WPFG

Referring in Functional Grammar: how to define reference and referring expressions
M. Evelien Keizer
Free University, Amsterdam

Referring in Functional Grammar: how to define reference and referring expressions
M. Evelien Keizer

Reasoning at the abstract attitude about action (of a ill to others and for oneself)
see Schopenhauer
G. Jonathan Krane

0. Introduction: referring in FG[*]

In Dik (1989: 2) the theory of Functional Grammar is described as a general theory concerning the organization of natural languages, meant to reconstruct part of the linguistic capacities of 'the natural language user' (NLU). The theory is 'functional' in the sense that, in order to find out how the NLU "works", it seeks to answer the question of how speakers and addressees succeed in communicating with each other through the use of linguistic expressions. Thus, as in Dik (1978), language is in the first place seen as an instrument of social (more specifically, verbal) interaction among human beings, used with the intention of establishing communicative relationships. Accordingly, linguistic expressions must be 'described and explained in terms of the general framework provided by the pragmatic system of verbal interaction' (Dik 1989: 3).

In accordance with this view of language, referring in FG is seen as 'a pragmatic, cooperative action of a Speaker in a pattern of communication between Speaker and Addressee' (Dik 1989: 111), whereby the Speaker uses a term (or referring expression) to guide the Addressee to some entity about which s/he wishes to predicate something. In order to make it possible for the Addressee to pick out the intended referent, the information in the (predicating part of the) term must be sufficient, i.e. the properties assigned to the referent must sufficiently narrow down the set of potential referents (within a given setting).

Finally, it is important to realize that in FG the entities referred to by a speaker are not entities in the 'real world', but entities in a 'mental world'. These mental constructs can be introduced into the discourse, and can be referred to and talked about, irrespective of whether they exist in the real world. Reference, therefore, is not dependent on ontological commitment or existence in reality, but on existence in the mind (Dik 1989: 113).

Summing up, we can say that in FG referentiality is given what may be considered a pragmatico-semantic definition, involving, within a particular communicative situation, a fourfold relation between a speaker, an addressee, an entity (or set of entities), and a term.[1]

1. Terms or referring expressions

It will be clear that terms play a crucial role in the FG approach to reference, as it is by means of a term that a Speaker guides his/her Addressee to an entity about which s/he wishes to predicate something. Accordingly, a term is defined as 'any expression which can be used to refer to an entity or some entities in some world' (Dik 1989: 111). That is to say, terms are given a functional definition: they are defined in terms of the function they fulfil in the predication, namely that of referring (i.e. 'pinpointing some entity') as opposed to predicating (i.e. assigning properties to such entities).

At the same time, however, terms are given a formal description. Thus, terms are described by means of the following general schema (Dik 1989: 115):

(1) $(\Omega x_i: \Phi_1(x_i):\Phi_2(x_i):\ldots:\Phi_n(x_i))$

According to this schema, terms are supposed to have a term variable (x),

---

[1]Note that in this approach, although pragmatic in the sense just described, we are dealing with what Givón (1978, 1982) calls 'semantic' reference: it involves the speaker's intent to refer to an entity within a particular universe of discourse. Du Bois (1980), Givón (1982), Hopper and Thompson (1984, 1985), Wright and Givón (1987), as well as others, however, present evidence to suggest that referentiality should be seen not as a semantic, but as a pragmatic (i.e. a discourse) property. According to Givón (1982: 84), for instance, referentiality depends upon the 'communicative intent of the speaker uttering the discourse, specifically on whether an individual argument (NP) is going to be *important* enough in the *subsequent discourse*'. In other words, for an expression to be (pragmatically) referential it is a necessary, but not a sufficient condition that the speaker should pinpoint some entity about which s/he wishes to predicate something (see Dik 1989: 211). In addition, the specific identity of this particular entity should be thematically important in the discourse.

In FG, on the other hand, such factors as aboutness and saliency (i.e. topicality and focality) are captured by means of the pragmatic functions Topic and Focus, and are not used as criteria for referentiality.

symbolizing the intended referent, one or more term operators (Ω) and one or more restrictors, the first of which (the head of the term) is typically a nominal, the second (third, etc.) typically an adjectival predicate (or some other attributive modifier, such as a prepositional phrase or a restrictive relative clause; see Dik 1989: 130/162).

Now, in many cases the term status of an expression is unequivocal since both the functional and the formal requirements are met. Thus in the following sentence the constituents *the little boy* and *his old blanket* are straightforward examples of terms:

(2) The little boy would not go anywhere without his old blanket

Interestingly, in FG both generic and non-specific expressions are also regarded as terms, i.e. as referring expressions. This means that in the following example, (2′),

(2′) The little boy would not go anywhere without an old blanket (any old blanket)

the non-specific indefinite *an old blanket* not only has term structure (a nominal head, a second (adjectival) restrictor, term operators specifying number, definiteness and genericity), but is also seen as fulfilling the same function in the predication as specific terms, namely that of referring to, i.e. pinpointing, some entity. The only difference between the specific *his old blanket* in (2), and the non-specific *an old blanket* in (2′) is situated in the fact that the former refers to a particular token of the kind designated by the term (a particular old blanket), whereas the latter refers to an arbitrary token (any entity with the properties 'blanket' and 'old') (Dik 1989: 143).

A justification for this approach can be found in the fact that both specifics and (under certain conditions) non-specifics/generics can create discourse referents (in the sense of Karttunen 1971, see also Partee 1972: 422ff.; Lyons 1977: 191-2), which suggests that they must have some kind of referent.[2]

---

[2]Expressions creating what Karttunen calls discourse referents are not to be confused with Givón's (1982) pragmatically referential expressions: whereas for the latter to be referential the referent of the expression must be salient in subsequent discourse, the criterion for the former is merely that subsequent

As we will see in the following sections, however, there are also many instances where only one of the two basic requirements (the functional or the formal) is fulfilled, either wholly or partly, and where, as a consequence, it may be difficult to decide whether the expression in question is a term.

2. The layered structure of the clause

In Dik (1978), the notion of referentiality seemed relatively straightforward and uncontroversial. The highest level in underlying representation was the predication, which consisted of a verbal predicate and one or more terms functioning as arguments, thus combining the two basic acts of predicating and referring.[3] In other words, referring expressions were always terms and by definition took argument position. Furthermore, all terms contained the variable x, symbolizing the potential referent or set of referents, irrespective of the type (or order) of entity referred to. However, with the introduction of the layered clause model (Hengeveld 1989, 1990a), the notion of referentiality has become more widely applicable. Thus Hengeveld's original layered model distinguishes four levels in the representation of the clause, each referring to a different order of entity, symbolized by a different variable:

(3)

Var	Restrictor	Clause unit	Reference
E	Clause	$(E_1: [Clause] (E_1))$	Speech act
X	Proposition	$(X_1: [Proposition] (X_1))$	Potential fact
e	Predication	$(e_1: [Predication] (e_1))$	State of affairs
x	Predicate$_N$	$(x_1: [Predicate_N] (x_1))$	Individual

(Hengeveld, 1989: 130)

Dik (1989) adopts a modified version of Hengeveld's classification, which can

reference is possible.

[3]In fact, the highest level of representation was the extended predication, consisting of a nuclear predication (verbal predicate and arguments) and one or more satellites. Most of what follows will be concerned with the referentiality status of argument terms. See, however, footnote 12.

4

be represented as follows:

(4)

structural unit	type of entity	order	variable
clause	speech act	4	E_i
proposition	possible fact	3	X_i
predication	state of affairs	2	e_i
term	entity	1	x_i
predicate	property/relation		f_i

(Dik 1989: 50)

If we compare the two schemas we notice a number of differences. The most obvious of these is, of course, the extra level distinguished by Dik; the level at which predicates, symbolized by the variable f, refer to properties or relations. In Dik (1989), it is only in the survey given in (4) that this extra level, with its extra variable, is mentioned. Recent proposals by Hengeveld (f.c.) and Keizer (f.c.), however, have expanded on this idea of providing predicates with their own variable. In both proposals, the principal reason for distinguishing the additional (zero-)level is formed by the fact that, as with 1st-4th order expressions, anaphoric 'reference' to nominal (5), adjectival (6) and verbal (7) predicates is possible:

(5) Schroeder bought a new piano yesterday. I bought an old *one*.
(6) Linus is funny, *which* you are not.
(7) Snoopy is sleeping. *So* is Woodstock.

In (5) anaphoric 'reference' is made to the first restrictor of the term *a piano*, i.e. to the nominal predicate *piano*. The relative pronoun *which* in (6) is 'co-referential' with the adjectival non-verbal predicate *funny*, the indefinite pronoun *so* in (7) with the verbal predicate *sleep*. In order to be able to represent these anaphoric relations in underlying representation the variable f has been introduced, symbolizing the property or relation expressed by the nominal, adjectival or verbal predicate. In analogy with the other levels, this property or relation (I will use the term 'quality' to refer to both) may be considered a 'zero-order' entity, which can be attributed or predicated, can be located in neither time nor space, and can typically be evaluated in terms of its applicability (to

5

higher order entities).[4] Simplified versions of the underlying structures of (5), (6) and (7) are given in (5'), (6') and (7').

(5') Past e_i: [bought$_V$ (Schroeder) (i1x$_i$:[f$_j$: piano$_N$]: [f$_j$: new$_A$])] (yesterday)
      Past e_j: [bought$_V$ (I) (i1x$_i$:[Af$_i$]: [f$_k$: old$_A$])]
(6') Pres e_i: [((f$_i$: funny$_A$) (Linus)], PresNeg e_j: [[Af$_i$] (you)]
(7') Pres e_i: [((Prog f$_i$: sleep$_V$) (Snoopy)]
      Pres e_j: [[Af$_i$] (Woodstock)]

As becomes apparent from these examples, nominal predicates, previously functioning as restrictors on the term variable x, symbolizing a first order entity,

---

[4]Notice that Weigand (1990: 99ff.), too, distinguishes a fifth category of entity types in addition to the 1st-4th order entities distinguished thus far in FG. These entities, called 'qualifiers', are subcategorized into three further types: qualities (qualifying first order entities, e.g. temperature, number, colour, size), manner (qualifying second order entities, e.g. speed, intensity), status (qualifying third order entities, e.g. probability, truth), and style (qualifying fourth order entities, e.g. politeness). Note, however, that Weigand's 'qualifiers' form only a subset of what I call 'qualities'. Thus, according to Weigand's system, the nominal predicate *car* (as in the phrase *a blue car*) gets a predicate frame of the type [material] (a subtype of the category of first-order entities), whereas an adjectival predicate like *blue* gets a predicate frame of the type [quality]. The predicate *government*, on the other hand, has three different predicate frames: one of the type [position] (a subtype of SoA, in the sense of governing), one of the type [manner] (the manner or system of governing), and one of the type [human] (the body of persons governing a state) (Weigand, 1990: 101). In my proposal, however, all predicates (verbal, nominal, adjectival) are seen as restrictors of expressions 'referring to' (first, second, third or fourth order) qualities. Thus the nominal *car* expresses the property 'car', just as the adjectival predicate *blue* expresses the property 'blue'. Both restrict expressions with a variable (f) symbolizing these properties. These expressions can in turn be used to refer to higher order entities. Thus [f$_i$: car$_N$] is typically used to restrict an expression referring to a first order entity, as in the term *a car*, (i1x$_i$: [f$_i$: car$_N$]). The same holds, in principle, for adjectival predicates like *blue*, the only difference being that these typically function as second restrictors (and for verbal predicates like *sleep*, which typically have a predicative function; see Dik 1989: 162). Similarly, the nominal predicate *government* can be used to 'refer to' the property 'government'; the resulting expression [f$_i$: government$_N$] can in turn be used to refer to a 'zero', first or second order entity (a manner, body or position, respectively). In other words, all predicates are used to 'refer to' the quality they express before they are used to attribute this quality to a higher order entity.

now function as the first restrictor of zero-order expressions. In turn, these zero-order expressions (which I have labelled 'predicators', Keizer (f.c.)) function as the first restrictors of terms referring to first order entities, assigning the qualities they 'refer to' to the entity symbolized by the term variable x. The five layers of the clause can now be represented as follows:

(8)

Var	Restrictor	Clause unit	Reference	Order
E	Clause	$(E_1: [\text{Clause}])$	Speech act	4
X	Proposition	$(X_1: [\text{Proposition}])$	Potential fact	3
e	Predication	$(e_1: [\text{Predication}])$	State of affairs	2
x	Predicator	$(x_1: [\text{Predicator}])$	Individual	1
f	Predicate	$(f1: [\text{Predicate}])$	Quality	0[5]

A second difference between Hengeveld's proposal and Dik's modified version consists in the fact that, unlike Hengeveld, Dik mentions the term as the structural unit referring to first order entities. Thus, according to Dik's classification, terms are on a par with the other four structural units in that they are used to refer to a particular type of entity. As appears from the following examples, however, terms can be used to refer to any type of entity, i.e. not only to individuals, but also to speech acts, potential facts, SoAs, and even qualities:

(9) *The question* was 'Who's the best baseball player in the world?'
   $(d1E_i: [f_i: \text{question}])$
(10) *The assertion* was that Linus would not go anywhere without his blanket
   $(d1X_i: [f_i: \text{assertion}])$
(11) *The match* started at one o'clock
   $(d1e_i: [f_i: \text{match}])$
(12) *The colour* was beautiful
   $(d1f_i: [f_i: \text{colour}])$

---

[5]Further justification is provided by, for instance, the applicability of the f-variable in the treatment of adverbials (Hengeveld, f.c.), copula constructions and pragmatic function assignment (Keizer, f.c.) and coordination (Dik, f.c.).

This problem does not arise if we accept schema (8), which (like Hengeveld's original model) does not mention terms as a particular structural unit used to refer to a particular type of entity: it merely indicates that first order entities can only be referred to by means of expressions with term structure, but does not state that terms necessarily refer to first order entities.

Finally, it will be clear that in Hengeveld's original clause model it is not only terms referring to first order entities that are considered to have referring potential, but that, in addition, each of the clause units listed in schema (8) can be used to refer.[6] In Dik's version of the clause model, on the other hand, the term reference does not appear. And although Dik (1989) does not explicitly reject Hengeveld's application of the notion of reference, he himself nowhere states that predications, propositions or clauses *refer to* entities. Instead, Dik uses the term *designate*. However, as this term is given no further explanation or definition, it is by no means clear in what sense it differs from referring. Thus Frege (1892a: 61) uses the term as follows:

> A proper name (word, sign, sign combination, expression) *expresses* its sense, *stands for* or *designates* its reference. By means of a sign we express its sense and designate its reference.

Likewise, Lyons (1977: 199) points out that what Frege called 'Bedeutung', translated as reference in English, is identifiable with what many German writers call 'Bezeichnung', often translated into English as 'designation'. In other words, 'designation' is commonly used as a near-equivalent of reference. Clearly, however, this cannot have been what Dik had in mind in using the term designate. In what follows I will therefore not use this term, but will use the non-technical terms 'express' or 'signify' instead.

Note, finally, that unlike the other clause units, terms are described as *referring* to first order entities. In other words, the relation between the structural units and the entities distinguished in Dik's model cannot be inferred from schema (4).

---

[6]Hengeveld thus expands on Vet's (1986: 1) claim that

> In natural languages we have two kinds of referring expressions. First we have terms, which refer to individuals in some world. Second we have sentences, which refer to states of affairs.

Summing up we can safely say that the present situation in FG is far from clear. What is clear, however, is that the definitions of reference and terms given in Dik (1989) do not provide for the possibility of referring to entities by means of entire clause units; nor, for that matter, for terms referring to higher order entities. In order to clarify the situation, we will need to establish, firstly, which expressions do and which do not refer, and what exactly are their referents; and secondly, how can we adapt the definition of referentiality and referring expressions given in section 1 to the new situation created by the introduction of the layered model?

There seem to be two ways to approach these questions, each starting from a different view of the notion of referentiality. In the first place, we may accept that (as suggested by schemas (3) and (8)) every expression containing a variable refers, irrespective of the type of referent, its structure, or its function in the predication (as argument or predicate). This, of course, raises the question of whether all these expressions are also to be regarded as terms. Alternatively, we may claim that some but not all of the expressions distinguished in the layered model have a referring function. In that case, however, we need an unambiguous and justifiable criterion for determining term status. The rest of this paper will consider the possibilities and implications of each of these solutions. Finally, a choice between the two options will be made on the basis of these considerations.

3. Degrees of referentiality

Let us first consider the consequences of the first option, and concern ourselves with the question of whether we can infer from schema (8) that each element containing a variable (i.e. each of the clause units distinguished in (8)) is necessarily referring; and, if so, whether we are to regard all these referring expressions as referential to the same extent. Or can it be that some expressions are perhaps more prototypically referring than others?

If we accept that referentiality is a graded notion, this automatically leads to yet another question, namely that of what constitutes a prototypical referring expression in FG. The most obvious answer to this question will be that terms are prototypical referring expressions. By now, however, it is far from clear what exactly a term is. First of all there is the original pragmatico-functional definition of terms, according to which a term is any expression that can be

used to refer to some (mental) entity, irrespective of the form of this expression. A second possibility would be to determine term status on the basis of the function an expression fulfils in the predication, or clause; i.e. terms are referring expressions with argument function. Thirdly, term status may be determined on the basis of formal features, such as the presence of a nominal (lexical) head, second restrictors in the form of attributive modifiers, and one or more term operators. It will be clear that only after we find the answer to these questions can we decide on the main issue, namely that of whether all referring expressions are terms, and of whether this category of referring expressions is bounded or unbounded.

Let us start by considering the first question: is it possible, perhaps even necessary, to distinguish different degrees of referentiality? In seeking the answer to this question it is first of all important to realize that there has never been consensus on what constitutes a referring expression, neither among philosophers, nor among linguists. Russell (1905) and his followers in the logico-semantic tradition, for instance, maintained that only proper names and definite descriptions could refer to entities (Russell used the term 'denote'), since only the referents of these expressions could be said to exist in the real world. Others, among them Lyons (1977), defend the view, now widely accepted in linguistic theory, that reference need not be restricted to real world entities, but should also pertain to fictional and abstract entities. Lyons moreover extends the notion referentiality to include indefinite expressions as well, as long as they have 'specific identity' (Lyons 1977: 188). FG, we have seen, takes an even more liberal stand: both specific and non-specific expressions are considered to be referential; the difference between them merely being that whereas the former refer to a particular token of the relevant kind, the latter refer to an arbitrary token of the relevant kind.

This does not necessarily mean, however, that expressions used to refer to specific and non-specific 1st-4th order entities are all equally referential. First of all, it seems justified to assume that expressions referring to first order entities are more basic than those referring to higher order entities. Thus it appears that whereas all languages have basic (non-derived) nominal predicates for describing first order entities, not all have basic second or third (or fourth) order nominal predicates (see Lyons 1977: 447, who uses the term first, second or third order noun). Moreover, it seems to be the case that even if a language (e.g. English) has nominal predicates to describe all types of entity, the higher the order of the entity, the fewer nominal predicates there are available. The same appears to be

true of nominalizations (expressions with derived heads, either predications or propositions; see Mackenzie 1990a: 136). These phenomena may be accounted for by assuming that first order entities are more basic than higher order entities in the sense that, as Lyons (1977: 445) puts it, 'their ontological status is relatively uncontroversial', and that, as such, 'the notion of existence applies primarily to first order entities'.

Support for the idea that concrete objects are more basic than either actions or facts also comes from a cross-linguistic study conducted by Gentner (1982), which starts from what is known as the Natural Partitions hypothesis.[7] This hypothesis holds that the linguistic distinction between nouns and predicate terms (including both verbs and prepositions) is based on a preexisting perceptual-conceptual distinction between concrete objects such as persons or things and predicative concepts of activity, change-of-state, or causal relations, and that the category corresponding to nouns is conceptually simpler or more basic than those corresponding to verbs and other predicates. Thus, the results of the study show that children learn nouns before predicate terms, that nouns greatly outnumber verbs in early-production vocabulary, and that, at every stage of observation, children not only produce but also comprehend more nouns than verbs (Gentner 1982: 327). Gentner finally concludes that

> The Natural Partitions account has it that children learn concrete nouns early because, as object-reference terms, they have a particularly transparent semantic mapping to the perceptual-conceptual world. By this account, humans, even prelinguistic infants, inevitably see some parts of the perceptual world -- the "objects" -- as particularly coherent and stable. Words that refer to these concepts are easy to learn because the child has already formed object concepts, and need only match words and concepts (Gentner 1982: 328).

Predicate words, on the other hand, have a less transparent relation to the perceptual world, and are as such less accessible to the child. As for the

---

[7]The Natural Partitions account (or cognitive determinism) is the counterview of what Whorf (1956) labelled Linguistic Relativity (also known, in its stronger form, as Linguistic Determinism), according to which it is language that sets up the distinctions between parts of speech, and which, cnosequently, holds that form-distinctions are learned independently of conceptual structure or perceptual distinctions.

cognitive difficulty of the different types of predicate words, Macnamara (1972: 4) predicts that the order of learning words is as follows: names for entities, names for their variable states and actions, and names for more permanent attributes such as colour.

Secondly, expressions referring to a particular order of entity may be seen as exhibiting different degrees of termhood or 'nouniness' according to the presence or absence of a number of formal features. Thus, within the group of expressions used to refer to second order entities (SoAs), the following expressions represent a gradual increase in assimilation from the non-nominal to the nominal (Mackenzie 1986: 8):

(13) a. winV (my horse)Ag (the race)Go
     b. ... my horse winning the race
     c. ... my horse's winning the race
     d. ... my horse's winning of the race
     e. ... my horse's victory in the race

The predication in (13a) is fully verbal: it has a finite verb, specified for number; the use of modal auxiliaries is possible; the predicate can be specified for Tense and Aspect; Voice distinctions are possible; the predicate has full valency (of two, in this case) and may be modified by adverbs. The term in (13e), on the other hand, has none of these verbal features; it does, however, possess a number of nominal features. Thus it can be modified by adjectives, and can take both the definite and the indefinite article. The three expressions in (13b-d) exhibit different degrees of deverbalization and nominalization. In (13b) and (13c), for instance, there is no agreement and the use of modals is excluded. Apart from this, (13b) has all the verbal features of (13a). (13c), on the other hand, does not have full valency (one of the original arguments appears as satellite), and can be specified for definiteness. Finally, (13d) has none of the verbal features of (13a), but can be modified by adjectives and can be specified for definiteness. This gradual increase in the degree of nouniness is also reflected in the form of the head (first restrictor predicate). Whereas (13e) has a lexical (one-word) head, (13a-d) have non-lexical (derived) heads: in (13a) the head takes the form of a predication; in (13b)-(13d) the head (*winning*) is clearly more nominal, though not fully lexical (Mackenzie 1990a).

A similar scale can be found in expressions referring to first order entities (Mackenzie 1990b). Thus the following again exhibit different degrees of

12

nouniness:

(14) a. The one that sang the song
   b. The one singing the song
   c. The singer of the song
   d. A singer

Expression (14a) is the most marked, as it takes an entire predication as its head. Unlike (14a), the expression in (14b) does not have a fully verbal restrictor (it does, for instance, not contain Tense and Aspect operators, and involves valency reduction), and may as such be seen as the first step in the process of (first argument) nominalization. In (14c) this loss of verbal properties is accompanied by a gain in nominal properties (e.g. the Goal argument appears as Possessor satellite). Finally, in (14d), the predicate is fully nominal: it has neither arguments nor satellites, and expresses a habitual property (e.g. profession), rather than a specific SoA (Mackenzie 1990b: 129).

Together these observations have led to the idea that the linguistic concepts of noun and NP are themselves graded concepts, and that prototypical nouns are used to form NPs referring to concrete things, and exhibiting a certain formal behaviour (e.g. Quirk and Mulholland 1964; Crystal 1967; Carvell and Svartvik 1969; Ross 1972, 1973; Hopper and Thompson 1984, 1985; Lakoff 1987; Taylor 1989). It may therefore be desirable also to regard referring expressions in FG as a graded category, and, consequently, to provide a definition of what constitutes a prototypical referring expression in FG, in terms of the type of entity referred to, the form of the referring expression, as well as the function the expression fulfils in the predication. Therefore, let us say that the prototypical referring expression in FG is a 'full' term, i.e. a term with the following properties:

(15)
(i) referent:
    - it refers to a first order entity (symbolized by the x-variable)
(ii) form:
    - it has a prototypical (i.e. lexical) nominal head
    - has no valency, i.e. it may be specified by satellites, but not by arguments (except in the case of relational nominal predicates)
    - all term operators apply (at least potentially). This means a full term
        - can be singular or plural (which implies that terms containing countable nominal predicates are more prototypical than those containing non-countable nominal predicates)
        - can be definite or indefinite
        - can contain demonstratives, quantifiers and classifiers; and, in the case of countable nominal predicates, numerators and ordinators
        - can be specific or generic (where it could plausibly be argued that terms with specific referents are more prototypical than those with non-specific/generic referents)
        - can be anaphorically referred to by means of definite pronouns, with the form of the pronoun being determined by the gender and number of the antecedent term.
(iii) function:
    - it fills an argument slot

Examples of a prototypical term are *the little boy* and *his old blanket* in (2) and *a new piano* in (5).

Terms referring to higher order entities are not prototypical since they do not fulfil the first requirement. Apart from that, however, terms like *the arrival* and *the victory* exhibit all other characteristics of terms. They are what is called 'hypostatized' (Searle 1969: 120; Lyons 1977: 445): they refer to higher order (abstract) entities, but behave like prototypical terms in all other respects.

According to the criteria listed above, nominalizations, too, are non-prototypical referring expressions, since they have derived (non-lexical) heads. Within the category of nominalizations, however, there are again differences in prototypicality. Thus a first order nominalization like *the player* or *the writer* is only non-prototypical in the sense that it does not have a lexical head. A second order nominalization like *Franklin's arriving yesterday* (as in *Franklin's arriving yesterday was quite a surprise*) is, however, less prototypical: it does not refer

14

to a first order entity, does not have a lexical head and not all term operators apply (e.g. the singular/plural opposition). At the same time, it does fill an argument slot, and some term operators do apply (e.g. its referent is specific, and can be anaphorically referred to by means of *it*).

Finally, there are the higher clause units listed in schema (8), which are also regarded as having referents. Evidence for their referential status can be found in the fact that anaphoric reference to these units is possible. Moreover, they can be interpreted as having the same referent as their corresponding nominal forms. In other words, a predication like *Franklin arrived yesterday* can be said to refer to the same entity (SoA) as the term *Franklin's arrival yesterday*. Each of these clause units can also function as the argument of a higher predicate, as in *I do not know where Linus is* (which has a third order complement, *where Linus is*) and *Lucy shouted 'Help!'* (which has a fourth order complement, *'Help!'*). Nevertheless, they are clearly far removed from the prototypical referring expression: they do not refer to first order entities, do not have lexical heads, may but need not fill argument slots, and specification by means of term operators is very limited indeed.[8]

In other words, the degree of referentiality of a referring expression may be said to be determined, basically, by three separate factors: the entity the expression refers to, the form it takes, and the function it fulfils in the clause. Thus, each of the expressions discussed so far may be regarded as being referential, irrespective of whether it refers to first or higher order entities, or has a lexical or a derived head, and irrespective of whether it is, or can be, specified by term operators, or is used to fill an argument slot; they do, however, present different degrees of referentiality. This approach implies, however, that expressions which were originally seen as having a predicating function, now also have a referring function. As such, it raises the question of whether expressions with an f-variable also refer, or whether they have a purely predicating function; and if they do refer, what happens to the traditional notion of non-referentiality?

---

[8]One might claim that certain term operators do still apply to predications, e.g. those indicating a specific/generic referent (*John is smoking* vs *John smokes*), and those indicating number (the distinction between iterative and semelfactive predications). See Rijkhoff (1988).

15

4. Zero-order expressions

It may have been noticed that in discussing zero-order expressions the term 'referring' has been used with some caution, the reason being that in linguistics these expressions have traditionally been regarded as non-referential. Thus the expressions *new* and *piano* in the term *a new piano* are typically used to predicate properties of some higher order entity, and, consequently, are not considered to have a referent. They do, however, have what Frege called 'sense', or what Carnap (1956: 16ff/233) calls 'intension',[9] namely the quality expressed by the predicate. This view is supported by the fact that, according to the criteria listed in (15), they score very low on a scale of referentiality: they do not refer to first order entities, none of the term operators seems to apply, and they do not function as arguments but as restrictors on a variable (and as such have a predicating function). And although anaphoric reference to their own (f-)variable is possible, this is typically done by means of indefinite pronouns (*one* and *so*). Thus, despite the fact that, like the other variables, the f-variable symbolizes 'something' (some abstract entity), zero order expressions do not seem to *refer* to this something.

Nevertheless it seems possible to refer to 'qualities' by means of terms, i.e. there seem to exist 'zero-order' nouns or (non-productive) nominalizations. Examples of such expressions are *the colour* in (16), *selfishness* in (17) and *modesty* in (18):

(16) The colour is beautiful
(17) Selfishness is the most basic motivation
(18) Modesty is a virtue

According to our criteria, these expressions are clearly (though not prototypically) referring. Yet, they do not refer to first or higher order entities (at least not on the intended reading); instead they seem to refer to a quality. Not

---

[9]Carnap (1956: 16ff./233) describes the intension of the predicate blue as the property of being blue, and in McCawley (1981: 403) we read that 'it is customary in intensional logic to apply the term "property" not to the extension of a predicate, but to its intension'. What I will call the sense or intension of a predicate is presumably what Dik (1989) means by its designation, and is included in what Lyons (1977: 207/208) understands by the denotation of an expression.

surprisingly, such zero-order nouns are typically used either to describe the character or behaviour of an entity, e.g. *austerity, decency, depravity, eccentricity, efficiency, goodness, honesty, mediocrity, originality, popularity, respectability, stupidity, usefulness,* etc. (in their non-countable use); or to describe the physical characteristics of an entity, e.g. *beauty, breadth, colour, height, intensity, smell, thickness, vastness, warmth,* etc. That these nouns are typically used to refer to qualities rather than to first or higher order entities is confirmed by a look at their dictionary definitions. Thus all these words are defined (directly or indirectly) as qualities, while *quality* itself is defined as a characteristic, attribute, property, etc., words all of which turn out to be defined in terms of each other.[10] Thus it appears that what we are dealing with here is some kind of primitive, which I will regard as a fifth order (or 'zero-order') entity[11] alongside concrete objects, SoAs, possible facts and speech acts. The expressions referring to these entities will be less prototypical than those referring to higher order entities on account of the abstract nature of their referent (which is an entity in the sense that it can be referred to, and talked about, but can hardly be said to 'exist' in any tangible sense). At the same time, they are clearly more referential than the so-called 'non-referential' expressions (i.e. predicators, functioning as restrictors), their only non-prototypical feature being that they do not have first order referents (as in the case of second, third and fourth order nouns, they are hypostatized; see Searle 1969: 120).

---

[10]I am grateful to Piek Vossen from the 'LINKS in the Lexicon project' (a project which has developed a semantic data-base storing the meaning-definitions from the Longman Dictionary of Contemporary English in a systematically related way) for sending me a long list of all entries defined (directly or indirectly) by means of the atomic term 'quality'. The examples quoted form a selection from this list.

[11]In the layered clause model the unit referring to/designating these qualities (restricted by predicates) constitutes the lowest level; as such these clause units may be called zero-order expressions. This must, however, not be taken to suggest that they are more basic than first or higher order entities. On the contrary, on account of the extremely abstract nature of their referents they should rather be regarded as fifth order entities. This coincides with the fact that there are but very few fifth order (non-derived) nominal predicates (by far the majority of them being nominalizations).

5. Non-referentiality

Once again the conclusion must be that the category of referring expressions is a graded one, and that even expressions referring to a particular type of entity can be more or less referential, according to the number of properties they have in common with the prototype. Whether or not the term 'non-referential' makes any sense depends on whether we conceive of this graded category as a bounded or an unbounded one (cf. Lakoff 1987: 45ff.). If we take the view that the category of referring expressions has no clear boundaries, expressions referring to first order entities with a specific identity are simply most representative (best examples, central members) of the category, while predicating zero-order expressions (predicators) are least representative. This means that in principle every expression refers, and that the notion of non-referentiality becomes vacuous. If, however, we assume that the category of referring expressions has clear boundaries, then some expressions will be non-referential, while others will still be more or less representative of the category. The obvious disadvantage of the latter approach is, of course, that it is hard to tell where to draw the line, i.e. to tell exactly which expressions do and which do not belong to the category. Thus we saw that different linguists or linguistic theories have drawn the line at different places: Russell and his followers in the logico-semantic tradition tend to include only proper names and definite descriptions in the category of referring expressions; Lyons (1977) extends the category to include also indefinite NPs, provided they have specific reference; and in FG even non-specific terms are regarded as referential.

However, regarding the category of referring expression as unbounded also has its disadvantages. First of all, the idea that predicators (zero-order expressions functioning as restrictor) are referential seems to have little intuitive appeal. Secondly, it seems hardly attractive to have to regard all types of referring expressions as terms -- even if only to a certain extent. Moreover, by doing away with the notion of non-referentiality, and by implying that every linguistic expression refers, we render the basic distinction between the acts of referring and predicating irrelevant. However, as Strawson (1950: 17) already pointed out

One of the main purposes for which we use language is the purpose of stating facts about things and persons and events ... In the conventional English sentence which is used to state, or to claim to state, a fact about an individual thing or person or event, the performance of these two tasks can be roughly and approximately assigned to separable expressions.

Elsewhere, Strawson (1959: 142) describes the expressions used for referring and predicating as mutually exclusive. Given its definition of referring and its representation of referring expressions, FG seems to share this view of language. The rest of this section will therefore be devoted to defending the second of the two options given at the end of section 2, i.e. to defending the view that it is possible to retain the referring/predicating distinction after all by employing yet another criterion for distinguishing between these two functions. The criterion I will propose to use is that of whether an expression is predicated about (and as such takes argument position), or is itself used to predicate. This criterion may seem obvious, since, after all, it means a return to the original idea that only arguments have a referring function. There is, however, one important difference inasmuch as we now start from the predicating rather than the referring action.

Despite the intuitive appeal of the early FG standpoint that terms, as referring expressions, take argument position, such a direct link between argument position and referentiality is by no means self-evident. Both Frege (1892b) and Strawson (1959) tried to define the difference between arguments (also called referring expressions, singular terms, subjects or proper names) and predicative expressions without employing the notion of referentiality. Their reason for doing so was that they started from the assumption that referring and predicating expressions referred to (or identified) entities in the same way, which meant that referentiality could no longer be used as a distinguishing feature. Thus Frege (1892b) believed that in sentences like *Linus is funny*, the predicate expression *is funny* referred to the concept 'funniness' in the same way that the term *Linus* referred to a particular individual (object). After all, Frege argued, in uttering this sentence the speaker ascribes the concept (or property) 'funniness' to this individual, thereby committing him/herself to the existence of this concept/property. Therefore, he concluded, the expression *is funny* refers to the concept/property 'funniness', or, more generally, concepts are 'the reference of a grammatical predicate' in the same sense that objects are the referents of referring expressions (Frege 1892b: 43; see also Searle 1969:

97ff.). In the previous sections it has been shown that by recognizing a fifth (or zero-) level in the layered clause model FG seems to take the same point of view: not only arguments, but also predicates have a referring function, their referents being the qualities assigned to other entities. Therefore, predicates, too, are represented by means of a variable.

Since the notion of referentiality could no longer be used to account for the intuitive difference between referring expressions and predicates, Frege proposed to explain this difference in terms of 'completeness' instead (see also Strawson 1959: 212). Thus, according to Frege, expressions referring to concepts always have a predicative function because they are incomplete (unsaturated), whereas expressions referring to objects are complete. The same idea has found its way into FG, where predicates (or rather, predicate frames) have one or more argument slots that remain to be filled, thus forming 'open' predications; terms and nuclear predications, on the other hand, are 'closed' predications (Dik 1989: 70f.). The problem with this approach is, however, that it turns out to be difficult to define the notion of completeness without resorting to the referring/predicating distinction, thus turning the whole argument circular. After all, what does it mean for an expression to be incomplete? It means that, in order to be used meaningfully, an expression needs to be complemented by some other expression; in other words, that in order to form a complete utterance (a closed predication), the concept or property expressed in this utterance must be attributed to (predicated of) the referent of some other expression. This means that explaining the difference between arguments and predicates in terms of completeness still requires one to explain the difference between referring and predicating first.

Searle (1969: 99ff.) solves the problem by simply stating that predicate expressions do not refer. This does not mean that he denies that predicates express properties, nor does he deny that these properties have existence. He merely observes that

> From the fact that a statement I utter commits me to the existence of a property *it does not follow* that in that statement I *referred* to a property (Searle 1969: 99).

What Frege called 'reference to a concept', Searle (1969: 100) continues, is simply 'the ascription of a property'. In this way 'the distinction between reference and predication holds, and the correct description is that the predicate

20

expression is used to ascribe a property' (Searle 1969: 102). Searle's analysis also solves Frege's problem that in the sentence *The concept horse is not a concept*, the expression *the concept horse* does indeed not refer to a concept (since only predicates refer to concepts), but to an object. Rather, Searle explains, in a statement like *the concept horse is not a concept*, the expression *the concept horse* is not used to predicate a concept of (ascribe a property to) some other object, but is used to refer to the concept/property in question. Similarly, taking an example from the previous section, the predicate *modest* in *Schroeder is modest* expresses a property, and predicates this property of the referent of the argument term. As such it predicates, but does not refer. In the sentence *Modesty is a virtue*, on the other hand, the expression *modesty* takes argument place and is assigned a property; it does not, however, itself ascribe a property. Therefore it refers but does not predicate.

With regard to FG, this approach makes it possible (1) to hold on to the original idea that terms, and only terms are referring expressions; and (2) to opt for a functional rather than a formal definition of referring expressions, according to which

A referring expression is an expression by means of which, in a given predication, a speaker pinpoints some entity (or entities) about which s/he wishes to predicate something.[12]

---

[12]It will be clear that by starting from the predicating action, and by taking the predication as domain, the definition of referring expression only determines the referentiality status of arguments, not that of satellites. Nevertheless, some satellites clearly have term structure, while others are very far removed from our description of a prototypical (full) term (not considering, of course, the third criterion). As far as I can see, the definition can be extended to account for satellites as well; in other words, for satellites, too, the criterion for referentiality is whether or not they are predicated about. Like operators, satellites function to specify the internal structure of an SoA (level 1), an entire SoA (level 2), the contents of a proposition (level 3) or a speech act (level 4). Now, arguments may also be seen as having a specifying function: they serve to specify the verbal predicate whose arguments slots they fill. However, whereas arguments, being part of the nuclear predication, are always predicated about (and are, as a result, always referential), satellites are not. In some cases, however, it seems that satellites are predicated about in the same way as arguments. This appears to be primarily true of those satellites closest to the nuclear predication, i.e. level-1 satellites. Thus in a sentence like

Evelien Keizer

The second part of the definition is essential: it is not enough to pinpoint an entity (predicates may also be said to do this, depending on how one interprets 'pinpoint'); this must be done with the intention of saying something about this entity. Note that as a result of this second requirement referring expressions (terms, that is) always take argument position. Predicating expressions, on the other hand, are used to predicate something (a property or relation, i.e. a quality) of the referent of some other expression. Thus, although a predicate expression, too, expresses an entity (the quality predicated) -- an entity which, for the speaker at least, has existence -- it is not, in the particular predication, used to refer to this entity.

Finally, it will be clear that, according to these definitions, the functions of referring and predicating are mutually exclusive. This is not to say that within referring expressions predication does not take place, or that predicating expressions may not contain referring expressions; it is merely to say that one and the same expression (or unit) cannot be used to refer and to predicate at the same time. This means that the category of referring expressions, though graded, is not unbounded. Thus, as pointed out in section 3, expressions have different degrees of referentiality, depending on how far they are removed from the prototypical referring expression (or full term). The category of referring expressions does not, however, shade off into the category of predicate expressions, as the former are necessarily predicated about, whereas the latter

---

(i) Charlie bought some flowers for Lucy

the satellite *for Lucy* specifies the internal structure of the SoA described by the expression *Charlie bought some flowers*. At the same time, however, the predicate *buy* seems to predicate a property of *Lucy*, in the same way as with the referents of its arguments: the verbal predicate *buy* seems to express a relationship between (Charlie), (some flowers) and (Lucy) -- the only difference being that whereas the two arguments refer to necessary participants of the predication, the satellite refers to an optional, additional, participant. In other words, the satellite functions as a referring expression: it not only pinpoints an entity, but in addition something is predicated of that entity.

The same seems to hold for all level-1 satellites (with the possible exception of such manner satellites as *wildly* or *cautiously*, see Dik 1989: 193), as well as for certain level-2 satellites (e.g. Location satellites like *in the garden*). All these can be said to be referring expressions because the verbal predicate of the nuclear predication seems to ascribe a property to their referents. This does not seem to hold for other level-2 or higher order satellites, like those of Reason, Condition, Objective or Subjective modality, etc.).

22

are themselves used to predicate.

The conclusion now seems warranted that it is possible to retain the notion of non-referentiality in FG by employing a criterion that is not purely arbitrary, but has considerable theory-internal justification. Thus, apart from enabling us to give a definition of the class of referring expressions, it provides us with the means to preserve the distinction between the basic acts of referring and predicating (which, in turn, forms the basis of the argument/predicate and variable/restrictor distinctions), thus justifying the clause structure as we know it. In addition, it turns out that it is the least prototypical referring expressions that are now to be regarded as non-referential: zero-order expressions functioning as restrictors (predicators) or non-verbal predicates, and the higher clause units listed in schema (8) (when not used as complements).[13]

6. The function of variables

One may object that if an expression is not used to refer, it should not be provided with a variable.[14] On the other hand, it has turned out that even if an expression itself is not used to refer, it is possible to refer anaphorically to the

---

[13]This also solves Van der Auwera's qualms about the referential status of speech acts and predications. Thus Van der Auwera (f.c.) rightly points out that representing the highest clause unit (i.e. the entire utterance) by means of the variable E, symbolizing the speech act referred to by this utterance, makes the utterance self-referential (or rather, as it is the speaker who refers, that it creates a situation in which a speech act is used to refer to itself); or, as he puts it

> there is no way that events [acts] can be kinds of referential expressions. Speech events [acts] do not *refer* to entities in a world, they *are* such entities... (Van der Auwera, f.c.; original italics).

In other words, we can keep the variable E in referring to speech acts, but only those that have already been performed, and which are referred to by means of expressions functioning as arguments. Similarly, Van der Auwera objects to regarding entire predications (with variable e) as referring expressions, since in using a predication the speaker does not pinpoint an entity (SoA) about which something is predicated. It is exactly for this reason that in the present proposal predications are not regarded as referring expressions.

[14]This is the point of view taken by van der Auwera (f.c.).

sense or intension of that expression. One way of representing this co-reference, or rather co-signification (see Partee 1972: 425), will be by means of variables symbolizing the (semantic) information contained in that expression (the zero-order entity expressed). This means that the presence of a variable does not necessarily create a referring expression: in referring expressions, it symbolizes the entity referred to; in non-referring expressions, it symbolizes the entity expressed. Consider in this respect the following examples:

(5) Schroeder bought a new piano yesterday. I bought an old *one*.
(19) Charlie is the worst baseball player in the world. *That*'s not what he says he is.
(20) My house was burgled yesterday and my bicycle stolen.
    a. Oh, *such things* happen all the time
    b. Oh, *that*'s too bad.

In (5) the nominal predicate *piano* is used as a restrictor on the x-variable of the term *a new piano*; it expresses a property, but does not refer to it. The same holds for the indefinite pronoun *one* in the second sentence. Moreover, the two expressions are co-significant (see Partee 1972: 425): they express ('signify') the same property, symbolized by the same f-variable. In (19) the non-verbal predicate *the worst baseball player in the world* is used predicatively, not referentially. Nevertheless, the anaphoric expression *that* in the next sentence *is* used referentially, its referent being the property expressed by the preceding non-verbal predicate. This same holds for expressions describing SoAs. Thus in (20a) the anaphoric expression *such* is not co-referential with the SoAs described in the preceding predications, but instead co-significant with the properties expressed in these predications, i.e. with the sense or intensions of the restrictors of the e-variables. Finally, *that* in (20b) can be compared to *that* in (19): although its antecedent is not a referring expression, *that* is used referentially, its referent being the SoAs expressed in sentence (20). In other words, although the predications in (20) are not themselves referring expressions, they do introduce entities into the discourse.[15]

---

[15]With regard to non-specific and generic terms this means that these terms are not referential on account of the fact that they can be anaphorically referred to (this merely means that they must be provided with a variable), but on account of the fact that they pinpoint an entity about which something is

7 Conclusion

This paper has been an attempt to solve some of the problems arising from the treatment of referentiality in the theory of FG as presented in Dik (1989). First of all it has been shown that, with the introduction of the layered clause model, the definitions of terms and referring expressions need to be reconsidered, on account of the fact that in the layered model terms can be used to refer to different orders of entities, and referring expressions no longer necessarily have term structure. Next, it was argued that the prevailing situation can be accounted for in two ways: (1) by assuming that all of the expressions distinguished in the layered model are indeed referential, displaying different degrees of referentiality; i.e. that all these expressions are, to some extent, terms; (2) by assuming that some but not all of these expressions are referential, and by adopting a criterion for determining the referentiality or term status of an expression. After careful consideration of the implications of both possibilities, it was decided that the second option was the more attractive. Thus it turned out that only by employing the criterion of whether or not an expression is predicated about (and, as such, functions as argument), will it be possible to retain the basic distinction between the basic acts of referring and predicating, and consequently, between arguments and predicates, variables and restrictors, and referring and non-referring expressions. At the same time, however, it was argued that, although bounded, the category of referring expressions is also graded, and that expressions may display different degrees of referentiality, depending on how far they are removed, in terms of type of referent and formal features, from the prototypical referring expression (or full term).

---

predicated.

Evelien Keizer

REFERENCES

Auwera, J. van der (f.c.). Free Relatives. Paper read at the 4th International Conference on Functional Grammar. Copenhagen, June 1990.

Bailey, C.-J.N. and R.W. Shuy (1973). *New ways of analysing variation in English*. Washington: Georgetown University Press.

Bolkestein, A.M., J. Nuyts and C. Vet (1990). *Layers and levels of representation in language theory: a functional view*. Amsterdam: Benjamins.

Carnap. R. (1956). *Meaning and necessity*, Chicago: University of Chicago Press.

Carvell, H.T. and J. Svartvik (1969). *Computational experiments in grammatical classification*. The Hague: Mouton.

Chafe, W.L. (1980). *The Pear stories*. Norwood N.J.: Ablex.

Crystal, D. (1967). English. In *Word classes. Lingua* 17: 24-36.

Davidson, D. and G. Harman (eds) (1972). *Semantics of natural language*. Dordrecht: Reidel.

Dik, S.C. (1978). *Functional Grammar*. Dordrecht: Foris (third printing).

Dik, S.C. (1989). *The theory of Functional Grammar, Part 1*. Dordrecht: Foris.

Dik, S.C. (f.c.). *The theory of Functional Grammar, Part 2*.

Du Bois, J.W. (1980). Beyond definiteness: the trace of identity in discourse. In: Chafe (1980: 203-274).

Foley, W.A. and R.D. Van Valin (1984). *Functional syntax and universal grammar*. Cambridge: CUP.

Frege, G. (1892a). On sense and reference. In Geach and Black (1977: 56-

26

78).

Frege, G. (1892b). On concept and object. In Geach and Black (1977: 42-55).

Geach, P.T. and M. Black (eds) (1977). *Translations from the philosophical writings of Gottlob Frege*. Oxford: Blackwell.

Gentner, D. (1982). Why nouns are learned before verbs: Linguistic Relativity versus Natural Partitioning. In: Kuczaj (1982: 301-334).

Givón, T. (1978). Definiteness and referentiality. In: Greenberg (1978: 291-330).

Givón, T. (1982). Logic vs. pragmatics, with human language as the referee: toward an empirically viable epistemology. *Journal of Pragmatics* 6, 81-133.

Greenberg, J.H. (ed) (1978). *Universals of human language, Vol. 4*. Stanford University Press: Stanford, California.

Haiman, J. (ed) (1985). *Iconicity in language*. Amsterdam: Benjamins.

Hannay, M. and E. Vester (eds) (1990). *Working with Functional Grammar: descriptive and computational applications*. Dordrecht: Foris.

Hengeveld, K. (1989). Layers and operators in Functional Grammar. *Journal of Linguistics* 25, 127-157.

Hengeveld, K. (1990a). The hierarchical structure of utterances. In Bolkestein, Nuyts and Vet (1990: 1-23).

Hengeveld, K. (1990b). Semantic relations in non-verbal predication. In Bolkestein, Nuyts and Vet (1990: 101-122).

Hengeveld, K. (f.c.). Parts of speech. Paper read at the 4th International Conference on Functional Grammar. Copenhagen, June 1990.

Evelien Keizer

Hoppenbrouwers, C. et al. (eds) (1986). *Syntaxis en lexicon*. Dordrecht: Foris.

Hopper, P.J. and S.A. Thompson (1984). The discourse basis for lexical categories in universal grammar. *Language*, Vol. 60, 703-752.

Hopper, P.J. and S.A. Thompson (1985). The iconicity of the universal categories noun and verb. In: Haiman (1985: 151-183).

Karttunen, L. (1971). *Discourse referents*. Indiana University Linguistics Club.

Keizer, M.E. (f.c). Predicates as referring expressions. Paper read at the 4th Conference on Functional Grammar. Copenhagen, June 1990.

Kuczaj II, St. A. (1982). *Language development, Vol 2*. Hillsdale NJ: Erlbaum.

Lakoff, G. (1987). *Women, fire and dangerous things. What categories reveal about the mind*. Chicago: University of Chicago Press.

Lyons, J. (1977). *Semantics*. Cambridge: CUP.

Mackenzie, J.L. (1986). Aspects of nominalization in English and Dutch. *Working Papers in Functional Grammar* 15.

Mackenzie, J.L. (1990a). Let's get our heads together. In: Hannay and Vester (1990: 133-144).

Mackenzie, J.L. (1990b). First argument nominalization in a Functional Grammar of English. *Linguistica Antverpiensia* XXIV.

Macnamara, J. (1972). Cognitive basis of language learning in infants. *Psychological Review* 79, 1-13.

McCawley, J.D. (1981). *Everything that linguists have always wanted to know about logic (but were afraid to ask)*. Oxford: Basil Blackwell.

Partee, B. (1972). Opacity, coreference, and pronouns. In: Davidson and Harman (1972: 415-441).

Quirk, R. and J. Mulholland (1964). Complex prepositions and related sequences. *Supplement to English Studies* 45, 64-73.

Rijkhoff, J. (1988). A typology of operators; towards a unified analysis of terms and predications. *Working Papers in Functional Grammar* 29.

Ross, J.R. (1972). Endstation Hauptwort: The category squish. *CLS* 8, 316-328.

Ross, J.R. (1973). A fake NP squish. In Bailey and Shuy (1973: 96-140).

Russell, B. (1905). On denoting. *Mind* 14, 479-493.

Searle, J. (1969). *Speech acts*. Cambridge: CUP.

Strawson, P.F. (1950). On referring. In: Strawson (1971: 1-27).

Strawson, P.F. (1959). *Individuals*. London: Methuen.

Strawson, P.F. (1971). *Logico-linguistic papers*. London: Methuen.

Taylor, J.R. (1989). *Linguistic categorization*. Oxford: Clarendon.

Vet, C. (1986). Causatieve constructies in het Nederlands. In: Hoppenbrouwers et al. (1986: 62-75).

Weigand, H. (1990). *Linguistically motivated principles of knowledge base systems*. Dordrecht: Foris.

Whorf, B.L. (1956). *Language, thought and reality*. Cambridge, Mass: MIT.

Wright, S. and T. Givón (1987). The pragmatics of indefinite reference: quantified text-based studies. *Studies in Language* 11, 1-33.