Nominalisations of perception verbs

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1 Introduction

In this essay, I want to explore the similarities between perception verbs and their associated nominals. The areas that I want to explore are the similarities in their semantic structures, the relationship between the head word (perception verb or perception noun) and its dependents, and the relation between perception nouns and their heads. That is, I am concerned with the comparison of a group of related nouns and verbs, paying particular attention to the realisation of their arguments. The motivation for this enquiry is first that there are data that support an exploration of the similarities between the semantics of perception verbs and nouns and secondly I want to consider how a particular subset of verbs and nouns behaves in terms of the correspondences between semantic structure and syntactic structure. This study is in the tradition of those that are concerned with examining the behaviour of a group of words that belong to a single semantic class. My concerns are mainly descriptive. I begin by identifying the group of verbs that provides the basis for this study, and the nouns that are related to them. In this paper, I am concerned with nouns that show no deverbal morphology. Next, I shall introduce the theoretical mechanisms that are relevant to the analysis of the realisation of arguments, and finally I shall discuss the realisation of arguments of perception nouns in possessive constructions with 'S, and in constructions with verbs like HAVE and GIVE.

2 Data

The verbs that I am concerned with are those in Table 1. The verbs in the table are arranged according to the thematic role of their subjects, which is a fact I use in the distinguishing notation. Those in the first column have agentive subjects (hence'/A') as in (1)a. Those in the second column have experiencer subjects (/E) as in (1)b. and those in the third column have phenomenon subjects (/P), and are raising verbs, as in (1)c. All of these classes of verbs enter into different constructions that are sensitive to which sort of verb is under consideration. The semantic role of the subject is not, therefore, the only deciding factor in assigning these classes. It is a useful distinguishing factor.

(1) a. John looked at/ listened to the barking dog.
b. Peter saw/ heard the barking dog.
c. The barking dog looked/ sounded pretty dangerous.

TABLE 1

1	2	3
LOOK/A	SEE/E	LOOK/P
LISTEN/A	HEAR/E	SOUND/P
FEEL/A	FEEL/E	FEEL/P
SMELL/A	SMELL/E	SMELL/P
TASTE/A	TASTE/E	TASTE/P

The barking dog is the phenomenon in all of the examples. The set of nouns that is being considered in this paper is shown in Table 2.

TABLE 2

1	2	3	4
LOOK/action	SIGHT/experience	SIGHT/sense	LOOK/appearance
LISTEN/action	*	HEARING/sense	SOUND/app.
FEEL/action	FEEL/exp	'sense of feeling'	FEEL/app.
SMELL/action	SMELL/exp	'sense of SMELL'	SMELL/app.
TASTE/action	TASTE/exp	'sense of TASTE'	TASTE/app.

Other nouns which could appear in this table are those like WHIFF, DECKO and GLIMPSE which refer to an experience of very short duration. WHIFF, unlike GLIMPSE and DECKO, can also have a property of an object as its sense, as well as an experience: 'that dog has a terrible whiff about/to it' refers to a property of

the dog; 'the dog had a whiff of the tripe' refers to an experience that the dog enjoyed. Only the nominals from column 4 in the table above can occur in the 'property' frame.

I shall present the diagnostics which give rise to the classes of nouns suggested in the table above, and then I shall discuss some of the other other phenomena that these nouns display.

The diagnostics for the different nouns are as follows: for those nouns that are in the first column, those that are countable 'action' nominals, the diagnostic is the ability to occur as the complement of HAVE/execute, i.e. the HAVE in 'Peter had a walk/bath/look/run.'

(2) a. Peter had a [quick] look at the picture.
b. Peter had a [quick] listen to the baby.
c. Peter had a [quick] feel of the sandpaper.
d. Peter had a [quick] smell of the supper.
e. Peter had a [quick] taste of the supper.

The optional *quick* in these sentences is there to indicate that these are nominals that have an 'event' rather than a 'state' or a 'condition' or a 'thing' as their sense, on the premise that events are temporally limited. In the sentences in (2) the *had* is consistently the past of HAVE/execute. This HAVE is not the same sense of HAVE, as HAVE/undergo, e.g. 'Jane had an accident/operation.' The subject of HAVE in the examples in (2) is an agent. The selection of the complements will be one of the issues that I discuss later in the paper. Other related constructions that I shall discuss are those exemplified in 'Peter took a look at/*smell of supper' and 'Jane gave Peter a quick look at the picture.' These nouns are the nominal equivalents of the verbs in the first column of table 1.

The words in column 2 of table 2 are all associated with a sensory experience via one specific channel. The asterisk indicates the absence of a lexeme for this particular sense. The examples in (3) are all indications of the relevant meaning:

(3) a. My first sight of the Taj Mahal...
b. *My first listen/hear/sound of thunder...
[*listen* is unacceptable on the exp. reading]
c. My first feel of the silk...
d. My first smell (whiff) of the gasworks...
e. My first taste of the pie...

I do not actually have a diagnostic for disambiguating this meaning of the words, especially those that have the same form as words in other columns. SIGHT is the least ambiguous: it can only be confused with the meaning 'ability to see' which has a clear diagnostic, (see below). SIGHT displays the same aktionsart phenomena as SEE, namely that its aspectual nature is determined by its postdependent:

(4) a. The sight of the accident put me off driving
b. The sight of the Himalayas rooted me to the spot

In (4) a. the sight is a temporally limited event, in (4) b. it is a contingent state. In both cases the semantic role of the *see-er* is that of Experiencer. SIGHT/exp. has a meaning that is similar to that of LOOK/app.which is seen in examples like (5):

(5) a. The sight of the dog scared the cat
b. The look of the dog scared the cat.

However, sentence (5) a. refers to an experience belonging to the cat, and sentence (5) b. refers to a quality of the dog. One possible diagnostic that I can devise for these nouns is the ability to occur as the postdependent of HAVE/undergo. However, whereas 'Peter had his first sight of the Himalayas at forty' is interpretable with *Peter* as an experiencer and not an agent the facts are much harder to determine for SMELL. 'Peter had his first smell of Chanel at forty' is equally interpretable with *Peter* as agent, and *have* as HAVE/execute or with *Peter* as experiencer.

The test for the nouns in column three is whether they can occur in the frame 'Jane's_____isn't what it used to be'. In this case the item that occurs in the space should be the name of one of Jane's senses. As the entries in table 2 indicate, there is no one word for the senses of feeling, smell and touch. I have included the circumlocutions for completeness.

(6) a. Jane's sight isn't what it used to be
b. Jane's hearing isn't what it used to be
c. Jane's sense of feeling isn't what it used to be }
d. Jane's sense of smell isn't what it used to be } No one word
e. Jane's sense of taste isn't what it used to be } for the sense
f. Jane's sense of hearing/*sense of sight isn't what it used to be.

Facts that have to be accounted for here include the question of why it is possible to have *feeling* but not *feel* in (6)c; why *smell & taste*, but not *smelling* or *tasting*, can depend on *sense* in (6)d. and e., and why *hearing* can depend on *sense*, but *sight* cannot.

The examples in (6) and the third column of table 2 are all closely related to the verbs with experiencer subjects in table 1. However, they are not just related to the senses of those verbs, but to the interaction of those verbs with CAN. That is, SIGHT in (6)a. has the sense of *ability to see* which is related to 'Peter *can see* the church tower' rather than the sense of experiencing seeing something which is conveyed by SEE when it does not depend on CAN. It might be usual to refer to the ability to feel things in terms of a sense of touch, but note that if I touch something, it does not entail that I can feel it, especially if I have some kind of neuritis. Furthermore there are things that I can feel with no touch being involved, like heat and cold. I think that it might be appropriate to recognise two distinct senses of FEEL, one which includes the sense of TOUCH, and a general sense of FEEL which includes emotional feeling, as well as non-tactile physical feeling. FEEL/touch would be exemplified in sentences like 'I felt the wood to see whether it needed sanding'; FEEL/general is found in both 'I felt the heat of the fire' and 'I felt the tension between them.'

A straightforward test for the appearance nominals is whether they can occur in the frame 'I am judging it by its _____.'

(7) I am judging it by its look/ sound/ feel/ smell/ taste.

The nouns in (7) need not, therefore, express the ambiguity which potentially arises with them: 'Peter had a look' is ambiguous between interpretations where Peter is the agent of the look, and so the HAVE is HAVE/execute, and a reading where Peter is the possessor of the look, as in 'Peter had a dirty look on his face', and the sense of HAVE is HAVE/possess. It is examples like these that raise the question of the status of semantic roles assigned by nouns and how similar they are to those that are assigned by their verb counterparts.

Not all of the nouns described above have the same mass/count characteristics, and they also do not all depend on the same range of determiners (aka pronouns). All the nouns in the first column of table 2 are count, and they can all occur with A(N) and THE. The same facts are true of the nouns in the second column. The nouns in the first two rows of the third column are mass, and occur with no determiners. SENSE is a count noun however, so the circumlocutions are countable. The nouns in the fourth column are all count, and they all occur with both A(N) and THE. There is a specific collocation *good looks* which is always plural, and which is probably idiomatic.

3 The constructions and the analytical strategies

The main areas that we are going to look at in this paper are the semantics of possessives, the semantics of postnominal prepositional phrases, including OF phrases and other obliques, and the semantics of the nouns in table two when they depend on verbs like HAVE and GIVE. The reason for looking at possessives is that they sometimes demonstrate similarities to subjects of the corresponding verbs, and sometimes they appear to be related to other arguments of the verb. I am interested in seeing whether there are any generalisations that we can make, first about possesives and the arguments of nouns in general, secondly about the realisation of the arguments of the particular nouns in this study. There is a twofold reason for looking at the mapping of arguments onto OF phrases and obliques: as well as a generally accepted correspondence between the object of a verb and the OF phrase of its nominalisation there are other mapping relations between arguments and OF phrases. I want to find out what the wider facts are and then to establish the relevant pattern for the nouns that form the basis of this paper.

The reason for looking at the interaction of the nouns in table 2 with verbs like HAVE and GIVE is not so much to discuss the relevant facts about 'light verbs', but rather to see whether there are any principles governing the semantic ambiguities that are found in phrases like 'John had a look.' This phrase is ambiguous between an interpretation where *look* is LOOK/action and *John* is agentive, and a reading where *look* is LOOK/appearance and *John* is the phenomenon. I am interested in discovering whether I can give a more principled account of the facts than this simple description, and in seeing whether the ambiguity is resolvable because of more general reasons. The discussion of this material follows on from the discussion of possessives and other possible argument-phrases because it draws on some of the analyses of how arguments are realised.

There are two main theoretical devices that I use: 'firstargument' and 'secondargument' which are easy to define as working terms. 'Firstargument' is found in published work on Word Grammar, particularly Hudson (1990:155-6). It is simplest to say that it is the argument that is mapped onto the referent of the subject of a verb. Although firstargument is used as part of Word Grammar semantic description, the notion is semantically 'empty' in that it does not contain any particular semantic role as part of its meaning. For our purposes, we can say that a firstargument is the argument that is mapped onto the subject of an underived verb, and also that it is the equivalent argument of a nominalisation. There is no reference to 'secondargument' in published Word Grammar, although it is a current term. The secondargument is the argument that is the referent of the object in a simple transitive verb. It carries over to the realisation of the same argument in nominalisations. The advantage of the term secondargument is that we can refer

to the secondargument of CONSTRUCT and the secondargument of DESTROY without having to mention that one is 'effected' and the other is 'affected.' Furthermore, we can refer to the secondargument of OWN and the secondargument of DEPEND while being able to generalise across a secondargument that is a direct object, and a secondargument that is an oblique. Introducing the notion secondargument does not add to the categories in the grammar either: it is implicit in the categories 'own-er' and 'own-ee' (Hudson, 1990:160) where 'own-er' is a lexically specific characterisation of the firstargument. In the following discussion, I may also refer to firstargument as 'arg1' and secondargument as 'arg2'.

One further distinction that I shall make is between the firstargument of a lexeme, and the firstargument of a form of that lexeme. The first argument of a lexeme is the firstargument of the underived form of, e.g., the verb. In this way, we can distinguish between the firstargument of the lexeme SMELL and the firstargument of the verb *smell* in 'the food was smelt.' The firstargument of the lexeme SMELL is the agent, the *smeller*. The firstargument of the passive is still the referent of the subject of the verb, but in this case it is the thing *smelt*.

4 Possessives, and postnominal prepositional phrases

4.1 Introduction

The first problem that needs to be resolved is the disambiguation of the predependent of 'S in phrases like *Jane's look*. Is *Jane* an agent or a phenomenon? This problem is clearly related to the need to disambiguate the potential sense of LOOK in this case, which could be either LOOK/action or LOOK/appearance. It is relevant to note that postnominal prepositional phrases disambiguate the role of the predependent of 'S, and so which lexeme LOOK we have. Therefore (8) can have only one analysis:

(8) Jane's look at the picture lasted longer than Peter's

the referent of *Jane* is identified with the subject of the corresponding action (agentive) verb, and the complement *at* is identified with the oblique of the corresponding action verb. *Look* in (8) is clearly an example of LOOK/action. However, postnominal prepositional phrases are not always so obviously related to the oblique of the verb. In verbs that have objects and not obliques, the arg2 is usually found in an OF phrase after the noun. It is necessary to establish the range of relations that postnominal OF phrases can have, in order to determine how useful they are in disambiguating which lexeme is present.

The first strategy is to look at the relation between 'S and its dependents. The analysis in Hudson (1990:278) demonstrates that the referent of the possessive pronoun is the same as the referent of its complement. Hudson's figure (8) on the same page shows that the sense of 'S and its complement are the same as well. Comparing nouns with verbs, we can assume the position that Croft (1991:158) argues for: the thematic relations that are associated with verbs are defined by the semantics of the verbs that they are related to. Though it is not quite so overtly expressed, this is the same position that WG assumes, as the discussions in Hudson (1990:158; 1992:186) clearly demonstrate. It is a simple matter to extend the analysis from verbs to other words that clearly have a semantic relation to their dependents: in this case, the semantic relation between 'S and its predependent is contingent on the semantic structure of the complement of 'S.

Before I demonstrate this point with the nouns under consideration in this paper, I should like to consider the implications of such a claim for the status of the possessor relation that obtains between 'S and its predependent. The possessor relation between 'S and *Peter* in 'Peter's book' is the default interpretation. Possession is a very complex cultural concept, and it covers a wide range of generally applicable situations. So, although we do not expect lamposts and astronomical stars to have 'owners,' they are possessed in as much as they can both be found in part-whole relations: we can refer to the stars of galaxy X in the following way:'galaxy X's stars have all gone supernova' and we can refer to 'Electric Avenue's streetlights.' It is relevant to assume that 'Peter's book' refers to a book that Peter owns. In fact, this is the most likely interpretation because it is the one that we can make at the greatest level of generality. Any semantic relation that is not 'possession' that is found in 'S constructions is over-riding the default interpretation and so it is a consequence of the complement of 'S having a more specific semantics than the default. So if it is a fact that Peter writes books, than *Peter's book* might not just refer to a book in Peter's possession, but could equally refer to a book that Peter has written. This possibility is contingent on the fact that one thing we know about books is that they typically have authors as well as owners.

Having accepted that a simple possession can be over-ridden on account of the semantics of the complement of 'S having a different semantic role to assign to the predependent of 'S, we can observe that the semantic relations that are observed with the nouns under consideration in this essay will be contingent on the fact that they have *situations* as their senses, rather than entities. If we follow Croft (1991) in assuming that nouns are prototypically entities rather than situations, we have a situation where the default semantic relation between 'S and its predependent, is that of 'possessor' and the nouns under discussion here over-ride the default, and define their own semantic relations. The general observation

is that in *x 'S y*, *x* may fill any slot which is provided by the semantics of *y*. The default is that *x* indicates the possessor of *y* but the default can be over-ridden. In this case, *x* can indicate the time of *y*, (9)a, an instrument used in performing *y*, (9)b, the agent of *y* as in (9)c, or the patient of *y* as in (9)d.

(9) a. Yesterday's accident
b. The scud missiles' destruction of the city
c. The soldier's destruction of the depot
d. The city's destruction

A further claim is that the *z* in *y of z* will also have its semantic role determined by the semantics of *y* and that the semantic role of *z* will fill a slot in the semantics of *y* in the same way that the predependent of 'S does. This claim is found in Hudson (1990:279) where he states that 'Fred's hat' and 'the hat of Fred' have precisely the same semantic structure, in which the referent of *Fred* is the possessor of the sense of *hat*. This claim may need some revision in the light of what is due to follow. One more particular preoccupation of this paper is the relation between the semantics of postnominal OF phrases and the semantics of the predependent of 'S.

4.2 The semantic role of the predependent of 'S

The above discussion of the ambiguity of *John's look* pointed out that the question of which lexeme LOOK is present can be resolved by reference to the postnominal prepositional phrase: the secondargument of LOOK/action is always found in the AT phrase. It is just as easy to identify which lexeme is present when the auditory perception channel is involved, irrespective of prepositional phrases, because there are actually different words used: LISTEN and SOUND. The same lack of ambiguity does not hold for the remaining words under consideration: SMELL, FEEL, and TASTE. First, the words look the same across all of the rows of table 2, second, the verbs from which the action nominalisations derive take direct objects as their secondarguments and direct objects of verbs are realised as OF phrases in the corresponding nominalisations. The general rule, for a nominalisation like DESTRUCTION, where there is, I assume, no ambiguity between lexemes to be resolved, is that the postnominal OF phrase forces a reading where the firstargument is found as the predependent of 'S or as the referent of BY in a BY phrase:

(10) a. The barbarians' destruction of the city
b. The destruction of the city by barbarians
c. The city's destruction by barbarians
d. The scud missile's destruction of the city

In (10)a. the firstargument of 'S is the firstargument of the lexeme, DESTRUCTION. (10)d. shows that an instrument can be mapped onto a firstargument as well as the agent in (10)a. I see no reason why the BY phrase should not be similar to the BY phrase in passive constructions, so the referent of the BY phrase in (10)b. and c. is the firstargument of the lexeme DESTRUCTION. (10)b. and c. indicate that DESTRUCTION is able to express its 'secondargument' both in the OF phrase, and in the predependent of 'S. Subject to certain restrictions, the semantic role that maps onto the predependent of 'S is often able to map onto an OF phrase, with no corresponding alternation in the meaning. So if a secondargument of the lexeme can map onto an OF phrase, then given that the firstargument of the lexeme is not the predependent of 'S, it can also be expressed as the predependent of 'S. As already noted, we have to make a clear distinction between the firstargument of a lexeme and the firstargument of a word. Take for example 'Peter was hit by Jane.' A passive verb has a firstargument, which is the referent of its subject, and its lexeme has a firstargument, which is expressed in the BY phrase.

An OF phrase disambiguates a possessive construction, so that it is possible to see whether the firstargument of the lexeme or the secondargument of the lexeme has been mapped onto the the referent of the predependent of 'S: there is a rule to the effect that if there is a possessive construction that is well-formed and that has a postnominal OF phrase, then the firstargument of the lexeme will be mapped onto the referent of the predependent of 'S, and the secondargument of the lexeme will be mapped onto the referent of OF. It is by this means that we can determine which semantic participant is the firstargument and which the secondargument of the lexeme. There is no rule making it obligatory that the firstargument of the lexeme will be mapped onto the referent of the predependent of 'S, unless a postnominal OF phrase is also present, and postnominal OF phrases are strictly optional. The example in (11)a. shows a firstargument of the lexeme as the predependent of 'S; that in (11)b. shows the secondargument of the lexeme in that position.

(11) a. The barbarians destroyed a city, and the Martians destroyed a cabbage patch.
The barbarians' destruction was more devastating than the Martians'.

b. The barbarians destroyed a city and then they destroyed a cabbage patch.
The city's destruction was more devastating than the cabbage patch's.
c. *The city's destruction was more devastating than the Martians'.

The example in (11)c. suggests that as 'S in *Martians'* borrows its sense from *the city's destruction* there is no way to avoid indicating which argument is its firstargument. So the sense of the word includes a mention of the element that is to be realised as its firstargument.

Surprisingly, this range of options is not available for SMELL/action, TASTE/action, and FEEL/action. The reason is that it seems that only the firstargument of the lexeme can be the firstargument of these nominalisations. This is despite the fact that these nouns have firstarguments as well as secondarguments. Let us look at SMELL:

(12) a. Peter's smell made him heady
b. Peter's smell of the perfume made him heady
c. Peter's smell of Devon Violets was unpleasant

The first sentence in (12) is ambiguous between an interpretation where *Peter* is the agent or the phenomenon of *smell*. The ambiguity is contingent on the fact that *smell* is potentially one of two different words: SMELL/action or SMELL/appearance. There is no ambiguity that resembles the one that is potential in 'the barbarians' destruction' where *the barbarians* could be the destroyed or the destroyer. That is, there are no diathetic relations that hold where the action nouns in table 2 are concerned. The complement OF phrase with the definite article appears to force a reading where the instance of SMELL in the sentence is SMELL/action. The example in (12)c. indicates that an OF phrase with no definite article is related to SMELL/appearance. We shall leave the analysis of the Of complement of SMELL/appearance to the next section. For now, I am concerned with the OF complement of SMELL/action. This OF phrase marks the secondargument of SMELL. It corresponds to the direct object of the verb in a sentence like that in (13):

(13) Peter smelt the perfume

It appears to disambiguate the form of SMELL exactly. Unfortunately, it does not. There is an alternative interpretation where the OF phrase is actually a dependent of SMELL/appearance, although the form of the OF phrase includes a definite article as in (12)b.

(14) a. Jane's smell of perfume
b. Jane's smell of which perfume
c. Jane's smell of the perfume you gave her yesterday.

So there is apparently no sure-fire way of determining whether the word *smell* that we have is SMELL/action or SMELL/appearance. We have to look at prepositional complements of nouns in greater detail to see which arguments can be mapped onto a prepositional phrase, and to see whether there are different semantic structures for the different classes of noun and their complements. With the nouns that are under consideration here, one fact that we can be sure of is that only the firstargument of the lexeme is found as the predependent of 'S, and that this is an idiosyncratic fact. Surprisingly, this is a fact that is true of the appearance nouns and the two nouns SIGHT as well.

4.3 The role of the prepositional phrase

The claim so far is that the role of the prepositional phrase is to indicate the argument of the noun that corresponds to the secondargument of the underived verb. This claim needs some revising. Clearly the argument that is indicated by an oblique is invariant: an oblique is a secondargument of the verb, and it is a corresponding secondargument of the noun. OF phrases, though, potentially could indicate firstarguments as well. In a case like 'the army's destruction of the city' there is an obvious correspondence with the verb DESTROY; *the army* corresponds to the subject of the verb, and *of the city* corresponds to its object. Using diagnostics from Hudson (1990:204-5) *of the city* is a complement: it is non-repeatable; like all nouns, except those that are nominalisations of verbs that have obliques like DEPENDENCE (ON), the form of the complement is OF/dummy; the OF phrase is closer to its head than an adjunct is: '*the army's destruction because they were psychopathic of the city'; the semantic relation is determined by the head: *of the city* is patient or affected in 'the destruction of the city' but is a result or effected in 'the construction of the city.'

The analysis of complementhood goes through for all of the cases in (14) as well, so all of the prepositions are secondarguments of the complement of 'S:

(15) a. Peter's look at the picture.
b. Jane's listen to the music.
c. Peter's feel of the lump.
d. Jane's smell of the perfume.
e. Peter's taste of the supper.

However, there are cases where the OF phrase indicates the firstargument.

(16) a. the explosion of the volcano
b. the eruption of the volcano
c. the dancing of the marionettes
d.*the destruction of the barbarians [i.e. *barbarians* as agent]
e. *the look of John at the picture
f. the dependence of children on their parents

The first three phrases in (16) shows that the OF phrase can identify a firstargument. None of the nominalisations in these examples has a secondargument. The phrases in (16)d. and e. show that where the firstargument is an agent it cannot be realised in an OF phrase. The example in (16)f. shows that even when a nominalisation has a first- and a secondargument, its firstargument can be realised in the OF phrase as long as (i) the secondargument is an oblique that is not OF, (ii) the firstargument is not an agent. Therefore it is impossible to have a phrase like (17):

(17) *the look of John at the picture

Descriptively, the rule is that the OF phrase is the secondargument, unless (i) there is no secondargument or (ii) the secondargument is expressed in an oblique, which is carried over from the corresponding verb. There is no restriction on human firstarguments being expressed in the OF phrase, but agentive firstarguments cannot be expressed in the OF phrase.

It is possible, therefore, for the firstarguments of the nominalisations in column four of table 2 to have their firstarguments expressed in the OF phrase:

(18) a. the worried look of John
b. the loud sound of trumpets
c. the smooth feel of silk
d. the pungent smell of perfume
e. the garlicky taste of supper

The examples in (18) show the referent of the OF phrase as the firstargument of the noun. However, my assumption so far has been that all of the verbs in column 3 of table 1 are intransitive, therefore I do not expect any of them to have secondarguments. The examples in (19) suggest that the facts might be slightly more complicated than my first assumptions:

(19) a. Peter's look of dismay
b. Peter's sound of *?*
c. the lump's feel of *?*
d. Jane's smell of perfume
e. The supper's taste of coriander

The first phrase in (19) does not have an exact correspondent for the verb. 'Peter looked dismayed' is the nearest equivalent. It is impossible to say 'Peter looked of dismay.' Evidently, there is no corresponding OF phrase that can occur with SOUND and FEEL. SMELL and TASTE do have OF phrase correspondences across verbs and nouns:

(20) a. Jane smelt of perfume
b. The supper tasted of coriander

The OF phrases in the examples in (20) are complements of the verbs, and it appears that they are arguments: secondarguments to be precise. This fact raises two problems: a more general one and one that is local to the analysis of OF phrases that is being worked out here. The general problem is that SMELL/P and TASTE/P are raising verbs as witnessed by the examples in (21):

(21) a. The perfume smelt nice
b. The supper tasted nice

It should therefore be impossible for the OF phrases to be arguments of the verb, because raising verbs do not have secondarguments. It is also possible for SMELL/appearance and TASTE/appearance to have OF phrases that have the firstargument as the referent of the preposition, as I showed in the examples in (18). The argument at that point was that it was only possible for firstarguments to be expressed as the referent of the preposition OF if the nominalisation had only one argument, or if the secondargument was the referent of another preposition, an oblique, that was carried over from the corresponding verb. The presence of an argument OF in this case cannot be accounted for here.

The case with the OF after *look* is slightly different. Not only is there no corresponding verb+OF collocation, but there is a range of nouns that have a similar relation to postnominal of phrases to *look*.

(22) a. Peter sighed/gestured/looked/winked/grunted *despair/*of despair
b. Peter's sigh/ gesture/ look/ wink/ grunt of despair made Jane unhappy.

There is no sense in which the nouns in (22)b. have 'of despair' as a secondargument that is carried over from the verb. In fact, the OF phrase is very similar in meaning to an adjective. The nouns *sigh, gesture, look,* etc. are all symptons of the emotion that is expressed in the prepositional phrase. The same is not true of SMELL and TASTE:

(23) a. Jane smelt of sweat/ perfume/ soap/ *grief/ *joy
b. Jane's smell of sweat/ perfume/ soap/ *grief/ *joy

There is no way in which SMELL can be a sympton of emotion in the same way. It is relevant to compare the examples with *look* and *sigh* and so forth with examples like 'a happy grin.' This is ambiguous between an interpretation where either the grin is happy, or it is evidence that the grinner is happy. In this case, the nouns in (22)b. are all evidence of the emotional mood of their firstarguments. The appropriate semantic structure is that there is no argument relation between the head noun and *of despair*, but that both the head noun and *of despair* share the same firstargument.

4.4 Summary

So far, I have claimed that the predependent of 'S can express anything that is indicated by the semantics of the complement of 'S. So it is possible for both firstarguments and secondarguments to be the predependent of 'S. The rules for OF phrases are a little more complicated in that agentive firstarguments cannot be the referent of the preposition, and if there is an secondargument then, unless it is an oblique, it is realised as the referent of OF.[1] The nominalisations in this paper show some peculiar phenomena, in that the action nouns all have to express their firstarguments as the referent of the predependent of 'S, and they do not express their secondarguments there. It is not peculiar that their firstarguments cannot be realised in an OF phrase, because they are all agentive. The facts relevant to the nouns in column 4 of table 2 are a little more complicated, they can express their firstarguments as both the referent of the predependent of 'S, and in an postnominal OF phrase, but the situation regarding OF phrases involves idiosyncratic facts about the syntax and the semantics of the relevant nominalisations.

Finally, we can describe different semantic structures for the nouns in (24):

[1] I am assuming that OF and its complement are coreferential, which is a standard WG assumption.

(24) a. The sight of the dog scared the cat
b. The look of the dog scared the cat

In the sentence in (24) a. the dog is the secondargument of the head noun *sight*. In the next sentence, it is the firstargument of the head noun *look*. This accounts for why *the sight of the dog* refers to an experience of the cat's, but the *look of the dog* refers to a property of the dog. When *sight* has a secondargument OF phrase, then it is always SIGHT/experience. When it has a firstargument OF phrase, then it is SIGHT/sense.

5 Have a look

The reason for looking at constructions like 'have a look' is to attempt to resolve the ambiguity between a reading where *look* is an action nominalisation and a reading where it is an appearance nominalisation. The differences are shown in (25).

(25) a. Jane had a look
b. Jane had a look of despair.
c. Jane had a look at the picture.

The other reason is that the ability to appear in the frame 'Peter had a _____' with HAVE/execute is a diagnostic for the first class of action nominals. In this section, I am not concerned to establish means by which ambiguous data can be disambiguated, as I shall presume that the discussion about first- and secondarguments in section 3 is sufficient for that purpose. What I am concerned to do is provide the relevant semantic structures. All of the examples in (26) are examples of action nominalisations depending on HAVE/ execute.

(26) a. Peter had a walk.
b. Peter had a quick look.
c. Peter had a kick of the ball.
d. Peter had a ride in Jane's new car.

These constructions are discussed in Dixon (1991), Cattell (1984), and Wierzbicka (1982). HAVE/execute is similar to GIVE, MAKE, and TAKE when it is analysed as a 'light verb,' a term coined by Jespersen. All of the above authors make interesting observations about the behaviour of light verbs and their direct objects: Cattell, for example, points out that light verbs share the same selection restrictions

as their complements (1984:2), and that complex predicates (i.e. predicates with light verbs and a deverbal direct object) appear to be related to idioms (1984:52). All of the authors are agreed that the subject of a light verb must be agentive.

The analysis that I want to provide is that HAVE and LOOK are co-referential when HAVE/execute is the example of HAVE that we find. By this I mean that they both refer to the same event token. HAVE/execute and its direct object are then able to have the same firstargument as a matter of course. This is true of all cases where we find an example of HAVE/execute: it always has an object that has an event as its referent, and it is always coreferential with its object. So the analysis follows for the examples in (26) as well. This analysis of coreference need not be limited to a verb and its object, a verb and its subject can be co-referential as well, as in 'an accident happened.' The difference is clearly brought out in (27).

(27) a. Jane did a dance
b. Peter did the potatoes

In (27) a. *did* and *dance* are coreferential, because they refer to the same event token: the same is not possible in (27) b. where *potatoes* clearly refers to solid objects. Now we can formalise Dixon's (1991:342) observation that there is a difference between the two readings of 'have a drink': in one reading, DRINK/action is an event nominal, and so it is co-referential with HAVE/execute; on the other reading the DRINK is a concrete noun, and there is no coreference, because DRINK/liquid does not have an event as its referent. This same analysis can be extended to the other constructions that Dixon and Cattell discuss: those where an event noun can occur in the frames 'give a _____' and 'take a _____'.

There is a similar construction with HAVE: that where the subject of HAVE is a patient:

(28) a. Jane had an operation.
b. Peter had an accident.

I shall call this HAVE/undergo. The semantic role of the referent of the subject of HAVE/undergo is invariably a *patient*. I presume that the analysis that we have for HAVE/execute goes through for HAVE/undergo as well, in that the patient assignment of the referent of the subject of HAVE/undergo is not just a consequence of the semantics of this verb, but that it also depends on the semantics of the complement of HAVE. In this case, there is another example of co-reference and the firstargument of OPERATION, which is the referent of the subject of HAVE, is a patient. Consequently, the subject of HAVE is a patient. If we follow

this analysis through, then we can establish a single sense of HAVE, HAVE/experience, where the semantic role of the referent of the subject of HAVE is determined by the semantic role of the firstargument of the nominal complement of HAVE due to there being an example of verb-direct object coreference.

A number of 'event' nouns occur in the frames where they occur as the complement of GIVE and TAKE. There is an example with DRIVE in (29) below, because DRIVE goes through with all the constructions.

(29) a. Jane had a drive of the new car
b. Jane gave the new car a drive
c. Jane took a drive of the new car

In all of the examples in (29) *Jane* is the firstargument of the light verb and of *drive*. DRIVE has a first- and a secondargument, in (29)a. and c. the secondargument is found in the OF phrase, but in (29)b. the secondargument of *drive* is the indirect of *give*. We have already seen the ambiguity of the nouns in table 2 with HAVE: the ambiguity with GIVE is different, because all of the direct objects of GIVE are event nouns. The only nouns that are event nouns in table 2 are those in the first column.

If we look at the nouns in column 1 of table 2 above in this frame we find a similar semantic structure to the one that is outlined for DRIVE.

(30) Peter gave Jane a look

Sentence (30) has two potential interpretations: in the first, *Peter* is the firstargument of *a look*. In the second, *Jane* is the firstargument of *a look*. The first interpretation is equivalent to 'Peter looked at Jane'; the second is equivalent to 'Peter let Jane have a look.' Where *Jane* is the firstargument of *look* as in 'Peter gave Jane a free look' the *look* that is present is LOOK/action as is also the case when *Peter* is the firstargument of *look* as in 'Peter gave Jane a quick look;' there is no example of LOOK/appearance in any of these constructions.

Dixon (1991:343) insists that the only such construction that he is considering is that where the indirect of GIVE is the secondargument of the direct object of GIVE. Cattell (1984:77) also suggests that when the indirect is the firstargument of the direct there is a different structure from when the indirect is the secondargument of the direct object. There is a further related problem. The basic assumption is that GIVE can only form a 'complex predicate' with a noun that has a first- and a secondargument. However, SNEEZE shows that this need not be the case:

(31) Jane gave a sneeze.

So what then are the facts? I assume that the same coreference analysis holds in these examples, but only in the cases where GIVE and its direct object share a firstargument: in these cases GIVE and its direct object refer to the same event token, and the analysis is the same as for HAVE/ execute. In the cases where the indirect of GIVE is the firstargument of the direct object of GIVE, there is no coreference between GIVE and its direct object, and so the normal semantic structure that is assigned to GIVE holds. Because the referent of the direct object is an event, however, and it is impossible to physically hand over an event, GIVE has the sense of 'let have' in these cases. This accounts for 'permissive' GIVE.

The analysis goes through for all of the nouns:

(32) a. Peter gave Jane a listen.
b. Peter gave Jane a feel.
c. Peter gave Jane a smell.
d. Peter gave Jane a taste.

In all of these examples, it is quite straightforward to identify *Jane* as the firstargument of the perception nominal. It is less natural to identify *Jane* as the secondargument of the perception nominal. In order to identify the indirect object of GIVE as the secondargument of the perception nominal some other examples are needed where the indirect object of GIVE is obviously a potential secondargument of the nominal.

(33) a. ?Jane gave the music a quick listen.
b. Jane gave the fur a quick feel.
c. Jane gave the perfume a quick smell.
d. Jane gave the supper a quick taste.

In this case I find only (33)a. possibly unacceptable: all of the indirect objects of GIVE in (33) are chosen so that they are obvious potential secondarguments of the relevant perception word. It is clear then, that we have an interpretation of both the sorts of GIVE sentences.

The case of TAKE is interesting in that not all of the nouns that are under discussion in this paper can occur in this frame.

(34) a. Jane took a look at the picture.
b. *Jane took a listen to the music.
c. *Jane took a feel of the fur.

d. *Jane took a smell of the perfume.
e. *Jane took a taste of the food.

Clearly the reason for this exclusion is not that the nominal complements of TAKE have to be 'event' nouns: I have already established that the nouns under discussion here are event nouns. The coreference analysis should hold. I can only presume that this restriction is a matter of dialectal variation, but unfortunately, this presumption does not explain why all of the action nouns are acceptable in frames with TAKE as an imperative:

(35) a. Take a look at that
b. ?Take a listen to that
c. Take a feel of that
d. Take a smell of that
e. Take a taste of that

I have no explanation for these facts.

In this section I examined the occurrence of the perception nominalisations in table 2 with so called 'light verbs.' I established that the reason why the ability to appear as the direct object of a light verb was a test for the 'action' nominalisations was that the light verb and the action nominalisation both referred to the same event token. I also suggested a reason for the difference between GIVE when it forms a 'complex predicate' with its direct object and 'permissive' GIVE.

6 Conclusions

In this paper, I have explored the behaviour of perception nouns in a wide range of constructions all of which refer to the arguments that the nouns have, and some of which are particularly hard to analyse. None of the analyses has needed recourse to any new features in the grammar, like Grimshaw's (1990) argument structure, and I have shown that it is possible to generate all the relevant constructions in an economical fashion. One relevant point is that it appears that the different nouns, and therefore the verbs of which they are nominalisations do not form a single unified class, in that their behaviour shows extensive variation across constructions. A relevant strategy for future research will be to identify the classes of perception word that should be considered, in order to make appropriate analyses of the data.

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