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0. Introduction

In recent years our understanding of the elusive process of nominalization has been increased by a number of studies (Lees 1960, Vendler 1968, Chomsky 1970). In this paper nominalization will be regarded as covering any instance of the assimilation of the non-nominal to the nominal and will be analysed in the framework of Functional Grammar [FG] (cf. Dik 1978, 1980 for major expositions of this framework; for FG work on nominalization, see Dik 1985a, 1985b, Mackenzie 1985a, 1985b). As has been made clear in articles by Ross (1973), Comrie (1976), Lehmann (1982), and within FG by Mackenzie (1984) and Bolkestein (1986), there are, both across and within languages, degrees of assimilation to be detected, such that a scale of possibilities arises according to the extent to which relevant constructions approximate to the norm for the nominal. It is consequently often difficult to tell a priori, for any one construction type, whether there has been sufficient assimilation to the nominal for the term 'nominalization', understood as a descriptive label, to be appropriate. This problem arises most acutely with various hybrid constructions, such as the English 'genitive + gerund' or the Dutch 'infinitival nominalization', which, as we shall see, manifest a combination of typically verbal and typically nominal characteristics.

The interpretation of 'non-nominal' in the general definition given above allows for a number of possibilities: in keeping with the majority of the published work referred to, I shall concentrate here on the nominalization of verbal predications, and specifically on 'state-of-affairs' (SoA) nominalization (as opposed to, for example, agent nominalizations of the baker type). I wish to defend the position that SoA nominalization involves the (metaphorical) presentation of a State of Affairs (Action, Position, Process or State) as though it were a concrete entity (cf. Hopper & Thompson 1984: 746). I thus do not follow J. Lyons (1977: 445), who speaks of nominalizations as designating 'higher-order' entities; rather, I take the position that a SoA nominalization actually designates a thing (i.e. a first-order entity), albeit by virtue of metaphorical designation, in line with Lakoff and Johnson's

contention that '[e]vents and actions are metaphorically conceptualized as objects' (1980: 30). Yet, at the same time, it must be recognized that an SoA nominalization, as the name suggests, continues to designate an SoA. This seemingly paradoxical thesis, which I shall attempt to defend towards the end of this paper, leads to the conclusion that, like any other 'thing', the designatum of such a nominalization can have a Possessor, but that the Possessor has a special status, and indeed this is one line of inquiry that will be followed up in this article.

1. Nominalization and embedding in FG

FG assumes certain unmarked functions for each of the three types of lexical predicate recognized (cf. Dik 1978: 63):

- (1) a. verbal --> predicate in major predication
- b. nominal --> head of term phrase
- c. adjectival --> attributive modifier of head of term phrase

When a verbal predication is embedded (to give a subordinate construction), this involves, in FG, the location of that verbal predication within a term which is an argument or satellite in a higher (the next highest) predication. A generalized representation of a such a term may be given as follows:

- (2) (Ωx_1 : { $\Phi \vee (x_1) \dots (x_n) (y_1) \dots (y_n)$ } (x_1))

The head of the term represented in (2) is a derived predicate; note, in addition, that it has no category subscript. The process by which this derivation takes place has, to my knowledge, never been formally elucidated. By far the most elegant approach is to assume that it runs parallel to term-predicate formation as discussed by Dik (1980: 105) and Hannay (1985: 50). I therefore propose the (admittedly unaesthetic) appellation 'predication-predicate formation' for the predicate formation rule that is presupposed by (2). Given a predication P, predication-predicate formation will create, productively, a derived predication P', the predicate of which is derived from predication P as follows:

(3) PREDICATION-PREDICATE FORMATION

Input: P

Output: {P} (x₁) (= P')

Meaning: The predication P obtains

The fact that every instance of embedding necessitates the application of predication-predicate formation and the concomitant introduction of a categorically neutral (and thereby marked) predicate is a formal indication of the marked status of embedding. Embedding is, correspondingly, functionally marked in that subordinate clauses are typically not the bearer of speech-acts (Lehmann 1982:68) and are typically presupposed rather than asserted (Bossong 1979: 335). SoA nominalization may be seen as contributing to a reduction in this markedness by gradually bringing the categorially neutral head predicate of the term containing the embedded predication nearer to the norm for terms, i.e. nominal categoriality (cf. (1b) above). This can be shown -- and I shall return to this -- to be a natural consequence of an increasing nominalization of the verbal predicate in the embedded predication. There is thus, in this view, pressure on an embedded predication to adjust formally, through nominalization, to the norm for term phrases.

In the FG model, the assimilation referred to in the introductory paragraph as symptomatic of nominalization may be located either in the expression rules or in the fund. The position taken by Dik (1985b) is that nominalization comes about through application of expression rules to a predication which remains verbal; these are furthermore held to be sensitive to a prototypical expression model (PEM) for term phrases (cf. also Dik 1985a: 105). According to the proposals of Watters (1985), who locates derivational morphology in the fund and inflectional morphology in the expression-rule component, this would make nominalizing markers a matter of inflectional morphology. The opposite position, taken by Mackenzie (1985a), at least with respect to non-gerundive nominalization in English, is that nominalization comes about by rules operative in the fund: this, again assuming Watters' position, would make nominalizing markers a matter of derivational morphology. In the case of productive processes of nominalization, the derivational morphology (if any) would come about through a predicate formation rule; in non-productive cases, analysis in terms of relationships within

the lexicon would appear appropriate.

One possibility that deserves examination is that both locations for nominalization may be justifiable, according as the degree of assimilation is relatively light or heavy. Light assimilation, let us assume then, will involve chiefly the loss of verbal characteristics and only to a small extent the acquisition of nominal characteristics. Among the major verbal characteristics available for loss we may count the six categories discovered by Bybee (1985) to be typologically recurring morphological categories of the verb: agreement, modality, tense, aspect, voice and valency. These are listed, in Bybee's terms, in order of increasing relevance to the verb. Another typically verbal characteristic, for those languages that know the distinction, is modification by means of adverb(ial)s rather than adjectiv(e/al)s. Where a construction displaying such light assimilation to the nominal is involved, it seems wise (a) not to claim any change of category to N(ominal) and (b) to leave the generation of the form of the construction to expression rules sensitive to the absence of whatever typical accompaniments of major verbal predications are absent.

In the case of heavier assimilation, however, there will be not only a loss of verbal characteristics but also a major gain of nominal characteristics, such as number distinctions and adjectival modification. There may further be the requirement that the term in which the derived nominal predicate appears show typical properties of terms with non-derived nominal predicates, such as definite and demonstrative operators and/or adpositional or case marking of semantic and other functions. It is in such constructions, where there is clear evidence of a change of category, that we must invoke either a predicate formation rule of nominalization, if the relationship is productive, or mere lexical connectedness between a verbal and a nominal predicate-frame, if this does not apply. Typically, predicate formation will be called for in such cases only if the lexicon does not offer a ready-made alternative.

2. Examples from Dutch and English

Let us consider some examples from Dutch and English. The examples from Dutch are related to those discussed by Dik (1985a), and involve his categories INF(itive), NOM(inalization)-1 and NOM-2 respectively:

- (4) Een failliet bedrijf overnemen is niet altijd verstandig
 a bankrupt firm take:over is not always wise
 'Taking over a bankrupt firm is not always wise'
- (5) Het overnemen van een failliet bedrijf is niet altijd
 The take:over of a bankrupt firm is not always
 verstandig
 wise
 'The taking over of a bankrupt firm is not always wise'
- (6) De overneming/overname van een failliet bedrijf is niet
 The takeover of a bankrupt firm is not
 altijd verstandig
 always wise
 'The takeover of a bankrupt firm is not always wise'

The INF construction exemplified in (4) is a term, Subject and most likely Topic of the major predication. Nevertheless, it shows no nominal characteristics. Indeed the only verbal characteristic it lacks is agreement, since it can be shown that the expression of modality and oppositions of tense, aspect and voice are all readily available in the INF construction, which furthermore takes adverbial modification; there is only an apparent loss of valency in that the Subject of the construction, although never overtly present, is necessarily included in the representation as a variable (cf. Dik 1985c). The NOM-2 construction exemplified in (6) differs maximally from INF in being a term that displays exclusively nominal characteristics: it tolerates only adjectival modification and permits the full range of term operators.

The NOM-1 construction exemplified in (5) is altogether more complicated, manifesting some but not all nominal characteristics yet also retaining much of its verbal 'origins'; informants also vary in their willingness to accept the application of verbal categories. This is the hybrid construction alluded to in the opening paragraph. Whereas there is no doubt about the impossibility of any agreement, and none about the acceptability of adverbial (as well as adjectival) modification, not all respondents will assent to the

incorporation of a modal auxiliary (het kunnen overnemen van een klein bedrijf 'the can take:over of a small firm' = 'being able to take over a small firm'); the application of the past tense operator (het overgenomen hebben van een klein bedrijf 'the taken:over have of a small firm' = 'having taken over a small firm') or the progressive aspect operator (het aan het overnemen zijn van een klein bedrijf 'the at the take:over be of a small firm' = 'being in the process of taking over a small firm'). Finally, the possibility of a NOM-1 showing valency appears limited to Goals which are (a) generic in reference and (b) internally not too complex (cf. Dik 1985a: 89, e.g. dat bedrijfjes overnemen van jou 'that firm-DIM-PL take:over of you' = 'that taking over small firms of yours').

The characteristics of the three constructions may be represented in summary form in the following table, which also contains a column (FIN) for finite, non-nominalized subordination:

Table 1

		FIN	INF	NOM-1	NOM-2
1.	agreement	YES	NO	NO	NO
2.	modal aux	YES	YES	?YES	NO
3.	tense	YES	YES	?YES	NO
4.	aspect	YES	YES	?YES	NO
5.	voice	YES	YES	?YES	NO
6.	valency	YES	YES	?YES	NO
7.	adverbs	YES	YES	YES	NO
8.	args>sats	NO	NO	YES	YES
9.	adjectives	NO	NO	YES	YES
10.	def. term op.	NO	NO	YES	YES
11.	indef. term op.	NO	NO	NO	YES
12.	pl. term op.	NO	NO	NO	YES

Note that properties 1 to 7 are here regarded as 'typically verbal', that 8 and 9 are 'typically nominal' and that 10 to 12, while also being typically nominal, are taken to be characteristic of the prototypical term phrase. By property 8, 'args>sats', I mean that participants in the designated SoA which, if expressed in a verbal predication, would appear as arguments, show up in the constructions that have this property as satellites (if at all): thus, the Goal of overnemen in (4) appears in the same form as it would in a major predication, e.g. Hij nam een failliet bedrijf over 'He took over a bankrupt firm'; in (5) and (6), however, the 'Goal' can be expressed only as a Possessor, van een failliet bedrijf, with the status of a

satellite. I shall return to this matter and to the use of the term Possessor below.

In English, too, there is a range of constructions running from barely through to fully nominalized. Consider the data (8) to (10), all of which contain a term the head of which is derived from a predication that may be shown in outline as (7), and (11), which is related semantically:

- (7) win_v (my horse)_{AP} (the race)_{BP}
- (8) ... my horse winning the race (GERUND)
- (9) ... my horse's winning the race (GENITIVE GERUND)
- (10) ... my horse's winning of the race (NOMINALIZATION)
- (11) ... my horse's victory in the race (LEXICAL NOUN)

Applying the same criteria as were applied to the Dutch data, we obtain the following table showing a similar gradual increase in assimilation to the nominal:

Table 2

	FIN	GER	GEN-GER	NOM	LEX
agreement	YES	NO	NO	NO	NO
modal aux	YES	NO	NO	NO	NO
tense	YES	YES	YES	NO	NO
aspect	YES	?YES	?YES	NO	NO
voice	YES	YES	YES	NO	NO
valency	YES	FULL ..	LESS ..	NONE	NO
adverbs	YES	YES	YES	NO	NO
args>sats	NO	NO	YES	NO	NO
adjectives	NO	NO	NO	YES	YES
def. term op.	NO	NO	YES/DEM	YES	YES
indef. term op.	NO	NO	NO	?NO	YES
pl. term op.	NO	NO	NO	NO	NO

Again, some explanatory comments are in order. Firstly, note that agreement and the use of modal auxiliaries are excluded in all the constructions under discussion. Tense, I would claim, is relevant to the gerund constructions because of the interpretation of my horse('s) having won the race. The embedded predication need carry none of the aspectual meaning of My horse has won the race, as witness the possibility of inserting timepoint adverbials like yesterday, excluded from the finite version. Rather, the embedded predication is merely marked by having as being located in the (deictic) past: I therefore conclude that the constructions in question manifest a tense opposition Past vs. Non-past. The uncertainty about the applicability of aspect is occasioned by the low acceptability of

my horse('s) being winning the race (where winning is understood as equivalent to leading and the like); note, however, that a combination of past tense and progressive aspect is markedly better: my horse('s) having been winning the race. The passive voice, problematic in the Dutch NOM-1, is readily available with the English gerunds (the race('s) being won (by my horse)), as are adverbs (my horse('s) cleverly winning the race).

The major difference between GER and GEN-GER is to be found in the not unconnected matters of 'valency' and 'args>sats'. Whereas the term that precedes the predicate in GER is identical in form and function to the Subject of corresponding finite predications, and indeed can advantageously be analysed as undergoing Subject assignment (cf. Mackenzie 1985a: 38), the pre-predicate term in GEN-GER is formally distinct from Subjects by virtue of its Possessor appearance and is functionally distinct from them in its omissibility. It is of course impossible to tell, in the case of a gerund without any pre-predicate term, such as winning the race, whether the unmentioned term 'would have been' a Possessor or not; given the fact that Possessors are typically omissible (except for cases of inalienable possession) and that Subjects, at least in (formal) English do not have that property, it appears wise to treat such cases as lacking a Possessor. This supports the notion that GER has its full complement of arguments, whereas GEN-GER lacks one argument, and thereby has 'less' valency, with the possibility of re-introducing the missing argument as a satellite (i.e. 'args>sats'). With NOM and LEX, just as with NOM-2 in Dutch, arguments of the input predication re-appear, if at all, only as satellites.

The other distinction between GER and GEN-GER relates to the analysis of the construction (12):

(12) that tickling your brother of yours

As is now generally recognized (cf. C. Lyons 1986), the of + genitive construction is employed when the definiteness operator is not merely 'd' but either 'i', or 'd' plus some further operator, e.g. '-p': thus we have John's ball, but a ball of John's and that ball of John's. The same applies to the possessive determiners such as your and the alternant of yours: your ball|a/that ball of yours. Consequently, the simplest analysis of (12) relates it to (13a), a GEN-GER construction,

rather than (13b), a GER construction:

(13a) your tickling your brother

(13b) you tickling your brother

Although (12) is readily possible, there is no corresponding *a tickling your brother of yours: hence the YES(DEM) (= yes, if demonstrative) in Table 2 for GEN-GER with a definite term operator, but the NO to combination with an indefinite operator.

The only distinction between NOM and LEX as to the properties considered in Table 2 concerns a general incompatibility of NOM and the indefinite operator. As has been observed by Quirk et al. (1985: 1290), LEX (their 'deverbal noun') tends to present a 'record' of a SoA while NOM generally presents a 'description'. LEX-nominalizations, by offering a more punctual view of the SoA, lend themselves better, I wish to suggest, to individuation; NOM, on the other hand, inherently more durative, is less of a countable unit and is consequently less tolerant of an indefinite article.

3. An FG analysis of the English constructions discussed

How are the various constructions to be analysed in Functional Grammar? In Dik's (1985a) analysis of Dutch, INF and NOM-1 result from the application of expression rules, while NOM-2 is a matter of either a predicate formation rule (in the case of formations ending in -ing) or a lexical relationship. I shall not question that analysis here. For English, it seems wise to treat GER, which differs from FIN only in its lack of finiteness (agreement) and its intolerance of modal auxiliaries, as an instance of light assimilation and therefore as a phenomenon that can easily be handled by expression rules; these rules would ensure the addition of the (inflectional) morpheme -ing where there is no tense operator and where no modal auxiliary is present. NOM, on the other hand, differs from LEX in only minor respects and thus represents heavy assimilation to the nominal; this strongly suggests analysis with a predicate formation rule, one of whose effects would be to introduce the (derivational) morpheme -ing. Note that these analyses, taken together, entail that -ing is treated as falling sometimes under inflectional and sometimes under derivational morphology. What, then, of GEN-GER,

also characterized by the suffix -ing? The proposal I wish to defend is that, despite its similarity to GER as regards the retention of verbal properties, GEN-GER is most insightfully analysed as coming about through predicate formation, i.e. as matter of derivational morphology.

I make the assumption, at variance with FG 'orthodoxy', that non-relational (i.e. unmarked) nominal predicates are lexically avalent ($v\{alency\} = 0$), i.e. that the correct lexical representation of the predicate $ball_N$ is as in (14a) and not (14b):

(14a) $ball_N$

(14b) $ball_N(x_1)_{\#}$

This assumption was also made in Mackenzie (1985a:44) and (1985b), but not, say, in Mackenzie (1983); it will be defended on pragmatic grounds in Mackenzie (forthcoming). Relational nominal predicates, such as $father_N$, will in my analysis be treated as having one argument (thus deviating from the position taken by Dik 1978: 59 and Mackenzie 1983: 34), yielding the following analysis for my father:

(15) $(dlx_1: \{father_N(dlx_j: pl(x_j))_{\#} (x_1)\})$

I further assume that verbal predicates are typically polyvalent ($1 < v < 3$), and indeed prototypically bivalent ($v = 2$), such that avalent predicates of the 'meteorological' variety are exceptional. Given these assumptions, it is natural to expect that gradual assimilation of the verbal to the nominal will be paralleled by gradual valency reduction ($v = 2 \rightarrow 1 \rightarrow 0$). Indeed, the position will be taken, as in Mackenzie (1985a), that nominalization is a form of valency reduction. There will unfortunately be no room here to explore the suggestion in the work of Hopper and Thompson (1980; 1984) that valency (in their term, transitivity) is not counted in integers but is a statistical property calculated on the basis of a dozen independent parameter settings. It is noticeable, however, that outwardly bivalent verbal predications with inherently low transitivity nominalize with relative difficulty: thus John's hitting of the ball, with a high transitivity rating for the input predication, is much happier than, say, John's loving of a

secretary, with a comparatively low transitivity value. I take such observations to be indirect support for the view that nominalization is associated with transitivity reduction: there has to be a 'decent amount' of transitivity there for the nominalization process to reduce!

A further assumption, not at variance with FG principles but arguably to some extent at variance with FG practice, is that the formal description should come as close as possible to actually occurring data in texts. The most cursory examination of textual material shows that nominalized versions of verbal predications lack many of the terms that would typically be associated with the predicate in non-nominalized versions of those predications (see Mackenzie 1985a: 32-33). In other words, nominalizations display valency reduction in their normal habitus, and this fact, I believe, should be reflected in the representation accorded to them.

Given these assumptions, I wish to propose rules for the English GEN-GER and NOM constructions. These rules will be category-changing versions of the established rules for valency reduction (for which see Dik 1983, Van Schaaik 1985, etc.):

VALENCY REDUCTION

- a. Input: $\phi (x_1) (x_2)$
 Output: $\phi-R (x_1)$
 Meaning: The relation expressed by ϕ applies to (x_1)
- b. Input: $\phi (x_1)$
 Output: $\phi-R$
 Meaning: The property expressed by ϕ obtains

Rule a. takes a bivalent predicate-frame as input, removes one of the arguments (the semantic function of the removed argument is specified for each domain of application of the rule), and attaches the (possibly null) reduction marker R to the predicate; the input relation is presented in the output as a property of one of the arguments of that relation. Rule b. takes a monovalent predicate-frame as input (possibly one rendered monovalent by a prior application of rule a.), and delivers an aivalent frame, attaching the (possibly null) reduction marker R to the predicate; the input property assignment is presented in the output as merely 'obtaining', without the involvement of any

participant. The nominalizing versions of these rules will appear as follows (here, as elsewhere, Ag and Go are taken as representative of first and second argument respectively; Rec will below represent third arguments):

NOMINALIZATION

VERBNOUN FORMATION with bivalent input (VNF2)

Input: Φ_V Ag Go

Output: Φ -ing $_V/N$ Go

Meaning: The SoA designated by the Input is presented as applying to the Go of that SoA

NOUN FORMATION (NF)

Input: Φ -ing $_V/N$ Go

Output: Φ -ing $_N$

Meaning: The SoA designated by the Input is presented as obtaining

Again, explanatory comments are in order. Rule VNF, I wish to suggest, offers the neatest possible account for the GEN-GER construction. It brings about the partial valency reduction (2 \rightarrow 1) that was found to be characteristic of this construction, with the Goal as the argument that 'survives' the operation; the Agent may not be expressed as such, but, if needed, may be reintroduced, in a manner to be discussed below, as a Possessor (as exemplified in (9) above). The derived predicate combines verbal and nominal properties, in keeping with the discussion of the construction above, and is consequently represented as V/N, which indicates an overlapping of categories and may be read as 'verbnoun'. The presence of V in the category specification allows compatibility with adverbial satellites as well as such predicate operators as Pres/Past and, possibly, Prog. It also permits the optional assignment of Subj to the only remaining argument, the Go, to yield the passive GEN-GER in my horse's being beaten. The presence of N in the category specification allows compatibility with typically adnominal satellites, notably those with Possessor function. Note, finally, that -ing is interpreted as the reduction marker in English; given also its use in absolute participial constructions, which evince

(typically) a similar valency reduction, an analysis of derivational -ing as a reduction marker may ultimately emerge as the most general account thereof.

The NOM construction results from a serial application of VNF and NF, or, more plausibly, from a unitary rule combining the effects of both rules (as proposed in Mackenzie 1985a: 43, where further details may be found):

UNITARY NOMINALIZATION with bivalent input (UN2)

Input: ϕ_{\vee} Ag Go

Output: ϕ -ing_N

Meaning: The state of affairs designated by the Input is presented as obtaining

This rule and the VNF rule presented above have been given in the form appropriate for their application to the prototypical bivalent verbal predicate. They also apply, mutatis mutandis, to mono- and trivalent input predicates: with monovalent predicates, as in John's arriving, interpreted as an example of either GEN-GER or NOM, both rules effect valency reduction 1 \rightarrow 0:

VERBNOUN FORMATION with monovalent input (VNF1)

Input: ϕ_{\vee} Ag

Output: ϕ -ing _{\vee /N}

Meaning: The SoA designated by the Input is presented as obtaining

UNITARY NOMINALIZATION with monovalent input (UN1)

Input: ϕ_{\vee} Ag

Output: ϕ -ing_N

Meaning: The SoA designated by the Input is presented as obtaining

With trivalent predicates, it would appear that VNF involves valency reduction 3 \rightarrow 2, as in (John's) giving the church a tenth of his income, with the possibility of Object assignment to either Go or Rec, and that NOM calls for valency reduction 3 \rightarrow 1, as in (John's) giving (of a tenth of his income) to the church:

VERBNOUN FORMATION with trivalent input (VNF3)

Input: $\phi_{\check{V}}$ Ag Go Rec

Output: ϕ -ing \check{V}/N Go Rec

Meaning: The SoA designated by the Input is presented as involving the Go and the Rec of that SoA

UNITARY NOMINALIZATION with trivalent input (UN2)

Input: $\phi_{\check{V}}$ Ag Go Rec

Output: ϕ -ing N Rec

Meaning: The state of affairs designated by the Input is presented as applying to the Recipient

Avalent (meteorological) predicates seemingly cannot occur in NOM (a fact which supports the valency reduction approach to nominalization, since it can be ascribed to the impossibility of reducing beyond zero), but strangely can occur in GEN-GER, and then they are obligatorily accompanied by an (argument?) Possessor, as if the only possible valency change were an increase (0 \rightarrow 1): I was unpleasantly surprised by its/* ϕ raining.

4. Valency preservation vs. valency reduction

In many approaches to the analysis of nominalizations, it is assumed, contrary to the proposal made here, that the output of the nominalization process, however that is handled, has valency properties identical or at least comparable to the those of the verbal predicate nominalized. (For a sample of such approaches, which we may group together as the 'valency preservation hypothesis', see Dik 1985a, 1985b, Pit'ha 1984, Mackenzie 1983, Sommerfeldt and Schreiber 1977.) The empirical basis for the valency preservation hypothesis is of course the fact that nominalizations can be accompanied -- albeit with relatively low textual frequency -- by expressions that are in some sense equivalents of arguments in the input verbal predication. Thus, in (10) above, it could be held that my horse's and of the race are arguments of winning, with the semantic functions Ag and Go, just like the arguments in (7). As emphasized above, however, this analysis flies in the face of observable fact, in that nominalizations are typically not accompanied by expressions of

this nature; this suggests that the latter have the status of satellites rather than arguments. The valency preservation hypothesis also has to deal with the awkward matter of the form taken by the putative Ag and Go in the nominalization, namely that of Possessors, and there have been various ingenious suggestions for the solution of this problem. (Within FG, Mackenzie 1983 proposes Subject assignment within the nominal domain; Dik 1985b puts forward a Prototypical Expression Model for term phrases with a possessor slot.)

The position adopted here, the 'valency reduction hypothesis', entails that fully nominal predicates, derived or not, are -- with the exception of relational predicates à la (15) -- avalent. Nonetheless, it would be foolhardy to deny that, in nominalizations, the valency of the input predicate in some sense lingers on in the output; indeed the analysis in Mackenzie (1985a: 45) of Mary's sacking, where Mary is understood as being the victim of the dismissal (as the 'Goal'), requires the retention of some quantum of valency. In order to do justice to the (seemingly) mutually contradictory notions of an avalent nominalized predicate and of lingering valency, I wish to appeal to the concept of 'implied satellite', as adumbrated by Dik (1975) and introduced into FG in Dik (1978: 50-52). Dik observes that, with Action, Position and Process predications, a Manner satellite is necessarily implied, whereas a Beneficiary satellite, although always addable to an Action or Position, is not implied in such states of affairs. In simple terms, when you do something, you always do it in some manner, but not always for somebody('s sake). Hence the oddity of (16) and the normality of (17):

(16)a. ?I baked the cake in a manner

b. ?I baked the cake, but not in a manner

(17)a. I baked the cake for someone('s sake/benefit)

b. I baked the cake, but not for anyone('s sake/benefit)

Indeed, it appears possible generally to classify satellites as implied or non-implied on the basis of their semantic function. With Action predications, satellites of Manner, Time and Location are all implied, as is Duration in durative and Frequency in momentaneous states of affairs; where the Controller is a

rational Agent, satellites of Reason will also be implied. Satellites with the semantic functions Beneficiary, Instrument, Comitative, Cause, Circumstance, Result, Concession, ... are non-implied with Action predications. The distinction between the two types of satellite can be represented simply but effectively by exploiting the entire conclusion of the alphabet: (x) for arguments, (y) for implied satellites and (z) for non-implied satellites. An Action predicate-frame will, on this proposal, appear in the fund as follows:

(18) $\Phi (X_1)_{Ag} \dots (X_n) (Y_1)_{Loc} (Y_j)_{Time} (Y_k)_{Manner}$
 $(Y_l)_{Frequency/Duration} (Y_m)_{Reason}$

The argument-positions will usually be filled, but may be left as open variables (as in the case of Dutch infinitives discussed above) to create an open predication; the implied-satellite positions (y-satellites) will normally be left variable, although there is always the possibility of filling them where it is communicatively important to specify their value. Arguments and y-satellites, I would claim, together make up the nuclear predication, i.e. that part of the predication that corresponds structurally to the information encapsulated in the predicate-frame. (Note that this is at variance, although I believe not so in spirit, with the general structure for predications given by Dik 1978: 26.) Now, the non-implied satellites (z-satellites) are optionally added to this nuclear predication, in the way proposed by Dik (1978: 25) for satellites generally, to yield an extended predication. These have a much more distant relation to the predicate than the y-satellites, which are in many ways quasi-arguments, and rather modify the nuclear predication as a whole. The resultant picture is one of a scale of closeness to the predicate, with the most intimate relationship being enjoyed by arguments (with their own internal hierarchy of first, second, and third argument), then y-satellites (always there, but not always mentioned), and ultimately z-satellites (optionally added as modifiers):

intimacy hierarchy: arguments > y-satellite > z-satellite

One interesting difference between y-satellites and z-satellites is that y-satellites, by virtue of their covert presence in the predication, introduce discourse referents (in

the sense made familiar by Karttunen 1969) which may immediately be picked up as Topics (cf. Dik 1978: 51). This means that He sheared the sheep is, as it were, a shorthand way of saying He sheared the sheep in some way, at some time, at some rate, in some place and for some reason. Any or all of these satellites may be specified in further discourse, notably by means of the Topic-be-Focus construction discussed by Mackenzie and Hannay (1982). This construction consists of a Topic term the head of which is a relational noun (way, time, rate, place or reason) with a clausal argument, the copula, and a Focus term with a corresponding semantic function. Interestingly, there are appropriate relational nouns only for those semantic functions that have been identified as associated with y-satellites. It would appear that this special class of nouns has evolved to allow for the following type of discourse sequence (and is now approaching the class of subordinating conjunctions):

(19) He sheared the sheep and ...

the way)	(with a rusty knife
the time)	(at three o'clock
the rate)	he did it was (six an hour
the place)	(in the open field
the reason)	(to sell the wool

This option is not available with z-satellite notions:

(20) *He sheared the sheep and ...

the instrument)	(with a knife
the beneficiary)	he did it was (for his neighbour
the companion)	(with his friend

Returning now to nominalizations, we may recall that I propose to analyse GEN-GER (winning the race) as involving a predicate with one argument (here, the race); and that there is a possibility of adding a Possessor satellite (say, my horse's) to yield (9). The question now arises whether this satellite is implied or not. Common sense suggests that it is: you can't talk about winning the race without implying that someone/something won/is winning/will win it; and it is correspondingly nonsensical to assert or deny the Possessor:

- (21)a. *... winning the race, indeed someone's
 b. *... winning the race, but not someone's

The evidence for the implied status of the Possessor in GEN-GER is based not only on considerations of common sense, but also on the observation that it is very frequently controlled syntactically (cf. Schachter's 1976 discussion of private vs. public control), bringing it close to the status of the variable argument in infinitives. Thus, in I love singing arias, the 'singer' is necessarily coreferential with I, whereas in I recommend singing arias, the 'singer' is necessarily non-coreferential with I: love controls privately, and recommend publicly. In order to represent these phenomena of control and provide a basis for the associated interpretations, it will be at the very least expedient to provide a slot for the Possessor in the predication: given the omissibility of the Possessor, indeed the requirement in cases of strong control that it be omitted, this cannot be an argument slot but rather a slot for a y-satellite. The representation to be offered for GEN-GER, here exemplified by (9), will consequently be as follows:

- (22) (dlx₁: {win-ing_{V/N} (dlx_j: rac_N (x_j))_{GO} (dly_k: {horse_N (dlz₁: lp (z₁))_{POSS}} (y_k))_{POSS}} (x₁))

With NOM, the situation is more complex. NOM can be accompanied by two Possessors, as in (10), provided that these are situated in distinct fields (for description and discussion, see Mackenzie 1985a: 43-46). I here wish to explore the possibility that one of the Possessors is implied (a y-satellite) and the other non-implied (a z-satellite), and specifically that, in NOM, it is the Possessor equivalent to the Goal that is implied and the Possessor equivalent to the Agent that is non-implied. Such an analysis, coupled with the 'intimacy hierarchy', would offer an FG account of the often-repeated assertion that the 'Agent' in nominalizations of this type is less closely linked to the predicate than the 'Goal' and of the fact that 'Agent' Possessors, in textual counts, occur much less frequently than 'Goal' Possessors (cf. Levi's observations, 1978: 200, about criticisms of Quine by Chomsky and those by Linsky, and Sommerfeldt and Schreiber's claim (1977) that the 'Agent' is 'kommunikativ weniger nötig').

The following data may be offered in support of the notion that the two Possessors differ in status:

- (23)a. Someone's coughing was audible in the next room
 b. ??The beating of something was audible in the next room
- (24)a. Winning was vital. What was less important
 b. *Winning was vital. Who was less important

When considering sentences (16a) and (17a), we saw that implied satellites with non-specific reference are generally unacceptable in Action states of affairs, while there is no such problem with non-implied satellites. On this basis, we may observe that Agent-equivalent non-specific Possessors are acceptable as satellites to nominalized predicates, as in (23a), whereas Goal-equivalent Possessors are dubious, as is shown by (23b). This suggests that the Possessor in (23a) is a y-satellite and that in (23b) a z-satellite. The data under (24) are designed to show that the use of a NOM establishes its Goal-equivalent Possessor, but not its Agent-equivalent Possessor, as a possible discourse referent: this would explain the assessments of (24a) and (24b) as respectively acceptable and unacceptable discourse sequences, and again supports the analysis of Goal-equivalent Possessors as y-satellites and Agent-equivalent Possessors as z-satellites. On the basis of these observations, I wish to propose that the structure of (10) is as follows:

- (25) (dlx₁: {win-ing_N (dly_j: rac_N (y_j))_{POSS} (dlz_k: {horse_N (dlz₁: lp (z₁))_{POSS} (z_k))_{POSS} (x₁)})

5. Overview of constructions and analysis

At this stage, it seems advisable to provide an overview of the various constructions under discussion and the analysis I propose for them. Before doing so, I must however mention one complicating issue, namely the fact that verbs can undergo valency reduction not associated with nominalization and still be nominalized. Consider the verb win_v, which has figured prominently in the examples discussed above. Although lexically bivalent (cf. (7)), this verb can, like many others, be input to a valency-reducing predicate-formation (which I shall dub GOAL SUPPRESSION); this rule is an example of VALENCY REDUCTION a.

(see above) in which (x_2) is specified as Goal, there is no category change and the reduction marker is null:

GOAL SUPPRESSION (GS)

Input: $\phi_V (x_1)_{Ag} (x_2)_{Go}$

Output: $\phi_V (x_1)_{Ag}$

Meaning: The relation expressed by ϕ applies to Ag

This rule will be involved in the analysis of sentences like (26a) and is presupposed by the Agent-nominalization rule that has operated in (26b):

- (26)a. My horse always wins.
 b. My horse is a winner.

GOAL SUPPRESSION may also apply prior to either VNF1 or UN1, and this would appear to be the appropriate analysis of the underlined term in (27):

(27) I can rely on my horse's always winning

There is, of course, an alternative view of such cases according to which the Goal is not suppressed but rather left variable, or treated as anaphoric or generic, and for one of these reasons not expressed. None of these possibilities causes difficulties for the analysis proposed here. Similarly to Goals, the Recipients in trivalent predicate-frames can be suppressed (RECIPIENT SUPPRESSION [RS]) or left unexpressed, as in I would willingly offer a tenth of my salary to save his job.

Now it is possible to proceed to the overview:

OVERVIEW OF ANALYSIS

EXAMPLE	ANALYSIS	SATELLITE TYPE
<u>Monovalent verbal predicate</u>		
John arriving	expression rule	
John's arriving	UN1	z
arriving	or VNF1	y
	UN1 or VNF1	
<u>Bivalent verbal predicate</u>		
John winning the race	expression rule	
John's winning the race	VNF2	y
winning the race	VNF2	
John's winning	GS + VNF1	y
	UN1	z
John's winning of the race	UN2	z ... y
the winning of the race	UN2	y
winning	UN2 or GS + VNF1	
<u>Trivalent verbal predicate</u>		
John giving money to Mary	expression rule	
John's giving money to Mary	VNF3	y
giving money to Mary	VNF3	
John's giving to Mary	GS + VNF2	y
giving to Mary	GS + VNF2	
John's giving money	RS + VNF2	y
giving money	RS + VNF2	
John's giving of money to Mary	UN3	z ... y
the giving of money to Mary	UN3	y
giving to Mary	UN3	
giving	RS + UN2	

Consider now (28), the structure of the term winning, i.e. (10) without the two Possessor satellites shown in (25):

(28) (dlx₁: {win-ing_N} (x₁))

Note that (28) is an example of the generalized representation of subordination given in (2) above, with a categorially neutral predicate. However, the curly brackets around win-ing_N now, without any arguments or satellites, serve no useful purpose, and can profitably be removed to yield (29):

(29) (dlx₁: win-ing_N (x₁))

The resultant structure has the unmarked form for a term (cf. Dik 1978: 56), lacking the markedness of the categorially neutral predicate in (28). It is in an example like this that nominalization has its fullest effect, the head predicate of the term being categorially indistinguishible from what prevails in an unmarked term. Thus increasing nominalization finally leads to an overall reduction in markedness by creating, as the term 'nominalization' indeed suggests, new nouns.

6. Possessor

In the preceding presentation, I have assumed without argument that all adnominal terms of the form NP's or of + NP, or indeed in the form of a possessive determiner (my, your, ...) are to be assigned the semantic function Possessor. In so doing, I take my lead from, among others, the extensive typological work of Seiler (1983a, 1983b), who treats 'possessivity' as a category defined by a 'prototype' in the sense made familiar by Rosch (1977). The prototype is presented as follows (Seiler 1983b: 90):

... linguistic POSSESSION consists of the relationship between a substance and another substance. Substance A, called the POSSESSOR, is prototypically [+animate], more specifically [+human], and still more specifically [+EGO] or close to the speaker. Substance B, called the POSSESSUM, is either [+animate] or [-animate]. It prototypically includes reference to the relationship as a whole and to the POSSESSUM in particular. Semantically, the domain of POSSESSION can be defined as biocultural. It is the relationship between a human being and his kinsmen, his body parts, his material belongings, his cultural and intellectual products.

Seiler goes on (1983b: 90-91) to stress that 'POSSESSION is a relation between nominal and nominal'. In accordance with Seiler's findings, I shall define Possessor as a semantic function prototypically characterizing a term that is an argument or satellite of a nominal predicate ϕ_N and prototypically indicating the role of an entity P that enters into a biocultural relationship with the designatum D of ϕ_N such that P is seen as possessing D. The interpretation of the Possessor as owner, kinsman, agent, goal, etc. will be determined by the ontological status of D and further by factors that are, in the broadest sense, contextual.

The notion that the semantic function under discussion is rightfully labelled Possessor is hardly controversial for the adnominal term in examples where the 'possessum' is, in J. Lyons' (1977) terms, a first-order entity as in the child's ball, where the child's is to be analysed as a z-satellite with Possessor function modifying the predicate ball, a z-satellite since there is nothing about the meaning of ball that warrants the recognition of an obligatory Possessor. Nor need there be any argument about cases of the type shown in (15) above, often treated under the rubric 'inalienable possession', where my is represented as a Possessor argument of father. Of course, the referent of my does not 'possess' his father in any sense of ownership, but certainly does enjoy a 'biocultural' relationship with the 'father' that is unique to him and his siblings, indeed including the right to use the expression my father of him, and in that sense can be said to 'possess' that (rather than any other) father.

Unease about the appropriateness of 'Possessor' becomes more acute when the nominal predicate modified by the putative Possessor is not in correspondence with a first-order entity. Where the entity designated is a property or attribute (i.e. qualifies as a State in the SoA typology), the notion of possession is clearly metaphorical, but not strained:

- (29)a. his many qualities
- b. the many qualities that he possesses

- (30)a. my great respect for him
- b. the great respect that I possess for him

Given the equivalence in interpretation of the pairs of terms in

(29) and (30), it seems perfectly defensible to treat his and my in these examples as Possessors. The analysis of such examples as metaphorical is neutral with respect to Steen's (1985) objections to Dik's (1978: 44-46) invocation of 'special interpretation strategies' for such cases. Where the entity designated is a SoA of the Action, Position or Process type, as in (11) above, paraphrase with the verb possess is no longer happy, but the semantically related have, which can also replace possess in (29b) and (30b), is fully acceptable:

- (31)a. my horse's victory in the race [= (11)]
 b. *the victory that my horse possessed in the race
 c. the victory that my horse had in the race

On the basis of (31c), then, we may still maintain that my horse is 'presented as' the Possessor of the victory.

7. Conclusion: nominalization as metaphor

It appears to be a recurrent property of English, and probably of natural language in general, that there are, at the extremes of a scale of possibilities, two ways of talking about States of Affairs. Which way is chosen will depend largely on communicative purposes and discourse environment, but also on syntactic considerations (for some discussion, see Mackenzie 1985a: 33-34). One way involves direct designation by means of a major predication, typically with a verbal, but possibly also an adjectival or nominal predicate. The other involves (in part) presenting the SoA as an object by means of a term that has all the normal attributes of terms (notably operators and functions) but which contains a predicate designating the SoA in question. The scale of intermediate possibilities has as its linguistic counterpart the 'subordination squish', i.e. a range of expressions displaying increasing degrees of subordination; the examples of nominalization that have been at issue in this paper represent an advanced stage of that squish.

To present an SoA as an object is of course to present something as what it is not, i.e. to indulge in a metaphor, indeed one of the metaphors Lakoff and Johnson (1980: 30) have claimed we 'live by'. When we assert that victory in (31c) can be 'seen as' possessed by my horse, we are in fact appealing to this metaphor. We concede that the relationship between the

horse and winning is 'in reality' not one of possession (how could it be?), but it suits us, as it were, to think and to talk as if this were the case. We may even escape from the metaphor to a certain extent by presenting my horse as an Agent:

(32) ... the victory by my horse

but the victory remains a quasi-thing that we can be proud of, surprised by, looking forward to, etc.

The major semantic contribution of SoA nominalization, I wish to claim, is to permit the operation of the metaphor under discussion above. By converting a verbal predicate, which by its nature is reserved for the direct designation of SoA's, to nominal categoriality, nominalization creates an unmarked term with the associated expectation that the designatum will be a first-order entity. At one, metaphorical, level, this expectation is fulfilled; at another level, that at which interpretation takes place, the expectation is not fulfilled. The designatum is thus at once a thing and not a thing. It is here, I believe, that the clue to the understanding of the y -satellite Possessor lies: the appeal to the Possessor function follows from the metaphorical apprehension of the designatum as a thing, i.e. as an entity capable of being possessed; its status as an implied (y -)satellite, not typical of the Possessors of ordinary things, provides the basis for the interpretive apprehension of the designatum as a SoA with all its inherent complexity.

What has been said applies to the two extremes in the designation of SoA's. The range of expressions manifesting gradual assimilation of the verbal to the nominal may be seen as various linguistic milestones en route to the SoA-as-thing metaphor. Finite subordination in English and Dutch, the English GER and the Dutch INF display too little nominalization for the resultant term to have any but direct designation. Such constructions as English GEN-GER and Dutch NOM-1, however, with their loss of valency and their acceptance of certain term operators, display partial progress towards a presentation of the SoA as a thing. The concomitant occurrence of adnominal terms with the form of Possessors may be recognized as another aspect of progress towards the metaphor; that is, this is justification for analysing them, as I did above, as being what they look like, namely Possessors. This applies, a fortiori, to English NOM and

Dutch NOM-2, which display even greater assimilation to the nominal. We may concede that the Possessors in (9) and (10) cannot be paraphrased as such:

- (33) *... winning the race that my horse possessed/had
- (34)a. *... winning of the race that my horse possessed/had
 b. *... winning that the race possessed/had

The problem with (33) and (34) lies not so much in the Possessors, but in the would-be possessa, which are not sufficiently advanced on the hierarchy of assimilation to the nominal to permit their being used for the metaphorical designation of a thing. Their intermediate ontological status denies them the right to be possessed.

The purpose of this article has been to provide an understanding of the nature of SoA nominalization in English, and to some extent in Dutch, in the framework of Functional Grammar. One aim has been to show that a model such as FG, which seeks to account for linguistic phenomena in terms of discrete categories (\pm dynamic, \pm controlled, nominal or verbal or adjectival, etc.) rather than in terms of gradience or squishiness (more-or-less dynamic, more-or-less controlled, nouny or verby or adjectivy, etc.), can face up to an empirical area, that of SoA nominalization, which is, as indicated at the outset, characterized by a range of constructions displaying increasing degrees of application. The 'cost' has included recognizing, in keeping with work in 'cognitive grammar', the wellnigh ubiquitous presence of metaphor in thinking and language and incorporating the notion of prototype into the definition of at least one semantic function; in the light of Steen's (1985) insistence that FG cannot duck the issue of metaphor and Mackenzie's (1985b) demonstration that prototypes also have a role to play in FG, it may be doubted whether there is any real 'cost'. The 'gain', I would submit, has been an account of a sweep of nominalizing constructions which offers a pleasing link-up of form and function and a straightforward basis for interpretation.

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Also available are Simon Dik's 1978 monograph *Stepwise lexical decomposition* (f 5.00) and a complete bibliography of FG books, articles and papers (f 2.50). These items can be ordered in the same way as a Working Paper.

