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ANAPHORA: TEXT-BASED OR DISCOURSE-DEPENDENT? FUNCTIONALIST *VS*. FORMALIST ACCOUNTS*

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Abstract

The traditional definition of anaphora in purely co-textual terms as a relation between two co-occurring expressions is in wide currency in theoretical and descriptive studies of the phenomenon. Indeed, it is currently adopted in on-line psycholinguistic experiments on the interpretation of anaphors, and is the basis for all computational approaches to automatic anaphor resolution (see Mitkov, 2002). Under this conception, the anaphor, a referentially-dependent expression type, requires "saturation" by an appropriate referentially-autonomous, lexically-based expression —the antecedent— in order to achieve full sense and reference.

However, this definition needs to be re-examined in the light of the ways in which real texts operate and are understood, where the resulting picture is rather different. The article aims to show that the co-textual conception is misconceived, and that anaphora is essentially an integrative, discourse-creating procedure involving a three-way relationship between an "antecedent trigger", an anaphoric predication, and a salient discourse representation of a situation. It is shown that it is only in terms of a dynamic interaction amongst the interdependent dimensions of *text* and *discourse*, as well as *context*, that the true complexity of anaphoric reference may be satisfactorily described. The article is intended as a contribution to the broader debate which has been going on within the pages of this journal and elsewhere between the formalist and the functionalist accounts of language structure and use.

1. Introduction

There is currently a fundamental difference of conception and approach in the literature on anaphora as to its nature, functioning and status. The aim of this article is to clarify this difference and to spell out the implications of both types of account for the conception of language and its use that each assumes, as well as for a realistic description of this context-bound referring procedure. The discussion will be situated within the current debate between the dominant formalist and functionalist accounts of language structure and use, as represented within the pages of this journal notably by Newmeyer (2005) and Butler (2006), respectively. The predominant conception in theoretical and descriptive studies of the phenomenon, as well as in on-line psycholinguistic experiments on the interpretation of anaphors and computational approaches to automatic anaphor resolution, is the co-textual one: this holds that in order to interpret a given anaphor, it has first to be paired with an appropriate co-occurring textual antecedent expression. But another approach is fast developing, which places emphasis on the tracking of given referents in the interlocutors' respective evolving discourse models of the communicative event. This is the discourse-functional account of anaphoric reference.

The structure of the article is as follows. After a preliminary statement of the three-way distinction amongst the interdependent notions of *text, context* and *discourse* (this section), section 2 characterises the two approaches to be compared and contrasted (the "co-textual" and the "discourse-functional" ones); the comparison is situated within the broader debate between formalism and functionalism in current Linguistics. Section 3 gives an outline of the anaphora/deixis distinction in terms of a continuum of indexicality, seen from the discourse-functional viewpoint, and explores how these indexical referring procedures are related. Section 4 then attempts to characterise anaphora within a discourse framework, highlighting the discourse-level factors to which the procedure is sensitive; while section 5 revisits the account of anaphora given in Cornish (1999), developing in particular the distinction presented there between the notions of *antecedent trigger* and *antecedent*. The way in which anaphora operates in texts will be shown to require a complex of interactions amongst an antecedent-trigger, an evolving discourse representation, and the implementation of one or more integrative coherence relations initiated in terms of the anaphoric predication as a whole.

To start, let us draw a crucial three-way distinction amongst the notions of *text, context* and *discourse*. This distinction will prove central to the discussion to come. See Table 1 below:

Text	Context	Discourse
The connected sequence of verbal signs and non-verbal signals in terms of which *discourse* is co-constructed by the discourse partners in the act of communication.	The *context* (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, and the specific utterance situation at hand) is subject to a continuous process of construction and revision as the discourse unfolds. It is by invoking an appropriate context that the addressee or reader may create *discourse* on the basis of the connected sequence of textual cues that is *text*.	The product of the hierarchical, situated sequence of utterance, indexical, propositional and illocutionary acts carried out in pursuit of some communicative goal, and integrated within a given *context*.

Table 1. The respective roles of *text*, *context* and *discourse* (Cornish, 2008:Table 1, p. 998, revised)

The *text* is the trace of at least one utterance act (whether realized in terms of a verbal, linguistic trace, or of a non-verbal one – which may be gestural, sensori-perceptual or prosodic). Among the relevant non-verbal signals are gaze direction, winks, raising of the eyebrows and pointing gestures of various kinds; while in the written form they include underlining, italics, boldface, punctuation, paragraphing and layout generally. *Text*, then, refers to the connected sequences of signs and signals, under their conventional meanings, produced by the speaker and (in informal spoken interactions) by the addressee. Certain of these signals point to possible ways of grounding the discourse to be constructed within a particular context, in cognitive terms. These signals correspond to what Gumperz (1992a: 234) calls "contextualization cues" (see also Auer, 1992, as well as Gumperz, 1992b). For Bezuidenhout (2004), the grammatical morphemes within the linguistically-coded elements in text would be types of *procedural* devices, potentially signalling grounding (here, the invocation of relevant contextual assumptions). The author contrasts this class of devices with *declarative* (concept-denoting) signs, as is standard practice within Relevance theory. We may extend the procedural category to include the semiotically-relevant non-verbal elements mentioned above. For Verhagen (2005:22), "linguistic expressions are primarily cues for making inferences, and understanding does not primarily consist in decoding the precise context of the expressions, but in making inferences that lead to adequate next (cognitive, conversational, behavioural) moves."

The discourse partners exploit this trace by simultaneously invoking an appropriate *context,* in cognitive terms, in order to construct discourse. The context relevant for a given act of utterance is a composite of the surrounding co-text, the domain of discourse at issue, the genre of speech event in progress, the situation of utterance, the discourse already constructed upstream and the wider socio-cultural environment presupposed by the text. It is in constant development: the discourse derived via the text both depends on it and at the same time changes it as this is constructed on line.

The context invoked will serve to select the relevant sense of given lexemes, will narrow these down so as to be compatible with the discourse already constructed, and in

general will act to disambiguate potentially multiple possible interpretations of given textual segments. The context will also make it possible to flesh out elliptical or indeterminate references in the co-text, and to expand allusions made in the text to aspects of real-world knowledge. Furthermore, it will help the recipient to determine the illocutionary force of each incoming clause. See Asher & Lascarides (1996), Fetzer (2004), Connolly (2007) and Cornish (2009a) for developments of certain of these aspects.

Discourse, on the other hand, refers to the hierarchically structured, mentally represented product of the sequence of utterance, propositional, illocutionary and indexical acts that the participants are jointly carrying out as the communication unfolds. Such sequences have as their prime objective the realization of a local and/or global communicative goal of some kind. Discourse, then, is both hierarchical and defeasible (a provisional, and hence revisable, construction of a situated interpretation), whereas text is essentially linear – though in the spoken medium, paralinguistic, non-verbal signals may well co-occur simultaneously with the flow of verbal signs and signals. Discourse clearly depends both on *text* **and** *context*. It is the discourse constructed in terms of the text and a relevant context which is capable of being stored subsequently in long-term memory for possible retrieval at some later point. The textual trace of the communicative event, for its part, is short-lived, disappearing from short-term memory once that discourse is constructed — or very soon thereafter (cf. Jarvella, 1979). See also Ariel (2008: 2), Langacker (1996: 334) and Widdowson (2004: 8). Text, context and discourse, then, are interdependent, interactive and inter-defining.

2. The co-textual vs. discourse-dependent approaches to discourse anaphora

2.1 The textualist account of anaphora

Huang (2000: 1) gives a purely formal definition of anaphora in terms of textually co-occurring pairs of expressions:

> (1) a "In contemporary linguistics, [the term anaphora is] a relation between two or more linguistic elements, wherein the interpretation of one (called an anaphoric expression) is in some way determined by the interpretation of the other (called an antecedent)".

A similar definition is given by Barss (2003: ix):

> (1) b "Broadly construed, the term *anaphora* is used to cover myriad disparate cases of a linguistic expression receiving part, or all, of its semantic interpretation via a dependency upon an antecedent, rather than from its internal lexical content."

This conception of anaphora is one that is accepted as valid by linguists taking a basically formal-syntactic view of language structure, as input to a formal semantics and (enriched by an appropriate semantic interpretation), to a (formal) pragmatics. It is shared by pragmaticians such as Levinson (2000) and formal-semanticists such as Corblin (1995) – and even, in broad terms, by certain functionalist linguists such as

Halliday & Hasan (1976), Martin (1992) and Dik (1997, Part II: Ch. 10).[1] These linguists conceive the resolution of anaphors in terms of a binary (or *n*-ary, where there is more than one coreferring anaphor) relation holding between expressions occurring in some co-text. In definition (1a), the anaphoric relation (and hence, resolution) takes place solely at the level of the co-text ("…a relation between two or more **linguistic elements**…" —my emphasis, FC); while in definition (1b), the anaphor is said to be "dependent [for] its semantic interpretation" on an "antecedent": we may assume this to be a co-occurring linguistic expression, as in definition (1a), though this is not explicitly stated as such.

Given this conception, the chief concern of textualists has been to pinpoint the formal as well as semantic constraints allowing or prohibiting the bringing into relation of the two expression tokens: for example, matching morpho-syntactic feature values (where the anaphor is a 3rd person ordinary or reflexive pronoun); establishing the syntactic or semantic c-command configurations or the application of the relevant GB Binding Theory Conditions (for example) in which each expression token is involved, and ascertaining semantic[2] as well as pragmatic constraints. In Generative accounts, the relation has tended to be characterised in terms of coreference rather than anaphora — referential dependency— *per se*; though in the case of the Binding Theory Conditions within GB, "anaphors" (a highly restricted use of this term within this model) are defined as non-referring, inherently bindable variable-like expressions—e.g. reflexive and reciprocal pronouns: see Binding Condition A (Chomsky, 1986: 166, item (216)).

Lying behind this approach is an essentially truth-functional conception of utterances, where language primarily serves a representational role —describing situations in some world and conveying propositional information: for the concern of such linguists is to specify the extension or reference of referentially-dependent, non-autonomous expressions (anaphors, under the broad conception of the term), by transferring to them the sense and/or reference of a suitable textual antecedent expression. Linguists adopting this view of anaphora tacitly assume that, in order to describe and account for some phenomenon, it is first necessary to characterise its mechanics — that is, the ways in which it may be realised, independently of its possible uses in discourse.

This is made explicit by Newmeyer (1998: 7), who characterizes the formalist approach to language as follows: "One orientation sees as a central task for linguists characterizing the formal relationships among grammatical elements independently of any characterization of the semantic and pragmatic properties of those elements." (See Newmeyer, 1998; 2005 and Butler, 2006 for details of the debate between formalist and functionalist approaches to the study of language). As far as the discourse-functional, pragmatic dimension of anaphoric reference is concerned, although formalist-textualist linguists recognize it (e.g. Mitkov, 2002: 32-34), they do not frame their accounts in

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[1] See Brown & Yule (1983) for a critique of Halliday and Hasan's account of anaphora and cohesion, and Cornish (2002) for an assessment of Dik's *Functional Grammar* (Dik 1997, Part II: Ch. 10) treatment of discourse anaphora. Dik actually gives two parallel definitions of the anaphoric relation: the first in terms of a pairing of co-occurring expressions in a text, and the second in terms of the retrieval by the anaphor of a relevant discourse referent. So in fact he has a foot in both camps in this respect. It is evident, then, that the two dichotomies (textualist vs. discourse-functional accounts of anaphora, and formalist vs. functionalist paradigms in linguistics) are not co-extensive, but overlap. However, it remains true that the formalist schools take a preponderantly textualist view of the phenomenon.

[2] E.g. the selection restrictions imposed by the predicate of which each is the argument, the animacy of the two expressions, and other properties.

terms of it. Discourse-functional accounts, on the other hand, start from the premise that the motivation for the phenomenon is indeed discourse-functional, and that this raison-d'être should be the guiding framework in which the mechanics of its possible realisations are characterised.

The pairing of referentially and/or semically asymmetrical expressions which allegedly makes the transfer of the antecedent's sense and/or reference possible on the textualist account, typically harnesses only the *co-text* within the range of sub-types of context mentioned in §1 above (hence the appellation "textualist"). This leaves totally out of account the discourse underpinnings of the various types of anaphora (see sections 4 and 5 below): as we will see (in §2.2, §3 and *infra*), anaphora as well as deixis are essentially discourse-level referring procedures, serving to create discourse — by integrating discourse units in the case of anaphora, and by introducing new referents (or new aspects of existing ones) in the case of deixis. The textualist account also tends to underestimate the specific contribution to a given anaphoric relation of the particular *type* of anaphor token used to realise it —each anaphor type having a distinctive set of semantic and indexical properties (see Figure 1 and the discussion in §3 below).

As far as computational accounts are concerned, Mitkov (2002) provides a representative synthesis. Although the author acknowledges the relevance of discourse-pragmatic features like topicality, salience and so on, he adopts an essentially co-textual account of anaphora, giving preference to instances where the antecedent expression is an explicitly-realised NP (since anaphoric relations of this kind are the most tractable computationally). In the algorithms defined, pride of place is given to formal constraints (e.g. morphological feature-matching where the anaphor is pronominal, syntactic constraints of various kinds, as well as lexical ones —animacy, selection restrictions, etc.). In his formulations in the book, the author reveal his allegiance to the co-textual account in writing of given anaphors "pointing" to their textual antecedent (e.g. Mitkov, 2002: 12, 13, 14). Equivalently, he writes (p. 14) of anaphors "refer[ring] back to (or replac[ing]) a previously mentioned item". See also p. 23 for further such references. In endnote 7 to Chapter 1 (p. 24), the author observes in connection with the term *anaphor resolution* that "it would be logical to say that the *anaphor* is resolved to its antecedent…".

According to Mitkov's survey, the algorithms proposed for the automatic resolution of anaphors have tended to give priority to local, formal constraints (morphological agreement in gender, number and person, syntactic constraints such as disjoint reference configurations or c-command relations, and lexical-semantic filters such as selection restrictions) as well as preferences (for example, the parallel function heuristic whereby a candidate antecedent bearing the same syntactic function as an anaphor — subject, direct object, indirect object etc. — is a preferred choice). More "top-down" factors such as global discourse topichood, rhetorical structure relations or real-world knowledge tend to be downplayed in resolution systems, due to their complexity, relative intractability and "expensiveness" in terms of the computational resources required. As Mitkov (2002: 95) points out, current anaphor resolution systems tend to concentrate on the use of "knowledge-poor" strategies based on the types of local, "bottom-up" constraints and preferences mentioned above. Moreover, such systems proceed in a backwards direction, starting from the anaphor and establishing a set of candidate antecedents first within the same clause, then the same sentence, then in the *n* clauses or sentences preceding the anaphoric clause.

Frequently, formalist-textualist linguists will use invented two-sentence examples as the basis for their analyses — the first sentence containing the "antecedent" (most often a human-denoting NP) and the second an anaphor which may either be construed as anaphoric (usually in terms of coreference) to that antecedent, or as being "disjoint" in reference with it. A typical (decontextualized) instance of such examples is provided by Kamp & Reyle (1993:ex. 0.66):

(2) a Jones$_i$ owns *Ulysses*$_j$. It$_j$ fascinates him$_i$.[3]
b #It$_j$ fascinates him$_i$. Jones$_i$ owns *Ulysses*$_j$. (alternative version of (2a)–FC)

In (2a), the pronouns *him* and *it* are aligned with *Jones* and *Ulysses,* respectively, and thereby receive their full interpretations, since there is no c-command relation holding between anaphors and antecedents —the anaphors involved occurring in a separate independent subsequent sentence. Under the standard GB Binding theory account, if a pronoun c-commands its potential antecedent within a given syntactic configuration, then it cannot be "bound" by it (i.e. no anaphoric relation can be established between the two expressions, c-command being a relation between nodes within a given sentence structure). In (2a), as the authors explain, the inanimate pronoun *it* is compatible with *Ulysses*, the name of a novel, and the human-denoting, masculine pronoun *him* with *Jones*, a proper noun conventionally naming a (by default) male person. These pragmatic constraints stem from the addressee's or reader's knowledge of the world (which includes the referring conventions associated with the use of a given language —here, English). However, these alignments are not possible in (2b) (my variant of (2a)). A modified version of (2b), however, makes the anaphoric relations signalled by the identity of indices somewhat more natural:

(2) c ?#It$_j$ fascinates him$_i$. But Jones$_i$ doesn't actually OWN *Ulysses*$_j$.

Although this is not completely natural (this is the reason for the questioned crosshatch preceding the example), it is still an improvement over (2b), in terms of the anaphoric interpretations indicated by the indices. Below is an attested example with two inanimate subject pronouns in successive sentences referring cataphorically to a referent ostensibly introduced by a subject NP in a following independent sentence. Note that, in parallel with *OWN* in (2c) (see the discussion below), the adverb *more* in (2d) would also be assigned contrastive stress if spoken; and like the NP *Ulysses* in (2c), the NP *the Mirror* would be pronounced with low pitch and weak stress:

(2) d "It gets scoops. It makes money. What more must *The Mirror* do?" (title of a feature article in *The Observer*, 19.08.07, p. 9)

(2c) corresponds to a somewhat more natural variant of (2b) to the extent that the connection indicated between the two sentences is tighter: such degrees of tightness will partly be determined by the prosody with which they may be uttered –prosody being a contextualizing device *par excellence*. If the initial, anaphoric sentence is pronounced with continuative (rising) and not conclusive (falling) intonation, with extra-high pitch and contrastive stress on *own* in the second sentence and *Ulysses*

[3] The indices are my addition here.

consequently unstressed and pronounced in a low level-tone, the pause between the two sentences being minimal, then the first sentence will be presented as pragmatically subordinate in relation to the second —belying its grammatical status as an independent sentence.[4] The sequence of two sentences is then equivalent to a period, prosodically ("an integrative clausal unit characterised by a conclusive intoneme", in Simon's 2004: 232 words – my translation, FC), and not to two separate periods, as in (2b). Unlike (2b), the example may have the possible interpretation "In spite of the fact that he is fascinated by it, it is not the case that Jones owns (a copy of) the novel *Ulysses*". This represents the discourse that may be associated with the text under this prosodic configuration, in my terms (see Table 1).

In discourse terms, there is an evident coherence relation available in the case of example (2a) (that of *Explanation*, or at a minimum, *Elaboration*) in terms of which the discourse units derivable from each sentence may be integrated into a larger unit —the second sentence being construable either as the potential "Cause" of the situation evoked by the first, or as simply giving further information about it.[5] In the case of (2b), on the other hand, no such relation is evident: each of the two sentences appears to be a semantic isolate; so no semantic-pragmatic "scaffolding" is available to help integrate the discourse derivable from each unit and thus resolve the anaphors in the first.

In (2c), by contrast, where the anaphors and antecedents occupy the same relative linear positions and fulfil the same grammatical functions as in (2b), the pragmatic subordination of the first sentence in relation to the second induced by the discourse connective *But* prefacing the latter, as well as the negation of its predication, invoke a *Concession* coherence relation in terms of which each unit might be integrated. This then facilitates the resolution of the anaphors in the first in terms of the relevant referentially-independent NPs in the second. In (2d), likewise, the discourse derived through the integration via cataphora and the prosodic realisation indicated above, would also make use of the *Concession* relation. Informally, this discourse would be as follows (resolving the rhetorical question bearing a negative value in the third sentence in this context): "In spite of the facts that *The Mirror* gets scoops and makes money, it is not clear what **else** it can do (to survive as a commercial concern)". So discourse-semantic factors "come to the rescue" of otherwise problematic textual-syntactic configurations, contextualizing each unit in terms of the other. See the *text/discourse* distinction displayed in Table 1 above.

A comparison between the impossible realization (2b) and the almost natural (2c) (as well as the completely natural (2d)) shows that there are other factors over and above the types of expression involved in the relation and their relative positions in the co-text which favour or disfavour a given anaphoric interpretation in context. It is the application of at least one coherence relation to integrate two discourse units which

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[4] Clearly, if the NP *Ulysses* had received a pitch accent, then the discourse created via this textualization would be incoherent. The same applies to the NP *The Mirror* in (2d).

[5] The understander will invoke the pragmatically strongest coherence relation to integrate two discourse units, subsuming a weaker textual or semantic relation, where more than one is possible simultaneously. *Explanation,* being a pragmatically-based coherence relation, is "stronger" than *Elaboration*, a semantic one. See Cornish (2009b: §4.1 and §5) for relevant discussion.

results in the full pragmatic interpretation (i.e. "resolution") of a discourse anaphor contained in one of them.[6]

2.2 The discourse-functional approach to anaphora

More functionally-oriented linguists (though not all of them, as we noted in §2.1), on the other hand, tend to conceive anaphora in terms of the discourse job it performs: maintaining the reference or sense (or indeed, both) of its "antecedent", which takes account of the dynamic nature of a discourse. Indeed, if one envisages language use in terms of the speaker's attempting to influence his or her addressee(s) in specific ways, in interaction with them, then anaphora (and its close neighbour, deixis) takes on a rather different character: see section 3 for a characterisation in discourse-functional terms. It is no wonder, then, that there should be a major divergence in approach between the two schools, since each is in fact dealing with a somewhat different object of investigation. This major point is actually touched on implicitly by Huang (2000:15) himself, when he observes that "One general distressing feature of the 1980's has been the widening gap between formal syntacticians and discourse analysts. As a corollary, the investigation of discourse anaphora has in general been ignored or positively opposed in formal syntax."

In broader terms, the functionalist approach to language structure and use is neatly summed up by Nichols (1984: 97), quoted by Newmeyer (1998: 10):

> [Functional grammar] analyzes grammatical structure, as do formal and structural grammar, but it also analyzes the entire communicative situation: the purposes of the speech event, its participants, its discourse context. Functionalists maintain that the communicative situation motivates, constrains, explains, or otherwise determines grammatical structure, and that a structural or formal approach is not merely limited to an artificially restricted data base, but it is inadequate even as a structural account.

The key point here is that "grammatical structure" (part of what I am treating as *text*) is seen as an integral part of the "speech event". Thus, in conjunction with the assignment of an appropriate prosodic structure and the invocation of a context, it contributes to realising that speech event. The textual realisation, then, is not reified as the sole frame of reference for the analysis (as in the formalist-textualist account), but is conceived as playing an enabling role in relation to what I am calling *discourse* ("the purposes of the speech event", in the quotation from Nichols, 1984 above).

As regards anaphora, Huang's second group of linguists (the "discourse analysts" in the penultimate quotation) conceive of it as constituting a reference-maintenance device or procedure which operates upon memory representations in real (processing) time. These representations are assumed to enjoy certain specific cognitive statuses at the point of retrieval (e.g. "in-focus", activated and so on). The textual "antecedent", which may well not be present at all in the natural-discourse instances chosen for analysis by proponents of this approach,[7] is not central to such analyses, but is merely the "source" or origin of the reference of later anaphors. The interpretation of these is a function not only of the reference of the "antecedent" at the point in the

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[6] Cf. Hobbs's (1979, 1990) hypothesis on the symbiotic relationship between the invocation of given coherence relations to integrate two discourse units, and the resolution of anaphors contained in one of these; see also Cornish (2009b) for a critical development of this thesis.

[7] See examples (14), (15) and (17) below for three attested instances of this.

discourse at which it occurred, but also of what will have been predicated of the antecedent's referent downstream of its occurrence. Anaphora under this approach does not operate solely at the level of the co-text,[8] but at the level of discourse-memory representations. Here is a typical discourse-functional definition of the anaphora/deixis distinction:

(3) a "Deixis is a linguistic[9] means for achieving focusing of the hearer's attention towards a specific item which is part of the respective (sic) deictic space". (Ehlich, 1982: 325)

b "Anaphora is a linguistic means for having the hearer continue (sustain) a previously established focus towards a specific item on which he had oriented his attention earlier". (Ehlich, 1982: 330)

These definitions are framed in terms of what speakers and hearers are actually doing collaboratively in the process of communication, and do not make reference to any relation between co-occurring expression tokens in the co-text. However, they need to be refined by specifying what types of "linguistic means" may realise these two discourse-referring procedures, and what constitutes attention-focussing (definition (3a)) as well as a previously-established attention focus (definition (3b)). This is the purpose of sections 3-5 below.

Discourse analysts also tend to study corpus-based rather than constructed data subject to the analyst's intuitions, and take into account more centrally than do the formal-syntactic approaches the **context** surrounding the utterances under study.[10] The **co-text** is important in this kind of approach insofar as it provides constraints on what may be part of the relevant memory representation, and on the saliency level of that representation at the point of introduction as well as of retrieval. But it is simply one input to the discourse representations constructed as a result of the contextualisation, interpretation and integration of the information derived. Furthermore, the distribution of tokens of a variety of different types of indexical expression (whether expressing a type of deixis or of anaphora) throughout a given text is symptomatic of the structure of the discourse which may be associated with the text at hand.[11]

The concentration on resolution in terms of specifying the possible extension of given anaphors in textualist accounts excludes from the purview the crucial interpersonal dimension of anaphora (as well as deixis), which of course falls under the "discourse", not primarily the "textual" dimension of language use: see section 3 in particular on this aspect. For it is well-known that while deixis is the source of reference itself (Lyons 1975) and involves an essentially egocentric, subjective stance on the speaker's part (though overlain by social-cultural factors: see Hanks 2009 in particular

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[8] I.e. involving the bringing into relation of two or more co-occurring expressions.

[9] I would take issue with Ehlich, however, on the purported restriction of deixis to expression via **linguistic** means (though this is no doubt a correct characterization as far as anaphora is concerned). After all, deixis may well be realized via a gesture, or prosodically via a high pitch accent (where this is under the control of the speaker, and is not necessarily "imposed" on him/her by the structure of the language being used). See section 3 below.

[10] For example, their interactional and communicative dimensions, and the degree and kind of attention coordination which their features may reflect as between speaker/writer and addressee/reader.

[11] See for example Cornish (2008) for an analysis of the discourse-structuring functions of tokens of a range of indexical expression types across three texts (spoken as well as written) from different genres (a newspaper article, an advertisement and an oral eye-witness account of a natural disaster). See also Adam's (2005:92) analysis of his French textual example (T28).

on this aspect), anaphora is mastered much later by children, in ontogenetic terms. This is because its appropriate use in discourse requires the user to assess the current state of the addressee's pragmatic knowledge store, in terms of what s/he is supposing to be uppermost in his/her consciousness at the point of utterance, and what backgrounded. That is, the user must be capable of setting up a rather sophisticated psycho-social representation of the communication process. This crucial interpersonal dimension is what characterises the use of anaphora as well as deixis; and yet it tends to be left wholly out of account by proponents of the co-textual account of these procedures.

The frameworks in which the formal-syntactic (textualist) and the discourse-pragmatic approaches are operating in the analysis of anaphora are thus very different: co-textual and competence- or system-based in the former case, message/discourse memory and performance- or usage-oriented in the latter. It is therefore no wonder that, in Huang's (2000:15) words, "there has been [a] widening gap between formal syntacticians and discourse analysts".

3. *Deixis* and *anaphora*: the discourse-functional view

A word now on some of the basic differences and similarities between the discourse procedures of *deixis* and *anaphora* —complementary referential procedures involving pointing in context ('indexicality'). The user exploits these procedures in order to construct, modify and access the contents of mentally-represented models of an unfolding discourse. This discourse is represented in the minds of speaker and addressee —or writer and reader in the written form of language: see Table 1 above. Both procedures operate as a function of the principle of "Recipient Design" (see Bell, 1991 in relation to media discourse), and serve to ensure the coordination of the speaker's and addressee's attention (cf. Clark & Bangerter, 2004 and Verhagen, 2005 in relation to the act of referring more generally).

Deixis serves prototypically to orientate the addressee's attention focus towards a new discourse entity —or to a new aspect of an already-existing discourse referent — which is derived by default via the context of utterance, whose centre point is the *hic et nunc* of the speaker's verbal and non-verbal activity (see also Diessel, 2006:470). Deixis under this conception entails the exploitation of the utterance context —the deictic *ground*, in Hanks', 1992 terminology— in order to profile a *figure*: a new referent or a new conception of an existing referent within the discourse memory. We have to do with deixis every time we need to have recourse (by default) to the context of utterance in order to identify the referent intended by the speaker. However, this is only a necessary, not a sufficient condition, since "exophoric" reference may be anaphoric rather than deictic in character: see examples (5) and (15) below.

The use of the deictic referring procedure always entails a break in the continuity of the discourse up to that point, due to the fact that the user needs to have recourse to the circumstances of utterance in order to pick out the intended referent. Deixis may be realised via gestures alone (e.g. a pointing gesture or gaze direction), via a pitch accent in the spoken form, or via the appropriate use of particular types of indexical expressions: 1st or 2nd person pronouns, 3rd-person demonstrative pronouns, adverbs or NPs, for example — or indeed, via a combination of tokens of these types of device.

As for **anaphora**, the occurrence of an anaphor together with the clause in which it occurs as a whole constitutes a signal to **continue** the focus of attention established —or assumed to be established— at the point of use (see Ehlich's definition

in (3b) above); in this way, the referents of weakly-accented or unaccented, low-pitched anaphors, which are thus phonologically non-prominent, are presupposed to enjoy a relatively high degree of attention focus for the addressee at the point of use. Anaphora consists in the retrieval via a referentially-dependent expression token from within a given *ground* (the representation of a situation of some kind) of an already-existing *figure* (a central entity) together with its ground, the anaphoric predication serving to extend that ground (see also Kleiber 1994:Ch. 3).

Arguably, it is a mistake to consider, as is often stated, that deixis necessarily involves reference outside the text, to something which is part of or is in some way connected with the context of utterance,[12] while anaphora is *ipso facto* a reference to a segment of the co-text. For in both cases, it is the **conceptualisation** or **mental, psychological representation** of the referents which is at stake, whether these referents have been made available initially via the external situation or by the preceding (or indeed, succeeding) co-text. At all events, there exist different "fields" or domains of reference[13] on which **both** the deictic and anaphoric procedures may operate:

- **the utterance situation**
  canonical deixis: (4) A to B: Hey, look at *that*! (uttered with a pointing gesture towards a strange bird perched on the branch of a tree near the interlocutors).
  anaphora (more accurately, "exophora"): (5) [A and B turn a corner on the pavement, and suddenly find themselves face to face with a rather large dog] A to B: Do you think *it*'s friendly? (Cornish, 1999: ex. 4.1, p. 112).

- **the co-text**
  textual deixis: (6) A: Our rhododendrons are in blossom right now. B: Oh really? How do you spell *that*, by the way?
  anaphora: (7) B: …I know *it*'s got three "d"'s.

- **the discourse** already created or anticipated
  discourse deixis: (8) A: Listen to *this*: a man went into a butcher's shop one day wanting to buy a whole sheep, and…
  anaphora : (9) A: …Would you believe *it*?

- **shared long-term memory**
  anadeixis: (10) A: Do you remember *that holiday we had two years ago in the Bahamas*?
  anaphora: (11) B: I do indeed. *It* was the best we had in years!

In the case of the anaphoric ("exophoric") functioning of the pronoun *it* in (5) above, the essential difference in comparison to the conditions prevailing in the deictic use of *that* in (4) is that the intended referent's existence as well as saliency is presupposed in the former case, but asserted in the second (see Cornish 1999:Ch.4 for discussion of exophora). Unlike Mitkov (2002:10), I would not characterise the use of

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[12] This is often the conception assumed by those linguists who take an essentially co-textual view of anaphora. Cf. for example Mitkov (2002: §1.11, pp. 20-21).

[13] See Bühler's (1982/1934) notion of *Zeigfelder* [pointing fields] in this respect.

the pronoun *it* in (5) (or of *he* in (15) below) as "deictic", simply because the intended referent exists outside the co-text, in the utterance situation, and has not been previously mentioned. The discourse-cognitive account of anaphora as well as the characterisation above distinguishes anaphora from deixis partly in terms of the status of the intended referent in the participants' mental models of the discourse: already the object of an attention focus in the case of an anaphoric reference, but not yet so in that of a deictic one. See Ehlich's definition (3b) in this regard.

As far as textual deixis is concerned, the "field" is evidently the co-text: see example (6) above. The reference here is deictic and not anaphoric in character, since the speaker is not retrieving the referent of the textual antecedent ('the speaker's rhododendrons'), but is specifically directing his or her addressee's attention towards the head lexeme's form qua form within that antecedent(-trigger) (*rhododendrons*). Textual deixis is not an instance of "exophora", as Diessel (1999:101) claims it is, but, as its very name indicates, involves orienting the addressee's attention towards a relevant feature of the co-text. After all, when we refer (and predicate) in natural language use, we are focussing upon the **referents** of our referring expressions, not, under normal circumstances, on their phonetic or graphical form.

With discourse deixis, on the other hand, it is the surrounding discourse which has just been constructed (or which is on the point of being constructed, in the case of example (8)), which is operated upon by the addressee to appropriate the intended referent. The effect of the use of the proximal demonstrative pronoun in (8) is to open a discourse slot or space which is flagged as shortly to be filled by the story about to be recounted. See (18) in section 5 below for an attested example of (backward-looking) discourse deixis. Arguably, the fourth type of field indicated above —often known as "recognitional deixis" in the literature: see example (10) above— involves both anaphora (in the sense that an existing discourse representation is retrieved from long-term memory) **and** deixis (via the use of the utterance situation to point to a representation embedded in shared, long-term memory). This would be an instance of "anadeixis": see Fig. 1 below. But this reference is more clearly deictic than anaphoric, since the addressee's attention cannot be assumed already to be focused upon the intended referent here.

Clearly, both deixis and anaphora may operate on the context of utterance (situated "outside" the text, then), on the co-text, on the surrounding discourse, or on shared long-term memory representations. In fact, this is only true in terms of the **immediate** sources of the indexical reference involved: for in all cases, deixis as well as anaphora operate in terms of the discourse representations of the relevant fields. But the nature of each type of referring procedure is clearly distinct.

Figure 1 below is an attempt to range various categories of indexical expressions on a Scale of indexicality in terms of their relative degrees of inherent deicticity and anaphoricity (see also Consten, 2003 for a similar view[14]). The indexical expression types retained are indicated in terms of their category type, and not in terms of the actual forms involved (unlike in the case of the similar Scales presented by Gundel *et al*., 1993: 275, item (1) and Ariel, 1996: 21, item (11) in terms of the degree of cognitive accessibility coded by the forms concerned), since each category type may sustain various different types of use in context. In both Gundel *et al*'s and Ariel's

[14] However, as will be apparent, I do not share Consten's claim in this chapter that there is no essential or useful distinction to be made between 'deixis' and 'anaphora'.

Scales, each lexical or phrasal form type retained is assumed to have one particular use (more than one for specified forms in Gundel *et al*.'s hierarchy) —normally, the "default" one for each type. See Kaiser (2005) for a critique of the notion of 'saliency' assumed by scales such as these. Kaiser argues from the behaviour of certain Finnish anaphors (*hän*, a 3rd person gender-neutral pronoun, and *tämä*, a proximal demonstrative pronoun which may target human referents) that different types of indexical presuppose different types of saliency in their potential referents at the point of use, and thus that there is no single unitary scale of saliency such as those postulated by Gundel *et al* or by Ariel. Her general approach is very much in line with the Scale proposed in Figure 1, which is founded upon the inherent indexical properties of each category retained.

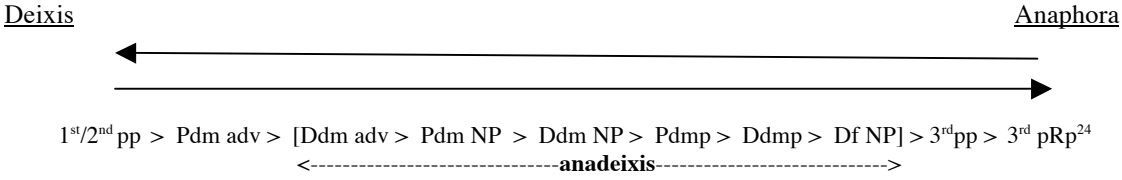


Figure 1: Scale of anaphoricity and deicticity coded by certain categories of indexical expressions (Cornish 2007: Fig. 1, p. 149)

The parallel unbroken lines ending in arrows pointing towards each pole are intended to indicate that deixis and anaphora are not mutually exclusive, 'absolute' indexical categories, but that the majority of the various indexical expression types which may realise them share both properties, albeit to differing degrees. After all, several types of indexical expression may have either a deictic or an anaphoric function in a given context —e.g. distal demonstrative adverbs, 3rd person demonstrative pronouns and determiners, and definite NPs; and in their anaphoric use, demonstrative-based expressions may have a partly-deictic, partly-anaphoric (i.e. "anadeictic", see Ehlich, 1982:333-4) function in referring contextually. As is well known, anaphora is derivative upon deixis (see for example, Lyons, 1975; Diessel, 1999:110-113), the latter referring procedure taking precedence over it both phylogenetically and ontogenetically. In recognition of this relationship, the hierarchy shows an overlap in the middle between the two poles of pure deixis and pure anaphora: see the segment delimited by the square-brackets termed "anadeixis" in Figure 1. High pitch and heavy stress placed on a token of a given expression type (e.g. 3rd person pronouns) move it one position higher towards the 'Deixis' pole on the scale.

The rationale for the hierarchy lies in the degree of inherent deicticity of each individual indexical category retained. The two poles are occupied, respectively, by 1st and 2nd person personal pronouns, which are primary deictics and may not function anaphorically (contrary to what is stated in Martin 1992: 127–8 for *I/me/my*, at least), and by 3rd person reflexive pronouns, which (at least when unstressed in English) function only anaphorically within a highly constrained clause-bound context. 1st and 2nd person pronouns are inherently deictic in that their use by a speaker quasi-automatically selects the current speaker and the current intended addressee, respectively. The repetition by a given speaker of a 1st and 2nd person pronoun within his or her conversational turn selects that speaker anew as the referent of the occurrence of the 1st person pronoun, and, in conjunction with a gaze or other gesture, the intended addressee(s) —who may thereby be different from the one(s) determined earlier. Such repetitions may in no way be viewed as anaphoric in function, as maintaining a previous

reference.[15] The referring potential of these two expression types is thus more highly constrained than their 3rd person demonstrative counterparts (demonstrative adverbs, pronouns and determiners).

The demonstrative-based expression types ranged in between the two polar categories are ordered in terms of the proximal (marked) vs. distal (unmarked) distinction which they carry morphologically —the marked counterpart bearing a higher degree of deicticity than its unmarked one. See in this regard Gundel *et al*'s (1993:275) *Givenness Hierarchy* (Figure 2 below), where the proximal demonstrative NP *this N* (in its "indefinite", that is, new-referent-evoking use) is placed to the right end of the Scale, just to the left of the polar indefinite NP type *a N* —which is the least context-bound of all the expression types recognized on this Scale, coding the status "type identifiable". The Givenness Hierarchy places each cognitive status retained on a scale of alleged increasing restrictiveness of the mental representations associated with each position: from the least context-bound ("type-identifiable", coded by the indefinite article to the extreme right of the GH), to the most ("in-focus", coded by 3rd person pronouns at the extreme left).

in focus	>	**activated**	>	**familiar**	>	**uniquely identifiable**	>	**referential**	>	**type identifiable**
it		*that/this this N*		*that N*		*the N*		indef. *this N*		*a N*

Figure 2. Gundel *et al*.'s (1993:275) *"Givenness Hierarchy"*

But other demonstrative determiner types are placed at several points removed from this type (*that N* — "familiar" —two places to the left, and *this N* again —here bearing either a deictic or an "anadeictic" referential value in context, and coding the status "activated"—one place further to the left of this determiner type). The advantage of the Scale presented in Fig. 1 is that the relative degree of cognitive accessibility of the potential referents of each category represented follows from its basic inherent degree of deicticity and of anaphoricity. Thus these degrees of accessibility are not simply "stipulated" as such for each form type, as seems to be the case in Gundel *et al*'s and Ariel's Hierarchies.

On the Scale in Fig. 1, the demonstrative adverbs (e.g. *now*/*then*, *here*/*there*) are placed at a higher position than the NPs (since they are potentially "token-reflexive" items, like the 1st and 2nd person pronouns), and the NPs higher than the corresponding pronouns. All demonstrative-based categories are placed above the definite NP category: I have placed definite NPs at the lower limit of the "anadeictic" span in Figure 1, since though they are not always indexical in function,[16] they may yet occur deictically as well as anaphorically. Their inherent degree of deicticity is thus lower than the demonstrative-based categories retained, but higher than (unstressed) 3rd person pronouns, which are normally restricted to the anaphoric function.

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[15] If there is 'coreference' between repeated instances of 1st and 2nd person pronouns, it is coreference without anaphora (as in the case of repeated full proper nouns or full definite NPs, which are referentially-autonomous and not referentially-dependent expression types). This is because 1st and 2nd person pronouns are primary deictic expressions, which refer "token-reflexively" (via the user's needing to have recourse to the circumstances of their very use on each occasion).

[16] They may refer independently in terms of their lexical content when this is sufficient to uniquely identify their referent.

4. Discourse-functional determinants of anaphora: the integrative role of coherence relations

The (traditional) conception of anaphora outlined in the quotations from Huang (2000) and Barss (2003) in §2.1 (items (1a) and (1b)) is essentially a static one: it is tacitly assumed by proponents of this conception that the referent of the "antecedent" expression is uniquely determined via the lexical content of this expression, together with the instruction as to the identification of its referent conveyed by the determiner, where there is one; and that it is this referent together with the lexical content of the head noun and any complement(s) and/or modifiers, which serves to determine both the sense and the reference of the anaphor when it occurs, once the two expressions are brought into relation one with another. However, this is an idealisation which bears little relation to the way in which anaphora is actually interpreted in real texts. Let's examine a recipe, from a "directive" genre of language use, to illustrate. The clauses are numbered for convenience.

(12) **"Lobster with warm potato, shallot and tarragon salad**
(1)Slice 200g new potatoes into thinnish discs. (2)Simmer *ø* until al dente. (3)Split a cooked lobster lengthways, (4)and make a dressing with 1 tbs red wine vinegar, 2.5 tbs extra-virgin olive oil, 2 diced shallots, tarragon, salt and pepper. (5)Drain *the potatoes*, (6)and dress *ø*. (7)Serve *ø* with *the lobster* and lemon wedge." Recipe 24, *The Observer Food Monthly* supplement, August 2007, n° 77, p. 34.

This text is characterised by a sequence of short, compact sentences, with the verbs all in imperative mood form. The only mode of connection between clauses is via coordination, and there is frequent use of zero pronouns in object positions. Each clause of this short text corresponds to a particular procedure, a stage in the preparation of the dish under consideration. What is of course crucial to an understanding of this text is the particular predications in each clause denoting the culinary operations to be applied to the initially raw ingredients. The genre imposes that each predication denote an operation to be applied in sequence to the result of the immediately preceding one; indeed, there is a single type of coherence relation adopted to integrate the discourse associated with each clause: "Sequence". Thus in the first clause, the raw new potatoes will be conceptualised as having been "sliced into thinnish discs"; in the second, as having been simmered until still firm ("*al dente*"); in the fifth, as having been removed from the saucepan[17] and the water drained from them; in the sixth, as covered with the dressing specified in the fourth clause; and finally, in the seventh, as having the split, cooked lobster already prepared added to them and presented for consumption.

Now, if we take the **discourse** constructed by the reader as intended by the writer here into account (as of course we must), in addition to the **text**[18] then clearly, the occurrences of the relevant anaphoric expressions (the null pronouns in clauses 2, 6 and

[17] Not explicitly mentioned, but implied by the imperative transitive verb form *simmer* in clause 2.

[18] The purely perceptual signs (the verbal content) and signals (the punctuation and any added graphic marks including page layout etc. inritten form, as here) that form a text. See Table 1 for my conception of the distinction between *text* and *discourse*. I have italicized the indexical expressions (null pronouns and definite NPs) in this text.

7, and the definite NP *the potatoes* in clause 5) will not be interpreted in terms of the referent of the antecedent expression *200g new potatoes* in clause 1. This is because we need to take account of what will have been done to these initially raw, intact ingredients at each relevant stage in the preparation of the dish at issue. Thus what will be "simmered until al dente" in clause 2 is not the intact, raw, unscrubbed and unwashed new potatoes introduced in clause 1, but the circular, thinly sliced segments of the potatoes (presumably scrubbed and washed) whose representation will have been created via the operation prescribed in clause 1 as a whole. In clause 5, the anaphoric, reduced definite NP *the potatoes* clearly refers to the result of the operation prescribed in clause 2: the firm, simmered, thinly-sliced pieces of the original potatoes. It would be a serious error of interpretation to understand *the potatoes* in clause 5 as referring to the original raw, unsliced, unsimmered (that is, not yet boiled in water) and unpeeled set of potatoes introduced in clause 1 —i.e. the referent of the textual antecedent—, just as it would be to interpret the null object of *simmer* in clause 2 as referring back to this set. Yet this is precisely what the co-textual account of discourse anaphora entails. The resulting preparation would certainly not be acceptable as a dish put before the guests on the dinner table!

Similarly, the reduced definite NP *the lobster* in clause 7 will be understood as referring back to the result of the operation on the (cooked) lobster introduced in clause 3: the fact that it will have been "split lengthways", and not simply as maintaining the referent of the indefinite NP *a cooked lobster* from within that clause. All the textual antecedent does in such instances is determine the **ontological category of entity** which the anaphor's referent presupposes. In (12), these are, respectively, 'potato' and 'lobster': both are cases of the ontological category "Instance" in Fraurud's (1996) typology of referents. But the referent itself may differ in a number of ways. See Brown & Yule (1983) for very similar criticisms of the co-textual account of anaphora, notably in relation to Halliday & Hasan's (1976) conception of anaphora ("reference") in terms of their concept of cohesion.

In Martin (1992:140–153), a work also written within the Systemic-Functional framework, "participant identification" is modelled in terms of individual dependency relations obtaining, not uniquely between anaphors and their textual antecedent, but between successive references in a text relating given occurrences of a (coreferential) anaphor and the previous retrieval via an anaphor. The account is still an essentially text-based one (in that discourse interpretation is founded upon (a series of) pair-wise text-internal relations between an anaphor and an immediately preceding antecedent, or between an anaphor and the most recent coreferring anaphor); but some concession is nevertheless made to the undeniable fact that each successive retrieval of a given referent has a somewhat different interpretation (taking account of what will have been predicated of that referent in the clauses following its introduction).

However, as in text (12) above, there are often predications that apply in between successive anaphoric retrievals of a particular referent, which thereby alter the speaker's/writer's (and addressee's/reader's) conception of that referent. Linked to this point, no real acknowledgement is given of the separate existence of a level of discourse interpretation and representation, as is claimed to be essential here.

See Butler (2003, Part II: 303–306) for a discussion of the 'text'/'discourse' distinction in relation to various functionalist theories of language. As Butler points out (p. 303), "Halliday (1994: 366) himself appears to equate 'text linguistics' with 'the study of discourse', and Chafe (1992: 356) … states that "[b]oth terms ['text' and

'discourse' — FC] may refer to a unit of language larger than the sentence: one may speak of a 'discourse' or a 'text'." The problem posed for the textualist description of anaphora by instances of "evolving reference" as illustrated in (12) stems from the fact that the "discourse" dimension (in the sense adopted here) is left out of account.

Here are two other texts, this time short "news-in-brief" newspaper articles. First, (13):

(13) "**Paulson offered treasury role**
President Bush nominated Henry Paulson, the chief executive of Goldman Sachs, as US treasury secretary in place of John Snow. *The 60-year-old investment banker* is a China expert and keen environmentalist." *The Guardian Weekly* 9-15/06/06, p. 2

(13) belongs to the sub-genre of expository news articles (more specifically, that of broadsheet newspaper "news-in-brief " articles). The predominant grammatical mood used in this sub-genre is declarative, as here. The use of expanded definite and demonstrative NPs as resumptive anaphors is one of the hallmarks of this subgenre. Here, the expanded definite NP *the 60-year-old investment banker* clearly refers back to the referent introduced via the proper name *Henry Paulson* in the initial sentence. In principle, it could also refer back to 'John Snow', also introduced in that sentence. But the first individual is clearly marked as having (macro-)topic status via this sentence.[19] Even though the definite NP *the 60-year-old investment banker* is informationally specific and not general, it is nevertheless referentially dependent (the effect, in part, of the definite article here) — the hallmark of an indexical function. The reason for its being expanded ("60-year-old") is the journalist's typical desire to pack new information into definite or demonstrative NPs whose vocation is to maintain a previous reference (this is partly a reflection of the genre-specific need for brevity, and partly of the concern to achieve greater impact and "newsworthiness") —a characteristic feature of news journalism. So in fact it is presupposed —or at least, the journalist is presenting this information as if it were so for the reader— that the individual referred to is "a 60-year-old investment banker". It is this factor which makes the definite NP referentially dependent and not autonomous —as canonical definite descriptions beloved of logicians and language philosophers, of the type *the author of Waverley, the present Queen of Britain and the Commonwealth*, etc., would be.

Moreover, the discourse unit corresponding to the second sentence would be integrated with the first in terms of the coherence relation (*Entity-)Elaboration*, providing as it does further information regarding the macro-topical individual at issue here: given the stative aspectual as well as predicative character of this sentence (which corresponds to a "categorical", not a "thetic" utterance), it serves to attribute a further property to Henry Paulson. This "elaboration" is made possible via the co-reference between the two NPs concerned in this short text. The strongly-favoured (Entity-)Elaborative relation motivating the integration of these two discourse units in fact imposes the retrieval by the anaphor of this referent: for in the case of the other potential referent, the second unit would not "elaborate" the first (since neither the latter

[19] Its exponent NP fulfils the nuclear direct object function, whereas that of the second realizes a more peripheral function as complement of a preposition. In addition, the introduction of the former referent is expanded via an identifying NP in apposition with it. Furthermore, the name of this referent appears in subject position in the very title of the article. These are co-textual cues to the discourse status of the two referents at issue here.

not the former is "about" the referent 'John Snow' at all). See Cornish (2009b) on the question of the interdependence of the operation of integrative coherence relations and anaphora in the creation of discourse.

Although the NP is arguably in an anaphoric relation with the referent evoked by its antecedent, it adds information to the referent of the latter expression, as we have seen —at least, for the reader who is not already in possession of this information. In this case, the antecedent cannot be characterised as "the expression in terms of which the anaphor is interpreted", as the co-textual account would have it —rather the reverse, in fact.

Clearly then, it is in terms of the discourse derivable by the addressee or reader, in context, as a function of the text as well as a relevant context, that anaphora operates. Contrary to what is often assumed in textualist accounts, the co-text is only one ingredient in the establishment of an anaphoric interpretation.

5. My (1999) account of the operation of anaphora in discourse revisited

5.1 The "antecedent-trigger"/ "antecedent" distinction

In my 1999 book on anaphora and understanding in English and French within a discourse context (Cornish 1999:41-51), as well as in previous and subsequent work, I suggested that the dual role of traditional textual antecedents be parcelled out into distinct constructs: the "antecedent-trigger", on the one hand, and the "antecedent" on the other. A very similar term, "presupposition trigger", is now accepted in work in pragmatics (see Levinson, 2000: 60, 111, for example). A canonical antecedent, after all, is both a co-occurring textual expression and allegedly provides the full[20] interpretation for the anaphor once the latter is brought into relation with it. But both these functions need not be performed by the same expression: indeed, it is perfectly possible for the "antecedent-trigger" to introduce a particular referent or a sense into a discourse, but for the anaphor to refer back to an associated or related referent or sense at a later point in that discourse. See, for instance, so-called "associative anaphora":[21]

(14) "As my kids have grown up, watching TV has become quite a struggle; you have to fight for control of *the remote*…" ("What I'm watching", Armando Ianucci, *Radio Times*, 29.07.-4.08.06, p. 31)

or more generally, metonymic anaphora (here "exophora"):

(15) [Outside a University staff member's office door. A student is evidently trying to see the staff member, but his office door is locked. Passing staff member to student:] "*He*'s not there!"[22] (Example (4.3), pp. 119-20 in Cornish, 1999)

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[20] Or partial, under Barss's (2003) definition presented in §2.1 above (item (1b)).

[21] See Kleiber (2001) for a recent account in terms of French, as well as the relevant chapters in section 1 of Schwarz-Friesel *et al*. (eds.) (2007).

[22] Note that the 3rd person subject pronoun *he* here was pronounced with low pitch and was unstressed. It was therefore clearly anaphoric and not deictic in function.

In (14), a personal comment in a weekly radio and television magazine whose style corresponds to that of a casual spoken exchange, the discourse unit corresponding to the anaphoric clause would be integrated with the one expressed by the initial clause in terms of the coherence relation *Claim-Evidence* (see Cornish 2009b, on this relation): the tense-aspect of the main verb in the initial clause is the present perfect, highlighting the current relevance of a past state of affairs which is asserted, at the time of utterance; and the use of the gerundive expression (watching TV) has a generic nominal value: this unit is thereby signalled as corresponding to the Claim.

The second, modalised clause provides evidence for the fact that watching TV in the speaker's household is a "struggle" (note also the use of the prototypical-addressee-denoting subject pronoun you here). The associative-anaphoric connection between the acts of "watching TV" and "fighting for control of the remote (control)" is provided by the definite elliptical NP the remote. In Barsalou's (1992) account of frames, the remote control in the speaker's household would correspond to the value of this attribute of the frame evoked by mention of 'TV' — a highly presupposed ingredient of this frame in today's world. Further support for postulating a Claim-Evidence relation here comes from the possibility of coherently inserting one of the connectives *after all* or *indeed* in front of the anaphoric clause, without affecting the in-context interpretation of this clause in any way.

There is no canonical textual antecedent in (15). Nonetheless, the anaphoric predication "He's not there!" would be integrated with the discourse representation already set up contextually by the two interlocutors in terms of the coherence relation *Explanation*: informally, "student X is trying to see staff member Y, but Y's office door is locked. *This is because* staff member Y is not in his office" (this inference is made possible by the conventional assumption that if a University staff member's office is locked, then that staff member is not likely to be in it). What is common to the process of understanding both (14) and (15) is not the co-text (i.e. the co-presence of a canonical textual antecedent), but the discourse representation which is available to the understander in the immediate context of occurrence of the anaphors concerned (respectively, *the remote* and *he*), and the accessibility of a relevant coherence relation in terms of which to integrate the anaphoric predication with it.

The antecedent-trigger, then, is not the "antecedent", which is the in-context interpretation of the anaphor. This interpretation is as a function of the antecedent-trigger, but also of the predications which will have applied to its referent downstream, and of the denotation of the anaphor within its immediate context. That is, it is determined jointly by all these three factors working together. While the antecedent trigger is a percept (see examples (5) and (15) above), an utterance token or a semiotically relevant non-verbal signal, the "antecedent" under this conception is relationally-determined, and is not necessarily correlatable with a particular co-occurring expression within the co-text. See also in this respect Langacker's (1996:342) brief characterisation of what I assume he is calling a "conceptual antecedent" (see below) in claiming that it "may specify relationships the referent bears to other entities". In (14) and (15), the antecedent-triggers are, respectively, the gerundive phrase *watching TV* and the interlocutors' focussing on the relevant staff member's office door; and the "antecedents", "the remote (control) of the TV which the speaker and his grown-up children are watching" and "the staff member whose office door the student in question is knocking on and is trying to open". In example (12), the first antecedent trigger is *200g new potatoes*, and the antecedent of the definite NP anaphor *the potatoes*

in clause 5, "the thin, circular, firm, simmered slices of the set of new potatoes weighing 200g"; in the case of the antecedent-trigger *a cooked lobster* in clause 3, the antecedent of the definite NP anaphor *the lobster* in clause 7 will be "the cooked lobster which has been split lengthways".

5.2 The notion "antecedent" revisited

Similar conceptions of the notion of "antecedent" I am arguing for here may be found in the literature on anaphora. For example, Ariel (1996:17) writes of "different antecedents [being] stored in the addressee's memory in different degrees of accessibility". For Ariel, an antecedent is a mental representation, and not a segment of co-text. Givón (1995:376) also characterises topical referents as potentially having "an accessible antecedent in some extant mental representation". See also Langacker's (1996:359-361) notion of "conceptual antecedent" in contrast to that of "structural antecedent" (analogous to my term *antecedent trigger*). Furthermore, Passonneau (1996:234) claims that "discourse entities serve to index a semantic representation constituting the current description of the speaker's intended referent," and that "these representations are updated as the discourse progresses." Finally, Riley (2007: 849) claims that "[t]heir [i.e. anaphors' and pronouns'] antecedents are mental representations of entities, and not just expressions." We thus take the "antecedent" to be a discourse-semantic construct, in terms of which the intended referent of the anaphor is described as a function of its salient attributes —which clearly evolve as the discourse progresses.

The antecedent, which determines a particular discourse referent under this account, is constructed in this way: the head noun of the anaphor (where it is a lexically-based one) or its animacy property where it is a pronoun, normally figures as the head of the semantic-pragmatic representation. The function of this head or introductory predicate is to specify the kind of entity which is denoted. Where referential, it is preceded by a definiteness operator ('ι'), and the relational elements characterising this referent which have been predicated or which are presupposed of this referent up to the point of occurrence of the anaphor are structured around it in the manner of a (series of) restrictive relative clause(s).

5.3 The proactive role performed by the anaphoric predication

One other very important factor in the operation of anaphora is the nature of the anaphoric predication as a whole (see Cornish, 1999:Ch. 3 on this aspect): that is, what is predicated of the referent of the anaphor (which may still be unascertainable at the point when it is uttered) acts as a pointer towards a referent of a certain type and at the same time filters out otherwise possible candidate referents for that anaphor; in other words, it places a semantico-pragmatic constraint on its potential values. A pair of examples presented in Wilson (1992) makes the point very clearly (see also example (15) above):

(16) a *Sean Penn attacked a photographer. **The man** was quite badly hurt.* (Wilson, 1992: 168, ex. (1b))
b *Sean Penn attacked a photographer. **The man** must be deranged.* (Wilson, 1992: 181, ex. (17))

Here, each anaphoric predication most naturally continues the perspective involving a different discourse referent mutually available to the speech partners at the point where the definite subject NP of the second sentence occurs —a term which is semantically appropriate for retrieving either of these referents. In (16a), the (passive) predicative component of the anaphoric clause denotes a resulting state of a prior action: as such, its content can only be applied to the referent assuming the semantic role of Patient in the initial predication, 'the photographer attacked by Sean Penn'. In (16b) on the other hand, the epistemic use of the modal auxiliary *must* as well as of the axiological predicate "(be) deranged" indicates an evaluation by the speaker of the cause of the attack, perpetrated by the individual responsible for it, namely 'Sean Penn'. The above are my analyses.

It is the anaphoric predication as a whole which contracts a particular coherence relation with the relevant context representation, so enabling the resolution of the anaphor and the integration of the two discourse units. In addition, the anaphoric predication as a discourse unit serves, as a function of its orienting role, to select the relevant part of the discourse representation established upstream of the anaphor with which the integration is to take place; that particular part of the representation need not be immediately adjacent in textual terms (whether just constructed, or anticipated as such): see as an illustration the anaphoric predications *Drain the potatoes* in clause 5, and *Serve the lobster…* in clause 7 in example (12) above.

In some instances, there is no canonical textual antecedent at all, in terms of which the anaphor may be interpreted (see also the "exophoric" uses of 3rd person pronouns illustrated above by (5) and (15)). However, as elsewhere, the discourse context provides an appropriate interpretation:

(17) "…Another guest, a tall princess, married to an erudite naturalist landowner called Béla Lipthay, from Lovrin in the Banat, was a descendant (not direct, I hope) of Pope Innocent IX of the famous house of Odescalchi, lords of Bracciano.*

* According to Sir Walter Scott (or Macaulay quoting him; I've searched both in vain and will probably come upon **the passage** the day after this book is out), Bracciano, by its reedy lake, was the best example of a mediaeval fortress he had ever seen…"

(Patrick Leigh Fermor, *Between the Woods and the Water*, London: John Murray, 2004, p. 104)

In this written autobiographical narrative extract, the antecedent triggers are both the framing adverbial PP *According to Sir Walter Scott (or Macaulay quoting him…)* and the conjunct *I've searched both in vain* in the first and second lines of the footnote containing the definite NP anaphor *the passage* (second line of the footnote). This NP refers anaphorically to the contextually available referent characterisable (informally) as "the passage sought by Patrick Leigh Fermor in either a relevant work by Sir Walter Scott or by Macaulay, in which it is claimed that the castle of Bracciano was the best example of a mediaeval fortress the author had ever seen".

In the footnote to this extract, the author of this book is described as searching for a particular reference to something in a book on history (that something is specified only in the subsequent main clause of this complex sentence). See Schwarz-Friesel (2007) and Cornish (2005) on the principles regulating the use of "indirect" anaphors in discourse.

Finally, one area where the difference in conception of anaphora makes itself felt acutely is in foreign language learning and teaching. To illustrate this, a group of French-speaking 3rd-year university students of English as a foreign language, who had been taught the conventional (text-based) account of anaphora stemming from Halliday & Hasan's (1976) classic work on cohesion, were required recently to analyse the word *that* (in boldface in (18) below) in an extract from James Joyce's "The Dead" (*Dubliners*, 1914). Part of this extract, providing relevant context for the expression at issue, is given in (18). The passage evokes the arrival of the guests for the Misses Morkans' annual dance in Dublin.

(18) "Lily, the caretaker's daughter, was literally run off her feet. Hardly had she brought one gentleman into the little pantry behind the office on the ground floor and helped him off with his overcoat, than the wheezy hall-door bell clanged again and she had to scamper along the bare hallway to
5. let in another guest. It was well for her that she had not to attend to the ladies also. But Miss Kate and Miss Julia had thought of **that** and had converted the bathroom upstairs into a ladies' dressing room…"

The students were asked to analyse the word *that* in line 6, by indicating its syntactic category, referential function and interpretation in context. Now, the vast majority of students' answers (see the sample presented below) were in terms of the static, text-based account of anaphora, missing the (coherent) interpretation signalled in context by the distal demonstrative pronoun *that* within the indexical clause in line 6 of this extract. The students concerned had been taught that there are basically two varieties of anaphora: "(co-)textual" or "*endophora*", subsuming "anaphora" in the strict sense, where the antecedent precedes the anaphor in the co-text, and "cataphora", where the anaphor precedes the antecedent; and "situational" ("*exophora*"). The preponderant interpretation indicated by the examinees was that the referent of the textual antecedent of this pronoun (namely the proposition expressed by *she had not to attend to the ladies also* in lines 5-6) corresponded to that of the demonstrative pronoun, evidently taking the host verb *thought of* in the indexical predication as meaning "cognized" (as in "Think of a number. Multiply it by 7…"). In reality, this verb means something akin to "anticipated" here, which is a rather different interpretation (see the brief discussion of the relevance of contextual factors in the construction of discourse in §1.1 above). It also misses the discourse functioning of the adversative connective *But* prefacing the anaphoric unit. This connective has a "denial of expectation" value in context, rather than one evoking a straightforward contrast: what is denied here is the inference which may be drawn from the fact that Lily did not have to attend to the ladies, to the effect that no provision was made to help them off with their overcoats and allow them to get ready for the dance to which they were invited.

Here is a selection of student responses to this question (where the original answers were in French, I have translated them into English):

- "the lexeme "that" is a demonstrative pronoun. It replaces an idea that has been mentioned before. It refers to the fact that Lily does not need to attend to the ladies. It has an anaphoric value."
- "(…) Its referential function is that of a proform which picks up Lily's (sic) words, "It was well for her that she had not to attend to the ladies also." That also has an anaphoric and endophoric value."

- "In the clause 'Miss Kate and Miss Julia had thought of that,' (…) THAT refers (…) to the text, it is therefore endophoric. It has as referent the preceding sentence which is itself the consequence of what has been uttered at the beginning of this paragraph (…). As far as its precise interpretation is concerned, we may say therefore that THAT here picks up the fact that Lily is very busy and that it is a good thing for her not to have to worry about the ladies as well…".
- "'that'(…) is a deictic proform (…) which [is] anaphoric, since it picks up the entire preceding utterance: "it was well for her that she had not to attend to the ladies also." In some sense, this utterance is pronominalised by 'that' itself."
- "The syntactic category of "that" is that of (a) demonstrative – Its referential function is that of a proform and refers to (…) "she had not to attend to the ladies." In this context, "that" makes it possible to avoid a repetition (…)."

Evidently, the interpretation put forward by these students would not be coherent when the anaphoric clause is integrated with its discourse context: "#But Miss Kate and Miss Julia had thought of (= "cognized") the fact that it was well for Lily not to have to attend to the ladies also and had converted the bathroom upstairs into a ladies' dressing room". If Miss Kate and Miss Julia thought it was well (a good thing) that Lily should not have to attend to the ladies, then it is unclear why they should have felt the need to "convert the bathroom upstairs into a ladies' dressing room".

All the answers given above characterise the reference of *that* here as purely "anaphoric" (even though the fourth one says it is a "deictic proform"). None of them picks up the fact that there is also a deictic dimension to this reference, which would come under the category of "anadeixis" which we saw in section 3 in particular. It is in fact even a "discourse-deictic" reference, since in context, its operation creates on the basis of a negatively-specified proposition ("Lily did not have to attend to the ladies also") a quasi-generic referent characterisable informally as "the need to attend to the ladies who had been invited to the Misses Morkans' annual dance in Dublin". It is via the expectation-denying function of the connective *But* prefacing the indexical clause, rejecting the inference drawn from the antecedent-trigger predication to the effect that no provision was made for welcoming the lady guests to the annual dance, as well as via the character of this clause itself, that the intended referent of *that* is created here. As it is so created, the effect is to enhance the salience level of this discourse entity, which is <u>not</u> available as such prior to the occurrence of the anadeictic demonstrative pronoun within its particular textual setting. Unlike Piwek *et al*. (2008:697), I do not believe discourse deixis is just a form of "anaphora", simply because its function is to relate to prior (or subsequent, as in (8) above) discourse. Unlike anaphora (or indeed, strict "anadeixis"), with discourse deixis there is no independently existing discourse entity upstream "waiting" for its reference to be picked up by a discourse-deictically used expression.

It is clear, then, that the co-textual expression *It was well for her that she had not to attend to the ladies also* in (18) acts as the "antecedent trigger" to the anadeictic *that* within its host clause, and cannot be construed as a simple "antecedent", in the standard sense (fully determining the interpretation of an anaphorically-used pronoun). The in-context sense "anticipated" assigned to the host verb *thought of*, the introductory function of the adversative connective *but*, and the import of the second conjunct *and had converted the bathroom upstairs into a ladies' dressing room* (which contracts a *Result* coherence relation with the first) all provide support for this discourse-deictic interpretation.

6. Conclusions

Arguments against the standard (traditional) account of anaphora, which holds that the anaphor needs to be brought into relation with an appropriate co-occurring antecedent in order to be assigned both a sense and a referent, include the following:

- The antecedent's referent doesn't remain static once it is established: its representation in the discourse accrues and/or sheds properties as a function of what is predicated of it downstream of its initial occurrence; thus, the sense and reference of the anaphor ostensibly in relation with it may well be rather different (see example (12) in particular).
- Depending on the 'textual antecedent' as well as anaphor involved, the anaphor may well contribute to the understanding of the antecedent properties which the latter didn't initially have for the recipient (see example (13)).
- Furthermore, there may well be no canonical textual antecedent at all (see examples (14), (15) and (17)); and yet the anaphor (in all three cases a definite NP or a 3rd person pronoun or pronominal determiner) may be interpreted without difficulty via the drawing of relevant inferences.
- The specific indexical properties of the different types of anaphors (3rd person pronouns, definite NPs, both expanded and reduced, demonstrative-based expressions, and so on), taken in conjunction with the anaphoric predication as a whole, play an important role in determining the anaphor's in-context interpretation (see (16) and (17) in particular). It is not the anaphor qua separate expression that picks up the relevant salient discourse representation at the point of utterance, but the entire anaphoric predication – which triggers the integration of the discourse unit to which it corresponds with its immediate discourse context in terms of an appropriate coherence relation (see the analysis of (2a,c) as well as of (12)-(15) above), thereby "resolving" the anaphor.

  This is the 'discourse' contribution to the functioning of anaphors in texts. The semantic-pragmatic relation holding between the discourse unit corresponding to the anaphoric predication and the "source" one as a function of the particular coherence relation invoked to integrate them, is a condition on the isotopy required for the anaphor's maintenance of its source referent. See (2b) in this regard, where no integration seems possible between the two units involved, and where, as a result, the anaphors are uninterpretable. In addition, see example (13), where it is clear that the relation *(Entity-)Elaboration* induced in this context can only "elaborate" an entity introduced within the discourse unit corresponding to the first sentence, which is evidently "about" Henry Paulson, and not John Snow: hence it is the former referent which is the target of the expanded definite NP subject of the second. In the textual examples mentioned above, we have seen the relevance of the following coherence relation types: *Claim-Evidence*, *Concession, (Entity-)Elaboration, Explanation*, *Result* and *Sequence*.
- Finally, in psycholinguistic terms, it is quite implausible that hearers would need to keep in short-term auditory memory a particular expression (the "antecedent") in order to interpret a later anaphor —which is what the co-textual account of anaphora would entail, of course; in the written form, this possibility is in principle available to readers, since the co-text remains permanently visible on

the page. But even here, according to psycholinguists (Ehrlich & Rayner 1983; Charolles & Sprenger-Charolles 1989), eye regressions by readers to a relevant textual antecedent are relatively rare. Why? Because they are tracking the referents represented in their respective discourse models as the discourse is constructed on-line (in fact, the introduction and updating of particular discourse referents is an integral part of the very creation of discourse itself). The referents of given anaphors are not to be found "in" the text, but rather are available in (or via) the discourse representation.

The advantage of the notion *antecedent trigger* in relation to the canonical *textual antecedent* is that it is more general, bringing a range of non-canonical types of anaphora under this type of discourse-referential procedure: as a percept, utterance token or semiotically relevant non-verbal signal, it will be present in cases of "evolving reference" (example (12)), "associative anaphora" (example (14)), exophoric anaphora (examples (5) and (15)), inferential or "indirect" anaphora (example (17)), discourse deixis (example (18)) as well as in instances of standard anaphora, where a canonical textual antecedent is present (in examples like (2a), (2d) and (13)). The antecedent trigger contributes the ontological category or type of the anaphor's referent, but the actual referent itself and its characterization are determined by a variety of other factors (what will have been predicated of it up to the point of retrieval, the nature of the coherence relation invoked to integrate the units concerned, and the particular character of the anaphoric predication involved).

As the examples cited above show, there are other ways than via the use of an explicit, textual phrase (typically, a lexically-headed NP) in which a referent may be introduced into a discourse, such that it may be later retrieved via an anaphoric expression. Whether the referent retrieved via an anaphor has been directly and explicitly evoked in the preceding (or succeeding, in the case of cataphora) co-text, is neither a necessary nor a sufficient condition for the existence of anaphora.

By separating out the two constructs *antecedent* and *antecedent trigger*, then, we are in a position to characterise the in-context interpretation of anaphors by highlighting the interaction between the complementary dimensions of text and discourse, thereby capturing the dynamics of discourse interpretation. As a unit of *text*, in the broad conception adopted here (see Table 1), the antecedent-trigger no longer completely determines the anaphor's interpretation: the 'antecedent', an evolving unit of *discourse*, is now the full discourse-model representation of the anaphor's interpretation. In this way, the essentially integrative, relational nature of anaphora may be captured.

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References

Adam, Jean-Michel. (2005). Ch. 4, sect. 1: La construction textuelle de la référence (liages sémantiques 1). In *La linguistique textuelle*, 86-97. Paris: Armand Colin.

Ariel, Mira. (1996). Referring expressions and the +/- coreference distinction. In Thorstein Fretheim & Jeanette K. Gundel (eds.), *Reference and referent accessibility*, 13-25. Amsterdam: John Benjamins.

Ariel, Mira. (2008). *Pragmatics and grammar*. Cambridge: Cambridge University Press.

Asher, Nicholas & Lascarides, Alex. (1996). Lexical disambiguation in a discourse context. In James Pustejovsky & Branimir Boguraev (eds.), *Lexical semantics: The problem of polysemy*, 69-108. Oxford: Clarendon Press.

Auer, Peter. (1992). Introduction: John Gumperz' approach to contextualization. In Peter Auer & Aldo di Luzio (eds.) *The contextualization of language*, 1-37. Amsterdam/Philadelphia: John Benjamins.

Barsalou, Lawrence W. (1992). Frames, concepts, and conceptual fields. In Adrienne Lehrer & Eva Feder Kittay (eds.), *Frames, fields, and contrasts*, 21-74. Hillsdale, NJ/Hove and London: Lawrence Erlbaum Associates.

Barss, Andrew. (2003). Preface. In Barss (ed.), ix-xi.

Barss, Andrew (ed.). (2003). *Anaphora. A reference guide*. Malden, MA, USA/Oxford, UK/Melbourne, Australia: Blackwell Publishing.

Bell, Alan. (1991) Ch. 6: Stylin' the news: Audience design. In *The language of news media*, 104-125. Oxford: Blackwell.

Bezuidenhout, Anne. (2004). Ch. 6: Procedural meaning and the semantics/pragmatics interface. In Claudia Bianchi (ed.), *The semantics/pragmatics distinction*, 101-131. Leland Stanford Junior University: CSLI Publications.

Brown, Gillian & George Yule. (1983). *Discourse analysis*. Cambridge: Cambridge University Press.

Bühler, Karl (1934). *Sprachtheorie*. Jena: Fischer Verlag.

Bühler, Karl (1982). The deictic field of language and deictic words. Extracts in English from Bühler (1934). In Robert J. Jarvella & William Klein (eds.), *Speech, place and action. Studies in deixis and related topics*, 12-28. Chichester: Wiley.

Butler, Christopher. (2003). *Structure and function: A guide to three major structural-functional theories. Part I: Approaches to the simplex clause. Part 2: From clause to discourse and beyond*. Amsterdam & Philadelphia: John Benjamins.

Butler, Christopher. (2006). On functionalism and formalism. A reply to Newmeyer. *Functions of Language* 13.2. 197-227.

Chafe, Wallace L. (1992). Discourse: An overview. In William Bright (ed.), *International encyclopedia of linguistics* Vol. 1, 355–358. New York: Oxford University Press.

Charolles, Michel & Liliane Sprenger-Charolles. (1989). Les paradoxes de la résolution immédiate des pronoms. In Marie-José Reichler-Béguelin (ed.), *Actes du colloque de Fribourg*, 159-189. Bern: Peter Lang.

Chomsky, Noam. (1986). *Knowledge of language*. New York/Westport/London: Praeger.

Clark, Herbert H. & Bangerter, Adrian. (2004). Ch. 2: Changing ideas about reference. In Ira A. Noveck & Dan Sperber (eds), *Experimental pragmatics*, 25-49. Basingstoke/New York: Palgrave Macmillan.

Connolly, John H. (2007). Context in Functional Discourse Grammar. *Alfa. Revista de Linguística* 51 (2). 11-33.

Consten, Manfred. (2003). Towards a unified model of domain-bound reference. In Friedrich Lenz (ed.), *Deictic conceptualisation of space, time and person*. 223-248. Amsterdam/Philadelphia: John Benjamins.

Corblin, Francis. (1995). *Les formes de reprise dans le discours*, Rennes: Presses Universitaires de Rennes.

Cornish, Francis. (1999). *Anaphora, discourse and understanding. Evidence from English and French*. Oxford: Clarendon Press.

Cornish, Francis. (2002). Anaphora: lexico-textual structure, or means for utterance integration within a discourse? A critique of the Functional Grammar account. *Linguistics* 40 (3). 469-493.

Cornish, Francis. (2005). Degrees of indirectness: Two types of implicit referents and their retrieval via unaccented pronouns. In A. Branco, T. McEnery & R. Mitkov, (eds.), *Anaphora Processing: Linguistic, cognitive and computational modelling*, 199-220. Current Issues in Linguistic Theory 263. Amsterdam/Philadelphia: John Benjamins.

Cornish, Francis. (2007). English demonstratives: discourse deixis and anaphora. A discourse-pragmatic account. In Randi A. Nilson, Nana A. A. Amfo & Kaja Borthen (eds.), *Interpreting utterances: Pragmatics and its interfaces. Essays in honour of Thorstein Fretheim*, 147-166. Oslo: Novus Press.

Cornish, Francis. (2008). How indexicals function in texts: *Discourse, text* and one neo-Gricean account of indexical reference. *Journal of Pragmatics* 40. 997-1018.

Cornish, Francis. (2009a). *Text* and *discourse* as *context*: Discourse anaphora and the FDG Contextual component. In Evelien Keizer and Gerry Wanders (eds.), *Special issue of Working Papers in Functional Discourse Grammar (WP-FDG-82)*: The London Papers I, 97–115. Available at the website http://home.hum.uva.nl/fdg/working_papers/WP-FDG-82_Cornish.pdf

Cornish, Francis. (2009b). Inter-sentential anaphora and coherence relations: A perfect match. *Language Sciences* 31(5). 572–592.

Cornish, Francis, Alan Garnham, H. Wind Cowles, Marion Fossard & Virginie André. (2005). Indirect anaphora in English and French: A cross-linguistic study of pronoun resolution. *Journal of Memory and Language* 52 (3). 363-376.

Diessel, Holger. (1999). *Demonstratives. Form, function, and grammaticalization*. Amsterdam/Philadephia: John Benjamins.

Diessel, Holger. (2006). Demonstratives, joint attention, and the emergence of grammar. *Cognitive Linguistics* 17 (4). 463-489.

Dik, Simon C. (1997). Ch. 10: Anaphora. In *The theory of Functional Grammar* Part II: *Complex and derived constructions* (ed. K. Hengeveld), 215-228. Berlin & New York: Mouton de Gruyter.

Ehlich, Konrad. (1982). Anaphora and deixis: Same, similar, or different? In Robert J. Jarvella & William Klein (eds.), *Speech, place and action. Studies in deixis and related topics*, 315-338. Chichester: Wiley.

Ehrlich, K., & K. Rayner. (1983). Pronoun assignment and semantic integration during reading: Eye movements and immediacy of processing. *Journal of Verbal Learning and Verbal Behavior* 22. 75-87.

Fetzer, Anita. (2004). *Recontextualizing context*. Amsterdam: Benjamins.

Fraurud, Kari. (1996). Cognitive ontology and NP form. In Thorstein Fretheim & Jeanette K. Gundel (eds.), *Reference and referent accessibility*, 65-87. Amsterdam: John Benjamins.

Givón, Talmy. (1995). *Functionalism and grammar*. Amsterdam: John Benjamins.

Gumperz, John J. (1992a). Contextualization and understanding. Ch. 8 in A. Duranti & C. Goodwin (eds.), *Rethinking context: Language as an interactive phenomenon*, 229-252. Cambridge: Cambridge University Press.

Gumperz, John J. (1992b). Contextualization revisited. In Peter Auer & Aldo di Luzio (eds.), *The contextualization of language*, 39-53. Amsterdam/Philadelphia: John Benjamins.

Gundel, Jeanette K., Nancy Hedberg & Ron Zacharski (1993). Cognitive status and the form of referring expressions in discourse. *Language* 69 (2). 175-204.

Halliday, M. A. K. (1994). *An introduction to functional grammar*. 2nd edn. London: Arnold.

Halliday, Michael A.K. & Ruqaiya Hasan. (1976). *Cohesion in English*. London: Longman.

Hanks, William F. (1992). The indexical ground of deictic reference. In A. Duranti & C. Goodwin (eds.), *Rethinking context: Language as an interactive phenomenon*, 43-76. Cambridge: Cambridge University Press.

Hanks, William F. (2009). Fieldwork on deixis. *Journal of Pragmatics* 41.10–24.

Hobbs, Jerry R. (1979). Coherence and coreference. *Cognitive Science* 3. 67-90.

Hobbs, Jerry R. (1990). Ch. 5: The coherence and structure of discourse. In *Literature and cognition*, 83-114. Leland Stanford Junior University, Calif: CSLI Lecture Notes 21.

Huang, Yan. (2000). *Anaphora: A cross-linguistic study*. Oxford: Oxford University Press.

Jarvella, Robert J. (1979). Immediate memory and discourse processing. In G.B. Bower, (ed.), *The psychology of learning and motivation* Vol. 13. New York: Academic Press.

Kaiser, Elsi. (2005). Different forms have different referential properties: Implications for the notion of 'salience'. In António Branco, Tony McEnery & Ruslan Mitkov (eds.), *Anaphora processing: Linguistic, cognitive and computational modelling*, 261-282. Amsterdam/Philadelphia: John Benjamins.

Kamp, Hans & Uwe Reyle. (1993). *From discourse to logic*. Dordrecht: Kluwer Academic.

Kleiber, Georges. (1994). *Anaphores et pronoms*. Louvain-la-Neuve: Duculot.

Kleiber, Georges. (2001). *L'anaphore associative*. Paris: Presses Universitaires de France.

Langacker, Ronald W. (1996). Conceptual grouping and pronominal anaphora. In Barbara Fox (ed.), *Studies in anaphora*, 333-378. Amsterdam/Philadelphia: John Benjamins.

Levinson, Stephen C. (2000). *Presumptive meanings. The theory of generalized conversational implicature*. Cambridge, Mass.: MIT Press.

Lyons, John. (1975). Deixis as the source of reference. In Edward Keenan (ed.), *Formal semantics of natural language*, 61-83. Cambridge: Cambridge University Press.

Martin, James R. (1992). Ch. 3: Identification. Reference as semantic choice. In *English Text: System and structure*, 93–157. Amsterdam: Benjamins.

Mitkov, Ruslan. (2002). *Anaphora resolution*. Harlow: Pearson Education.

Newmeyer, Frederick. (1998). *Language form and language function*. Cambridge, Mass./London: MIT Press.

Newmeyer, Frederick. (2005). Review of Butler (2003) Parts 1 and 2. *Functions of Language* 12.2. 275-283.

Nichols, Johanna. (1984). Functional theories of grammar. *Annual Review of Anthropology* 13. 97-117.

Passonneau, Rebecca J. (1996). Using Centering to relax Gricean informational constraints on discourse anaphoric noun phrases. *Language and Speech* 39 (2-3). 229-264.

Piwek, P., Beun, R-J. & Cremers, A. (2008). 'Proximal' and 'distal' in language and cognition: Evidence from deictic demonstratives in Dutch. *Journal of Pragmatics* 40. 694-718.

Riley, John A. (2007). Mental representations: Reference and definiteness. *Journal of Pragmatics* 39. 831-871.

Schwarz-Friesel, Monika. (2007). Indirect anaphora in text. A cognitive account. In Schwarz-Friesel, Consten & Knees (eds.), 3-20.

Schwarz-Friesel, Monika, Manfred Consten & Mareile Knees (eds.). (2007). *Anaphors in text. Cognitive, formal and applied approaches to anaphoric reference*. Amsterdam/Philadelphia: John Benjamins.

Simon, Anne-Catherine. (2004). *La structuration prosodique du discours en français*. Bern: Peter Lang.

Verhagen, Arie. (2005). *Constructions of intersubjectivity. Discourse, syntax, and cognition*. Oxford/New York: Oxford University Press.

Webber, Bonnie-Lee. (1986). So what can we talk about now? In Barbara J. Grosz, K.S. Jones & Bonnie-Lee Webber (eds.), *Readings in Natural Language Processing*, 395-414. Los Altos, Calif.: Morgan Kaufmann.

Widdowson, Henry G. (2004). *Text, context, pretext. Critical issues in Discourse Analysis*. Oxford: Blackwell.

Wilson, Deirdre. (1992). Relevance and reference. *University College London Working Papers in Linguistics* 4. 167-191.