Can pronouns look back a long way?

Hans Kamp – University of Stuttgart / University of Texas at Austin
hans.kamp@ims.uni-stuttgart.de

1 The end of Flaubert's Parrot

(1) Perhaps it was one of them.

(1) is the concluding sentence of Julian Barnes' *Flaubert's Parrot* (Barnes 1985), a book about Flaubert of an unusual sort, not quite a biography, more a kind of smorgasbord of different text types. But you can learn a lot of things about Flaubert from it. In particular there is much you can learn about 'Flaubert's parrot' – a stuffed parrot he had on his desk while writing 'Un Coeur Simple', a short story about a woman who has been in service for most of her life with a family that eventually has no use for her anymore and unceremoniously gets rid of her. Among her few possessions is a stuffed parrot, which during her final days is her sole companion. Apparently, the parrot on Flaubert's desk, that kept him to his subject while the writing was in progress, eventually came to irritate the author, whereupon he returned it to the Municipal Natural History Museum of Rouen, the nearby city from where Flaubert had borrowed the creature. One of Barnes' Flaubert projects that is discussed at length in his book, was to find out what happened to this famous prop of literary history. For the quite amusing details of Barnes' quest I must refer you to the book itself. But for present purposes I must give away the main point of the plot: In the end it turns out that Flaubert's parrot could have been anyone from a pretty large collection, some of which (if only a small proportion) were still in the possession of said museum on his last visit there that Barnes mentions.

Back to (1). Half of the words in (1) are pronouns. Two of them, *one* and *them* are unproblematic. *them* refers to the set of stuffed parrots Barnes is looking at in the museum, which is also referred to in the immediately preceding sentence – by another occurrence of *them* to which that of the last sentence can be construed as anaphoric – and *one* refers to some unspecified member of that set. The case that commands attention is the pronoun *it*. To properly understand what makes this case interesting you should ideally have read *Flaubert's Parrot*. But I don't want to assume that, so I will have to try to explain the problem by telling you enough about the book, and in particular a little more about how it ends. And perhaps you can guess the meaning of (1) just from the little I have told you so far: *it* must refer, somehow, to the parrot that once sat on Flaubert's desk. And (1) is a kind of free indirect discourse; it conveys Barnes' thought when he stands face to face with the three remaining items from the stuffed parrot collection the museum once had, to which, with reasonable probability, Flaubert's parrot must have belonged at some point in time.

So far nothing I have said about the case suggests anything of special interest to the linguist. What makes the case interesting is not what the antecedents of its anaphoric pronouns are, but where those antecedents can be found, assuming the pronouns have any. The antecedent of *them* is, we already noted, unproblematic: it is the *them* in the immediately preceding sentence. To be more explicit: the set of parrots that Barnes is looking at is introduced explicitly in the sixth but last sentence of the book and then resumed in every one the sentences that follow, ending with (1), and in all but the first of these sentences by a pronoun. The string of pronouns is a model example of personal pronouns with short distance antecedents.

Not so the *it* of (1). The last explicit mention of its referent – the parrot from Flaubert's desk – is a noun phrase 57 sentences back (on one count; the counting is a little difficult because of the colons and semi-colons, but the exact sentence number matters less than the fact that this mention was in a different episode, clearly separate from the last one of which (1) is the

concluding sentence). If the *it* of (1) is to be construed as anaphoric to this noun phrase, then this is a case of long-distance antecedent if ever there was one.
The remarkable thing about *it* in (1), however, is that it isn't hard for someone who has read the book up to this point – in other words: for someone who has read the book to the end – to understand that it refers to Flaubert's parrot. After all, Flaubert's parrot is what much of the book is about and the final chapter in particular. For a reader of that chapter Flaubert's parrot is conceptually salient like nothing else. So for those who hold that salience is what matters for anaphora Flaubert's parrot ought to be as good a referent for *it* in (1) as anything could be.

But are they right? I think they are not. True, the reader can readily conclude what *it* must be referring to. But when I read (1) the first time round – as a reader of a piece of literature, not as someone with a professional interest in linguistic analysis – the sentence came across as marked, and as marked because of its *it*. 'Where is its antecedent?', the reader in me was asking. 'Surely what is meant is Flaubert's parrot. But where was it mentioned last?' In fact, it is this markedness of Barnes use of it in (1) that makes it such a good way to end the book. Suppose the last sentence had been 'Perhaps Flaubert's parrot was one of these.' That would have expressed the same proposition. But it would have been a really pedestrian way to end, unworthy of a writer of the quality of Barnes. By using *it* instead the author conveys that his thoughts are so preoccupied – so obsessed – with the object of his quest that for him it is the natural way to speak about it. Or something along these lines.

2 Pronominal anaphora and DRT

When, close to 45 years ago, I first started to try and think seriously about anaphora, one of the problems that occupied the formal semantics community was donkey anaphora, a problem that Geach had found in the scholastic literature and brought to the attention of logicians and philosophers in his *Reference and Generality* (Geach 1962). Donkey anaphora became one of the motivations for *Discourse Representation Theory* (DRT) and the first DRT publication – Kamp (1981) – was on just this. One of the main points of this paper is that donkey anaphora isn't a problem that only shows up in certain sentences – Geach's 'donkey sentences' – but also, and in fact much more commonly, in multi-sentence discourses and texts. DRT gives a formal account of the truth conditions of donkey sentences and donkey discourses, and within this framework it is possible to formulate logical constraints on the pronoun-antecedent relation. The constraint, explicitly formulated in Kamp & Reyle (1993), is known as *accessibility* in DRT. Accessibility is a relation between the positions of pronouns and those of candidate antecedents in Logical Form. When this relation is not satisfied – when the candidate antecedent is not accessible from the position of the pronoun – then the pronoun cannot be anaphoric to it.

As defined in Kamp & Reyle (1993), DRT accessibility cannot deal with all the facts about donkey sentences, of which there are quite a few beyond those that Geach discussed. Some of these shortcomings have been corrected in later definitions of accessibility. But neither the original definition nor its corrections have anything to say about the rarity of long distance relations between pronouns and antecedents: DRT's accessibility imposes no constraints on the distance between antecedent and pronoun. To account for the strong tendency of pronouns to find their anaphoric antecedents nearby we need something quite different. One possibility is to introduce a notion of salience: to qualify as antecedent of an anaphoric pronoun the antecedent must be salient at the point when the pronoun has to be interpreted. Antecedents that are further back won't qualify because they lack the necessary salience. And they lack salience because salience decays as the discourse and its interpretation proceed. But what is salience precisely? (Or better perhaps: what precisely is the salience that is relevant to the

pronoun-antecedent relation?) And what is the rate of decay for the relevant notion of salience? To my knowledge these questions are still without persuasive answers.

In the course of the past four decades DRT has been extended in various directions. The most elaborate, well worked-out and widely known of these is SDRT ('Segmented Discourse Representation Theory') developed first and foremost by Asher & Lascarides (2003). SDRT builds on DRT in that it uses DRSs to represent clause and sentence contents. But in SDRT these DRSs serve as arguments of predicates that represent discourse relations.[1] One observation that SDRT has the tools to account for is that antecedent accessibility isn't just a matter of the structure of sentences and texts, as it is in DRT, but also depends on discourse relations. For instance, indefinite NPs occurring in a clause or sentence S' that stands in the rhetorical relation of Explanation to some other clause or sentence S isn't accessible to a pronoun in a sentence S'' that follows both S and S' in the discourse and stands in a non-subordinating relation (such as Narration) to S. This case of inaccessibility is a special case of a central principle of discourse coherence in SDRT, the so-called 'Right Frontier Constraint' (for details see Asher & Lascarides 2003). Since the Right Frontier Constraint imposes restrictions on multi-sentence texts that go substantially beyond those imposed by DRT, this is a natural place to look for constraints that forbid or strongly disprefer long-distance relations between pronouns and their antecedents. But unfortunately things aren't as straightforward as one might have hoped. Sequences of sentences S^1, S^2, …, S^n from a discourse such that each pair $<S^i, S^{i+1}>$ is related by a coordinating discourse relation should not allow for pronoun-antecedent relations when the pronoun belongs to S^i and the antecedent belongs to S^{i-k} for some $k \geq 2$.[2] But such relations are not impossible.[3]

There is probably more than one way out of this difficulty. One would be to admit larger discourse units that would be able to play a role in connection with nominal anaphora (and perhaps only in this connection). Among these larger discourse units would then be in particular narrative segments S^1, S^2, …, S^i of the sort mentioned in footnote 2. But note well that by itself this would not be enough to deal with the long distance problem we started out with: Once we allow narrative discourse units of two or more sentences, we also need some limits to how long these may be.

Perhaps it is possible to discover principles of discourse structure that give us these limits. Here is an observation that may lead us to such a principle when we pursue it more systematically than I have yet been able to: Suppose you write a bit of text that starts out as a single paragraph. But at some point the paragraph is getting too long. So you decide to split the paragraph into two, Paragraph 1 and Paragraph 2, the second following directly after the first.

---

[1] More accurately, the DRSs used in SDRT are content representations for *discourse units*. Discourse units are those parts of a discourse or text that stand in rhetorical and other discourse relations to each other. Mostly they are sentences or full sentential clauses, but other sentence constituents can also play the part of discourse units, and so can certain bits consisting of several sentences. One of the tasks for discourse theories like SDRT is to say what discourse units can be and how they are identified.

[2] The prediction follows if we assume that a pronoun occurring in a sentence S^j from a text or discourse must find its antecedent either within the semantic representation K^j of S^j itself or else in the DRS K^α of the node in the SDRT representation for the antecedent discourse to which K^i will be attached. In a 'simple narrative discourse' S^1, S^2, …, S^n, in which the relation between each successive sentence pair $<S^i, S^{i+1}>$ is Narration, the only possible attachment point for S^j is K^{j-1}; in other words, K^α is K^{j-1} in this case. So according to the mentioned Right Frontier Constraint the antecedent of an anaphoric pronoun in S^j must either occur in S^j or in S^{j-1}.

[3] Here is an example:

(i) A man took some steps in Minna's direction and asked her what was going on. Minna didn't know herself. So she didn't know what to say. She kept silent for a full ten seconds. But then he repeated his question and she knew that she had to say something.

In this case it seems to me that *he* is quite acceptable, even though there are two full sentences that separate the pronoun from its antecedent.

Suppose the split has the effect that Paragraph 2 contains a pronoun whose antecedent is in Paragraph 1. In my experience that will hardly ever do, even though there was no problem about this so long as the original paragraph hadn't been divided. So what I end up doing almost invariably is to replace the pronoun with some other noun phrase, which can be happily understood as anaphoric to an antecedent that occurs in a preceding paragraph. (Usually what I choose is some definite description.)

I take it that what is responsible for this change from an acceptable to a non-acceptable pronoun-antecedent relation is that single paragraphs are supposed to convey a form of cohesion that is lost when they are broken up into smaller paragraphs, and that pronoun-antecedent connections are properly satisfied only when both antecedent and pronoun belong to a part of the discourse that is cohesive in this sense. When one splits a paragraph, which is supposed to be cohesive into two or more, that is a way of saying that while the cohesion still holds for the smaller parts, it does not hold for any part of the discourse that consists of two or more of them. Trying to use a pronoun in one of the parts to refer back to an antecedent in some other part is inconsistent with treating these two parts as two paragraphs, as opposed to a single one.

Assume that I am right with my observation that paragraphs imply a cohesion that discourse segments of more than one paragraph do not possess. What kind of cohesion is this? Are single paragraphs different from sequences of two or more paragraphs also in other respects than pronoun-antecedent relations? If we knew about such other differences, then perhaps we would also be in a better position to understand what makes it so hard for pronouns to have antecedents that are far away.

Another factor may play its part as well. We humans are not good at coping with too much plain repetition. Narrative sequences, for instance, are fine, but they shouldn't be going on for too long without telling us any more than 'and then and then and then'. If the 'and thens' get to be too many for our taste we will want to cut the lot into parts, not so much because there is too little coherence in it, but because there is too little diversity. But when we do that, we signal that the conditions for pronoun-antecedent links are now restricted to the parts. This may be another force that keeps a lid on the distance between pronouns and their antecedents, as a kind of side effect. And also note: (i) keeping paragraphs short, for whatever reasons, is a soft constraint. For one thing, there is no fixed cut off point for boredom; it builds up gradually and at some rarely predictable point too much is too much. And (ii) if limits on paragraphs carry limits on pronoun-antecedent relations in their wake, that of course doesn't mean that there won't be other constraints on pronoun-antecedent distance as well. Perhaps some such will emerge when we keep looking into connections between anaphora and discourse coherence more closely.

3 Looking at the problem from the opposite direction: Chiriacescu and von Heusinger on *pe*-marking as a means of creating anaphoric antecedents

Up to this point we have been looking at the problems of anaphora from the perspective of the anaphoric expression: How does such an anaphoric NP find its antecedent? Where in the sentence, or in the antecedent discourse or text, can the antecedent be found, what properties should the antecedent have in order to qualify as pronoun antecedent – how 'salient' should it be, how 'prominent', how 'activated'? And there are also further questions that can be looked at from this perspective: What type of NP should a pronoun antecedent be? And how do different NPs compete with other NPs as antecedents for a given pronoun, in terms of their respective positions and forms?

But we can also adopt the reverse perspective: Consider some definite or indefinite NP type and ask what kind of anaphoric NP could be used to refer back to it at some later point, and

under what conditions determined by the sentence, discourse or text to which antecedent and anaphoric NP belong. This, on my understanding of it, is the perspective of Chiriacescu & von Heusinger (2010). Chiriacescu & von Heusinger are concerned in this paper with the discourse effects of *pe*-marked direct objects in Romanian. Romanian is a D(ifferential)O(bject)M(arking) language, in which animate indefinite descriptions in direct object position can be optionally marked with the particle *pe*, typically in combination with clitic doubling. One effect of *pe*-marking is that the thus marked phrase behaves as a specific indefinite. But as Chiriacescu & von Heusinger show, there is also a forward-looking dimension to the difference between *pe*-marked and non-*pe*-marked indefinite direct objects, in that the former carry an implication that more is going to be said about the entities they introduce. An experiment was conducted by Chiriacescu & von Heusinger, in which Romanian native speakers are asked to continue initial text fragments the last sentences of which have indefinite direct objects. There are two versions of these fragments, one in which the final indefinite object has *pe* and one in which the final indefinite does not. One half of the subjects were asked to continue a fragment with *pe* and the other half got the corresponding fragments without *pe*-marking. The continuations of the two groups were compared along a number of different dimensions.

One of the expectations was clearly confirmed: the continuations of the fragments with the *pe*-marked indefinite objects had substantially more anaphoric references to this indefinite than the continuations of the versions in which the indefinite was not *pe*-marked, and on the whole these anaphoric resumptions came earlier, many of them in the first sentence of the continuation, as if the pe-marked indefinite wants to be seen as a topic and the participants in the experiment feel that pressure and like to confirm that in their continuations by resuming it promptly. With the non-*pe*-marked indefinites there were not only fewer resumptions but on the whole they were more evenly distributed over the five sentences the participants were asked to write.

A second finding was also in line with expectations: in the continuations of the first versions there was a predominance of simple, unmodified definite descriptions, whereas in the continuations to the second versions there was a higher proportion of definite descriptions without modifiers. Exactly what moral about the status of DOM can be derived from this difference in the types of anaphoric resumptions is perhaps not immediately clear and an explanation of this difference is one of the challenges that this paper presents.[4]

Less expected was how little use the participants made of pronouns. To fully understand why, would require a close look at the material – the text fragments they were offered and the continuations they wrote – and that is something, which so far I haven't been able to do (and couldn't do without the help of native speakers). As the authors suggest, the explanation for this sparsity of pronoun uses may well have to do with a variety of factors, some of which may

[4] Here is a hunch: The difference between the kinds of descriptions that are preferred in the two tasks is that *pe*-marked indefinites establish their referents as entities, to which a subsequent anaphoric NP can then point. A definite description can do that by pointing at that entity in a way that is unambiguous given what is known about the entity on the basis of how it is introduced by the indefinite. For this to work all that is needed is that the head noun of the description makes it clear which of the established entities is meant. A non-pe-marked indefinite on the other hand does not make an entity available in this same way; it merely adds a representing discourse referent to the discourse representation. A description that refers back to something that is merely present in the form of such a discourse referent must select it as the unique satisfier of its descriptive content within the *class* of entities that the discourse representation represents the entity as being a member of; and that as a rule requires more descriptive information. To do justice to this distinction between entities 'merely' represented by discourse referents and 'referents established as entities', DRT and SDRT as described in Section 2 do not deliver. Needed, rather, is an extension of DRT in which entities can also be represented in some such form as file cards (Perry 1980), (Heim 1982,1988), (Recanati 2012). For one such extension, MSDRT, see e.g. (Kamp 2003), (Kamp 2015), (Kamp 2019).

be specific to Romanian, where the range of anaphoric expressions is different from (and larger than) in English.[5] So we should be very careful about drawing any conclusions from an experiment like this one about the use of English pronouns.

But apart from this, the experiment doesn't tell us anything about long distance anaphora. It wasn't designed for that. In this respect it is representative of pretty much all work on pronoun anaphora that I have seen: the focus is on short distance relations, where pronoun and antecedent are rarely more than two sentences apart. In this regard production-oriented work on pronoun anaphora is like the interpretation-oriented approaches of Section 2. There is no doubt in my mind that we will need to combine work from both these two perspectives to come to a substantially better understanding of anaphoric processes than we have. This will hopefully also show the way toward a better understanding of long distance anaphora. But at this point this no more than a hope.

As it is, then, we have made no real progress with the question we started out with, about the role of *it* in Barnes' last sentence, whose antecedent is apparently so very far away. But perhaps I didn't state that question the right way. Perhaps pronouns, and especially English *it*, are never long distance. That, I believe, is the intuition that most of those who work on nominal anaphora share. It partly motivates and perhaps also justifies that work, with its almost exclusive focus on short distance anaphora. If that intuition is right, then the *it* of sentence (1) isn't anaphoric pronoun at all. But then, what is it?

One of the established insights about pronouns is that they can be used for two related purposes – that of referring and that of resuming some earlier discourse constituent (their anaphoric function). Commonly these two purposes are realized together, when the resumed constituent is a referring phrase and the pronoun refers to the referent of that phrase by virtue of resuming it. But there are also cases where resumption does not entail reference (e.g. when the resumed constituent is a quantifying phrase). And, crucially, pronouns can also refer in the absence of resumption. The paradigmatic examples of this are *deictic* uses, where the speaker draws the attention of her audience to the thing she want to refer to by pointing at it, so that the audience can determine in that way what it she referring to.

Obviously such deictic uses of pronouns aren't found in written prose, which is meant to be read while the author is not present, and which in actual fact is nearly almost read in their absence. In particular, the *it* of (1) isn't a deictic pronoun in the usual sense. But – this is my concluding fling at an answer to the query posed by (1) – there can be something like pronoun deixis in soliloquy. When we talk to ourselves we can use pronouns to refer to things without needing to point at anything in physical space. All we need to do is something like pointing to something within the inner space of our mind, since in soliloquy that space is one that we share with our audience. The 'pointing' we do in such cases is perhaps more like highlighting: the highlighting of an entity representation – presumably one that must have sufficient prominence to begin with. When highlighting lifts such an entity representation into the spotlight, even the

---

[5] Sofiana Chiriacescu-Lindemann and Alina Tigău both checked the final sentence of *Flaubert's Parrot* in the Romanian translation of the book, which I repeat here.

(i) Poate că unul dintre ei era **cel** adevărat.
perhaps one of them was CEL (one) real.
'Perhaps one of them was that real one.'

The crucial bit in (i) is *cel* (marked in boldface). I quote Chiriacescu-Lindemann's comment (pers. comm.): 'The translator uses here the *cel* construction. *cel* is a demonstrative adjective (like *acel*(*a*) 'that'), which has a deictic/anaphoric interpretation. The *cel* construction seems to be best-suited for the present purposes as it points to and simultaneously shifts the attention to the intended referent. The more common Romanian simple personal pronoun and the null pronoun would be infelicitous in this exact context. The null pronoun could have been used in another version of this sentence, however, only in a free indirect discourse, like the present one, which involves context shifting.' It would be no doubt instructive to compare this translation with those into other languages, but this is a project I haven't undertaken.

pronoun *it* can be used in our soliloquizing to refer to the entity that the entity representation represents.

It was this use, I now think when reflecting in retrospect on my first reading of *Flaubert's Parrot*, that the *it* of its last sentence led me to; and with it a vivid image of Barnes standing in front of the parrot display in the museum, musing to himself: 'Was it perhaps one of these?' With that vivid image my reading of *Flaubert's Parrot* came to an end and it lingered on after I had turned the last page. Pronouns in texts are not really meant to be used this way. But that is precisely why Barnes' last sentence makes it so effective; and why it is one worthy of a first rate writer.

Author's note
Many thanks to Sofiana Chiriacescu-Lindemann and Alina Tigău, who set me right on a number of points concerning the data from Romanian. Without them, this piece would not have been possible.

References

Asher, Nicholas & Alex Lascarides. 2003. *Logics of Conversation*. Cambridge: Cambridge University Press.

Barnes, Julian. 1985. *Flaubert's Parrot*. London: Pan Books.

Geach, Peter Thomas. 1962. *Reference and Generality: An Examination of Some Medieval and Modern Theories*. Ithaca, NY: Cornell University Press.

Heim, Irene. 1988. *The Semantics of Definite and Indefinite Noun Phrases*. New York: Garland Press.

von Heusinger, Klaus & Sofiana Chiriacescu. 2010. Discourse prominence and *pe*-marking in Romanian. *International Review of Pragmatics* 2. 298–332.

Kamp, Hans. 1981. A theory of Truth and Semantic Representation. In Jeroen A. G. Groenendijk, Theo M. V. Janssen & Martin B. J. Stokhof (eds.), *Formal Methods in the Study of Language*, Part I, 277–322. Amsterdam: Mathematisch Centrum.

Kamp, Hans. 2003. Einstellungszustände und Einstellungszuschreibungen in der Diskursrepräsentationstheorie. In Ulrike Haas-Spohn (ed.), *Intentionalität zwischen Subjektivität und Weltbezug*, 209–289. Paderborn: Mentis.

Kamp, Hans. 2015. Using proper names as intermediaries between labelled entity representations. *Erkenntnis* 80. 263–312.

Kamp, Hans. in press. Entity representations and articulated contexts. An application to the analysis of deictic demonstratives. In Jessica Alden Pepp & Joseph Almog (eds.), *Themes from Kaplan, Thirty Years Later*. Oxford: Oxford University Press.

Kamp, Hans & Uwe Reyle. 1993. *From Discourse to Logic*. Dordrecht: Kluwer.

Perry, John. 1980. A problem about continued belief. *Pacific Philosophical Quarterly* 61(4). 317–332.

Recanati, François. 2012. *Mental Files.* Oxford: Oxford University Press.