, in turn <w c19>), function deictically.

Inferrables, of course, do not operate in terms of any 'textual antecedent'; and even less so in terms of a (suitably adjusted) substituted copy of an 'antecedent'. So they cannot be classified as 'pro-forms': nor indeed can the occurrences of definite article/possessive determiner + head noun which convey **discourse-new** information in context (in the "American sandwich" corpus, the 36 instances of 'inferrables' mentioned above and the 7 cases of 'non-inferrables': 43 in all, out of a total of 63

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reduced definite or possessive NPs, i.e. 68.25% of the total). (14) is an example of a reduced definite NP (*the stuff*, line 1) functioning as an anaphoric inferrable:

> (14) <x c43> …it was incredibly hot we would do our washing in the morning and hang *the stuff* out in the garden and… (Extract from "The great American sandwich" corpus)

For one reason or another, then, the range of indexical expression subtypes tabulated in Table 1, even including pronominal *one*, cannot be satisfactorily analysed as operating in terms of the 'substitution' of a copy of their 'textual antecedent' (where such exists), or even in terms of a bringing into relation of indexical and 'textual antecedent' (as classically conceived).[18] Rather, they function by targeting a referent in terms of a particular discourse representation (the *antecedent* in the conception adopted here: see §2.3.2 above), and may even be instrumental in creating that target representation in context themselves, within the context of their host predication as a whole (see in particular the distal demonstrative NP *those words* in (1)). Our analysis of the data points to the need to distinguish between the form types at issue as such and their possible uses in context — mainly via the choice by the speaker of one or other of the three basic indexical referring procedure types (strict deixis, 'anadeixis' or strict anaphora). Notice in particular in this respect the instance of 'indefinite-*this*' N in (12) (which is discourse-introducing and not-retrieving in function), and the discourse-new instances' *the N*. There is no sense in which the form types at issue are *ipso facto* referent-maintaining by very nature, as the 'pro-form' conception assumes.

We turn now to a consideration of relevant data from language acquisition by very young children.

4. The view from the perspective of child language acquisition: evidence from French

Let us make a few observations of young children's first uses of referring expressions. Children's language provides an interesting field for comparing the contrasting perspectives.

Early studies of children's discourse adopted a textualist view of anaphora and considered the existence of a non exophoric or non deictic antecedent as the *sine qua non* condition for deciding on the anaphoric value of indexical expressions (Karmiloff-Smith, 1985; Hickmann, 1987). Otherwise, indexical expressions, even when subsequently referring via the same mention, were considered as stimulus driven and the resulting coreferential chain as the product of reiterated deictic reference. Indeed, these studies highlight the difficulty for young children to create adult-like anaphoric relations in complex genres like narratives, particularly when they have to deal with several competing referents. However more recent studies on younger children's discourse in early dialogues (Gundel et al., 2007; Allen et al., 2008; Salazar Orvig et al., 2010, *inter alia*) have shed new light on the early anaphoric and anadeictic values of 3rd person pronouns. These studies have shown that from the onset toddlers use weak expressions (null forms, clitic pronouns) in the context of previously mentioned and highly accessible referents. But let us first recall the main milestones of the acquisition of referring expressions.

From the time children utter their first words, around age 1, up until the achievement of an adult-like use of language, at around age 3, the repertoire of referring expressions progressively grows in formal, semantic and pragmatic terms. Children's earliest utterances are frequently made up of one or two terms, which may be bare nouns (see ex. (15)), demonstratives (see exs (22)–(23)), or predicative units (see ex. (16)). 3rd person clitic pronouns appear from the moment children begin to produce more adult-like utterances (see exs (17) and (18)). French-speaking children have another early clitic pronoun, the demonstrative *c'* in the "*C'est +X*" construction, which is typical of spoken French (see exs (20) and (21)).

The fact that young children begin to use clitic pronouns later than nouns could be considered as evidence of their acquisition as substitutes for noun phrases. However, an analysis of the way they use pronouns[19] reveals that the different types of referring expressions are first acquired with contrasting functions, which correspond, from the onset, to different positions on the deixis/anaphora continuum (cf. Fig. 1). We will show that neither demonstrative nor personal pronouns can be described primarily as 'pro-forms', whether in terms of functional or ontogenetic perspectives. We will also show that these cognitive features are grounded in highly routinized interactions.

4.1. Contrasts between nouns and third person pronouns

In early child language, nouns (and/or proper names) are often the earliest type of referring expression:

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[18] See for this approach one of the three main "endophoric" functions of the proximal demonstrative *this N* in thesis summaries, according to Bourdet (2011, p. 14) (we translate from the French original): "From a pragmatic point of view, the endophoric function of "this" (sic) in thesis summaries presents itself thus:

– "this" and the term it determines retrieves **a term used earlier in the text**…" (our emphasis).

[19] We refer here to the results of a research project on the acquisition of referring expressions by French-speaking children in naturally occurring dialogues at home ('Acquisition des expressions référentielles en dialogue; approche multidimensionnelle') funded by the French National Research Agency (ANR-09-ENFT-055). The corpus was gathered from several research projects. The data were analyzed by Christine da Silva, Julien Heurdier, Marine Le Mené, Haydée Marcos and Anne Salazar Orvig. We are highly indebted to them.

(15) Pauline[20] 1;11 - MLU 1.73
Pauline and her mother are playing with a doll

MOT -   et si tu lui donnais à boire
         'and what if you gave her something to drink'
PAU -   ɔ ! lƐ
         'oh! lait'
         'oh! milk'
MOT -   elle boit du lait elle aussi
         'she also drinks milk'
PAU -   wi bwanəlƐ
         'oui boit ne lait'
         'yes drink(s) F milk'

Pauline picks up a horse and hands it to her mother

PAU -   ʃəval
         'cheval'
         'horse'
MOT -   oui
         'yes'

In this excerpt the child uses nouns in three different functions: introducing a new referent (*lƐ*, 'milk'), repeating her mother's utterance (*bwanəlƐ*, 'drink(s) F milk') and labelling (*ʃəval*) the object she hands to her mother.

However, when the child predicates something of a previously focused referent, null forms are preferred to nouns. In the next example Iris uses a bare predicate (*tɔ̃be*, '{fell/fall}') to comment on the fall of the toy she is manipulating under her father's attention.

(16) Iris 1;11 – MLU 1.30
Iris and her father are playing with a Mister Potato Head®

FAT-   voilà l'oreille
         'there you have the ear'
IRI -   a!mman
         'ah! mman'

Mister Potato Head slips from her hands

IRI -   ɔ! tɔ̃be
         oh ! {tombé/tomber}
         'oh ! {fell/fall}'
FAT -   il est tombé. eh bien ramasse-le
         'it fell. well pick it up'

The first uses of 3rd person clitic pronouns tend to appear in the same contexts as null forms, when the referent has been previously mentioned, as in the following examples:

(17) Loli 2;3 – MLU 2.94
Loli and her mother are talking about Loli's father

MOT -   il est à son bureau oui. c'est quoi le bureau qu'est-ce qu'i(l) fait au bureau?
         'he is at his office yes. what is the office? what does he do at the office?'
LOL -   ilʁava!
         'il trava(ille) !'
         'he works!'

Arguments for a deictic interpretation of children's 3rd person pronouns are based on the fact that they may be used to first-mention a referent. However when this is the case, the referent is clearly under the joint attention of the interlocutors:

(18) Lisa 1;11 – MLU: 1.56

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[20] The captions of examples indicate the name of the child, his/her age (years; months) and the Mean Length of Utterance (MLU) for the cited session. When the children's utterances are transcribed phonetically, the interpretation in French is given in inverted commas. An approximate English translation is also given between inverted commas. Braces indicate uncertain transcriptions or alternative interpretations. {X} stands for uninterpretable or inaudible segments. In the interpretations and translations, 'F' stands for a filler syllable.

Lisa is playing with a puzzle, her father is watching her. She places the pieces on the board but does not put them in the right place. Having done so, she looks at the puzzle.

Lɪs - a! lɛfini
 ah! **l'**est fini
 'ah! it's finished'

Fᴀᴛ - <smiling> tu crois que c'est fini? tu crois que c'est comme ça que ça va Lisa?
 'you think it's finished? you think that's the way it's supposed to be, Lisa?'

The father's answer confirms, through the use of the clitic demonstrative (*c'*, 'it'), that the reference was already intersubjectively constructed before the child's first mention of the puzzle with the pronoun *l'*.

These early occurrences converge to show that at the onset, nouns and 3rd person clitic pronouns are used for clearly distinct and contrasted functions: nouns are the linguistic device for constructing shared attention and 3rd person clitic pronouns (and null forms) are the device used for maintenance of attention. This distribution has been found in several languages. Clancy (2003), Serratice (2005), Allen et al. (2008) and Hughes and Allen (2013) *inter alia* confirm that null forms are preferred for referents that are under joint attention (or were previously mentioned), whereas strong (lexical) forms are used for brand-new referents, as can be seen in the next example:

(19) Daniel 2;3, MLU 2.5
Daniel and his father are playing with miniature cars. D is trying to put a Playmobil® figure on a tractor. His first choice is discarded. D. goes back to his father holding another figure

Fᴀᴛ - c'est qui lui?
 'who is it?'
Dᴀɴ - {X} dam
 '{X} dame'
 '{X} lady.'
Fᴀᴛ - ah c'est une dame! alors là attend hein! c'est la paysanne avec la plume dans son chapeau! <he whistles>
 'oh it's a lady! hey, wait a minute, wait! it's the peasant woman with a feather in her hat'

D. puts it on the tractor. His father helps him

Dᴀɴ - va kɔ̃dɥiʁ
 'va conduire'
 'gonna drive'.
Fᴀᴛ - oui +++ regarde
 'yes +++ look'
Dᴀɴ - atɔ̃b
 'F tombe'
 'F falls'
Fᴀᴛ - elle tombe
 'she's falling.'
Dᴀɴ - wi
 'oui'
 'yes'
Fᴀᴛ - fais voir
 'let me see'

F. puts it back in the tractor.

Dᴀɴ - nɔ̃. fɛ atãsjɔ̃ ɛtɔ̃b. atã atã papa!
 'non. fais attention e(lle) tombe. attend attend papa !'
 'no. careful she's falling, wait wait Dad!'

F. takes his hand away

The noun *dame* is used by the child to label the new toy he is showing to his father. He then predicates something of the figurine with verbs associated with a null form (*va kɔ̃dɥiʁ*), then with a filler[21] (*atɔ̃b*) and finally with a pronoun (*ɛtɔ̃b*[22]), which is taken up from his father's earlier response.

This example illustrates how young children make use of NPs and pronouns in contrasting functions. Whereas nouns are very often used for labelling (or other non-referential uses), pronouns draw their referential (anaphoric) value from the

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[21] Verbal forms can also be preceded by proto-morphological filler syllables (such as [a], [ə] which appear as a transitional phenomenon towards the emergence of grammatical morphemes (Veneziano and Sinclair, 2000). They are notated 'F' in the transcripts.
[22] In ordinary oral French usage by adults, the third person pronoun can be pronounced [i] or [ɛ] in front of a noun that begins with a consonant.

convergence of joint discourse, where both interlocutors are talking about a common shared referent. 3rd person pronouns are acquired by the child as anaphoric expressions, in the sense that they are associated with the maintenance of the high level of activation of the referent the predication is about.

4.2. Contrasts between demonstratives and 3rd person pronouns

Let's turn now to the other expressions children use at this age: clitic and strong demonstratives.

Clitic demonstratives present a complex status (Salazar Orvig et al., in preparation). On the one hand, they are often used in a similar context to 3rd person pronouns:

> (20)   Loli 2;3 – MLU 2.9
> *During snack time, Loli and her mother are talking about a playground*
>
> Mot -   t(u) as vu le dada! attend
>   'did you see the horse ? wait!'
> Lol -   ãsɛʁo
>   han c'est (g)ros
>   'hum it's big'
> Mot -   c'est trop gros <she laughs>
>   'it's too big'

On the other hand, they are also used to evoke referents which are part of the ongoing activity but are not precisely in focus:

> (21) Olga 2;3 – MLU 2.65
> *Olga and her mother are playing with a puzzle. After placing one piece, Olga points to another one*
>
> Olg -   sekwa ?
>   'c'est quoi ? '
>   'what is it ? '
> Mer -   ça c'est un cerf volant
>   'that (it) is a kite'

When *c'* is used to introduce a new referent under the focus of attention, it is usually associated with a pointing gesture. As Kleiber (1994) suggests, the pointing conveys the deictic function, whereas the clitic fits into this newly constructed shared representation.

In contrast, the independent demonstrative pronoun, *ça*, is typically used for referents that are present in the situation and even part of the ongoing activity but that have not been in the interlocutors' attention focus, as we can see in the next example:

> (22) Daniel 1;10 - MLU 1.36
> *Daniel turns around the camcorder, pointing to or touching every component*
>
> Dan -   sa + sa <he points to the cassette compartment >
>   'ça + ça'
>   'that + that'
> Obs -   ça c'est la cassette
>   'that's the cassette'

The convergence between demonstratives and gestures has often been noted (Lyons, 1979; Diessel, 2006). This similarity makes *ça* the deictic device *par excellence*. However this pronoun can also present anadeictic uses when it is associated with a contrast in dialogue (for example changing footing or positioning).

> (23) Margaux 2;3 - MLU 2.6
> *Margaux's mother is trying to get her to eat some cookies*
>
> Mot -   goûte ils sont bons ces petits gâteaux
>   'taste, these cakes are good'
> Mar -   aj + sepabosa
>   'aïe c'est pas bon ça'
>   'oops!, that's not good'

Again, our observations of a large corpus make it possible to say that 3rd person clitic pronouns, clitic demonstratives and independent demonstratives occupy different positions in the deixis/anaphora continuum. The alternation between 3rd person clitic pronouns and independent demonstratives is not random. The latter can be used, like nouns, to place a referent under joint attention or to redirect the interlocutors' focus of attention; whereas the use of 3rd person clitic pronouns

depends on the shared discourse memory. Although 3rd person clitic pronouns are the most anaphoric of these, independent demonstratives tend to be either purely deictic, as they create a new focus of attention, or anadeictic in the sense of both maintaining a shared meaning space and/or a changing perspective. Only clitic demonstratives appear to form a complex unit as they share the property of continuity with 3rd person pronouns, and of anadeixis with independent demonstratives. They appear then to be a typical anadeictic device. The fact that they are most frequently used for non-animates could explain the co-existence of both functions. But this hypothesis still needs to be verified.

One last aspect needs to be considered: the question of which factors better explain these early uses is still under debate. Without overlooking the cognitive dimension (De Cat, 2015; Gundel et al., 2007) and the mechanics of dialogue (Matthews et al., 2006), Salazar Orvig et al. (to appear) have explored the way concrete communicative experiences form the ground on which this ability develops. Following a dialogic perspective (Bakhtin, 1986), they studied the discursive contexts of the use of 3rd person pronouns (as compared to nouns and demonstratives). They showed that clitic forms are strongly affected by speech genres: clitic demonstrative pronouns are more frequently used in labelling (see ex. (21)), while 3rd person clitic pronouns are mostly used in descriptive utterances (see exs (17) and (19)). Even though description has not been identified as an early use of language (Ninio and Snow, 1996), this pervasiveness may lie in the discursive (or dialogic) position of descriptive utterances which most often appear as a second move after the identification or the labelling of the referent. Therefore, they necessarily concern previously mentioned referents. This regularity suggests that children would first learn to use a form in routinized sequences such as 'introduction of a referent followed by a description' that pertain to what Bruner (1982) calls a format. Further communicative experience would allow them to generalize the use of 3rd person pronouns to all second position moves, in other genres, and then to the more abstract level of the semantic and referential features of the indexical expression.

4.3. To summarize

The study of the acquisition and development of referring expressions in early child language highlights a series of phenomena that lead us to reconsider certain common assumptions about so-called 'pro-forms'. Work on child language shows that the construction of grammar is not a step-by-step reconstruction of grammarians' or linguists' models. Indeed, children's utterances, which show emerging syntax and morphology, are primarily determined by discursive and pragmatic factors.

This view of early uses of referring expressions allows us to draw two conclusions. On the one hand, there is no ontogenetic path from noun phrases to pronouns. On the contrary, pronouns are acquired with very distinctive functions: independent demonstratives are the earliest deictic devices, whereas 3rd person clitic pronouns appear in continuity with null forms in the anaphoric function. Indeed, pronouns are not acquired as a subsequent (and more complex) step after mastering an initial level of lexical resources. They are rather acquired with different and contrasting functions that converge, through the child's progressive acculturation to a range of discourse genres and the development of his/her discursive skills, into what are usually considered as textual (cohesive) devices.

One might be surprised by such precocious skills. However these functions are prepared by pre-verbal communicative skills: young children learn to progressively contribute to shared meanings within the framework of these meaningful situations (Bruner, 1982) and to distinguish, for example, shared from non-shared knowledge and also to direct the interlocutor's attention when necessary (O'Neill, 2005, *inter alia*). Thus, when they come to their first words, young children have already mastered two 'proto-referential' non-verbal functions: to solicit or attract their interlocutor's attention to an object or an event and thus to establish joint attention, and to take part in a joint attention episode. Before being able to build a monological text, with its implications of dealing with competing referents and avoiding both ambiguity and repetition, children develop their grammar from certain fundamental functions in discourse and interaction: maintaining joint attention, orientating and reorienting their interlocutors' attention, changing footing or position, and contrasting referents.

5. Conclusions

The standard notion of 'pro-forms' and of 'textual antecedents' implies a verbal text-centric conception of language use (discourse), which tacitly reflects a bias towards the written form of language (cf. Linell, 2005). However, when we take adult unplanned spoken discourse (see §3) and early child discourse (necessarily spoken, too: see §4) into account, then the picture is a very different one. In fact, written language itself exhibits some of the features of unplanned spoken texts, as seen in §3, and is not invariably susceptible of a 'pro-form' substitutional analysis (see for illustration example (1) in §2.2).

These corpus studies show that indexicals are *sui generis* and that they are not simply 'quasi empty forms' (akin to shells) that 'absorb' the lexical material corresponding to their 'textual antecedents' by deputizing for them at a later point in the emerging text. On the contrary, they each serve to perform specific cognitive-interactive functions in the ongoing discourse, which is co-constructed 'on the hoof', as it were, by the interlocutors. See also Argaman (2007, 1599–60) for a discussion of what the author calls the 'stance indicator' function of Hebrew *ze* 'it', a function intrinsic to this marker and which could not be realised via a repetition of its 'textual antecedent'. See also Ruthrof's (2015) analogous concept of what the author calls 'voice', the 'modal shadow' accompanying what he terms 'implicit deixis', which according to him makes it possible to convert the meaning potential of sentence tokens into meaningful, contextualised utterances. See Cornish (forthcoming) for a demonstration of the erroneous conception of discourse anaphora as well as deixis in (written) texts often induced in 2nd

language learners in Higher Education by an uncritical reliance on the Cohesion model of textualisation (cf. Halliday and Hasan, 1976).

These functions, then, are underpinned by the indexicals' intrinsic semantic and pragmatic properties, as well as by their morpho-syntactic ones. For if we attempted retroactively to replace the so-called 'pro-form' occurring in a particular position in some text by a suitably-adjusted reflex of its 'textual antecedent (where this exists), then we would certainly discover that the textually-explicit expression in question would not be appropriate, in terms of the discourse context, at that particular point in the ongoing co-text: see example (7a), amongst other relevant examples throughout the text. As we saw in Section 3 in particular, each subtype of indexical expression is specialised in reflecting a particular stage in the building of a hierarchical discourse structure and/or a particular relationship between speaker, the intended referent and the addressee. They are not simply a convenient means of avoiding repetition, or of signalling maintenance or discontinuity of reference. Furthermore, an observation of young children's use of indexicals shows how their intrinsic semantic and pragmatic properties build up via communicative experience. As indexicals appear from the onset in contexts where nouns are not found, there can be no question of a 'substitutional' account of their presence in texts at an early age.

The 'textual antecedent-pro-form' substitution account is very clearly a reflection of an essentially truth-conditional, representational approach to anaphora resolution, which is prevalent in particular in recent and current computational accounts of this phenomenon (see e.g. Cornish, 2010: 212–213 on this issue). Such an approach sidelines or even neglects completely the all-important discourse-functional role fulfilled by indexicals of various types, several of which we have seen in this article (cf. Sections 3 and 4 in particular).

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