Reports of Specific Indefinites

Abstract

Utterances of sentences with an indefinite can sometimes be reported with a referential term instead, notably if the indefinite was 'specific' but a referential term would not have been appropriate in the original utterance situation. This motivates a reassessment of indefinites and of speech reports. Under the proposed analyses, specific indefinites are referential with respect to what will be called the speaker's context, as distinct from the common context, and this can shine through in speech reports because they can be sensitive to that context.

1 Introduction

This paper is about some potentially problematic data concerning so-called specific indefinites and speech reports, how these data should be described and how the facts should be interpreted. The data in question are cases like the following. Suppose I confess to my wife:

(1) I have met someone else.

Suppose also that prior to hearing (1), she knows nothing about this 'someone else', there is no property that she believes her to have. Suppose, finally, that (1) is all I say to my wife about this matter on this occasion. Then the someone else can later – truthfully, it seems – report (1) by (2).

(2) He has told his wife he has met me.

The most conspicuous feature of (2) is the referential, indexical pronoun *me*. That this term does not figure in the original utterance (1) is unsurprising, but the fact that no referential term figures there at all – neither a personal or demonstrative pronoun, nor a proper name, or a definite description – is *prima facie* unexpected. In fact, it might seem to provide concrete evidence that the indefinite description *someone else* is in (1) used in a 'specific sense', that it is a 'specific indefinite',[1] and to support theories that postulate that indefinites *are* (potentially) referential (e.g., Kratzer 1998, 2003).

[1] There are various notions of 'specificity' concerning indefinites; von Heusinger (2011) identifies seven (partially overlapping) types, two of which are particularly relevant here: Epistemic specificity (the term originated with Farkas 1994) and scopal specificity.

The case of (1) and (2) is one example of a general pattern: whether I tell you something (declarative), ask you something (interrogative) or tell you to do something (imperative), if I use an indefinite description, then that can count as telling or asking you (to do) something expressed with a referential term, such as a name. (3)–(5) illustrate the pattern for predictions, questions, and commands.

(3) Matthew ... record[s] John the Baptist saying that he baptized people with water but that Jesus would come after him and baptize people with the Holy Spirit and with fire (Matthew 3:11 ...). (http://www.hosim.org/pages.asp?pageid=95711, linked to:)

Matthew 3:11: "I baptize you with water for repentance. But after me comes one who is more powerful than I, whose sandals I am not worthy to carry. He will baptize you with the Holy Spirit and fire."

(4) Along his route, Stanley asked the natives whether they had seen Livingstone: "Have you seen an old white man?"

(5) Joan gave orders that someone should be sent to Fierbois to fetch the Sword of Charles Martel: "Go to the church of Sainte-Catherine and fetch for me a sword which is buried behind the high altar there!"

It is well known that an indirect speech report does not need to be faithful to the original utterance in the sense that the complement clause must express the same content as was originally expressed (see Cappelen and Lepore 1997 for a variety of counterexamples). Typically, it may express something weaker. Thus a name or a personal pronoun in the original can be replaced by an indefinite pronoun in the report. But the case at hand is different, it is almost the other way around here: an indefinite in the original is replaced by a name or a personal pronoun in the report.

It is also a known fact that an attitude report can contain one term although the reported attitude is about the content of another; the former term is then said to have a 'relational *de re*' reading, where the latter is an 'identifier' based on an 'acquaintance relation' between the attitude holder and the referent in question (Maier 2010 provides a recent treatment of such readings). Could what we have here be an instance of 'relational *de re*', applied to speech reports? The problem is that the original utterance features an indefinite, not a definite. It is a precondition for a relational *de re* interpretation that the two concepts are coextensional, and this would require the indefinite to be referential. But, as will be shown in section 4.1, if we can assume that indefinites can be referential, the facts before us can be accounted for on a standard semantics for speech reports, without recourse to a relational *de re* analysis; moreover, as will be argued in section 4.2, an assumption that indefinites can be referential is unrealistically strong.

Two factors seem to be important for an indefinite to be rendered by a referential term in a speech report. First, it seems to be a precondition that when uttering the indefinite, the original speaker had a specific referent in

mind, the one denoted by the referential term. In other words, the indefinite must evidently have been uttered in what Karttunen (1968: 14) called "the specific sense". Second, it seems to be important that a referential term, like a name, would not have 'made sense' to the original hearer. Thus if my wife were to somehow know of the person I allude to with (1), the *me* of (2), it would not suffice to have uttered (1) for (2) to be true; I would have had to supply a more definite term, like a name or a definite description.

These observations inspire the following tentative generalization:

(6) **Referential Report** (preliminary version)

> An utterance with an indefinite description in it can under certain circumstances having to do with the hearer's information state on the one hand and the speaker's information state on the other hand be reported by use of a referential term.

My more precise hypothesis about these 'certain circumstances' will be that (i) the indefinite description token is specific in the sense that the speaker has an individual in mind for it, the individual denoted by the referential term of the report, but (ii) this entity cannot be identified to the hearer; it is not possible to use a referential term and thereby convey its identity. This hypothesis is debatable, however, and needs to be argued carefully. The next section, section 2, is devoted to this argument. I conclude that in the absence of relevant background knowledge, the two criteria (i) and (ii) do seem both necessary and sufficient for Referential Report.

Section 3 addresses speech report verbs to assess what their semantics predicts about the phenomenon. The conclusion is that because background knowledge is not a decisive factor, even relatively weak truth conditions for speech report verbs predict that for (2) to be a true report of (1), the content of *someone else* in one context must equal the content of *me* in another. More generally, the phenomenon requires an indefinite to be referential in some context, and this may pose a problem for the theory of indefinites.

This leads to a discussion of the semantics of indefinites in Section 4. Here, I argue that while one type of theory (advanced by Kratzer 1998 and others), where specific indefinites *are* referential in many contexts, would solve the problem, this type of theory is on the whole too strong. Instead, I propose to take a particular weaker theory, that developed by Jäger (2007), as a basis for my own analysis, which is set out in section 5. The elements of this analysis are, informally:

1. A context of utterance includes a 'speaker's information state', a set of world-assignment pairs, from which a 'speaker's context' can be defined

2. an epistemically specific indefinite can in principle be referential, and it will be referential in view of the speaker's context,

3. as far as speech reports are concerned, under certain circumstances

the speaker's context can count as the context.

Together, these three elements can account for the pattern observed in (1)/(2) and (3)–(5). There is also independent motivation for 1. and 2.: these two assumptions provide a way of explaining the tendency for hearers to select widest scope readings of indefinites they recognize as specific.

Section 6 provides a critical discussion and conclusions.

2 Delineating the phenomenon

In this section I will defend the descriptive hypothesis (7), a refinement of (6).

(7) **Referential Report**

Consider an utterance of a sentence [a P] Q.[2]
[a P] can be rendered by a referential term u (a name, a personal or demonstrative pronoun, or a definite or demonstrative description) in a report of this utterance if and only if either

A the reporter has background knowledge that the referent of u is the only entity that satisfies P and/or Q, or

B **(i)** the original speaker had the referent of u in mind in uttering [a P] but
(ii) the referent of u was not identifiable to the hearer.

Case **A** is part of a more general picture, relevant for other terms than indefinites and also arguably for other attitude reports than speech reports. As we will see, background knowledge can help infer the content of the complement clause of the report from the content of the reported utterance and thus help make the report true, and case **A** is a special case of that. Case **B**, however, is characteristic of reports of utterances with indefinites and of central concern in this paper.

The defense of the hypothesis falls into three parts. First, I have to show that **B(i)** is a necessary condition providing **A** does not apply, i.e., that if background knowledge cannot be relied upon, the condition that the original speaker had the referent of the referential term in mind in uttering the indefinite is a necessary condition for Referential Report (section 2.1). Second, I have to show that if background knowledge cannot be relied upon, the condition that the speaker would not have been able to identify the referent of the referential term to the hearer is a necessary condition as well (section 2.2). And third, I have to show that these two conditions are jointly sufficient, independently of background knowledge (section 2.3).

[2] The formulation is a bit simplistic: the indefinite description [a P] may be embedded, in which case the notation [a P] Q is inaccurate; and there is imprecision concerning the locution "can be represented" (what is intended is that the report is correct (true) under the substitution of u for [a P] if it is otherwise sufficiently faithful – cf. section 3).

2.1 The criterion of epistemic specificity

In the examples considered so far, it is rather obvious that the speaker of the reported utterance had an individual in mind when uttering the indefinite. But that does not yet show that this feature is constitutive of knowledge-independent Referential Report; to find support for this part of the hypothesis (7), **B(i)**, we must consider a case where the original speaker can be assumed not to have had a specific individual in mind and see if the speaker of the report can still render the utterance of the indefinite with a referential term (without drawing on background knowledge of the kind outlined in part **A**).

The notion of specificity as the speaker having an individual in mind is not a sharply defined one, though it has been modelled in various ways. Thus in the theory of Kamp (1990) and Kamp and Bende-Farkas (2010), to use an indefinite token specifically is to have an anchored representation for it, i.e., the discourse referent introduced by it has an 'external anchor'. In the theory of Dekker (1998), an indefinite token is (narrowly) specific if in the speaker's 'information aggregate' that 'licenses' the utterance, all assignments defined for the variable that the variable set up by the indefinite token is linked to map this variable to one and the same individual. In the theory of von Heusinger (2002), specificity indicates that the indefinite is 'referentially anchored'; referential anchoring is, following Kratzer (1998), explicated through a parameterized choice function where the parameter can be set to the speaker, and if it is, the choice function can be spelt out as *λP the P the speaker has in mind*. But there are no clear-cut operational criteria for judging whether a given use is specific in the 'epistemic' sense of having a referent in mind.

Moreover, according to Dekker (2002: 153f.), unembedded indefinites are normally uttered with specific individuals in mind: "... a speaker must have definite individuals in mind when she talks about them, be it in definite or in indefinite terms." Thus it may not be easy to find a clear case where an unembedded indefinite is used without a definite individual in mind. But (8), as uttered by one of the seven dwarves, seeing a small depression on his bed, may come fairly close:

(8) Someone has lain in my bed.

It does not appear to be possible to report such an utterance of (8) by (9):

(9) The dwarf said that Snow White had lain in his bed.

The only way this report could be justified is if the speaker of it knows that Show White and noone else had lain in the bed – but even so, it is not very natural, and anyway, that is background knowledge of the kind outlined in case **A**, so the hypothesis does not predict that specificity is necessary.

On the other hand, consider an utterance of (8) or, more naturally, (10), where the speaker is Mary at confession and she has John in mind in uttering

the indefinite. It seems that the report (11) could be justified then, and in fact, even if it is not known that noone but John had been in Mary's bed, only that, say, Mary is especially worried over this particular sin so that John would have been on her mind.

(10) I have had a man in my bed.

(11) Mary told her priest that she had had John in her bed.

Thus the report is saved by introducing epistemic specificity into the source. More cases where we do not even need to assume that, mutatis mutandis, John had been in Mary's bed at all are presented in section 2.3.

A particularly clear piece of evidence that epistemic specificity is a decisive factor is provided by cases like the following, where Referential Report succeeds or fails according to which entity the speaker had in mind.

(12) Two students have been looking for the professor – the professor knows neither of them but the secretary knows one of them and has this one in mind when uttering: "A student was looking for you this morning. You should check your pigeonhole."

Suppose this student later calls the secretary and asks:

(13) Did you tell the professor I'd been around looking for her?

My intuition is that the secretary's truthful answer to this will be *yes*. Suppose, by contrast, that the other student also calls and asks the same. My intuition is now that the secretary's truthful answer is *no*.[3] Note that because the secretary knows that the first student was *not* the only one looking for the professor that morning, case **A** is out of the question.

Sometimes, it may seem relevant that the original *hearer* had or got a definite entity in mind. Consider the following scenario, brought up by a reviewer as potentially problematic for the criterion of epistemic specificity:

(14) The secretary tells the professor:
"This morning a student was looking for you."

The secretary has no clue who it was, but the professor knows immediately it could only have been Peter. Now, the professor calls Peter and says:

(15) My secretary said that you were looking for me this morning.

It might appear as though speaker-specificity is reversed to hearer-specificity here, in the sense that the hearer came to have Peter in mind when hearing *a student* and that this is what enables the referential report. Note, however, that the original hearer coincides with the speech reporter, and that what brought Peter to her or his mind was the piece of knowledge that it could

[3] There may be more natural responses like *Well, not really, but I did tell her a student had ...*; note the parallel to a case of anaphoric uptake of a specific indefinite discussed by Dekker (2002: 152f.), modelled on the same situation and making a similar point.

only have been him who had been looking for the professor that morning. The given scenario can therefore be subsumed under case **A**, Referential Report on the basis of background knowledge.

Cases involving plural indefinites also seem to complicate the picture:

(14) a. The secretary tells the professor:
"This morning two students were looking for you."

The secretary has no clue who they were, but the professor knows immediately it could only have been Peter and George. Now, the professor calls Peter and says:

(15) a. My secretary said that you were looking for me this morning.

Again, I believe that case **A** is relevant here, making specificity irrelevant, though the example shows that the hypothesis (7) is too simple: it should extend to plural indefinite or cardinal DPs and referential terms for atomic *or nonatomic* referents, and to enable reports like (15a), case **A** must allow for the referent of u to be part of a nonatomic referent known to be the only entity to satisfy P and/or Q. To retain a reasonably manageable hypothesis, though, I will refrain from such extensions. Note that, as will become clear in section 3.3, case **A**, whether in singular or plural instances, poses no problem for the semantics of speech reports. It is case **B** (as an exclusive disjunct) that will be seen to present a challenge.

In sum, the criterion of epistemic specificity does seem a decisive factor: at least in the absence of background knowledge of the kind 'this and only this individual satisfies the description and the predication of the source', it seems to be crucial that the speaker had the referent in mind.

2.2 The criterion of hearer non-identifiability

This is the requirement that the referent of the referential term used in the report was not identifiable to the hearer; that is, there is no term that the speaker could have used to designate that individual in the original context. Again, the examples given so far seem to support the hypothesis (it is clear, in particular, that the terms *Jesus* and *Livingstone* would not have made sense to the addressees). But we must also consider cases where it would have been possible to identify the individual in question to the hearer and see whether this blocks a referential report.

What we seem to find is that this criterion is not sharp at the edges but sensitive to other, softer or more pragmatic aspects of the original context than the mere (non-)existence of a term that would designate the same individual in the original context as the referential term does in the context of the report. In fact, there may be a term by which that individual was identifiable to the hearer as long as the individual was novel, not familiar, to her. There are two relevant cases of exception: demonstratives and non-familiar definites.

Let us return to example (1) from section 1. Informants are in agreement that the referential report (2) fails if my wife knew the person I had in mind. As an extreme case, suppose that the person I had in mind is her sister: clearly, (2) fails to report (1) then. But what if the person I had in mind was, by accident, in our visual field in the situation where I uttered (1) – might (2) be a true report in that case? It seems that it might, although I could have demonstrated the person to my wife but chose not to, so that the person was in a manner of speaking identifiable by way of a referential term, say, the demonstrative description *that woman over there*.[4]

This might be thought to reflect a difference in speaker cooperativity concerning Quantity and Relevance. Failure to mention that the person I have in mind is your sister violates the combination of these two maxims, it is (deliberately) under-informative. Failure to point the person out to you, on the other hand, is compatible with my contribution being as informative as is required for the purposes of the current exchange. In light of this, one might consider replacing the criterion of hearer non-identifiability with a criterion that the speaker observed the combined maxim of Quantity and Relevance ('say as much as you can as long as it is relevant', cf. Benz 2007: 94), (s)he was not withholding information in using the indefinite.

Let us briefly turn to indefinites that could be replaced by definites. (16) would be a case in point (as would (5) in section 1):

(16) You must fetch me a ring which I have dropped into the Red Sea.

Here the definite description *the ring which I have dropped into the Red Sea* could have been used, but even so, (17) could be a true report of (16).

(17) The sorceress said to him he had to fetch her the Ring of Water.

It seems clear, however, that since this definite description is non-familiar and its presupposition is accommodated, it would not serve to identify the Ring of Water any more closely than the indefinite description. So this case does not form real counterevidence to the criterion of non-identifiability.

As shown by the following scenario, however, the criterion should not only refer to the hearer but take the speaker into account as well: it should be relativized to the speaker's ability to identify the referent on the basis of the available evidence.

Suppose that my wife has hired a private detective to follow me, that he has seen me and you, her sister Anne, together, and that he reports to my wife: "Your husband is seeing another woman." After being confronted with this by my wife, I report it to you by saying:

(18) My wife has hired a private detective to follow me and he has now reported to her that you and I are seeing each other.

[4] I am grateful to a reviewer for the Journal of Semantics for bringing this consideration to my attention.

This will not be a faithful report if the detective had found out that the woman he had observed me with is my wife's sister, or someone she knows, but still just said, "Your husband is seeing another woman." But otherwise? Judgments are subtle here, but if (18) can be a faithful report if the detective's sole acquaintance with my wife's sister is through sightings of her and me together, this may motivate a modification of the criterion in the following direction: there was no term by which the speaker could have identified the referent to the hearer without violating the maxim of Quality. Note that the detective was cooperative just in case he had not found out that the woman is my wife's sister, or anyone she knows: identifying her would have violated Quality, as he would lack sufficient evidence.

In sum, there appears to be reason to add to the formulation of the criterion of non-identifiability in (7), **B(ii)**, a proviso in pragmatic terms: the referent of u was not identifiable to the hearer in a manner necessitated by the combined maxim of Quantity and Relevance and compatible with the maxim of Quality.

There will be occasion to return to this issue in section 5.3.

2.3 Independence of auxiliary premises

According to the hypothesis (7), the criterion of epistemic specificity and that of hearer non-identifiability are jointly sufficient for a referential report. That is, the following inference is predicted to hold (for any noun phrase P, any verb phrase Q and any individual u):[5]

(19) A said to B: "a P Q."
In so saying, A had u in mind, but had no way to identify u to B.

A said to B that u Q.

Let us call P the 'description' and Q the 'predication'.

The question is now whether this is too liberal. There are several subquestions that can be asked:[6]

1. Should not u be required to be a P, or to Q, or to be the only entity that could satisfy P and Q?

2. Should not A be required to have believed that u is a P, or that u Q?

3. Will any description P do, or should A be required to have chosen the description in accordance with some constraint?

[5] This inference schema is by necessity lacking in generality, in regard to the notation "a P Q", as well as in precision, regarding the object-language, pre-theoretic formulation "in so saying, A had u in mind, but had no way to identify u to B".

[6] The predicates 'P' and 'Q' are often used as shorthand for their respective denotations in these meta-language contexts.

2.3.1 Must u (be the only entity to) satisfy P and Q?

It does not, in fact, seem to matter whether the original speaker was right or wrong about the properties she ascribed to the referent she had in mind. I can report an utterance of (20a) by saying (20b) even though I am not really a dancer but a callgirl, and I can report an utterance of (21a) by saying (21b) even if I have no intention of leaving my nephew anything.

(20) a. I have fallen in love with a dancer.
b. He has told his daughter he has fallen in love with me.

(21) a. Once an uncle of mine passes on I'll be rich.
b. He's been telling his friends he'll inherit a fortune when I die.

Indeed, if someone, observing suspicious behavior at a storefront at night, calls the police and says, "A man is trying to break into the store," a report like (22) seems adequate, although neither P nor Q prove to hold of u.

(22) Excuse us, ma'm, a caller said you were trying to break into the store, but we realize now you are a jogger stretching your hamstrings. (modelled on a case in Dekker 1998)

This example also seems to show that it is unnecessary to assume that u is the *only* entity that could satisfy P and Q. The speaker of the report (20b) will be convinced that she is the only individual that could possibly be a dancer he has fallen in love with, and the speaker of the report (21b) will probably be convinced that he is the only individual that could possibly be an uncle leaving the nephew a fortune, but it seems implausible that the speaker of the report (22) believes that the hearer is the only individual that could possibly answer the description 'man trying to break into the store'. What does ring true is that the speaker of the report (22) believes that the hearer is the only individual that the original speaker could possibly have had in mind when (s)he made the call.

Another case that shows that a premise that u is the only entity to satisfy P and Q is unnecessary is the case described by (12) and (13) in section 2.1, where there are two individuals satisfying P and Q.

2.3.2 Must u be believed by the speaker to satisfy P and Q?

It also does not seem to matter whether the original speaker was speaking in good faith or not as far as Q, the predication, is concerned. Suppose I am leaving for Paris to meet you, my client but also my lover, there, saying to my wife: "I have to go to Paris for a meeting with a client." Once we meet there, you ask me what I told my wife. I say:

(23) I said I had to come here for a meeting with you.

What I did say was deliberately misleading, yet the rendering of it with the second person pronoun instead of the indefinite *a client* seems correct.

A more general counterargument to the idea that u must be believed by the speaker to satisfy Q, the predication, is the following: as shown in section 1, referential reports are not limited to declaratives but extend to interrogatives and directives, and here, it is difficult to see how a constraint of that kind could make sense. In particular, with reference to (4), there would not be much point in asking whether the hearer has seen Livingstone if the speaker were already to be convinced that (s)he has.

What does seem to hold is that the speaker must have believed that u satisfies P, the description. If you are not my client, (23) is hardly a correct report of my utterance "I have to go to Paris for a meeting with a client." How is this condition to be understood? It seems natural to connect it with the condition that the speaker had u in mind (section 2.1). I cannot be said to have you in mind for my utterance of *a client* unless I believe you are my client. Generally, it seems reasonable to restrict epistemic specificity in regard to indefinite descriptions "a P" and individuals u to situations where speakers believe that u is a P. (This constraint must be kept in mind when epistemic specificity is to be modelled in section 5.1.) Hence, it is not necessary to formulate an additional constraint on referential reports.

2.3.3 Will any P do?

There are indications that the description P must have been chosen with some care. Consider this scenario: in the women's change room at a public swimming pool, I am astonished to see a man behaving as if he were in the men's change room, and I go and tell the guard: "A man is in the women's change room!" Returning, I say to the man:

(24) You have to leave. I said to the guard that you are here.

This is faithful enough to be true, but would it be if what I actually said to the guard was not "A man is in the women's change room" but just "Somebody's in the women's change room"? Again, judgments are subtle. It seems clear that even if I had that man in mind in uttering *somebody*, my utterance could not felicitously be reported as in (24), so evidently it can matter what indefinite description was chosen. However, (24) might still be a true report, as the impression that it is not correct might stem from the pragmatic inadequacy of the utterance with *somebody*, making any report of it problematic. (24) would be misleading, as it would suggest that something appropriate had been uttered.[7] On the other hand, if (24) is considered a false report of "Somebody's in the women's change room", this could, again, motivate a constraint on Referential Report to the effect that the speaker was observing, in particular, the maxims of Quantity and Relevance (cf. section 2.2). This option is formulated in more precise and

[7]Note that there are situations where the sentence would be adequate and the report unproblematic, say, if the man is in the women's change room after closing hours. Note, too, that in the original situation the guard would probably interpret *somebody* in the enriched sense of 'somebody who isn't supposed to be there' or even 'a man'.

general terms in connection with a weakened semantics for speech reports in section 5.3.

Other observations also militate for a pragmatic constraint of this sort. Let us once again briefly consider (1) and (2) from section 1: as pointed out by a reviewer, if it is somehow important in the scenario who the utterer of (1) had met, for example, if he had been asked – by the woman he had met, or by a friend, say – to tell his wife about certain properties of the woman he had met, then (1), with the near-trivial description *someone else*, might not be informative enough to justify (2).

(1) I have met someone else.

(2) He has told his wife he has met me.

I believe that this points in the same direction as the case above: the speaker must be assumed to have been as informative as required for the purposes of the exchange, and here he was not. What sets this case apart from the one above is that here, these purposes are in part determined by a third person (the woman he had met, or a friend).

2.4 Interim conclusion and outlook

I have tried to show that reports of indefinites in terms of referential terms represent a separate phenomenon, independent, in particular, of background knowledge in the form of auxiliary premises saying that there is only one individual that satisfies both the description and the predication, namely, the referent of the referential term. Epistemic specificity, the notion that the speaker has an individual in mind in uttering the indefinite description, emerges as a key factor, together with a condition to the effect that the indefinite description was, in a manner of speaking, the best term available.

In the following section, the aim will be to show that this phenomenon presents a problem, for the semantic analysis of indefinites and/or that of speech reports. I will start by considering the semantics of speech reports.

3 The semantics of speech reports

In this section I go into the semantics of verbs like *say* and *tell* to show that for a reasonable analysis of speech reports to support the Referential Report hypothesis, it must be possible for an indefinite to express an individual concept in a context.

There is no consensus on the analysis of indirect speech report verbs; more or less explicit proposals range from the strict theory of Kaplan (1977) to the more pragmatics-minded views expressed by Cappelen and Lepore (1997); Brasoveanu and Farkas (2007) maintain an intermediate position. But all theorists seem to agree on three points about I(ndirect) S(peech):[8]

[8] As we will see, Kaplan's formal analysis does not leave room for the points 2 and 3,

1. IS involves context-shift: while the content of the argument clause is fixed by the current context, the content of what was spoken is fixed by the source context, to be reconstructed from the current context by certain substitutions, most notably, the subject of the report verb for the speaker and the time of the speech act for the current time.

2. The content of the argument clause (in the current context) does not have to be equal to that of what was spoken (in the source context), it may be weaker.

3. The content of the argument clause may even be logically independent of that of what was spoken, providing there is background knowledge of the right kind to help infer the former from the latter.

I will now elaborate on these three points step by step, with a view to assessing to what extent reports of indefinite descriptions by means of referential terms can be predicted. It will be seen that even on a weak definition in accordance with 3, to account for such reports it is necessary to assume that – in principle – an indefinite can express an individual concept. This, in turn, will be the topic of section 4.

3.1 Context-shift and rigid designators

I take the analysis of speech reports given by Kaplan (1977/1989: 554) as a point of departure, because it provides a clear-cut format for describing the context shifts involved in speech reports.

In Kaplan's framework, the interpretation function maps an expression to a meaning, or *character*, which maps a context of utterance to a *content*, or intension, which in turn maps a context of evaluation to an extension. Contexts, whether utterance or evaluation contexts, are tuples of the various aspects of a context, such as the world, the time, the place, the speaker, the hearer, and more. The minimum is a triple of speaker, world and time, since, as noted by von Stechow and Zimmermann (2005: 210), all other aspects that can help determining a content can be derived from that:

> An individual in a world at a time can be identified with a context because it gives us any kind of information a context could yield. The individual is located at a particular place in that world at that time, the content of *here*. There might be a particular audience addressed in w at t by the individual, the content of *you*. The individual might share certain assumptions with other participants of the conversation, Stalnaker's common ground, and so on. All this is determined by the triple containing speaker, world, and time.

but he is known to recognize the validity of these two assumptions; cf. section 3.3.

However, it is often practical to assume additional members of the context tuple. I will eventually assume, in addition to world, time and speaker, the hearer and an 'information state' (a set of world-assignment pairs).

Kaplan does not state his analysis of speech reports in definitive detail, so there is some room for interpretation, exploited in various ways by, e.g., Schlenker 2003, von Stechow and Zimmermann 2005, and Maier 2009. (25) is a direct definition of the meaning of the verb *say*, taking three overt arguments – a proposition and two individuals – and a covert event argument.

(25) **The meaning of *say* according to Kaplan (1977) (first)**

$$[\![\, say \,]\!]_{c,j} = \lambda\phi\lambda y\lambda x\lambda e\ \exists\chi\, \Delta_{c'}(\chi)(y)(x)(e) \wedge \chi_k = \phi$$
$$\text{where } k = c\,[\,1_c/x, 2_c/y, t_c/\tau(e)\,]$$

I follow von Stechow and Zimmermann (2005) in using the index c for the current context of utterance and the index j for the current context of evaluation. The core of the meaning of *say* is that there is a declarative sentence character χ – a function from contexts to propositions – which was uttered (Δ for *dictum*) and which assigns to k, the context of that utterance, the argument proposition of *say*.[9] The original context k is here specified as the tuple coming from c by three substitutions: the subject (x) for the speaker, the object (y) for the hearer, and the time of the event ($\tau(e)$) for the time. This does not mean that the context of utterance *is* a triple; at a minimum, it also has a world coordinate.

With this definition of the speech report verb *say* in hand, let us return to the speech report (2) to assess what the man referred to with *he* could have said to his wife to qualify as telling her he has met the woman referred to with *me*.[10]

(2) He has told his wife he has met me.

He is unproblematic: he would have referred to himself as I, since $[\![\, I \,]\!]$ assigns to a context replacing 1_c by x whatever $[\![\, he \,]\!]$ in (2) assigns to c. The *me* might be unproblematic as well – if, for instance, this individual was visible to both interlocutors so that the speaker could point her out to the hearer saying (26) or (27), using a deictic pronoun or a demonstrative description.

(26) I am having an affair with <u>*her*</u>.

[9] Due to the chosen framework, what is here and throughout called a proposition is, following the practice of e.g. von Stechow and Zimmermann (2005), strictly not a set of worlds but a set of Kaplanian contexts (of evaluation), where the world is one member. It is practical, though, to think of propositions as sets of worlds, and sometimes they will be referred to as if they were.

[10] Strictly, (25) does not define the meaning of the verb *tell* but that of the verb *say*, and though differences between *say* and *tell* cannot be ignored (e.g., some would say the latter is more liable to be used in a factive sense, and the indirect object is obligatory with *tell* but optional with *say*), they are irrelevant in the present context.

(27) I have been seeing that woman over there.

More realistically, the speaker might have chosen to use a name – Diane Maria Pinto, say, if she was called that.

(28) I have a thing going with Diane Maria Pinto.

But here too there is a condition: he would not choose to use the name unless he was confident that the hearer would associate something with it. That may not have been the case: if the hearer had never heard or seen the name, it would not make any sense to her, and the speaker, realizing that, would avoid using it.

That the use of proper names is constrained by a 'mutual familiarity' condition has been recognized and described from various perspectives. On one recent theory (Matushansky 2008: 599), names have an argument slot for "the naming convention in force between the speaker and the hearer", *the naming convention of the speaker that is presupposed to be shared by the hearer*, saturated by an indexical variable $\mathcal{R}_0$. Thus (slightly adapted):

(29) **The meaning of *Diane* according to Matushansky (2008)**

$[\![\, \textit{Diane} \,]\!]_{c,w} = \iota x\ \mathcal{R}_c(x)(/\text{daɪæn}/)$

The denotation of the name in context c and in world w is the individual – presupposing that there is one and only one such individual – such that the value of the naming convention $\mathcal{R}$ at c holds between it and the meta name. This means that just as (26) or (27) will fail to express a proposition unless the context provides a referent for the deictic term, (28) only expresses one if the context provides a naming convention unambiguously determining an individual; crucially, this convention must be a convention in the true sense: the hearer must be in on it.

Let us say that neither option was open – it was neither possible to use a deictic expression nor to use a name to designate the woman referred to as *me* in (2). There is one more type of (potentially) referential expression available in principle: definite descriptions, as in (30).[11]

(30) I have become involved with the woman I met at the Hanover Fair.

But again, this would not be an option unless the hearer had previously been told about the woman. The case is not much different from that of names: the referent for the definite description should be familiar, or identifiable, to both interlocutors under the same or a more specific description, if not from the previous discourse, then from their common ground of shared beliefs.[12]

[11] There are of course a wide variety of analyses of definite descriptions; such a term can contribute to a proposition coinciding with the content of the complement clause in (2) under a theory where it is directly referential, i.e., where its value is determined by some aspect of the context of utterance and does not vary with the context of evaluation.

[12] It has been observed (e.g. by Beaver and Zeevat 2004) that 'long' definite descriptions relatively readily allow accommodation of their existence and uniqueness presupposition,

Of course, there are very many definite descriptions to be considered, but let us say the speaker had to discard them all because none would have made sense to the hearer. Then, the range of referential terms exhausted, one would have to conclude that there is no declarative sentence character χ which maps the source context to the content of the complement clause in (2), and thus that under the analysis in (25), (2) cannot be true as long as the hearer has no previous knowledge of the person the speaker has met.

There is, in principle, yet another option: an indefinite description like *someone else* as in (1). But under the strict analysis of *say* in (25), such a term will have to be directly referential to contribute to a proposition that coincides with the content of a clause like *he has met me*. There are theories of indefinites where they are directly referential; first, however, let us see whether a less strict analysis of *say* can be used to relax that requirement.

3.2 Amendment I

Cappelen and Lepore (1997: 282f.) observe that "(5) can be correctly reported by (6) even though its complement clause couldn't have the *same* semantic content as (5)". Their (5) and (6) are here rendered as (31a-b):

(31) a. A: I bought a pair of Bruno Magli shoes and then I ate lunch.
b. A said that he bought a pair of Bruno Magli shoes.

They also supply (32a-b) and (33a-b) to illustrate the point that complement clauses of *say* can differ in semantic content from the reported utterance.

(32) a. A: I own a very expensive pair of brown Bruno Magli shoes.
b. A said that he owns a pair of Bruno Magli shoes.

(33) a. A: I slapped him hard in the face.
b. A said he slapped him in the face.

Richard (1998: 609ff.) responds to this and other challenges raised by Cappelen and Lepore by suggesting that there is a relation DET such that, if someone asserts p and p DET q, she asserts q. It is clear that DET is intended to include the entailment relation (but also more, cf. section 3.3). In the framework of the Kaplanian analysis of indirect speech report verbs presented above (section 3.1), it is clear how definition (25) can be modified to accommodate examples like (31a-b)–(33a-b): in the key definiens clause "$\chi_k = \phi$", "=" must be replaced by the subset relation symbol, "$\subseteq$":

(34) **The meaning of *say* according to Kaplan (1977) (second)**

$[\![\, say \,]\!]_{c,j} = \lambda\phi\lambda y\lambda x\lambda e\ \exists\chi\, \Delta_j(\chi)(y)(x)(e) \wedge \chi_k \subseteq \phi$

where $k = c\,[\,1_c/x, 2_c/y, t_c/\tau(e)\,]$

and the definite description in (30) is long; yet one would be inclined to say that (30) fails to express a proposition if I have kept it a secret from you that I met a woman there.

This is a simple and relatively unproblematic amendment.[13] But, while (34) is more adequate than (25), it does not yet provide a way to get around the requirement that any utterance (expressing a nonempty content) serving as a source for a true utterance of (2) must contain a directly referential expression to match the pronoun *me*.

3.3 Amendment II

There is a widely shared recognition that (34) is still too strong.[14] After presenting their own, strict version of Kaplan's analysis of *say*, equal to (25) in all relevant respects, von Stechow and Zimmermann (2005) note:

> According to (6-2) [i.e., the definition], an indirect speech report reports the exact content of the reported speech act. There may be a reading of English *say* for which this kind of exactness is adequate. However, normally the indirect report is understood as specifying a contextual consequence of the original content, i.e. a proposition it implies, given some background knowledge. In this respect, then, (6-2) is not fully adequate, as was pointed out to us by Philippe Schlenker (crediting David Kaplan).

This notion of 'contextual consequence' seems closely related to the notion of 'context-sensitive entailment' referred to by Brasoveanu and Farkas (2007) in connection with their characterization of the meaning of *say*:

> As the examples in (22), (23) and (24) below show, *say* reports can felicitously put words in the utterer's mouth as long as the "faithfulness to meaning" requirement is satisfied, i.e., as long as, *in the context of interpretation*, the at-issue and implicated contents of the complement clause are entailed by the at-issue and implicated contents of the source sentence respectively.

Their examples (22) and (23) are rendered here as (35a-b) and (36a-b):

(35) a. Sam: The Provost was fired yesterday.
b. John: (?)Sam said that the Chancellor fired the Provost yesterday. (felicitous if we know that the only person who can fire the Provost is the Chancellor)

(36) a. Sam: John understood the problem and Sue and Jane also understood it.
b. John: Sam said that every student in Gigi's section understood the problem. (felicitous if we know that the only students in Gigi's section are John, Sue and Jane)

[13] The only problem with it is that it is necessary to assume non-triviality at both ends, so to speak, or else any report will be verified by an utterance of a contradiction, and any utterance will be truthfully reported by use of a tautology.

[14] Soames (1988: 216) gives examples of cases where (34) is actually too weak – it can be true that you said p and yet false that you said q even though p entails q. I will ignore this complication.

Similarly, as pointed out by Cappelen and Lepore (1997: 285) and reiterated by Richard (1998: 611), if George says (37a), the report (37b) can be true in a situation where it is known to the speaker but maybe neither to the hearer nor to George that Berkeley is in Northern California.

(37) a. (George:) John leaves for Berkeley next week.
b. George said that John is going to Northern California soon.

There seems to be agreement, then, that the content of the source does not need to entail the content of the complement clause in the report all on its own, but that it can be aided by additional information known to the speaker and hearer of the report or at least to its speaker.

Richard (1998) intends his DET relation mentioned above to incorporate such auxiliary premises but does not provide an explicit definition. As a matter of fact, it appears to be still an open issue how much and what kind of implicit information is admissible to bridge a gap in strength between a speech report and its source. For one thing, the relation between the source and the relevant piece of implicit information is essentially asymmetric: on the one hand, the piece of knowledge that the only students in Gigi's section are John, Sue and Jane should be allowed to bridge (36a) and (36b); on the other, the piece of knowledge that John, Sue and Jane understood the problem should not be allowed to help (36b) be a true report of (36c):

(36) c. Sam: The only students in Gigi's section are John, Sue and Jane.

Similarly, (37b) would not be a true report of (37c) on the strength of it being common knowledge that John is leaving for Berkeley.

(37) c. (George:) Berkeley is in Northern California.

What one can say is that the piece of information that Berkeley is in Northern California can be counted as a piece of encyclopaedic knowledge, while the piece of information that John is leaving for Berkeley cannot be counted as a piece of encyclopaedic knowledge. But this is difficult to make precise.

I will not try to improve this situation by proposing clear constraints, but simply augment the Kaplanian analysis of *say* as formulated in (34) by a contextual parameter, ε_c, for background knowledge of the relevant kind. This gives a very loose definition, but it will suffice for present purposes:[15]

(38) **The meaning of *say* according to Kaplan (1977) (third)**

$$[\![\, say \,]\!]_{c,j} = \lambda\phi\lambda y\lambda x\lambda e\ \exists\chi\, \Delta_j(\chi)(y)(x)(e) \wedge \chi_k \cap \varepsilon_c \subseteq \phi$$

where $k = c\,[\,1_c/x, 2_c/y, t_c/\tau(e)\,]$

[15] Cappelen and Lepore (1997) go a step further, holding that a report can incorporate a conversational implicature arisen from the source. Though Braseovanu and Farkas (2007) reject this, one could, following Richard (1998: 609), add a disjunct to the effect that the speaker implicated ϕ. It would not, however, make a difference for present purposes.

With this augmented definition in place, let us return to the question of what might be required for an utterance to serve as a source for a report like (2): could (1) do without having to assume that the indefinite *someone else* is (on one reading at least) a directly referential term?

(1) I have met someone else.

(2) He has told his wife he has met me.

Yes, it could: the information encoded in ε_c could contain the piece that the speaker has met, apart from the hearer, nobody other than the reporter. The example (35a-b) from Brasoveanu and Farkas (2007) is instructive in this connection: here, the passive construction of the source has an implicit indefinite agent ('by somebody'), the identity of which is determined by our knowledge that the only person who can fire the Provost is the Chancellor. This is the kind of background knowledge mentioned in the hypothesis of Referential Report, case **A** ((7) in section 2): a certain entity is the only one to satisfy a certain description and/or predication; it can serve to, as it were, instantiate an existential like 'there is an individual that fired the Provost', and this seems to be what makes (35b) a true report of (35a).

Yet, we must be reminded that the hypothesis of Referential Report, (7) in section 2, has a case **B** which is independent of background knowledge of the kind that can serve to instantiate an existential, and that several examples considered in section 2, most notably (12) and (22), show that referential reports are possible in the absence of such knowledge. The weak truth conditions given in (38) may be argued to account for many examples, but generally, even they are insufficient unless we can assume that indefinites can, in principle, be referential. In the next section, I turn to the semantics of indefinites to discuss whether such an assumption is reasonable.

4 The semantics of specific indefinites

The first idea that comes to mind to explain the verifying role that uttering (1) can play with respect to (2) – whose complement clause is aligned with (1) below – is that, in line with a long tradition and large body of research, the indefinite *someone else* is in (1) used as a referential term, a term that might assign to a context reconstructed from c the same individual concept that *me* assigns to c, or an individual concept that background knowledge could equate with that expressed by *me*.

(1) I have met someone else.
He has told his wife he has met me . = (2)

Below, I review some proposals made for the analysis of specific indefinites, in particular those where specific indefinites are referential. I conclude that although such analyses would directly or could indirectly provide an account of Referential Report (case **B**), they are on the whole unrealistically strong.

However, I also present a non-referential analysis which, if augmented in a certain way, can serve as a good point of departure for an account, viz., the analysis proposed by Jäger (2007).

4.1 Specific indefinites as referential terms

There are basically two types of theories of (epistemic or scopal) specificity of indefinites: weak and strong; and only the strong type is strong enough for the purpose of providing an account of Referential Report (case **B**). On weak theories, although the indefinites are not analyzed as quantifiers, the result is as if they were, only that their scope can be arbitrarily wide. This is so because the indefinite article is assumed to introduce a variable, typically a *choice function* variable, which is subjected to *existential closure* before the meaning of the clause is complete. The indefinite description may denote an individual, but only locally, or preliminarily; no more than does, e.g., a bound pronoun. Prominent proponents of such theories are Reinhart (1997), Winter (1997), Matthewson (1999), and Jäger (2007).

On the strong type of theory, a specific indefinite denotes an individual. If the indefinite article is assumed to introduce a choice function variable, this is a variable which remains free to be supplied a value by the context, and in a typical case the value will be 'the element the speaker has in mind'. Prominent proponents of this type of theory are Fodor and Sag (1982), von Heusinger (2002), and Kratzer (1998). An intermediate type of theory is proposed by Schwarzschild (2002): the indefinite article is given a classical existential analysis but specificity results when the description is covertly restricted to denote a singleton. Ionin (2006) assumes a weak theory of *a* but propounds a strong theory of the 'referential indefinite' determiner *this* and similar determiners in other languages.

Beside the classical, existential-quantificational meaning of the indefinite article, Fodor and Sag (1982: 387f.) posit a 'referential reading':[16]

(39) **Referential indefinites according to Fodor and Sag (1982)**

$[\![a_\rho\, \alpha]\!]_{c,j}$ is defined only if there is a unique individual z that the speaker of c has in mind in c, and $z \in [\![\alpha]\!]_{c,c}$; where defined, $[\![a_\rho\, \alpha]\!]_{c,j} = z$.

Here the indefinite, say, *a woman*, is directly referential when defined; it expresses a 'partial rigid designator', defined for contexts of utterance where the speaker has a particular woman in mind and denoting, if defined, her in any context of evaluation.

[16] After the rendering of Heim (2011); a_ρ is the referential indefinite article. In their original formulation, Fodor and Sag "add to the specification of a context an element of $\mathcal{U}$, c_{IR}, which is the individual that the speaker intends to refer to at the time of utterance – specifically, at the time of utterance of the indefinite noun phrase" (p. 387). Precursors of this analysis are Karttunen (1968) and Kasher and Gabbay (1976).

Kratzer, too, assumes that the classical reading coexists with one where the indefinite denotes an individual. On her theory, what corresponds to the referential reading is a special case of the value of a parameterized choice function f_x, encoded by the determiner: the case where the parameter x is set to the speaker and the free variable f is set to $\lambda x \lambda \alpha$ 'the α that x has in mind'.[17] Then applied to a set like $[\![\, woman \,]\!]_{c,j}$, f_x will single out the member of it that the speaker has in mind in c.

Kratzer's analysis of specific indefinites and its close relatives have not met with universal acceptance; scholars tend to assume a 'weak' theory with existential closure in some form or something that corresponds to it. Some scholars assume a referentiality but locate it in a super- or sub-semantic dimension, reflecting the speaker's perspective: in the speaker's information state (Yeom 1998); the speaker's information aggregate (Dekker 1998, 2002); the speaker's context set (Farkas 2002); the speaker's mental state (Kamp and Bende-Farkas 2010). I return to these approaches in section 5.1.

The most critical issue is whether it is reasonable to think that indefinites designate individuals, rigidly or not, when the hearer cannot be expected to, and as a rule will not, be able to identify them. Criticism in this spirit is raised, e.g., by Matthewson (1999), in the face of which Kratzer (2003) defends her position.[18] The tension is unresolved; on the one hand, there is often a strong intuition that the indefinite is used with a 'referential intention' (Stalnaker 1998); on the other hand, there is a matching recognition that this intention does not affect the truth conditions of the current clause. There will be reason to return to this dialectic presently (section 4.2).

My immediate concern, however, is to establish that once a strong theory is adopted, the observation that an utterance of (1) can serve to verify (2) can be accounted for. For convenience I repeat here (1), (2), the Kaplanian analysis of speech reports (38), and Fodor's and Sag's analysis of referential indefinites (39):

(1) I have met someone else.

(2) He has told his wife he has met me.

(38) **The meaning of *say* according to Kaplan (1977) (third)**

$[\![\, say \,]\!]_{c,j} = \lambda\phi\lambda y\lambda x\lambda e\ \exists\chi\, \Delta_j(\chi)(y)(x)(e) \wedge \chi_k \cap \varepsilon_c \subseteq \phi$
where $k = c\,[\,1_c/x, 2_c/y, t_c/\tau(e)\,]$

(39) **Referential indefinites according to Fodor and Sag (1982)**

$[\![\, a_\rho\, \alpha \,]\!]_{c,j}$ is defined only if there is a unique individual z that the speaker of c has in mind in c, and $z \in [\![\, \alpha \,]\!]_{c,c}$; where defined, $[\![\, a_\rho\, \alpha \,]\!]_{c,j} = z$.

[17] Cases where x is not set to the speaker but bound by a quantifier higher in the clause are to account for 'intermediate (pseudo-) scope readings'.

[18] See also Endriss (2009: 118ff.) for a survey of the various positions on these issues.

The context for (2) is c. Assume that the entity referred to by *he* in c is γ_1, the entity referred to by *his wife* is γ_2, and the entity referred to by *me* is γ_3. Then the proposition expressed by the complement clause of (2) is that γ_1 has met γ_3; now the character χ of (1) assigns to the context k coming from c by substituting γ_1 for 1_c, γ_2 for 2_c, and the time of uttering χ for the time of c a subset of the proposition that γ_1 has met γ_3 *if*

(i) $[\![I]\!]_k = \lambda j\, \gamma_1$ and

(ii) $[\![\textit{someone else}]\!]_k = \lambda j\, \gamma_3$.

(Note that j is here a metalinguistic variable for contexts of evaluation.) (i) is given because $[\![I]\!]_k = [\![he]\!]_c$; (ii) is given iff (*someone else* is referential and) $[\![\textit{someone else}]\!]_k$ is defined and γ_3 is the woman that γ_1 has in mind in k. Which is a realistic possibility given the analysis (39).

Note that under a choice function analysis à la Kratzer (1998) or von Heusinger (2002), where the indefinite is referential but perhaps not directly referential (since the denoted individual may depend on the extension of the noun in the context of evaluation), the character of (1) may not map k to a subset of ϕ without the aid of a background proposition equating the other person γ_1 had in mind with γ_3: $\lambda j'[f_{\gamma_1}([\![\textit{someone else}]\!]_{c,j'}) = \gamma_3]$. But this is fully possible given (38), and then (2) is again verified.

However, there are two counterarguments against this way to account for the phenomenon of Referential Report (case **B**).

One counterargument concerns what I have called the criterion of hearer non-identifiability. It was observed in section 2.2 that if his wife were to know me, (2) would not be a faithful report of (1), even if he had me in mind – he would have been withholding information. Now if, as under the analysis (39), the (referential) indefinite designates an individual as soon as the speaker has one in mind when uttering it, there would be no way to prevent (2) from being a true report of (1) in such a situation.

The other counterargument is much more general and merits a separate subsection.

4.2 Contra *tout court* referentiality: polar questions

This counterargument to a solution to the Referential Report problem in terms of a theory of specificity à la (39) and a theory of report à la (38) builds on evidence about the content of sentences containing indefinites. It has been noted many times (e.g. by King 1988, Ludlow and Neale 1991) that truth conditions do not seem to be affected by whether the speaker has someone or something in mind and if so, whom or what. "The problem has always been to understand", Stalnaker (1998: 16) writes, "how facts about the speaker's state of mind that were unavailable to the audience could be relevant to the semantics of what was being said." Kaplan, in the final section of his paper "Dthat", titled "Exciting future episodes" (1978: 241), lists as episode 4:

> Extending the demonstrative notion to indefinite descriptions to see if it is possible to so explicate the ± specific idea. (It isn't.)

This scepticism is understandable: a speaker may well be, in a loose sense, referring to some determinate entity when using the indefinite, *in lieu* of a definite or other referential term, but only exceptionally will this referring act be actually communicated – what will usually come across is that the speaker has some entity in mind, not the identity of that entity. In fact, contra Kratzer (2003), who maintains that an indefinite can denote an individual even though the hearer cannot identify it, only the choice function identifying it, the facts indicate that the speaker does not intend the hearer to take the indefinite to denote an entity even when she intends the hearer to take her to have an entity in mind.

A family of data particularly suited to bring out the independence of truth conditions from specificity as referentiality are answers to yes/no questions, such as the one reported in (4):

(4) Along his route, Stanley asked the natives whether they had seen Livingstone: "Have you seen an old white man?"

Though there may be no doubt that the asker has a specific entity in mind or that the answerer is aware of this fact, an appropriate complete answer (yes or no) is evidently insensitive to it. This shows not only that the hearer relates to the existential interpretation of the specific indefinite but also that the speaker intends her to interpret it that way.

Consider the following case. My 88 years old father, my son and I are hiking in the mountains and my son and I part ways with my father. When he fails to return to the parking lot at the agreed time, we grow worried, and ask a couple who come by if they have seen him. What we ask is (40), and the answer we get is (41), not (42).

(40) Have you seen a man up here?

(41) Yes – is it an old man you mean?

(42) ?Don't know – is it an old man you mean?

If the communicated interrogative content were whether they had seen my father, the man we had in mind, one would expect (42) (or the negative *no*) to be the natural response, but it is in fact unnatural. On the other hand, if what we asked was whether they had seen a man *simpliciter*, *Yes* (or *No*) is the expected response.[19]

It is worth noting that the choice of (40) as a means for eliciting information about my father is a sample of a good strategy. The obvious alternative was (43), and we might have asked that, but the chances of receiving a complete positive answer would be considerably slimmer.[20]

[19] Thanks to Kaja Borthen for calling my attention to this fact and its significance.

[20] In fact, if the aptness of a yes/no question Q for asking if P is measured by two probabilities, (i) that of the hearer knowing whether Q and (ii) that of (¬)P given (¬)Q,

(43) Have you seen my father up here?

In conclusion, yes/no questions and their answers show that indefinites may be used with clear referential intention in the sense that the point is to elicit information about some specific individual which the speaker has in mind – and the utterance can be reported with a referential term – but the content which the speaker wants the hearer to react to is still weak and existential. What this seems to point to is that a strong, referential theory of specific indefinites is too strong, or not sufficiently discriminate; it may distinguish between two readings (the existential-quantificational and the referential), but what seems to be called for is a differentiation between the (referential) content relative to the speaker and the (existential) content relative to the hearer; or at least some way of taking the asymmetry between speaker and hearer into account.

This challenge will be addressed in section 5.1. However, it is useful to first introduce a particular 'weak' theory of specific indefinites which will serve as a basis for the analysis to be developed there, the theory of indefinites as partial variables (Jäger 2007).

4.3 Indefinites and partial variables

Jäger (2007) proposes an analysis of indefinites *a P* as 'partial variables', where *P* is a presupposition (definedness condition). In a notation (used by Heim and Kratzer 1998) where the material between : and . is a definedness condition, the meaning of *a* indexed by *i* can be defined as follows:[21]

(44) **The indefinite article according to Jäger (2007)**

$$[\![a_i]\!]^g = \lambda P \lambda w \colon P_w(g(i)).\, g(i)$$

For a variable assignment g, the indefinite article indexed by i expresses that partial function from properties P and worlds w to individuals which is defined if and only if $g(i)$ is a member of P_w and which then yields $g(i)$.

Note that here, to avoid overly complex definitions, especially regarding the definition of the existential closer below, I deviate from the Kaplanian two-context parameterization of the interpretation function used above and stay close to Jäger's formulations. This deviation is purely temporary and for reasons of perspicuity. In the revised definition of the indefinite article in section 5.2, I return to the two-context picture of interpretation; there I also reformulate the definition of the existential closer accordingly. In that picture, the assignment function g reemerges as g_c, an aspect of the context.

Jäger's theory has two advantages over other (weak) theories. The first is that it emulates arbitrarily wide scope for the indefinite without move-

(40) may prove more apt than (43) for asking if they had seen my father. The latter probability may be lower than 1, but not much, and the former will be relatively high.

[21] This formulation corresponds to a preliminary version of the analysis, but suffices for present purposes. The original notation is: $\| [\, x \mid \varphi \,] \|_g = g(x)$ *iff* $\| \varphi \|_g = 1$, *undefined else*.

ment (which would have to violate island constraints or else stipulate that indefinites are special) and without choice functions (which have proved difficult to treat compositionally, cf. Winter 1997: 445–452 and 456–464). This is accomplished because the definedness condition $P_w(g(i))$ is projected from the indefinite article to expressions containing it and because the variables are bound by an operation of existential closure that can apply at any sentential level. Crucially, the existential quantifier does not pass on the definedness condition but uses it as a truth condition.

In the simplified formulation (45), the definedness condition is designed to pass on any presuppositions that do not have anything to do with the variable at issue but to block the one that does, namely, $P_w(g(i))$; $\perp$ is a designated entity that has every property. Note that the variables can also be bound by adverbs of quantification.[22]

(45) **The existential closer according to Jäger 2007**

$$[\![\exists_i]\!]^g = \lambda\phi\lambda w : \phi_w^{g[i\to\perp]} \in \mathrm{D}_t \,.\, \text{for some } \alpha \neq \perp,\ \phi_w^{g[i\to\alpha]} = 1$$

Let us look at a specific case to see how Jäger's theory works. Consider the intended specific reading of the indefinite description "a man" in (46):

(46) (The Hong Kong Chinese man ... asked her what her business was in Hong Kong.) "To find a man," she said, ... (Nesbo 2011: 11)

The semantic composition of Kaja wants to find a man is outlined in (47):[23]

(47) a. $[\![a_i \ man]\!]^g = \lambda w : \mathbf{m}_w(g(i)).\, g(i)$

b. $[\![\textit{find}\ a_i \ man]\!]^g =$
$\lambda x_{(se)}\lambda w : \mathbf{m}_w(g(i)).\, \mathbf{f}_w(g(i))(x_w)$

c. $[\![\textit{to}_j \ \textit{find}\ a_i \ man]\!]^g = \lambda w : \mathbf{m}_w(g(i)).\, \mathbf{f}_w(g(i))(g(j))$

d. $[\![\textit{want to}_j \ \textit{find}\ a_i \ man]\!]^g =$
$\lambda x_{(se)}\lambda w : \mathbf{m}_w(g(i)).\, \mathbf{w}_w(\lambda v\, \mathbf{f}_v(g(i))(g(j)))(x_w)$

e. $[\![k_j \ \textit{want to}_j \ \textit{find}\ a_i \ man]\!]^g =$
$\lambda w : \mathbf{m}_w(g(i)).\, \mathbf{w}_w(\lambda v\, \mathbf{f}_v(g(i))(\mathbf{k}))(\mathbf{k})$

f. $[\![\exists_i k_j \ \textit{want to}_j \ \textit{find}\ a_i \ man]\!]^g =$ (by (45); cf. also fn. 22)
$[\![\exists_i]\!]^g(\lambda g\lambda w : \mathbf{m}_w(g(i)).\, \mathbf{w}_w(\lambda v\, \mathbf{f}_v(g(i))(\mathbf{k}))(\mathbf{k})) =$

[22] The logical type of ϕ is that of a function from variable assignments to propositions. $[\![\exists_i]\!]^g$ will normally be composed with a proposition, so we must assume a composition principle analogous to Intensional Functional Application (Heim and Kratzer 1998: 308) to make it apply to the abstraction over the variable assignment g.

[23] Actually, to bring about the result in (47d), it is necessary to assume a special rule for the desire verb so as to ensure that the definedness condition on the argument proposition does not necessarily enter into what the subject wants or even believes. One way to achieve this (though Jäger 2007 or 2010 does not go into such detail as regards composition) is to exploit the designated entity $\perp$ to say that if the argument proposition of *want* is ϕ, what the subject wants is $\lambda w\, \phi_w^{g[i\to\perp]} = 1$ for any index i.

$$\lambda w : [\lambda g \lambda w : \mathbf{m}_w(g(i)).\, \mathbf{w}_w(\lambda v\, \mathbf{f}_v(g(i))(\mathbf{k}))(\mathbf{k})]_w^{g[i\to\perp]} \in \mathrm{D}_t\,.$$
$$\text{for some } \alpha,\ [\lambda g \lambda w : \mathbf{m}_w(g(i)).\, \mathbf{w}_w(\lambda v\, \mathbf{f}_v(g(i))(\mathbf{k}))(\mathbf{k})]_w^{g[i\to\alpha]} = 1$$
$$= \lambda w.\, \text{for some } \alpha,\ \mathbf{m}_w(\alpha) \text{ and } \mathbf{w}_w(\lambda v\, \mathbf{f}_v(\alpha)(k))(k)$$

Note how in (47f), existential closure turns the definedness condition $\mathbf{m}_w(g(i))$, the descriptive content of the indefinite, into a truth condition: since we can be sure that $\perp$ is a man, and there is no other definedness condition than $\mathbf{m}_w(g(i))$ on the existential closure's argument proposition, we are left with the truth condition that for some α (different from $\perp$) as the value for i, the partial argument proposition is true. This is so just in case there is in fact some (genuine) individual that is a man and that Kaja wants to find.

The second advantage of Jäger's theory is that the indefinite (token) carries a referential index, a variable assigned a value by an assignment function g.[24] As defined in (45) and illustrated in (47f), the existential closer manipulates the assignment function (and an adverb of quantification could do the same) so that the sentence as a whole does not depend on this function: it plays, as Büring (2011) puts it, "an ancillary role only".

The reason this can be an advantage in the present context is this. Although Jäger does not openly consider the possibility that the variable introduced by the indefinite "remains free", to be assigned a value by a, or the, contextually determined assignment function, the theory does not exclude this. In principle, the semantic composition in (47) could be cut off after (47e), as the definiens is here already a (partial) proposition, defined iff $g(i)$ is a man and true iff Kaja wants to find $g(i)$.

In principle, that is. However, apart from the fact that Jäger does not intend the partial variables to be able to remain free, it is not unproblematic to open up this possibility. For one thing, there may be reason to distinguish between the variable assignments that are manipulated by variable binders like quantifiers and that are in a sense arbitrary, or 'pro forma', and those that are contextually determined. Second, even if such a distinction is drawn, it is not evident how a contextually determined assignment function could be relevant for indefinites, even if they are epistemically specific. Still, this is in a general sense the option I will pursue in the next section.

5 An analysis

The problem described in the previous sections can be summed up thus: On the one hand, facts about speech reports indicate, on a realistic theory of speech reports, that epistemically specific indefinites can be referential, but on the other, a realistic theory of indefinites seems to block this conclusion.

The solution to be proposed in this section has three key elements:

1. A context of utterance includes a 'speaker's information state', a set

[24] This it has in common with several theories that are not geared towards specificity, notably theories of discourse representation (Heim 1982, Kamp 1981).

of world-assignment pairs, from which a 'speaker's context' can be defined

2. an epistemically specific indefinite can in principle be referential, and it will be referential in view of the speaker's context,

3. as far as speech reports are concerned, under certain circumstances the speaker's context can count as the context.

These elements are introduced and developed in subsequent subsections.

5.1 Subjective contexts and speakers' aspects

Discussing coreference conditions in connection with free variable pronouns, Heim (2009) reiterates a distinction she has made in earlier work between the 'objective' and the 'subjective' context of an utterance, where the former is a world-assignment pair and the latter is a *set* of such pairs (corresponding to a context or information state in some versions of dynamic semantics).

> [T]he "objective" context of an utterance ... corresponds to the particular situation in which the utterance actually occurs, with all its properties both known and unknown to the discourse participants. The objective context does supply a specific individual for ... each free variable .... Then there is the "subjective" context, which is a set of candidates for the objective context, the set of all the possible objective contexts that the utterance might be located in for all that the discourse participants presuppose. This is the notion familiar from the work of Stalnaker (1978), his "context set" or "common ground".

Heim uses capital 'C' to stand for a subjective context, a set of possible objective contexts, "each of which comes with its own contextually determined variable assignment".

Subjective contexts are primarily designed to explain cases of 'contingent identity', where a speaker comments on whether a free pronoun, say, she_i, has a certain referent. In such a situation, the subjective context C is such that for some $< w_1, g_1 >$, $< w_2, g_2 >$ in C, $g_1(i) \neq g_2(i)$, that is, not all assignments 'agree on' the value for the variable.[25]

In many other cases, however, the discourse participants are certain which referent a free pronoun, say, she_i, has, and the subjective context C offers a way to model this: for all $< w_1, g_1 >$ and $< w_2, g_2 >$ in C, $g_1(i) = g_2(i)$, that is, all assignments do agree on the value for the variable. The value is the female individual that speaker and hearer 'have in mind' as the referent of the pronoun, in (48), my mother.

(48) (We have had a drink with my mother and her new boyfriend when I remark to you:) I think she is really in love.

[25] I simplify Heim's formulation a bit by omitting reference to *extended* assignments.

This use of pronouns is not strictly deictic or demonstrative but rather based on salience in the utterance situation (see Zimmermann 1991: 193ff. for an instructive discussion of this kind of context-dependence).

As we will eventually return to speech reports and their analysis in terms of Kaplanian contexts (in section 5.3), it is useful to treat the subjective context C as a member of a Kaplanian context tuple. However, since it is confusing to have a context contained in a context, the subjective context should be renamed. Henceforth it will be called the *information state*. Note that information states (i.e., what has been introduced under the term subjective contexts) are thus aspects of contexts. The 'objective' variable assignment g_c is also included in the context tuple.

(49) **Contexts contain information states**

Let any context c be a tuple $< 1_c, 2_c, t_c, w_c, \ldots, g_c, \mathrm{C}_c, \ldots >$
where g_c is the assignment coming with the context of utterance c and C_c is the set of world-assignment pairs not excluded by 1_c and 2_c at t_c in w_c.

A simplistic definition of the meaning of the pronoun she_i as occurring in (48) might be (adapted from Kratzer 2009: 188):

(50) $[\![she_i]\!]_{c,j} = g_c(i)$ if $g_c(i)$ is a single female, undefined otherwise

Note that C_c is a shared information state, it is the set of world-assignment pairs that are not excluded by both speaker and hearer. Next I propose to introduce the speaker's information state as the set of world-assignment pairs that the speaker does not exclude, without consideration of the hearer. Let C_c^1 stand for this and let us assume that it is also a member of the Kaplanian context tuple:

(51) **Contexts contain speakers' aspects of information states**

Let any context c be a tuple $< 1_c, 2_c, t_c, w_c, \ldots, g_c, \mathrm{C}_c, \mathrm{C}_c^1, \ldots >$
where C_c is the set of world-assignment pairs not excluded by 1_c and 2_c at t_c in w_c and C_c^1 is the set of world-assignment pairs not excluded by 1_c at t_c in w_c.

It can be assumed that the shared information state and the speaker's aspect are not logically independent but that the latter is a subset of the former, $\mathrm{C}_c^1 \subseteq \mathrm{C}_c$. This reflects that the speaker and hearer will jointly exclude less possibilities than the speaker alone; any world-assignment pair that might be the objective context for all that the speaker presupposes will be a world-assignment pair that might be the objective context for all that both discourse participants presuppose, but not vice versa. Though this assumption may be an oversimplification, any refinements it may need will not affect the point of the distinction between C_c and C_c^1. What is essential is that the former may contain pairs that are not contained in the latter.

The primary purpose of introducing the speaker's information state is to model epistemic specificity as 'having an individual in mind'. The idea is that an indexed indefinite $a_i\ P$ is used epistemic-specifically in the context of utterance c just in case there is an individual γ such that for all $<w, g>$ in C_c^1, $g(i) = \gamma$ and γ is a P in w. (This latter conjunct takes care of the constraint noted in section 2.3.2 that to have an individual u in mind for an utterance of $a\,P$, the speaker must believe that u is a P.) That is, all the assignments agree on a value for the variable and this value is a P in all the worlds: the P (as evaluated in the C_c^1 worlds) that the speaker 'has in mind' as the referent of the indefinite; in (52), my mother' new boyfriend.

(52) (After being introduced to my mother's new boyfriend I say to you:)
My mother is in love with a man half her age, and he loves her.

This notion of a specific use of an indefinite has parallels in the work of Yeom (1998), Dekker (1998, 2002), Farkas (2002), Kagan (2006) (building on Groenendijk and Stokhof 1980 and Schwarzschild 2002), and Kamp and Bende-Farkas (2010). For example, the value that all C_c^1-assignments agree on and that is a P in all C_c^1-worlds corresponds to the external anchor for the discourse referent in the theory of Kamp and Bende-Farkas (2010). In particular, the notion of convergent values with respect to the speaker's aspect of the information state borrows ideas from Dekker (1998) and Farkas (2002). According to Farkas (2002: 239), epistemic specificity is characterised by "fixed, non-variable reference", but only relative to the speaker, not to the context as a whole. In Dekker's theory, the characteristic of specificity (in a narrow sense) is that in the speaker's so-called 'information aggregate' that 'licenses' the utterance, all assignments defined for the variable (or 'subject') that the variable set up by the indefinite token is linked to map this variable to a particular individual. In both these theories, the entity that stands witness to the specificity in an indefinite is the value converged on by a totality of assignments.

Let us define an auxiliary partial function f taking three arguments, a property P, a referential index i, and a context c, the 'specification function':

(53) **The Specification Function f**

Let c be a context, P a property, and i an index;
$f_c(P)(i)$ is defined if and only if there is an individual γ
such that for all $<w, g>$ in C_c, $g(i)$ is a P in w and $g(i) = \gamma$;
then $f_c(P)(i)$ is that individual.

This definition will be integrated into a definition of the meaning of the indefinite article in the next section.

5.2 A hybrid analysis of indefinites

Consider the following augmented definition of $[\![a_i]\!]$, to be compared with the definition adapted from Jäger (2007) in section 4.3 (f as defined in (53)):

(54) **The revised meaning of the indefinite article**

$$[\![a_i]\!]_{c,j} = \begin{cases} \lambda P\colon P_j(f_c(P)(i)).\, f_c(P)(i) & \text{if } f_c(P)(i) \\ & \text{is defined;} \\ \lambda P\colon P_j(g_c(i)).\, g_c(i) & \text{else.} \end{cases}$$

This definition distinguishes two cases, the 'free case' and the 'bound case', and gives priority to the former. The sense in which this case is free is that the auxiliary 'specification function' f defined in (53) functions like a contextually determined assignment of values to free variables, where the referential index on the indefinite article functions as the free variable. The 'else' case is 'bound' in the sense that the assignment function g_c is eventually manipulated by the existential closer, defined anew in (55) in accordance with the Kaplanian interpretation scheme.

(55) **The existential closer (Jäger 2007) reformulated**

$[\![\exists_i]\!]_{c,j} = \lambda\phi : \phi_{c'',j} \in \mathrm{D}_t$. for some $\alpha \neq \perp$, $\phi_{c''',j} = 1$
where $c'' = c[g_c/g_c[i \to \perp]]$ and $c''' = c[g_c/g_c[i \to \alpha]]$

Now there would not seem to be much use in the 'free' case. Note that the specification function is defined over C_c, the shared information state of c. This means that for it to be defined, both hearer and speaker must, as it were, have a specific individual in mind. As noted in section 4.2, however, the hearer is as a rule unable to identify what the speaker has in mind when uttering an indefinite. Indeed, as long as we consider 'normal' contexts. say, of the type characterized in (51), the first case will hardly ever arise.

It may, however. Exceptionally, the individual the speaker has in mind will actually come across. Consider (56) and (57), where the hearer is evidently meant to identify what the speaker is referring to.

(56) I have a feeling that someone we both know very well is filling your head with a bunch of lies, just because she is a drama queen.

(57) I wonder if a mutual friend of ours has any thoughts.
Have you tried him?

Such interpretations as these might be called 'alias interpretations' because the indefinite is used in spite of the fact that the identity of the referent matters and a referential term would make sense.[26] Their existence is sig-

[26] Cf. Dekker (2002: 154): "The choice to use an indefinite rather than a definite term may be given by pragmatic considerations, for instance, because the identity of the actual referent is irrelevant, or because the addressee can be assumed not to be familiar with the referent."

nificant because it demonstrates that the specification function f of (53) can in principle be defined for 'normal' contexts. But the main use f will be put to is in shifted contexts like those involved in speech reports. One simple type of shifted context is now the 'speaker's context'.

(58) **Speakers' contexts**

Let c be a context (a tuple $< 1_c, 2_c, t_c, w_c, \ldots, g_c, \mathrm{C}_c, \mathrm{C}_c^1, \ldots >$).
The associated speaker's context c^1 is $c[\,\mathrm{C}_c/\mathrm{C}_c^1\,]$.

In words, the speaker's context associated with a context c is the tuple coming from c by substituting the speaker's aspect of the information state for the information state.[27]

The speaker's context does not directly affect the content of an utterance. However, in two regards can it influence a content indirectly: (i) it can be relevant for the shifted context considered in the interpretation of a speech report, (ii) when an indefinite would be referential in the speaker's context, this can function as a guide to the right reading of the sentence in terms of scope. (i) is the topic of section 5.3 and (ii) is the topic of section 5.4.

First, however, to illustrate the revised definition of the meaning of the indefinite article in (54), let us consider a simplified version of example (1), (59), in both types of context – the normal context accessible to you, the hearer, and the speaker's context accessible to me.

(59) I love a woman.

Assume that the Logical Form for this sentence is (60).

(60) $[\,\exists_i\,[\,I\,[\,\mathit{love}\,[\,a_i\ \mathit{woman}\,]]]]$.

Building a meaning for this LF, starting with the indefinite article, we first use a context c for which $f_c(P)(i)$ in (54) is not defined, as it is natural to assume that the context accessible to you, the hearer, is of this sort.[28]

(61) a. $[\![\, a_i\ \mathit{woman}\,]\!]_c = \lambda j : \mathbf{w}_j(g_c(i)).\, g_c(i)$

b. $[\![\, \mathit{love}\ a_i\ \mathit{woman}\,]\!]_c = \lambda x \lambda j : \mathbf{w}_j(g_c(i)).\, \mathbf{l}_j(g_c(i))(x)$

c. $[\![\, I\ \mathit{love}\ a_i\ \mathit{woman}\,]\!]_c = \lambda j : \mathbf{w}_j(g_c(i)).\, \mathbf{l}_j(g_c(i))(1_c)$

[27] Note that it would be wrong to suppose that what has been defined as the speaker's context models the speaker's full knowledge of the utterance situation. In the speaker's context in the technical sense, as the notion will be used in the revised definition of speech reports, the speaker's information state replaces the information state; in fact, however, the speaker needs access to the shared context to select her signals in due consideration of the hearer's limited resources.

[28] An intensional method of composition is used here to let the definedness conditions project, as in Beaver and Krahmer 2001; thus some meanings, like those of nouns or VPs, as in (61b), are strictly not functions from contexts of utterance to functions from contexts of evaluation but, for example, functions from contexts of utterance to functions from individuals to functions from contexts of evaluation to truth values (i.e., propositions). But as before, c is a context of utterance and j a context of evaluation.

d. $[\![\, \exists_i\, I\ love\ a_i\ woman \,]\!]_c =$
$\lambda j.$ for some α, $\mathbf{w}_j(\alpha)$ and $\mathbf{l}_j(\alpha)(1_c)$ (by (55); cf. also (47f))

Next we use a context c for which $f_c(P)(i)$ in (54) is defined, as it is natural to assume that the context accessible to me, the speaker, is of this sort.

(62) a. $[\![\, a_i\ woman \,]\!]_c = \lambda j : \mathbf{w}_j(f_c(\mathbf{w})(i)).\, f_c(\mathbf{w})(i)$

b. $[\![\, love\ a_i\ woman \,]\!]_c = \lambda x \lambda j : \mathbf{w}_j(f_c(\mathbf{w})(i)) \,.\, \mathbf{l}_j(f_c(\mathbf{w})(i))(x)$

c. $[\![\, I\ love\ a_i\ woman \,]\!]_c = \lambda j : \mathbf{w}_j(f_c(\mathbf{w})(i)) \,.\, \mathbf{l}_j(f_c(\mathbf{w})(i))(1_c)$

d. $[\![\, \exists_i\, I\ love\ a_i\ woman \,]\!]_c =$ (by (55))
$\lambda j : \mathbf{w}_j(f_c(\mathbf{w})(i)) \,.$ for some α, $\mathbf{l}_j(f_c(\mathbf{w})(i))(1_c) =$ (62c) =
(assuming $f_c(\mathbf{w})(i) = \alpha'$) $\lambda j : \mathbf{w}_j(\alpha').\, \mathbf{l}_j(\alpha')(1_c)$

The difference between the two cases in the first three steps of composition, a–c, is that $g_c(i)$ is replaced by $f_c(\mathbf{w})(i)$, but this seemingly small difference has a big effect in the fourth and final step, as the existential closure operation, defined for g_c, fails to bind, resulting in a vacuous quantification and in a reduction to, in words (where for simplicity I write 'worlds' instead of 'contexts of evaluation'),

(62) e. the partial proposition defined for worlds where α is a woman and true for worlds where this woman is loved by me, for the woman α I have in mind; as opposed to

(61) e. the total proposition which is true in worlds where there is a woman loved by me.

Note that (61d) follows from (62d) in the sense that the 'positive extension' of the former, the set of worlds where it is true, includes that of the latter. Thus the proposition expressed in the common context and the one that would be expressed in the speaker's context are logically related – the latter is stronger than the former. This will always be so if the existential closer is adjoined at top level, giving maximal scope, cf. section 5.4 below.

5.3 Speech reports revis(it)ed

Referential Report can now be predicted if we assume that the context shift involved in the interpretation of speech reports may consist in a shift to the (original) speaker's context. In this way, the content of speech reports is made sensitive to the speaker's context, with the result that epistemic specificity is made semantically visible.

In a first step, the definition of the meaning of *say* we last encountered, (38) in section 3.3, must be extended to include the substitution of the original information states for the current information states:

(63) **The meaning of *say* based on Kaplan (1977) (fourth)**

$$[\![\, say \,]\!]_{c,j} = \lambda\phi\lambda y\lambda x\lambda e\ \exists\chi\, \Delta_j(\chi)(y)(x)(e) \text{ and } \chi_k \cap \varepsilon_c \subseteq \phi$$
where $k = c[\, 1_c/x, 2_c/y, t_c/\tau(e), \ldots,$
$\mathrm{C}_c/$ the information state of x and y at $\tau(e)$,
$\mathrm{C}_c^1/$ the information state of x at $\tau(e)\,]$

In the next and crucial step, I introduce a second option into this definition. In case the first option fails, that is, in case no sentence meaning would have expressed a sufficiently informative proposition in the original context (the tuple coming from the current context by the 'usual' substitutions), then it suffices if what was uttered, provided it expressed a proposition in the original context, gives a sufficiently informative proposition *as applied to the speaker's context associated with the original context*.

(64) **The modified meaning of *say* based on Kaplan (1977)**

$[\![\, say \,]\!]_{c,j} = \lambda\phi\lambda y\lambda x\lambda e\ \exists\chi\, \Delta_j(\chi)(y)(x)(e)$ and
(if $k = c[\, 1_c/x, 2_c/y, t_c/\tau(e), \ldots, \mathrm{C}_c/$ the information state of x and y at $\tau(e), \mathrm{C}_c^1/$ the information state of x at $\tau(e)\,]$)
(i) $\chi_k \cap \varepsilon_c \subseteq \phi$ or
(ii) $\neg\exists\chi'\, \chi'_k \cap \varepsilon_c \subseteq \phi$ but $\chi_{k'} \cap \varepsilon_c \subseteq \phi$ and χ_k is defined
where k' is the speaker's context associated with k

As before, c is the current context of utterance and j is the current context of evaluation, and ε_c is the set of worlds (strictly: contexts of evaluation) compatible with the admissible relevant facts. The 'primary' content of the speech report is that some sentence character χ was uttered (Δ for *dictum*), assigning to k, the context of that utterance, a proposition which (maybe together with ε_c) is a subset of the argument proposition of the verb.

Now there may not exist any χ' assigning to the original context a subset of ϕ, even together with ε_c, or ε_c is irrelevant, but that does not mean that the report must be false.[29] Its 'secondary' content is that a χ was uttered which assigns to a slightly different context, namely, the associated speaker's context, a subset of ϕ (maybe together with ε_c). Crucially, though, χ must be defined in the common original context as well, or else the speaker could have used some term (say, a name or definite description) that only made sense to her, and the report would come out true.

The condition that there must be no χ' assigning to the original context a sufficiently informative proposition for the second option to take effect may be too strong, as discussed in section 2.2 (the 'criterion of hearer non-identifiability'). If desirable, it is possible to weaken it by adding or substi-

[29] Strictly, there will of course always exist such a character, namely, the meaning of a contradictory sentence; as noted in section 3.2, when we quantify over things that are or are not to enter into subset relations, we have to ensure nontriviality by excluding empty sets and total sets. So in case (ii) in the definition, $\neg\exists\chi'$ has the implicit domain restriction $\chi'_k \neq \emptyset$.

tuting a condition of a pragmatic nature, such as: there is no χ *that should have been uttered in view of the combined maxim of Quantity and Relevance and could have been uttered in view of the maxim of Quality* assigning to the original context a sufficiently informative proposition.

To illustrate, let us recapitulate the case of (1) and its alternatives (28) and (30) as reported with (2) in the light of (64).

(1) I have met someone else.
He has told his wife he has met me . = (2)

(28) I have a thing going with Diane Maria Pinto.

(30) I have become involved with the woman I met at the Hanover Fair.

The context of utterance for (2) is c. Assume that the entity referred to by *he* in c is γ_1 (in technical terms, the pronoun is indexed and the 'objective' assignment function g_c maps its index to γ_1), the entity referred to by *his wife* is γ_2, and the entity referred to by *me* is γ_3; then the proposition expressed by the complement clause of (2) is that γ_1 has met γ_3, and an utterance of (1) verifies (2) if either (i) or (ii) holds (possible contributions by the admissible relevant facts ε_c are disregarded) (as in section 4.1, j is a metalinguistic variable for contexts of evaluation):

(i) The character χ of (1) assigns to the context k coming from c by the usual substitutions a subset of the proposition that γ_1 has met γ_3, that is, $[\![I]\!]_k = \lambda j\, \gamma_1$ (which is unproblematic) but also $[\![\mathit{some}_i \mathit{one\ else}]\!]_k = \lambda j\, \gamma_3$ (which is improbable, given that k is a normal, not a speaker's context);

(ii) there is no character assigning to the context coming from c by the usual substitutions a subset of the proposition that γ_1 has met γ_3, but the character of (1) assigns to the context k' coming from c by four usual and one unusual substitution(s) such a proposition. The unusual substitution is, in effect, that of C_k^1 for C_c. In fact, the character of (1) assigns to k' exactly the proposition that γ_1 has met γ_3 if $[\![\mathit{some}_i \mathit{one\ else}]\!]_{k'} = \lambda j\, \gamma_3$, and this is so if γ_3 is the value of the specification function f at k', the property of being someone else, and i, which is realistic in the given scenario. In this way, (2) can be a true report of (1).

The condition that there is no character χ' such that $\chi'_k \cap \varepsilon_c \subseteq \phi$ for k the context coming from c by the usual substitutions, if unqualified by pragmatic conditions, implies, in particular, that the speaker could not have uttered (28) or (30) instead of (1) and thereby made (2) a true report.

The last condition that must be met for an utterance of (2) to verify (1) is that the character of (2) is defined in the normal original context k (i.e., that it made sense to the hearer). This is simple; if the identification function, f, is not defined for k, the property of being someone else, and i, $[\![\mathit{some}_i \mathit{one\ else}]\!]_k = \lambda j : [\![\mathit{one\ else}]\!]_j(g_k(i)).\, g_k(i)$, and existential closure will eventually produce the interpretation that γ_1 has met someone else.

The account of Referential Report that has now been illustrated rests on an interaction between a new analysis of indefinites (building on Jäger 2007) and a new analysis of speech reports (building on Kaplan 1977). Both

innovations may seem costly, an issue that will be readdressed in section 6. Especially the analysis of indefinites may seem to give little gain, if all the novel element is good for is to allow a referentiality to be reflected in reports (recall that but for what were called 'alias interpretations', the novel first option in the definition of the meaning of the indefinite article will hardly ever apply at the level of the utterance itself). Below, however, another reason is offered for making indefinites referential in principle.

5.4 Maximal scope

Under the analysis in (54), indefinites can be referential, but in contrast to the theory of Fodor and Sag (1982), it does not suffice for them to be referential that the speaker has a specific referent in mind. The specification function must be defined for the common context, meaning that the hearer must be able to identify the referent. Therefore, indefinites will normally only be referential in the speaker's context, which comes from the common context by having the speaker's information state act as the information state. The hearer is normally expected to construct an existential reading, assigning an interpretation to an existential closer in the LF.

When the existential reading is to be constructed, the question is where in the LF of a complex sentence the existential closer is posited. Theories from Reinhart (1989) to Jäger (2007) leave a freedom, allowing closure to apply at every sentential level. But it is also commonly assumed that in the absence of overt or covert bound variables in the indefinite description, specificity is correlated with maximal scope (see, e.g., von Heusinger 2011), implying that the existential closer is adjoined at top sentential level. For example, for (65) the LF (66a) must be assumed to be selected over (66b), and for (67) the LF (68a) must be assumed to be selected over (68b).

(65) If a relative of mine dies I inherit a fortune.

(66) a. [$\exists_i$ [[*if* [a_i *relative of mine dies*]] [*I inherit a fortune*]]]
b. [[*if* [$\exists_i$ [a_i *relative of mine dies*]]] [*I inherit a fortune*]]

(67) Every critic praised a film about the life of Che Guevara.

(68) a. [$\exists_i$ [[*every critic*] [λx *x praised* a_i *film about the life of Che*]]]
b. [[*every critic*] [λx $\exists_i$ [*x praised* a_i *film about the life of Che*]]]

However, this assumption remains a stipulation. To be sure, there has been an intuition that the existential-quantificational reading that corresponds most closely to a referential reading is a widest scope reading. But if the theory does not recognize a referential reading, this intuition cannot be made precise. If the notion of the speaker having a specific referent in mind is dismissed as something that cannot have any theoretical significance, as argued explicitly by Geurts (2010), the preference for widest scope readings in situations where the speaker evidently has a specific referent in

mind cannot be accounted for.[30] It can only be made precise in a theory where a referential and an existential interpretation can coexist for one and the same utterance, depending on which aspect of the context is considered.

The definition of the meaning of the indefinite article (54), together with the definition of the specification function in (53) and the definition of the speaker's context in (58), is such a theory. The hearer will normally have to use the 'second option', resulting in an existential interpretation, but at the same time, she may well recognize the referential intention of the speaker and realize that the specification function is defined for the speaker's context, meaning that the indefinite is referential for the speaker.

It is reasonable, then, to assume that the hearer adheres to a pragmatic principle like (69), which will give a maximal scope reading for an indefinite whenever the hearer infers that it is epistemically specific.

(69) **Maximal match with the speaker's-context content**

> The LF is chosen so as to assimilate the common-context content to the speaker's-context content: Select the $\exists_i$ adjunction site that produces the strongest among the weaker readings!

Because the descriptive content of the indefinite is on the referential reading a definedness condition projected to top level, there will always be at least one existential reading weaker than that, weaker in the sense of including the truth set of the partial proposition, namely, the widest scope reading. If there are more than one weaker reading, the others will be still weaker and are not to be selected; nor are stronger or logically unrelated readings.

In a case like (65), only one reading is weaker than the referential reading arising in the speaker's context. The hearer will (subconsciously) reason thus: the narrow scope interpretation obtained by choosing the low adjunction site for the existential quantifier, in (66b), cannot be what I am to construct, for that is not a weaker reading at all, it does not include the set of worlds where the partial intension of the sentence in the speaker's context is true (where a is a relative of yours and if a dies you inherit a fortune, for some a unknown to me but of course known to you). On the other hand, the wide scope interpretation obtained by choosing the high site for the existential closer, in (66a), does constitute a weaker reading.

In a case like (67), two different adjunction sites produce two readings that are both weaker than the speaker's context based proposition, but a hearer adhering to (69) will choose the higher site of adjunction, in (68a), since this produces the stronger of the two readings.

Thus in both cases the instruction to construct the existential interpretation that corresponds most closely to the epistemically specific interpretation results in global scope.

Now reconsider (46) in a somewhat larger context, (70). At issue is, again, the speaker-referential interpretation of *a man* (which is intended

[30] Geurts offers a different type of explanation, based on his *Buoyancy Principle*.

in the authentic context, the referent is, in fact, Harry Hole); but as the continuation shows, the hearer fails to appreciate that this is what he is to approximate, constructing a narrow-scope reading:

(70) (The ... Chinese man ... asked her what her business was in Hong Kong.) "To find a man," she said, ... "You are very beautiful, Miss. And don't believe all you hear about the Chinese only marrying other Chinese." (Nesbo 2011: 11)

(69) is essentially a pragmatic principle, but the specification of assimilation in terms of logical consequence is a matter of observed fact: we can observe that in successful communication, hearers respond to perceived specific uses by adopting interpretations which follow but are not weaker than necessary, given the formalization of (epistemically) specific uses.

6 Discussion and conclusions

Utterances of sentences containing indefinites can sometimes be reported faithfullly with a referential term replacing the indefinite. The question is how the theorist should respond to this. This paper has explored two prima facie plausible answers, criticized both and suggested a third.

One possible response is to appeal to a general sloppiness of utterance reports: the content of the source will often only entail the content of the complement clause of the report verb modulo some relevant background knowledge, so what we have here could be just another instance of that. Sections 2 and 3 have, however, cast doubt on this explanation: the kind of background knowledge that would (on a standard, weak analysis of indefinites) be needed to bridge the gap between the source and the report turns out to not always be relevant in the cases under consideration.

Another response could be to opt for an analysis of epistemically specific indefinites on which they are referential; there is, say, a choice function producing the P the speaker has in mind where P is the description in the indefinite. This would immediately solve the problem, but section 3 has provided reason to doubt this solution too: there seems to be strong evidence that indefinites are as a rule not intended to be interpreted as denoting individuals even when they are specifically used.

But if both these solutions are dismissed, a third answer must be sought, and section 5 presented a new analysis of indefinites and of speech reports. Both presuppose a distinction between a context as a symmetric entity which does not differentiate between speaker and hearer and a context as seen from the speaker's perspective. In particular regarding the set of pairs of worlds and variable assignments which Heim (2009) calls the subjective context, we can fruitfully discriminate between the discourse participants: there is a set of world-assignment pairs that both or all participants agree could be the 'objective' pair of context world and contextual assignment, and there is a smaller set of world-assignment pairs that the speaker does

not rule out as candidates for the 'objective' world-assignment pair. That Kaplanian context where the latter set, the speaker's information state, counts as the information state was dubbed the 'speaker's context'.

The new analysis of indefinites takes a cue from what might be called hybrid analyses of specific indefinites, those that assume a referentiality which does not show in the truth-conditional content but in a dimension that reflects the speaker's perspective: as the case may be, in the speaker's epistemic model (Groenendijk and Stokhof 1980), the speaker's information state (Yeom 1998), the speaker's information aggregate (Dekker 1998), the speaker's context set (Farkas 2002), or the speaker's mental state (Kamp and Bende-Farkas 2010). It opens the option that the indefinite can in principle be referential, and the emerging picture of epistemically specific indefinites is that they are indeed referential with respect to the speaker's context.

To complete the picture, speech reports are analyzed as contexts where that referentiality can – indirectly – become semantically visible after all, in the following way. Speech report verbs are made sensitive to speaker's contexts: a disjunct is added to the meaning definition of the report verb saying that if, in effect, there was no way to express a sufficiently strong proposition in the original context, it suffices if what was uttered did express one in the original speaker's context. Thus a character built from an indefinite can, if a referential term was not an option, serve to verify a report in virtue of the content it assigns to the speaker's context. When an indefinite is referential in the perspective of a speaker, this can "shimmer through" in a report.

In summary, the key elements in the proposed analysis are:

- a formalization of the notion of perspective in terms of information states which can be common but also confined to the speaker,
- a redefinition of the indefinite article, making it sensitive to information states,
- a redefinition of the report verb, making it sensitive to speaker's contexts.

This proposal may appear to be an overreaction to the phenomenon at hand. Particularly the reanalysis of indefinites may seem insufficiently motivated if all it accomplishes is an explication of epistemic specificity which only have an impact on truth conditions in the interpretation of a report, not in the interpretation of the indefinite itself (if we disregard so-called alias interpretations, cf. (56) and (57) in section 5.2).

But note that by explicating epistemic specificity in the way it does, the new analysis also helps explicate how a perceived specific indefinite is systematically assigned a widest scope reading in the hearer's perspective, where the interpretation is not referential but existential. The hearer can be described as opting for the reading that comes as close as possible to the

positive extension ϕ of the partial proposition expressed in the speaker's context, as close as possible in the precise sense of expressing a superset of ϕ but a subset of any superset of ϕ expressed by another reading. This description is made possible by, first, a formal notion of content relative to the speaker's context and, second, the definedness condition encoding the descriptive content of the indefinite. Because this condition is projected to top level on the referential interpretation in the speaker's context, there will always be at least one superset of ϕ based on an existential interpretation in the hearer's context, namely, the proposition expressed by the LF where the existential closer has maximal scope; and if there are more than one such superset, the others will be supersets of it.

The analysis is thus not just an analysis of reports of utterances that have epistemically specific indefinites in them, it is an analysis of epistemically specific indefinites as such.

Still, one may find that the new, augmented analysis of speech reports is poorly motivated too, if the sole purpose of the augmentation is to enable epistemically specific indefinites to be reported in terms of referential terms. As far as this paper reaches, indefinites are the only class of expressions that a shift from a context to the speaker's context can make a difference for, so the added disjunct in the meaning definition of the report verb may seem ad-hoc. On the other hand, indefinites (or, in languages without articles, bare nominals) might be considered important enough to merit such special treatment, and moreover, future work may yet show that other classes of expressions are relevant as well.

The bottom line, though, is that it is hard to see how the phenomenon under study could be accounted for without either adopting a referential semantics for epistemically specific indefinites or basically maintaining, but augmenting, an existential semantics for indefinites while also reassessing the semantics of speech reports. I have tried to show how this second alternative can be worked out. Though this particular proposal may not be unproblematic, it is to be hoped that the paper as a whole can contribute to an understanding of the phenomenon as such and to a clarification of the alternative ways of dealing with it.

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