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Indirect pronominal anaphora in English and French: marginal rarity, or unmarked norm? Some psycholinguistic evidence

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1. Introduction

The details of the two experiments reported on in this paper (in particular, the statistical analyses of their results) are presented in full in Cornish *et al* (2005). The reader is invited to consult that article for further information, since there is no space in the present paper to include the details.

I take a discourse-cognitive view of anaphora, whereby the anaphor retrieves, not necessarily the referent associated with its associated antecedent (as illustrated in (1a) below) at the point of occurrence, but a salient discourse representation compatible with what is predicated of the anaphor's potential referent and available when the anaphor is uttered. Minimally, the antecedent's discourse representation will have accrued (and/or shedded) properties as a result of the predication of which its referent is a part, and of any subsequent predications in which it is involved. The anaphoric or "host" predication plays a crucial orienting role in determining the potential range of interpretations of an anaphor, not only by filtering out incompatible candidate referents, but also by targeting a certain salient discourse representation as the one yielding the highest degree of coherence following the integration of the anaphoric clause with its immediate discourse context.

"Indirect" pronominal anaphora offers a particularly clear insight into the discourse-functioning of anaphora as a whole, since it necessarily involves recourse to inference, to cognition, to context, and to stereotypical and encyclopaedic knowledge to a high degree.

I will start by distinguishing direct and indirect anaphora, and will then present several linguistic and psycholinguistic hypotheses on the possible retrieval of indirect, implicit referents via pronouns. Following this, I will present the two reading time experiments in both French and English which I conducted recently in collaboration with two teams of psycholinguists, in order to test our own hypothesis of the existence of two types of indirect referent evoked via a given antecedent-trigger: namely, **central** and **peripheral** subtypes, and the possibility of object pronouns' felicitously retrieving the former, but not the latter (see Cornish *et al.*, 2005 for details). I will end by evaluating our results in the light of one influential theory of cognitive accessibility (that of Gundel, Hedberg & Zacharski, 1993).

2. What is (in)direct anaphora?

Anaphora functions exophorically (as illustrated in (1b) below) in exactly the same way as 'endophora' (co-textual anaphora: see (1a)). (See Cornish, 1999: Ch. 4 for arguments for this position.) Both are illustrations of 'direct' anaphora: the intended referent is directly evoked co-textually in (1a), and situationally in (1b), where the interlocutors are not only party to the scene at issue, but are actually focusing on the goat's actions. In both cases, the relevant discourse 'field' (co-text and situation of utterance) directly evokes a salient discourse representation in terms of which the pronouns operate.

DIRECT ANAPHORA

- (1) a A young goat suddenly entered by the half-open front door; but no-one could guess exactly what **it** was looking for.
 b [Context: a young goat suddenly enters by the half-open front door. Speaker, observing the scene with fascination:]
 What do you think **it**'s looking for, exactly? (Examples (1a) and (1b) from Cornish *et al.*, 2005: 369)

Turning now to 'indirect' anaphora, this is illustrated by the attested examples (2a-c) below. (2a) from French involves the stereotypically close relation between a work (here a film) and its author (the film-maker). (2b) from English works in terms of the illocutionary point of the woman's question (to elicit from the man the reason(s) why he did not send her any letters) as well as the lexical semantics of the predicate "write" (in its "correspond" sense). Finally, (2c) from German operates in terms of the stereotypical function of carparks and the lexical-semantic structure of the predicate "parken". In all three examples, the indirect referent at issue is retrieved via an unaccented 3rd person pronoun.

INDIRECT ANAPHORA

- (2) a "*Ah dis donc maman tu t'souviens Cinéma Paradiso, ben **il** a fait un nouveau 369film*" 'Oh I say, Mum, you remember 'Cinema Paradiso', well, he made a new film' (example (65) cited in Reichler-Béguelin, 1993)
- b Woman: "Why didn't you write to me?"
Man: "I did..., started to, but I always tore 'em up."
 (Extract from the film *Summer Holiday*)
- c "*Ich wäre wunschlos glücklich, wenn Sie nicht immer auf dem Lehrerparkplatz parken würden. Das nächste mal lasse ich **ihn** abschleppen.*" (Example taken from the TV soap opera *Beverly Hills 90210*, German RTL, 31.8.95, cited in Consten, 2001)

Indirect anaphora, then, requires a semi-automatic 'bridging' inference to get from what is explicitly mentioned or focused upon to a referent which is in some way associated with it – via a part-whole, token-type or metonymic relation of some kind. For the retrieval to be felicitous, there must be a potential "aboutness" or topical relation between the indirect referent and the subsequent discourse.

3. Linguistic and psycholinguistic hypotheses on possible retrieval of implicit referents by pronouns

Several linguists have put forward severe restrictions on the occurrence of unstressed pronouns with indirect anaphoric reference. For example, according to Dik (1978: 20), "Anaphoric reference to implicit referents is the exception rather than the rule." For their part, Erkü & Gundel (1987) state that "Indirect anaphora may not be realized via (unstressed) pronouns". Witness their property III, p.539:

- (3) "Neither type of indirect anaphora may be pronominal."

The two impossible types of indirect pronominal anaphora that Erku & Gundel had in mind here are “inclusive” (associative) anaphora, as in (4), and “exclusive” (complementary) anaphora, as in (5):

- (4) *I couldn't use the box you gave me. **The bottom**/#it fell out.* (Erku & Gundel, 1987, ex (1))
- (5) *The ant daubs part of her burden onto a cocoon and passes **the rest**/#it to a thirsty larva.* (Erku & Gundel, 1987, ex (6))

In (4), the antecedent-trigger evokes a frame ('the box') of which the anaphor's referent is a part ('the bottom of the box'). Clearly, the parts of a whole will not be activated psychologically upon mention of that whole, just as the residue of a set or a mass (as in (5)) is not made salient when the other part is evoked. So unaccented pronouns will clearly not be able to target anaphorically such 'background' referents.

See the further strictures of Gundel, Hedberg & Zacharski (2000: 93), who claim that “Indirect pronominal and demonstrative anaphors are relatively infrequent in relation to indirect anaphors introduced by a definite or indefinite article.” In their conclusion (p.100) they further state that “Indirect anaphors, typically, may not be coded via pronominal or demonstrative phrases...”

In the psycholinguistics field, Sanford & Garrod (1981) draw a processing distinction between two distinguishable areas within the mental workspace: *explicit focus*, which is claimed to house representations of referents which have been introduced textually and are thus located in short-term memory; and *implicit focus*, which is located within the wider area of working memory, which includes short-term memory as a proper part. This section would house implicit, stereotypical entities forming part of the background scenario evoked in order to sustain the more foregrounded domain of explicitly mentioned entities. In this early work, Sanford & Garrod posit a ban on antecedentless pronouns: references to implicit entities such as the waiters in a restaurant scenario, or the nurses in a hospital one, must be carried out via lexically more explicit phrases than unaccented pronouns.

In a later publication (Sanford et al., 1983), the authors reported on a series of experiments carried out in collaboration with several colleagues: first, an on-line self-paced reading time test was administered to 30 subjects, using several sets of texts of the type illustrated in Table 1; these texts appeared sentence by sentence on a computer screen.

Table 1

Stimuli from Sanford et al. (1983), Experiment 1

		Explicit antecedent	Implicit Antecedent
(6) a Matching Gender/Number	Sentence 1	Roland parted his long hair with a comb.	Ronald parted his long hair.
	Sentence 2 (Target)	It was twisted with many teeth missing.	
	Sentence 3	He had had it since childhood.	
	Question	Did Ronald part his hair with a brush? (No)	
(6) b No Match	Sentence 1	Being arrested by the police was embarrassing for Andy	Being arrested was embarrassing for Andy.
	Sentence 2 (Target)	They took him to the station in a van.	
	Sentence 3	He was charged with breach of the peace.	
	Question	Was Andy embarrassed by his arrest (Yes)	

(Table 1 in Cornish *et al.*, 2005: 365)

After the standard Reading Time test, they gave the subjects tested a set of written texts (assembled in a booklet) made up of each of the conditions represented in Experiment 1 (see Table 1 for a sample), and assigned them the following (off-line) rewriting task: “Re-write these texts if you consider it necessary, in such a way as to make them ‘sound better’.” Predictably, only 7% of texts with explicit antecedents were re-written, but between 83% and 92% of those with implicit ones were. These results are a reflection of the influence of this off-line, “reflective” context and the implicitly normative effect of the instruction, where the implication conveyed is that “these texts may not all sound very good”.

However, in their on-line reading time experiment 1, where the very same materials were used (see again Table 1 for a sample), only a non-significant difference of 139 msec was found between the mean reading times for the target pronominal utterances in both the Explicit and Implicit Antecedent conditions, in the “non-matching” materials, as in (6b) within Table 1. “Non-matching” materials are those where there is no “alternative” explicit textual antecedent in Sentence 1 to which the pronoun could “bond”, in terms of identical gender and/or number features. This is the case in (6a) in Table 1, where the pronoun *it* in the critical, target sentence 2 could “bond” (inappropriately) to the referent ‘Roland’s long hair’, since the NP *his long hair* in sentence 1 of this item is both singular and neuter (inanimate) in gender.

So the conclusion drawn from the off-line rewriting test results by the authors, to the effect that “This study clearly demonstrates an unprompted judgement that pronouns without antecedent are unacceptable - at least in materials of the type used here” (Sanford et al., 1983: 313), cannot in fact be upheld. It is really a question of the distinct genres corresponding to informal, colloquial speech, on the one hand, and formal written prose, on the other, and the listener’s or reader’s expectations based on their knowledge of the contexts appropriate to these genres, which is at issue here.

The contrasting pairs of examples shown in (7)-(9), with pronouns (the (b) examples in (8) and (9)) and definite lexical NPs (in (7b) and (9a)) as anaphors, provide the evidence on which Sanford & Garrod (1981) based their original distinction between explicit and implicit

focus spaces, and their ban on pronouns' retrieving referents from within the implicit focus space.

- | | |
|---|---|
| <p>(7) a <u>Stated antecedent</u>
 <i>Mary put the baby's clothes on.</i>
 <i>The clothes were made of pink wool.</i></p> | <p>b <u>Implied antecedent</u>
 <i>Mary dressed the baby.</i>
 <i>The clothes were made of pink wool.</i></p> |
| <p>(8) a <i>Mary put the baby's clothes on.</i>
 <i>They were made of pink wool.</i></p> | <p>b <i>Mary dressed the baby.</i>
 <i>#They were made of pink wool.</i></p> |
| <p>(9) a <i>Harry drove to London.</i>
 <i>The car broke down half-way.</i></p> | <p>b <i>Harry drove to London.</i>
 <i>#It broke down half-way</i></p> |

4. Predictions to be tested via the French and English experiments

Comparing examples (2a-c) with (4) and (5) on the one hand, and with those in (6b), (8b), and (9b) on the other, we observe the following range of implicit referent indirectness:

1. Central or Nuclear indirect referents

The pronouns with implicit (indirect) antecedents in (2a-c) could be easily processed, since the intended referent was central within the discourse representation targeted by the anaphoric predication as a whole. The film-maker is a central factor in the making of a film in (2a), and the concepts of 'a letter' and 'a car' are nuclear arguments of the predicates corresponding to the verbs *write* and *parken* in (2b) and (2c), respectively.

2. Associative ('part-whole') or complementary indirect referents

In examples (4) and (5), on the other hand, pronouns could not retrieve the intended implicit referent, since it is inactive psychologically within the target discourse representation – that is, in the extreme background of consciousness.

3. Peripheral, 'semi-active' indirect referents

In (6b), (8b) and (9b), the intended 'implicit' referents were evoked via the relevant trigger predicate as the means by which the situation described was (partially) realised. They are thus 'peripheral', 'semi-active', but not central participants in these states of affairs. However, in Sanford & Garrod's experiments, this crucial distinction between 'nuclear' and 'peripheral' implicit referents was not taken into account.

Our experiments using French- and English-language materials took specific account of the first and third of these types of implicit referents ('central' and 'peripheral') (see Cornish *et al.*, 2005). We wanted to determine whether the degree of conceptual centrality of given indirect referents could be the factor accounting for the apparently conflicting claims of these linguists or psycholinguists. See Cornish (2005: 208-211) for arguments in favour of the 'nuclear' vs. 'peripheral' distinction in connection with indirect referents.

The target pronouns in our experiments were all object ones, unlike in Sanford *et al.*'s (1983) experiments. Thus, either they followed the verb (in English), without being interpretable independently of it, or they preceded it (in French) as pro-clitic pronouns - which as such are not independent of their host, either accentually or semantically.

In no case did we use materials where the implicit referent was inferable in terms of a morphological connection between the antecedent-trigger and the expression in terms of which the anaphor would receive its interpretation.

4.1 General Prediction...

That, contrary to the claims of Dik (1978), Erku & Gundel (1987), Sanford & Garrod (1981) and Sanford et al. (1983), a (non-subject) pronoun CAN felicitously retrieve an implicit referent without increasing processing cost - but on condition that is *nuclear* and not *peripheral*.

4.1.1 *More specifically...*

When the referent is *nuclear*, no processing difference (no significant difference in reading times) was expected between explicit and implicit conditions. But when the referent is *peripheral*, reading times in the explicit conditions should be faster than in the implicit ones.

Similarly, in the *implicit conditions*, reading times should be faster with a nuclear referent than with a peripheral one, while no difference in reading times was expected in the *explicit conditions*.

5. Design, materials and method adopted in the two experiments

The aim of the study was to test experimentally the psychological reality of the distinction between 'central' and 'peripheral' implicit referents. To this end, two self-paced reading time experiments were devised, prepared and implemented. The first, in French, was set up in collaboration with M. Fossard (University of Toulouse II, France), F. Rigalleau and V. André (University of Poitiers, France); and the second, in English, in conjunction with A. Garnham (University of Sussex, U.K.) and H.W. Cowles (formerly of the University of San Diego, USA). Each experiment tested 20 subjects.

5.1 *Design of the study*

24 experimental texts (short two-part dialogues) were devised in both French and English (see Tables 2 and 3 below for a sample of the materials used), interspersed with 24 filler (distractor) texts in order to avoid subjects' developing comprehension strategies. The two main factors were *Centrality* (nuclear vs. peripheral referent) and *Explicitness* (implicit vs. explicit referents). These factors were crossed so as to yield four conditions for each text:

- version 1: nuclear * implicit;
- version 2: nuclear * explicit;
- version 3: peripheral * implicit;
- version 4: peripheral * explicit.

See Tables 2 and 3 below for illustrations of these four conditions. Two-part dialogues were chosen, of the type *Statement-Reaction* or *Question-Answer*, due to the greater frequency of indirect pronominal anaphora in informal speech than in more formal written prose. The second dialogue turn containing the object pronoun was the target utterance (whose reading times were recorded and measured), and Statements were presented at the end of each dialogue for assessment as TRUE or FALSE with respect to the situation described. The Statements for the Implicit conditions related to the target (pronominal) utterance, and were always TRUE; whereas those for the Explicit conditions related to the initial, antecedent-trigger utterances, and were always FALSE. They were included in order to ensure that subjects read the dialogues for comprehension.

The first utterance by Speaker 1 was the same in all four conditions, and introduced the predicate which evoked the targeted referent. In the explicit conditions, there was a second initial utterance which explicitly mentioned the critical argument of the predicate (whether central or peripheral) – always in subject position. The second turn of the dialogues (uttered by Speaker 2) consisted of an utterance that referred back to the target argument from Speaker 1's turn via a non-subject pronoun. The content of this second utterance oriented the reference towards the target nuclear or peripheral referent.

Table 2

Experiment 1 (French) : Example Stimuli

		Explicit antecedent	Implicit Antecedent
Nuclear	Speaker 1	Cet artiste a peint toute la journée en plein air hier. Ses tableaux ont vivement impressionné une passante très riche. <i>That artist painted all day in the open air yesterday. His pictures greatly impressed a very wealthy lady passing by.</i>	Cet artiste a peint toute la journée en plein air hier. <i>That artist painted all day in the open air yesterday.</i>
	Speaker 2 (Target)	Oui, et il les a vendus à bon prix en plus. <i>Yes, he sold them for a good price as well.</i>	
	Statement	L'artiste a peint des tableaux dans l'atelier. (FAUX) <i>The artist painted pictures in the studio. (FALSE)</i>	L'artiste a pu vendre ses tableaux. (VRAI) <i>The artist was able to sell his pictures (TRUE)</i>
Peripheral	Speaker 1	Cet artiste a peint toute la journée en plein air hier. Ses pinceaux étaient nombreux et de tailles différentes. <i>That artist painted all day in the open air yesterday. His brushes were numerous and of different sizes.</i>	Cet artiste a peint toute la journée en plein air hier. <i>That artist painted all day in the open air yesterday.</i>
	Speaker 2 (Target)	Oui, et il les a tous utilisés, du plus fin au plus épais. <i>Yes, and he used them all, from the finest to the thickest.</i>	
	Statement	L'artiste a peint juste une partie de la journée. (FAUX) <i>The artist only painted for part of the day. (FALSE)</i>	L'artiste a bien utilisé tous ses pinceaux. (VRAI) <i>The artist did use all his brushes. (TRUE)</i>

(Table 2 in Cornish *et al.*, 2005: 369)

Table 3

Experiment 2 (English): Example Stimuli

		Explicit antecedent	Implicit Antecedent
Nuclear	Speaker 1	Have you noticed that Mark isn't shaving? His straggly beard makes him look like a tramp.	Have you noticed that Mark isn't shaving?
	Speaker 2 (Target)	Yes, in fact he's really allowing it to grow now.	
	Statement	Mark is sharply reducing the length of his beard. (FALSE)	Mark does seem to be growing a beard. (TRUE)
Peripheral	Speaker 1	Have you noticed that Mark isn't shaving? His disposable razors have all completely disappeared.	Have you noticed that Mark isn't shaving?
	Speaker 2 (Target)	Yes, he tells everyone he's thrown them all away.	
	Statement	Mark always uses an electric razor for shaving. (FALSE)	Mark has clearly decided to get rid of his razors. (TRUE)

(Table 3 in Cornish *et al.*, 2005: 372)

6. Results

The average percentage of incorrectly answered TRUE/FALSE Statements was 9.3% in Experiment 1 (French), and 8.75% in Experiment 2 (English) – with no significant differences in response accuracy as between conditions. This suggests that in the Implicit conditions, Statements referring to peripheral referents did not cause a higher error rate than their nuclear counterparts. The average reading times for the critical second dialogue turn are shown in Figure 1 for the French Experiment 1, and in Figure 2 for the English experiment 2. As is evident from these Figures, the target utterances were read slightly more slowly in the Nuclear Implicit conditions than in the Nuclear Explicit ones, resulting in a statistically non-significant difference. There was no difference (as expected) between the reading times in the two Explicit conditions. But the target utterances in the *Peripheral* Implicit condition were read much more slowly than either those of the corresponding Explicit condition or of the Nuclear Implicit condition. These factors (Explicitness and Centrality) interact, since as noted, in the *Implicit* conditions, the peripheral target utterance was read more slowly than when it was explicitly mentioned.

For *Figure 1*: “Experiment 1: Reading times for target dialogue turn (Speaker 2): French version”, see Cornish *et al.* (2005: 371).

As for *Figure 2*: “Experiment 2: Reading times for target dialogue turn (Speaker 2): English version”, see Cornish *et al.* (2005: 372).

7. Conclusion: Evaluation of the results

Our predictions were largely borne out by the results obtained both in French and in English: clearly, (non-subject) pronouns are capable of retrieving an implicit referent, but only on condition that it is '*nuclear*' and not '*peripheral*'. Experiment 2 replicated the results yielded

by Experiment 1, showing that these were not something specific to French anaphor resolution. So reference centrality is indeed *conceptual* and not purely linguistic in nature.

Our results show why there seems to be evidence both FOR and AGAINST the use of unaccented pronouns in indirect anaphora. Using these results regarding the existence of a distinction between central and peripheral indirect referents, in conjunction with Erku & Gundel's (1987) examples of associative or complementary anaphora illustrated in examples (4) and (5), we may posit a scale of conceptual centrality for indirect referents, as follows:

nuclear > peripheral > associative/complementary referents

This is systematized in Table 4, which includes the correlations noted between the degree of conceptual centrality of the targeted indirect referent, and the indexical expression type(s) that may be used to signal it.

Table 4

Three types of indirect referent and their targetability via pronouns and definite lexical NPs

Type of Anaphor	of	Type of Referent		
		Nuclear >	Peripheral >	Associative/complementary
3 rd person pronoun		+	+/-	-
Definite NP	lexical	+	+	+

(Table 4 in Cornish *et al.*, 2005: 374)

1. Associative referents:

Ex. (4): "I couldn't use the box you gave me. **The bottom/#it** fell out."

2. Peripheral referents:

Exs. (7b) and (8b): "Mary dressed the baby. **The clothes/#they** were made of pink wool."

3. Nuclear referents:

Ex. (2b): W: "Why didn't write to me?"

M: "I did..., started to, but I always tore' **em (/the letters)** up."

Table 4 reveals a situation of partial complementary referential distribution as between the possible uses of 3rd person pronouns and definite lexical NPs (this recalls Levinson's, 2000 pragmatic account of the use of these two expression types). At the top of the scale, we find the nuclear indirect referents, and at the bottom, the associative/complementary ones, with the middle position being occupied by the peripheral indirect referents. Starting from the bottom of this scale, it is clear, as we have seen, that associative or complementary indirect referents, such as 'the bottom of the box' in (4), cannot be accessed via unaccented pronouns, since this referent type is psychologically inactive at the point of retrieval. Only definite NPs with a lexical component can achieve this. But this point requires testing experimentally.

Next up the scale are indirect referents which are peripherally involved in setting up a given situation, as means, instrument or habitual accompaniment. This referent type is semi-active and not central within the mental representation of this situation. Such indirect referents

can only be retrieved with difficulty via unaccented pronouns, as our results have shown. This difficulty is not as absolute as with the associative or complementary background referents illustrated in (4) and (5). Examples are ‘the paintbrushes’ used by the artist in the set of French experimental items given in Table 2, or ‘the razors’ used by Mark in the English ones in Table 3. These referents are easily retrievable via definite lexical NPs, but only marginally via pronouns.

Finally, at the very top of the scale, implicit nuclear referents are almost as easy to retrieve via non-subject unaccented pronouns as their explicit counterparts are (see the attested examples (2a-c) as illustration). So pronouns and definite lexical NPs are almost equivalent as means of anaphoric access to such an indirect referent type.

Now, according to Gundel, Hedberg & Zacharski (1993, 2000), 3rd person pronouns canonically target referents with the most restrictive type of cognitive status targetable by a range of indexical forms. See their *Givenness Hierarchy* presented as Table 5 below.

Table 5

Gundel et al.’s (1993: 275) *Givenness Hierarchy*

in focus	>	activated	>	familiar	>	uniquely identifiable	>	Referential	>	type identifiable
<i>it</i>		<i>that/this this N</i>		<i>that N</i>		<i>the N</i>		indef. <i>this N</i>		<i>a N</i>

Each pronoun or determiner type is claimed to code one or other of the six cognitive statuses recognized by the scale. “In-focus” at the top is the most restrictive search space for the expression type’s referent, and “type-identifiable” at the bottom, the least. The hierarchy is implicational in character. At any position on the GH, the corresponding lexical item type is said to code that status as well as implying all the lower statuses (those to its right on the hierarchy). Moreover, the use of an expression containing a lexical item type occurring to the right of a given status only implicates that the leftward one doesn’t apply. As such, its use is sufficient to suggest a change of referent.

Now, according to the results of our two experiments, unaccented pronouns may not only signal the status “in-focus” of their intended referent, but also the status “activated” (the status immediately below it on the GH, to its right). Yet this possibility is not predicted by the authors: for unstressed pronouns cannot, according to the way in which the GH is claimed to operate, be used to signal a status to the right of “in-focus”. Donna Byron (2000) provides a range of attested as well as constructed examples, a number of which correspond to indirect anaphora, where 3rd person pronouns do in fact felicitously retrieve referents bearing the cognitive status “activated” but not “in-focus”. In fact, she argues that pronouns can go all the way down the GH to “type-identifiable” at the bottom right (so long as the semantic content of the anaphoric clause is sufficient to warrant this: see her notion of “semantically enhanced pronouns”). This latter situation would characterize the use of the generic indefinite pronoun *they*.

The next position down the GH after “activated” is “familiar”, a status said to be coded by the distal demonstrative determiner *that* in English, as in *Do you remember that summer we spent together two years ago?*. The demonstrative NP *that summer* in the example retrieves a representation of the intended referent from shared long-term memory. According to the results of our two experiments, peripheral indirect referents (which are only targetable with difficulty via pronouns) could well correspond to the status “familiar” on the GH. This status constitutes the limit of indirectness of potential referents retrievable via 3rd person pronouns. I would suggest that this is the reason why subjects found it significantly more difficult to resolve the

reference of object pronouns in this way in our two experiments. This is incidentally also the cut-off point for topical referents, according to Lambrecht (1994): for to be considered a potential topic, a referent must be both *identifiable* and *activated* – something which peripheral indirect referents are clearly not. Unaccented 3rd person pronouns, as is well known, are sensitive to the topical status of their potential referents.

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