EVA LAVRIC

Three-Phase Model-of-Reference, or Three-Dimensional Model-of-Reference (?)

The 'or' in the title of this paper is deliberately ambiguous and allows for two different interpretations: the two expressions are either names for the same model, or they denote two different models. In either case, the two models of reference are closely related: the three-dimensional model-of-reference can be regarded as a possible further development of the three-phase model-of-reference which I introduced in Lavric (1989 and 1990: 48-70).

Both models explain how a listener assigns reference to an indefinite or definite NP - the encoding by the speaker being interpreted as an anticipation of the process of reference-assignment, which means that exactly the same elements have to be allowed for as in the decoding process.¹ These reference models explain the progressive specification of the set of potential referents, starting with the practically infinite virtual reference (= meaning) of the bare noun in the lexicon, down to the particular referent or referents of the determined NP in a given (linguistic and/or situational) context.

It might be necessary to mention that the noun phrases considered are noun phrases with a nominal nucleus, the reference models in question having been developed mainly to explain the semantics of nominal determiners.

Let us look at a few examples:

(1) Isn't life awful? Last week I hit Caitlin with a plate of beetroot, and I'm still bleeding.²

If we consider the noun phrases with a nominal nucleus given in this example, we notice that only for the first one, life, the reference of the NP in the actual context includes the whole field of possible referents given through the meaning of the noun in the lexicon - which means, of course, that we are dealing with generic reference. On the other hand, in last week as well as in a plate of beetroot, it is not sufficient for the reader to know the bare meaning of week or of plate in order to assign the correct reference to the noun phrases in question. It is evident that for those NPs, the meaning of the attributes, i.e., last and of beetroot, has to be taken into consideration, as they greatly restrict the number of referents the writer might mean by week or plate. Nevertheless, even the combined meaning of week and last (or of plate and of beetroot) is still insufficient for the addressee to identify or localise the referents of these noun phrases. To prove this: neither you nor I can tell ex-

¹ As Lawler (1977: 107) pointed out, it is unexact to speak of the identification of the referent by the noun phrase: "en fait le référent est identifié (s'il l'est jamais) par le destinataire de l'acte de parole sur instruction du locuteur".

actly which week (or even which year) Dylan Thomas attacked his wife in the manner described, unless we could find out (in some way or other) when the letter quoted in the footnote was written. This is a piece of information usually given at the beginning of a letter. Furthermore, the original addressee, i.e., Mr. Daniel Jones, could probably, at the point of receiving the letter, make guesses about when it was written. So, the context and/or the situation are necessary for a proper understanding of the reference of a noun phrase like *last week*. As for a *plate of beetroot*, a description of its reference has to take into account the fact that of all possible plates of beetroot that exist, have existed or will exist, in reality as well as in imagination, it was fortunately only one that poor Mrs. Thomas was hit with. Furthermore, this single plate of beetroot is very likely to have existed in reality, in the lifetime of Dylan and Caitlin Thomas, somewhere on the British Isles. (And the original addressee of the letter could probably have added a few more details.)

For our theory, this means that not only the meanings of the nominal nucleus and of its attributes, but also the meanings of nominal determiners as well as a large variety of contextual and/or situational factors may influence the reference assigned to a noun phrase in a given utterance situation. They may, but sometimes they may not. As we saw, none of these elements except the bare meaning of the nucleus determines the reference of the generic noun phrase *life*.

A model of nominal reference will have to account - in a manner as simple and as convincing as possible - for either of these cases, as well as for their relationship. It will have to explain singular as well as plural reference, definite, indefinite and generic reference. And last but not least, it will have to provide us with a suitable frame in which to describe the meanings of the various determiners of nouns.

In this context, many linguists who have so far attempted to describe reference, far too impressed by the variety of types of reference as enumerated above, considered it necessary to choose one particular type as a paradigm. It has been a tradition to focus on singular definite reference, i.e., the reference of so-called 'definite descriptions'. Notwithstanding the extremely valuable results thus gained about reference in general as well as about the special type of singular definite reference, such an approach makes it rather difficult to keep separate those elements characteristic of singular definite reference, and those which play a part in any kind of reference process. I.e., elements such as 'localisation' were said to be part of the meaning of the definite article (see Hawkins 1978, "location" of referents). It can be shown however that in a large number of examples it is equally possible to observe localisation processes in indefinite noun phrases (see the above example with a *plate of beetroot*).

Furthermore, a (not unjustified) distinction has been introduced between specific and generic noun phrases, creating apparently two utterly different categories. But shouldn't it be possible to consider the generic reading of a noun phrase simply as one extreme value - a kind of *default* value - of the general reference dimension of *localisation*? That dimension would then comprehend phenomena such as anaphora and deixis as well as their absence, an unrestricted localisation leading to a generic reading. 3

---

3 Situational and linguistic context are always exchangeable, see Hörmann (1977: 179).

4 We shall see later on that the term *generic*, if considered as the default value of a localisation dimension given in indefinite as well as in definite noun phrases, has to assume a meaning slightly different from the meaning we are used to.

---

200
3-Phase Model-of-Reference...

As to example (1) and to the noun phrases examined there, it is possible to establish the following about the reference process as observed in any kind of noun phrase with a nominal nucleus:

The reduction in the set of potential referents\(^5\) - between the practically infinite virtual reference\(^6\) (= meaning) of the bare noun in the lexicon, down to the particular referent or referents of the determined NP in a given (linguistic and/or situational) context - can take place on three different levels:

1. on the level of restriction, i.e., the reduction of the virtual reference of the noun through the meaning of restrictive relative clauses and their equivalents (adjectives mainly)\(^7\), i.e., of elements within the NP itself;\(^8\)
2. on the level of localisation, i.e., the reduction of virtual reference through features of context and situation (anaphora, deixis, world knowledge...), i.e., through phenomena external to the NP, which allow the 'ego-hic-nunc' of the utterance to play a part in the identification of the NP-referent;\(^9\)
3. on the level of determination through articles and other determiners. The description of the third level is radically simplified by demarcating it clearly from the other two levels: the only distinction that has to be made on this level is whether all (definite determination) or only part (indefinite determination) of the set of possible referents arrived at by reductions on levels (1) and (2) is adopted to constitute the actual reference set of the NP (see Hawkins 1978, "inclusive" definite reference versus "exclusive" indefinite reference).\(^10\)

We can picture these three levels as a sequence, the output of one level being regarded as the input of the following one. This leads us to the so-called 'three-phase model-of-reference'.\(^11\) Through the interpretation of a number of examples of different kinds, it will

---

\(^5\) Where I speak of sets of referents, I am quite aware of the fact that this term in its mathematical sense cannot hold for uncountables. For the latter, Schilko (1980: 139) and Flückinger-Studer (1983: 31) suggest the concept of 'quantum' as an equivalent to the set concept. So, all the remarks made in this paper are valid for uncountables as well; one simply has to replace the term set by the term quantum.

\(^6\) This term has been introduced by Milner (1978: 26).

\(^7\) For restrictive relative clause equivalents, see Seiler (1960: 19-34), Raible (1972: 102), and Bach (1975: 85).

\(^8\) As for non-restrictive relative clauses and their equivalents, i.e., non-restrictive attributes, it can be shown through their semantic and syntactic characteristics that they do not come into play in the process of identification/circumscription of the noun phrase referent; in fact, they add some supplementary information about an already established referent (referent set) and therefore constitute a completely new predication, a predication intervening at the level of sentence predication. The latter indications should be sufficient to show that non-restrictive relative clauses and their equivalents have no role to play in a theory of mere noun phrase reference, see Lavric (1989: 239-243).

\(^9\) For the different types of localisation phenomena, see e.g. the different uses that Hawkins (1977) describes for definite articles: visible situation, immediate situation, anaphoric, associative anaphora, general knowledge, generic.

\(^10\) This means that for me, definite and indefinite are the two basic determination types, just as they are for Lehmann (1984: 261). Oomen (1977), on the contrary, distinguishes three types: definite, indefinite and generic. But for the semantic features concerned, she agrees with me and with Vater (1963 [1979]) in saying that the basic opposition is between 'part' and 'whole'.

\(^11\) For other models of the reference process (or of parts of it), that could be compared with the one outlined here, see Lehmann (1984: 259-261) (he demarcates clearly restriction and determination), Zhou (1985: 218-219), and Wilmet (1986).
be shown how this model fulfills the above claims concerning a unique reference model for all types of (determined) noun phrases. Nevertheless, some psycholinguistic considerations might bring about a revision of the model, leading to greater flexibility.

But first it must be shown concretely how the reference model outlined applies to a large variety of noun phrase types. In the following passage by Dylan Thomas, we find NPs which illustrate many different aspects of the three dimensions introduced above:

(2) Come and see my chapel,' said Gwilym. [...] 
Gwilym's chapel was the last old barn before the field that led down to the river; it stood well above the farm-yard, on a mucky hill. There was one whole door with a heavy padlock, but you could get in easilythrough the holes on either side of it. [...] 
We climbed into the chapel through a hole. [...] 
'You sit on the hay; mind the mice,' he said. [...] 
I sat on the hay and stared at Gwilym preaching [...]. The sun through a hole, shone on his praying shoulders, and he said: 'O God, Thou art everywhere all the time, in the dew of the morning, in the frost of the evening, in the field and the town, in the preacher and the sinner, in the sparrow and the big buzzard. [...]'[12]

An interpretation in the frame of the three-phase model will show the various phases in the form of a series of circles which represent the sets of potential referents arrived at in the different stages of the reference process. The three levels of possible reductions are represented in the diagram as arrows pointing from one circle to another. If a reduction in the set of potential referents takes place on a certain level, then the next circle will be a little bit smaller than the preceding one. If there is no reduction, but simply a confirmation, then the width of the circle does not change.

The last level of possible reduction, i.e. the determination level, is represented in a slightly different manner. As the main choice to be operated on this level is between whole and part, definite determination is shown as a whole circle, indefinite determination, as a circle segment. (This brings about some advantages for the representation of indefinite generics, as will be shown later on.)

Now that the representation conventions have been explained, we can finally proceed to explaining the concrete diagrams (see next two pages) related to some of the noun phrases of example (2).

It was my main purpose in giving all these examples to show the wide range, the great variety of possibilities, for the three dimensions - restriction, localisation, determination, in the reference process.

We have seen examples with and without attributes, with unrestricted ('generic'),[13] anaphoric and even deictic localisation, all of these in definite and indefinite variants. Our last example was a purely generic NP without any restriction intervening at any level whatsoever. The only thing we still lack is an example of an indefinite generic - such an example will be given later on.

In any case, I hope to have shown that the three-phase model is a very powerful model, which accounts in a precise and interesting manner for all the different types of nominal reference phenomena.

---

[13] Example 2/3 shows that unrestricted ('generic') localisation for an indefinite NP, in most cases, does not signify a generic reading.
(2/1) the last old barn before the field that led down to the river

Restriction

barn

restriction through a series of attributes

last old barn bef. the f. that led down r.r.

Localisation

localisation through larger context (beginning of the story)

l.o.barn...river (near farm of D.T.'s aunt and uncle)

Determination

confirmation (definite)

the last old barn...river (near farm of D.T.'s aunt and uncle)

(2/2) the farm-yard

Restriction

farm-yard

no restriction through attributes

farm-yard

Localisation

localisation through larger context

farm-yard of D.T.'s relatives

Determination

confirmation (definite)

the farm-yard (of D.T.'s relatives)

(2/3) a heavy padlock

Restriction

padlock

restriction through an attribute

heavy padlock

Localisation

unrestricted localisation

heavy padlock

Determination

part (indeterminate)

a heavy padlock

(2/4) we climbed into the chapel through a hole

Restriction

hole

no restriction through attributes

hole

Localisation

anaphora (- the holes on either side of it)

hole (beside the door)

Determination

part (indeterminate)

a hole (beside the chapel door)

(2/5) "You sit on the hay"

Restriction

hay

no restriction through attributes

hay

Localisation

situational deixis (in the 'chapel')

hay (in the 'chapel')

Determination

confirmation (definite)

the hay (in the 'chapel')

(2/6) I sat on the hay

Restriction

hay

no restriction through attributes

hay

Localisation

anaphora (- "the hay" in the 'chapel')

hay (in the 'chapel', mentioned)

Determination

confirmation (definite)

the hay (in the 'chapel', mentioned)
(2/7) the sun through a hole

Restriction

no restriction through attributes

Localisation

larger situation context: our solar system

sun (of our solar system)

Determination

confirmation (definite)

the sun (of our solar system)

(2/8) the sun through a hole

Restriction

no restriction through attributes

Localisation

context (anaphorical implication)

hole (in the 'chapel')

Determination

part (indefinite)

a hole (in the 'chapel')

(2/9) the dew of the morning

Restriction

restriction through an attribute

dew of the morning

Localisation

unrestricted ('generic') localisation

dew of the morning (in general)

Determination

confirmation (definite)

the dew of the morning (in general)

(2/10) the sinner

Restriction

no restriction through attributes

Localisation

unrestricted ('generic') localisation

sinner (in general)

Determination

confirmation (definite)

the sinner (in general)
The original idea which guided the elaboration of this model was to distinguish clearly between those semantic features which have to be assigned to articles and other nominal determiners, and those other features which might be found in any kind of determined noun phrase.

The latter clearly turned out to be restriction patterns on the one hand, localisation patterns on the other. Both of them tend to be ascribed to definite determination only, because they substantially contribute to the identification of noun phrase referents (see Hawkins 1977, Vater 1982). In the case of indefinite determination, there is no real identification but merely a kind of circumscription of the referent. This is why restriction as well as localisation patterns seem to lack a real function within the indefinite reference process (see Heinz 1982: 59). Nevertheless, they are still there and working, even if their effect is not sufficient to identify the referent(s) clearly.

This is far from being a flaw in the indefinite reference process compared to the definite one: It might even be seen as an additional and more complicated feature. To explain this, let us consider the virtual reference set established through: 1) the meaning of the nominal nucleus; 2) the meaning of restrictive attributes within the noun phrase; 3) precisions (restrictions) brought about by anaphora, deixis, and other localisation features. If we consider these three elements, then the definite article, which is regarded as so prestigious, simply confirms that this set of virtual referents (established as independent of the article in the course of the reference process) has to be taken over as a whole and thus constitutes the actual reference set of the noun phrase in question. The indefinite article, which seems to be in the position of the poor relation, actually does far more than that: It takes the same virtual reference set, but instead of simply confirming it, splits it into one set of referents actually meant, and another set only virtually, but not really referred to by a certain noun phrase in a certain utterance situation.

Relating this statement to the widespread (and true) theory saying that definite reference means identifiability of the referent by the addressee, whereas indefinite reference means non-identifiability (see e.g. Krámsky 1972: 30), it must be considered that in the course of the reference process, the smallest entity which can unquestionably be identified by the addressee is the above mentioned virtual reference set.¹⁴ This set is the output of the localisation level and the input of the determination level. Indeed, the speaker using a definite (or even an indefinite) NP presupposes implicitly that his partner should know on the one hand the meaning of the noun and its attributes (level of restriction), and that his partner should on the other hand also be aware of the necessary amount of linguistic and/or extralinguistic context (level of localisation). Now, if the speaker considers it possible and necessary for the addressee to identify the actual referent with accuracy, he will choose his description according to the knowledge he imputes to the hearer and signal to him, through the use of a definite article, the possibility to identify the referent completely. This signalling is the only function assumed by the definite article within the framework of a text. In no way does the definite article itself contribute to the identification of the referent (see Omen 1977: 50). It simply signals that this identification should be possible for the addressee through the given semantic and contextual information.

As for the indefinite article, it is merely a sign that the information given at the levels of restriction and localisation is not sufficient to allow a complete identification of the noun phrase referent. But this does not mean that no such information is given in indefinite noun

¹⁴ C. Lyons (1980) shows that completeness implies identifiability.
phrases. On the contrary, nobody can deny that the meaning of restrictive attributes contributes a lot to the understanding by the hearer of what is being meant (see our examples 2/3: a heavy padlock, and (1): a plate of beetroot). Concerning localisation phenomena, according to some linguists, they do not apply to indefinite reference assignment. But it seems easy to give a number of examples where the reference to be assigned to an indefinite NP is influenced by some contextual and/or situational factors, as in our examples 2/4: a hole, 2/8: a hole and even (1): a plate of beetroot. (Of course indefinite reference cannot be entirely determined by these factors as there is no reference determination in indefinite NPs.) And even in those types of examples where this is not the case, it should be possible to consider the absence of contextual hints as one extreme value on the scale of localisation and to draw a parallel to the case of unrestricted ('generic') localisation within the field of definite determination. Of course, it must be seen that, especially in the case of indefinite determination, generic localisation is not identical with a generic reading. This is illustrated by our example 2/3: a heavy padlock. In this case, the reference of the indefinite NP is not restricted through any contextual or situational factor. This means that the virtual reference set constituted on level two (after localisation) is identical with the set constituted on level one (after restriction). Even in this case, one must not forget that the indefinite determination splits this set into one part which is taken as actual referent(s) and another (not empty) part which is not. In other words, in comparison to the set corresponding to the whole range of the lexical meaning of the noun and its (restrictive) attributes, the final reference set is necessarily smaller and cannot therefore be seen as a generic reading. In any case, it is important to see that localisation can adopt a restrictive as well as a non-restrictive, i.e., generic, aspect.

The main advantage brought about by this view of localisation phenomena is to allow for a unique theory of reference, valid for indefinite as well as for definite reference, for specific as well as for generic noun phrases. The only price we had to pay for it was to consider the existence of something like an unrestricted ('generic') localisation and to admit that situational and/or contextual factors might influence the interpretation of indefinite noun phrases in some kinds of specific contexts. It has been shown through a number of examples that this is not improbable, so that the line usually drawn between definite and indefinite reference turns out to be much more subtle than has been admitted until now.

As for generic reference, it is taken to be a special case of definite reference: as a matter of fact, in the languages originally examined for this study, i.e. French and German, the generic reading is usually signalled by the use of a definite article in certain kinds of contexts. Considering the regular meaning of the definite article as explained above, in addition to the absence of any specific localisation features (which means the presence of an unrestricted (a 'generic') localisation context), it goes without saying that this brings about a generic reading, and that such a generic reading is possible even for a noun phrase with a series of attributes (see our examples 2/9 and 2/10).

Of course, this is not sufficient to explain any kind of generic noun phrase; as everybody knows, in many languages, for instance in German and to a lesser extent in French, indefinite generics exist as well. As for English, as I've never studied this language in any detail, I would not dare to say whether the English generic zero article is to be considered

---

15 We shall see later that nevertheless a generic reading is possible even for indefinite noun phrases, triggered by contextual features signifying exemplarity.
as a variety of the indefinite zero article, or as a completely new and independent entity, or even as a special variety of the definite article. Anyway, it seems to me that the three-phase model-of-reference should be able to account for it elegantly, as it accounts for definite as well as for indefinite generics. The latter can be explained like this: they are initially very common indefinites, with an unrestricted ('generic') localisation just as many other indefinites have it. But through special contextual factors (i.e., present tense, generalising adverbs etc.) the referent or referents arrived at by the end of the third phase of the reference process acquires exemplarity as an additional feature. 16 This can be illustrated by the following example:

(3) 'Where's the trouble and strife, Mr. Evans?' said Mr. Roberts in a cockney accent. [...] 'In the kitchen,' said Mr. Evans, handing out glasses. 'A woman's only place,' said Mr. Roberts heartily, 'with one exception.' 17

The indefinite generic in this example is of course the NP a woman's. - and it is the sententious character of the utterance that triggers the exemplaric reading. With a three-phase diagram, example (3) could be represented in the following way:

---

16 Lehmann (1984: 261) points out that the relationship between indefinites and indefinite generics is not the same as between definites and definite generics.

17 For the interpretation of indefinite generics, see also Lawler (1977: 116-118).

The feature [+ exemplarity] multiplies the part arrived at through indefinite determination; this multiplication makes the part into a whole again, and therefore, in spite of indefinite determination, there is no difference between the initial virtual reference set and the final set of actual referents.

Having presented the main features of the three-phase model-of-reference as well as a number of examples for its application, we observe that it meets the demands formulated at the beginning of the paper: it accounts equally for generic and specific, definite and indefinite reference; it keeps apart the elements to be ascribed to any reference process, and those characteristic only of special kinds of reference; it allows us to formulate an elegant and unique semantic interpretation for each of the two article types (and, besides, it provides us with a comfortable frame in which to locate the meanings of the other nominal determiners).

Nevertheless, it might be argued that the three phases distinguished in this model - the order of which is still very rigid - suffer from a slight lack of psycholinguistic probability. Nobody could maintain that the addressee of an NP of any kind actually begins by constituting a set of referents corresponding to the whole extent of the lexical meaning of the noun and its attributes, then proceeds by looking for situational and/or contextual hints to reduce this extent, and only finally considers the effect of the definite or indefinite determiner which introduces the noun phrase.

Of course, the reference model considered was never meant to be a true psycholinguistic account of the way addressees decode noun phrase reference. Its aim was simply to explain in a unified manner the complex phenomena of nominal reference on the level of linguistic or semantic theory. However, it could be interesting to work on a further development of the model outlined, which would keep the advantages inherent to the three-phase model, namely the distinction between the three phases recognized, but abandon the (psycholinguistically questionable) rigidity of their succession. And this leads us to the three-dimensional representation of the reference model outlined.

In the three-phase model-of-reference, the three levels of the reduction of reference - restriction, localisation, determination - are interpreted as a sequence: the output of one level is regarded as the input for the following level. Where a complementary set, i.e., a set of referents which are not, but might have been intended, is constituted on a certain level, such a complementary set can only refer to the output of the preceding level.

Let me give an example: in an NP such as a joy of childhood in the context of a biography of Dylan Thomas, the distinction made on level (1) is between childhood joys and other joys; furthermore, on level (2), between the childhood joys of D.T. and those of other people; on level (3), D.T.'s childhood joys are only partially adopted as actual referents, through a process of indefinite determination.

The three-dimensional representation of the same model of reference allows one to proceed less rigidly and to let the features which reduce the reference intervene in almost any sequence, without sacrificing the accuracy of the result. If the virtual reference (= meaning) of the noun is pictured as a cube, then reductions through restriction can be represented, e.g., by the dimension of height, those through localisation, by the dimension of width, and those through determination, by the dimension of depth. The corresponding complementary sets become more clearly visible; furthermore, a greater variety of such complementary sets can be considered. In terms of the example mentioned above, we are now able to
3-Phase Model-of-Reference...

contrast the set of D.T.'s joys with the set of other people's joys, without having first to limit the joys to joys of childhood.

Psycholinguistically speaking, it seems probable that the addressee of a (determined) noun phrase might carry out the various possible restrictions characterizing the reference process in any order whatsoever, and particularly in an order corresponding to the linear succession of the noun phrase elements in the course of the utterance. As the determiner comes first in this order, the hearer might first notice the determiner meaning (identifiable/complete versus non-identifiable/part), without knowing yet to which entity these categories apply. Hearing (or reading) then, for instance, the nucleus noun, he might localise it at once through deixis, anaphora or world knowledge, before even noticing the supervening restrictive attributes. Finally, after having taken notice of restrictive relative clauses etc., he might be forced to operate a second localisation applying to the whole semantic entity constituted by the noun and all its attributes.

This kind of 'trial-and-error' method for grasping the correct referent does not supply a very solid basis on which to build a model of nominal reference. It is preferable for such a model to have a much clearer structure. But it is no mistake at all if a reference model allows for such tortuous paths, being itself a simple and clear map showing with accuracy the goal of the whole procedure. This is what the three-dimensional model-of-reference provides us with, and this could be the reason why it is slightly preferable to a three-phase representation of the same process.
Whatever representation of the theory of reference described here is finally chosen, its main virtue is to demarcate clearly those features common to any nominal reference process, i.e., restriction and localisation, and those features characteristic of the meaning of the definite and the indefinite article. To put it very clearly at this point, restriction and localisation processes together establish a virtual reference set identifiable for the addressee; definite determiners confirm, indefinite determiners split that very virtual reference set.

References

3-Phase Model-of-Reference,...

[1979][reprinted (Linguistische Arbeiten 78) Tübingen].

Eva Lavric
Wien

"Someone with whom I am very closely acquainted had to go to the hospital for an internal X-ray and telephoned the doctor, on the morning when the X-ray was due, to ask, 'Doctor, do you want me to come sober?' I happened to be there at the time and I heard the nervous laugh on the other end of the telephone."
(N.D. 1966: 13)