Cognitive Ontology and NP Form

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1. Introduction

One general question uniting the chapters in this volume is: On what basis does a speaker or writer, when referring, make the choice between different forms of NPs? Most of the answers to this question found in the literature exclusively – or at least primarily – relate the choice of NP form to one or more of the related notions of familiarity, givenness and accessibility. Common to all these accounts is the assumption about a correlation between various NP forms and the speaker/writer's judgement regarding, metaphorically speaking, 'where' in the mind of the addressee the referent is. To cite two recent theories, this can be formulated as the degree to which the entity is accessible to the addressee, i.e., "how easy/automatic the retrieval is" (Ariel 1990: 16) or as "whether or not an addressee has a mental representation of a referent and whether attention is focussed on the referent" (Gundel, Hedberg & Zacharski, 1993: 275). I will, for convenience, refer to this general factor using the term 'givenness'.

While there are several specific points in these theories with which I both agree and disagree, I will in this chapter focus on another general, but largely neglected, aspect of discourse reference and NP form, namely the inherent properties of the referents themselves, or more properly, the way we human language users conceive of different entities in general – hence 'cognitive ontology'. I will sketch a preliminary model of such a cognitive ontology and the way it relates to NP form. I will tentatively discriminate three main classes of entities, or potential referents, and try to show that the ontological class of the referent is an important independent factor that both determines the range of

possible NP forms and in various ways interacts with other – previously acknowledged – factors influencing the choice among the possible forms.

The picture that emerges from the commonly accepted givenness account of NP form is that, for any entity that we are about to mention, the principles governing our choice of NP form are the same – regardless of the kind of entity in question. In each case we have a set of NP forms such as personal and demonstrative pronouns, definite and indefinite lexical NPs, proper names etc., from which to make an appropriate choice based on givenness. It is certainly true that, for example, the choice between pronouns and fuller forms will partly depend on our beliefs about what is in the addressee's focus of attention[2]. However, another obvious, but less acknowledged, observation is that different kinds of entities, for example people and apples, are treated differently in discourse. To the extent that ontological properties are ever considered in the givenness accounts of NP form, it is as factors that influence givenness. What I want to do in this chapter is to turn the issue around and try to see whether and how the first picture is altered if we, instead, start by examining the possible correlations between NP form and different ontological classes of entities. We may then turn back to the question of the relationship between givenness and these ontological factors.

2. Background

What first drew my attention to the importance of ontological properties was the results of some earlier studies of discourse reference based on analyses of NPs in natural language corpora. There are, in particular, two aspects of these results that have inspired the ideas I will present. The first is the role of *animacy* in discourse (Fraurud 1988, 1992: 34 f, and Dahl & Fraurud, this volume) and the second is the quantitative importance and the qualitative properties of *first-mention definites* (Fraurud 1989, 1990, 1992: 18-26).

2.1. Animacy and individuation

In order to illustrate the relevance of animacy to any account of the choice of NP form, let me give one little example of how empirical data can be distorted by neglecting this factor and treating, for example, personal pronouns as a homogeneous class, as is often done[3].

Table 1. Distribution of pronouns and definite NPs in a Swedish narrative fiction text according to distance from (or absence of) antecedent.

Antecedent:	in same/prec. sentence		earlier in the text		none		Total	
a. All referents:								
Pronouns	175	88%	22	11%	3	2%	200	100%
Definite NPs	14	7%	22	11%	164	82%	200	100%
b. Human referents:								
Pronouns	162	87%	22	12%	3	2%	187	100%
Definite NPs	9	20%	20	45%	15	34%	44	100%
c. Non-human referents:								
Pronouns	13	100 %	0	0%	0	0%	13	100%
Definite NPs	5	3%	2	1%	149	96%	156	100%

In a small sample of Swedish narrative fiction texts, 88% of the pronouns and 7% of the definite NPs had an antecedent in the same or immediately preceding sentence, and 2% of the pronouns and 82% of the definite NPs were antecedentless (Table 1:a). However, presenting these averages independently of the animacy parameter conceals the fact that *all* the non-human pronouns had a close antecedent and none of them were antecedentless, and that 96% of the definite NPs with non-human referents, but only 34% of those with human referents, were antecedentless (Table 1:b–c).

Another example of differences between human and non-human referents with regard to NP form is seen in data on what may be called 'pronominalization propensity', showing that human referents are more often referred to by pronouns than non-human referents (Fraurud 1992: 41). Some of these statistics, along with further discourse and typological data, are presented in another chapter by Östen Dahl and myself (this volume) on the specific topic of animacy. In general, it can be concluded that the animacy of the referent, and in particular whether or not it is human, is a factor that affects several phenomena at the discourse level as well as at the grammatical level. This is quite natural in the perspective of an anthropocentric cognitive ontology, which is structured around ourselves and our fellow human beings, and where everything else is described from the point of view of human beings. However, although the opposition between human and non-human entities is a very important one, it should be pointed out that it is necessary to discriminate further ontological classes that cannot be arranged on a simple linear animacy hierarchy (cf. section 4.4 below, and Dahl & Fraurud, this volume). I should also mention that my earlier observations about the role of animacy led me to a

more general ontological distinction that is captured by the notion of *individuation*, which, in the present context, can be described as the degree to which the interpretation of a NP involves a conception of an individuated entity.

2.2. First-mention definites and relationality

The relevance of *first-mention definites* to a cognitive ontology has to do with the fact that many entities are almost exclusively referred to by definite NPs – even the first time they are mentioned. During the last decade or so, one can trace an increased interest in first-mention definites, that is, definite NPs that 'lack' an antecedent (in the sense of a co-referent NP in the preceding text). Nevertheless one often gets the impression that these occurrences are seen as exceptions, or at least secondary to what is taken to be the paradigm case for definites, namely anaphora. This is, for example, reflected in the way in which first-mention definites are treated in process models of NP interpretation; anaphoric procedures are always given priority and are assumed to take less time (see Fraurud 1990). Such a view becomes less tenable in the light of distributional data from several corpus studies (cf. also Table 1), which show that first-mention definites, far from being exceptions, constitute the vast majority of definite NP occurrences in natural discourse. In one study of written Swedish non-fiction texts (Fraurud 1990), it was found that only 269, or 36%, of 745 definite NPs[4], had an antecedent at all, and in as many as 155 of these cases the referent had been introduced by a definite NP. In sum, 476+155=631, or about 85%, of all definite NPs had a referent introduced by a first-mention definite (Table 2).

Table 2. Distribution of definite NPs in a Swedish written non-fiction corpus according to form of antecedent and form of introductory NP.

Definite NP:	with a referent introduced by an indefinite NP		with a referent introduced by a definite NP		Total	
1. with an antecedent in the form of:					269	36%
a. an indefinite NP	114	15%				
b. a definite NP			155	21%		
2. with no antecedent			476	64%	476	64%
Total	114	15%	631	85%	745	100%

Now, what is interesting in the perspective of cognitive ontology and NP form is a property that most of these first-mention definites have in common, namely that they trigger what can be called a 'relational interpretation', like, for example, when *the windscreen,* in the context of talking about a car, is interpreted as the windscreen *of the car*. Relational NPs are thus interpreted in relation to something else. In the simple case, this 'something else' – which I call *anchor* – is another entity (like in the case of the windscreen [of a car]), but it may also be more abstract elements of the local or global context such as, for example, the time and place co-ordinates to which such entities as the postman [in this district] [today] or the gross national product [of Sweden] [1993] relate. Such NPs are sometimes described as involving relational as opposed to sortal (or predicative) nouns or concepts. Typical illustrations of this lexical distinction are the nouns *mother* [of someone] and *author* [of a book/article] versus *woman* and *writer*. However, whereas a NP occurrence in a specific context has either a relational or a non-relational interpretation, for most nouns relationality is not a categorical lexical feature. A door, for example, is usually the door *of* a house or the like. But, in the (less common) context of a carpentry shop which sells doors, it is possible to conceive of and talk about a door as an independent entity, that is, non-relationally. As regards nouns and concepts in general, then, relationality could be described as part of a lexico-encyclopaedic knowledge associated with the noun or concept – reflecting one important aspect of our structuring of the world, viz. the degree to which the entities denoted by these nouns are typically conceived of in relation to other entities.

The relation between the referent and its anchor(s) can be a one-to-one or a one-to-many relation – something which is reflected in the definiteness of the corresponding NPs; compare *the* windscreen [of the car], but *a* tire [of the car], respectively. On this basis, a distinction is sometimes made between *functional* nouns involving one-to-one relations and (other) relational nouns (e.g., Löbner 1985). In this chapter, I have focused on the functional subclass of relational nouns and concepts, and, accordingly, on definite NPs. The reason for this is, in short, that I believe that there is a close connection between definiteness and relationality. Not only do most definite NP occurrences have a relational interpretation (as shown in my earlier studies), but it also appears to be the case that most NPs with a relational interpretation are definite (and hence – with some interesting exceptions – functional). I will return to this issue in section 4.1.

To sum up, the notions of *relationality* and *individuation*, will be seen as two important dimensions of a cognitive ontology, constituting the basis for the following tentative sketch of three main cognitive classes of entities and their connection to NP form.

3. A simple cognitive ontology

Let us start with the rather self-evident but basic assumption that the way we talk about things is influenced by the way we conceive of and structure the world. The particular point to be made here is that the form of NP we use when we mention an entity is not solely determined by factors such as givenness, but also encodes different perspectives or ways of conceiving of that entity, which are partly determined by a general cognitive ontology of entities in the world.

For instance, if we want to say something about Thorstein Fretheim we may choose to refer to him by the proper name *Thorstein*, or by a definite NP like *the husband of Gine*, or by an indefinite NP like *a Norwegian linguist* – each form representing an alternative way of conceiving of the referent. But the range of *possible* ways of conceiving of an entity, and hence the range of 'available' NP forms, is not equal for all entities in the world. It varies depending on what could be seen as inherent ontological properties of the entities – on how we conceive of them *in general*. Thus, if we (for some reason) would like to mention Thorstein's nose, the choice of referring expression is much more constrained; we would use a genitive NP or the definite NP *the nose* (with the implicit anchor Thorstein). And, finally, if we talk about having a glass of wine with Thorstein, the indefinite NP *a glass of wine* is the only appropriate NP form. It is in this sense we may talk about a cognitive ontology – 'ontology' since categorisation of entities in the world is involved, and 'cognitive' since this categorisation takes place in the mind of the human language creator and user (in contrast to the philosophical 'objective' sense of the term 'ontology').

The difference between Thorstein and his nose illustrates one dimension of our structuring of the world; there are, on the one hand, entities that exist independently of other entities and can be conceived of in their own right, and, on the other hand, entities that only have an existence in association with other entities. A second dimension is illustrated by the glass of wine we drank, which differs both from Thorstein in that it is not conceived of as an individuated

entity but merely as an instance of the class (glass of) wine, and from the nose, in that it is not (permanently or prototypically) associated with another entity.

The entities corresponding to the NPs *Thorstein, the nose* and *a glass of wine* represent, I would like to suggest, three main classes[5] of entities in our cognitive ontology. The classes differ with regard to degree of individuation, relations to other entities, and ways (and degrees) of identification – differences that are reflected in the choice of NP forms, in particular in the way they are referred to initially. I will call these cognitive classes *'Individuals'*, '*Functionals'* and '*Instances'*, typically corresponding to proper nouns, definite NPs and indefinite NPs, respectively. I capitalise the names of these classes in order to show that they are used in a particular sense, to be further defined below. Thus, my Individuals should not be equated with individuals in formal semantics, where the term has a wider application.

3.1. Individuals, Functionals, and Instances

Individuals are those entities that are conceived of in their own right, independently of other entities, and that are directly identifiable, generally by means of a proper name. When interpreting a NP referring to an Individual, the relevant question is *Who?* or *Which one?*. As the word suggests, Individuals are the most individuated entities in our cognitive ontology, something which is reflected in the fact that they are typically named. Hence naming could tentatively be taken as a sufficient (but not necessary) criterion for an entity to be categorised as and Individual. Thus, Individuals would be the only entities to which we can refer using proper nouns. Typical Individuals are of course human beings, who obligatorily are named and whose position at the top of an individuation hierarchy is natural from an anthropocentric perspective.

Functionals are conceived of only in relation to other entities or elements, i.e., their anchors. They are identifiable only indirectly, via these anchors, by means of relational definite descriptions such as *his nose* or *the nose*. The relevant question when interpreting NPs referring to Functionals is *Whose?* or *Of whom/what?*. Typical examples of Functionals are parts of wholes such as the nose [of a person] and the windscreen [of a car]. Other examples are more or less abstract entities like the gross national product [of a country] [during a certain period] and role fillers like the postman [of a certain district] [at a particular day]. Functionals are generally referred to by means of a definite NP the first time they are mentioned; in fact, they are the typical referents of first-

mention definites, for which the choice of a definite NP is not only possible but (almost) obligatory.

Instances, finally, are merely conceived of as instantiations of types. To the extent that it makes sense to talk about identification in the case of Instances, it would be in terms of what may be called category or type identification provided by indefinite 'type descriptions' like *a glass of wine*. In this case, the relevant question for the interpreter is *what* it is rather than *which one* it is. Instances are typically referred to by means of indefinite NPs representing isolated mentions of a referent or concept (i.e., NPs with no co-referent NP in the preceding or following text). For example, the glass of wine referred to above has little significance as an individual referent and will most likely be mentioned only in passing (unless, of course, the wine would become significant by being poisoned, as it might happen in a detective story). In the non-fiction corpus mentioned before, 929 or about three quarters of 1224 indefinite NPs were isolated-mentions – something that suggests a strong connection between indefinites and Instances. This conjecture is further supported by Wijk-Andersson (forthcoming), who notes that, in the editorials and news articles she investigated, indefinite NPs seldom introduce discourse referents and that a "more common function is to refer to some kind of category membership" (ibid., my translation). Data on the low frequency of referent introducing indefinite NPs is also found in Dahl (1988a).

3.2. Identification of referents, relations and types

The crucial difference between Individuals, Functionals and Instances could thus be formulated in terms of the way we identify them when thinking or talking about them. While Individuals are identified directly, 'in their own right', Functionals are identified only indirectly, via some other referents or elements ('anchors' in my terminology), and Instances are identified only as categories, or instantiations of a type. On closer consideration of the latter two classes, in particular Instances, it does, however, become evident that the notion of *identification* needs some clarification. I think the possible uses of this term may be better understood if we consider *what* it is that is said to be identified. The view of NP form as reflecting degrees of givenness of the referent implies that, except for indefinite NPs, the task of the addressee is to identify *the referent*. But, as is occasionally acknowledged, not even definite NPs necessarily involve the identification of a particular referent. I would

suggest that, in terms of ontological classes, referent identification is primarily relevant when talking about those entities that we conceive of as Individuals, and of less or no relevance in the case of Functionals and Instances. In fact, I have the feeling that much of what is said in the literature on discourse reference applies to Individuals, in particular human ones, and to a much lesser degree to other kinds of entities.

The question of what is identified may become more meaningful if we consider what kind of knowledge the addressee needs to possess and activate in order to interpret the NP. The two main kinds of knowledge can be distinguished as: (i) *token*, or referent, knowledge, i.e., previous knowledge of the referent, and (ii) *type* knowledge, i.e., general lexico-encyclopaedic knowledge of the class of entities the referent belongs to. Type knowledge may in turn be *sortal*, for example, knowing that an apple is a fruit etc., or *relational*, that is, knowledge of possible associations between the entity and other entities, or anchors. Let us consider how the ontological classes Individuals, Functionals and Instances relate to these kinds of knowledge.

The only entities for which token knowledge is essential are Individuals; having a (more or less rich) representation of a specific referent is a prerequisite for conceiving of something as an Individual. In the typical case, i.e., for named Individuals, token knowledge is also the only kind of knowledge that matters, since the reference of a name is, by definition, independent of its possible descriptive content (which does not exclude that sociolinguistic knowledge of naming conventions may provide partial type information for at least certain names). The use of a proper name implies that there is a specific referent and can in general – unless the name is accompanied by an indefinite or definite description – be said to instruct the addressee to identify the referent. (As for the introductory uses of bare proper names, see Conclusion.)

When talking about Functionals, it is relational type knowledge that plays the crucial role. To know, for example, what a windscreen is includes both sortal and relational knowledge, cf. the dictionary definition: "the piece of glass or transparent material across the front of a car" (Longman Dictionary of Contemporary English 1978). But it is the relational knowledge that both – from the point of view of the speaker/writer – enforces the use of a definite NP and – from the point of view of the addressee – facilitates the identification of the correct anchor. What is essential to identify is the *relation* between the referent and its anchor(s). Token knowledge, and hence referent identification, is secondary. In fact, token knowledge is something that comes in degrees, and

the extent to which it makes sense to talk about the referent as being identified by the addressee varies. Reference to Functionals comprises everything from cases like *the sum of two and three*, where it makes little sense to talk about a referent at all, to role descriptions like *the postman*, which can be seen as functions that can have different values (i.e., referents) at different occasions and that need not be evaluated at all, to phrases like *the present king of Sweden*, where people may have very different amounts of previous background knowledge about the referent. The continuous nature of token knowledge and referent identification is seldom acknowledged, since the issue of referent identification generally is discussed in terms of Donnellan's (1966) binary distinction between referential and attributive uses of definite descriptions. Partee (1972), however, points out that the typical examples of referential and attributive definites should be seen as "two extremes on a continuum of 'vividness'". (For further discussion, see Fraurud 1990: 427 f).

Finally, in the case of Instances, the only relevant kind of knowledge is sortal type knowledge. What could be said to be identified is neither a referent, nor a relation, but the category, sort or type of thing that is mentioned. In Gundel, Hedberg and Zacharski (1993), 'type identifiability' is described as the lowest status of the givenness hierarchy, constituting a necessary criterion for the use of any NP, and a sufficient criterion for the use of an indefinite NP. But even if it is true in general that reference to Instances involves (sortal) type knowledge, assuming that the addressee lacks previous type knowledge need not rule out the use of an indefinite NP. In fact, a similar relation holds for (sortal and) relational type knowledge and the use of definite NPs in the case of Functionals.

Imagine, for example, a situation where Jim takes his car to the garage and is told: *There is a problem with the carburettor*. Even if he is quite ignorant about cars and has never heard about carburettors, the utterance is perfectly felicitous. He will simply conclude correctly that the mechanic is talking about some part of the car of which there is only one; the definite article signals a one-to-one relation between the referent and an anchor in the context. If the mechanic instead had said *There is a problem with a carburettor*, his use of an indefinite NP would have misled Jim to believe either that there is more than one carburettor in a car or that the mechanic, for some reason, is talking about an object not related to the car. The point here is that whether the mechanic assumes Jim to be familiar with carburettors or not is simply not relevant either

for his decision to utter something about the referent or for his use of a definite rather than an indefinite NP.

We may also consider the use of indefinite and definite NPs in typically introductory contexts like ostensive definitions. Say that Jim is instead standing in front of the open engine hood with the mechanic, who then points to an object within and says *This is the carburettor*. In this case, the less Jim knows about carburettors the more sense the utterance makes; the more information it conveys. In fact, if he had been familiar with carburettors the utterance would be rather pointless. The mechanic might also have said *This is a carburettor*. The use of an indefinite NP is more felicitous in such an ostensive definition than in the utterance above, but it could give Jim the impression that either the carburettor pointed to is but one of several in the car, or that it is something that does not belong to a car and should not be there (perhaps less likely for this particular object, but cf. *This is a screwdriver. Who ever left it in here?*).

What these examples illustrate is that the assumption that the addressee has type knowledge is not a necessary condition for the use of either an indefinite or a definite NP. In some situations, it is instead the use of a certain NP form itself that (together with the context) *conveys* type knowledge; in particular, the use of a definite NP may convey relational knowledge. What is also shown is that for Functionals it is, in most cases, not only possible but obligatory to use a definite NP, which instructs the addressee to identify a relation.

To summarise, I suggest that the essential kinds of knowledge involved in interpreting references to Individuals, Functionals and Instances are token knowledge, relational type knowledge, and sortal type knowledge, respectively. Finally, I would like to emphasise that 'having knowledge' should not be seen as a matter of either-or; rather, for all three kinds of knowledge it is more appropriate to talk about degrees or various amounts of knowledge. In particular, this is important when considering token knowledge.

4. Elaborations

4.1. Indefinite NPs and Functionals

The suggested correspondences between, on one hand, Functionals and definite NPs and, on the other, between Instances and indefinite NPs capture the *typical*

uses of definite and indefinite NPs in terms of frequency in natural discourse. I will now consider an exception to this generalisation that concerns indefinites.

According to my definition of Functionals – as entities conceived of in relation to something else – even certain occurrences of indefinite NPs can be taken to refer to Functionals. In a formal sense, 'functions' imply a one-to-one relation, but from a conceptual point of view it also makes sense to include entities that stand in a one-to-many relation to their anchors in the cognitive class of Functionals. Consider:

(1) (a) I got the book cheap because the cover was torn.
(b) I got the book cheap because a page was torn.

Clearly, both the cover and the page are conceived of in relation to the book, and the corresponding NPs are interpreted in relation to this anchor. The difference is that the definite article suggests a one-to-one relation and the indefinite article a one-to-many relation between the referent and its anchor, i.e., *the* cover of the book and *one of the* pages of the book, respectively. Although similar examples have been mentioned in the literature (Hawkins 1984, Carter 1987, Krifka 1989 and Sanford 1989), this use of indefinite NPs has, in general, received little attention in theories of NP interpretation, the common view being that indefinite NPs simply introduce new discourse referents – in contrast to definite NPs that have to be 'resolved'.

On the one hand, then, it is important to acknowledge that the interpretation of indefinite NPs *may* involve identification of and connection to anchors based on relational knowledge. In other words, not only definite NPs, but also indefinite NPs, may have referents that are conceived of as Functionals. On the other hand, I think there are still reasons to maintain the idea of a close connection between relationality and definiteness. I will briefly present three observations that seem to support this view (for a fuller discussion, see Fraurud 1992: 35 ff.). The first is that the contexts in which indefinite NPs may appropriately be used for reference to Functionals appear to be more constrained than for definites, cf.:

(2) (a) I got the book cheap. I didn't realise why until later, when someone drew my attention to the cover. It was torn.

(b) I got the book cheap. I didn't realise why until later, when someone drew my attention to a page. It was torn.

My intuition tells me that *the cover* sounds slightly more natural in this context than *a page*, which could be interpreted as a page not belonging to the book. In order to avoid this possible dissociation of the page from the book, *a page* might be replaced by a more explicitly relational phrase like *one of the pages* or *a page of the book*.

The second observation concerns the well-known counter-cases to the uniqueness requirement on definite NPs. Consider the Swedish example (3), where the use of definite NPs does not imply that John has only one hand and one pocket.

(3) John stoppade handen i fickan. (John put his hand in his pocket [lit.: the hand in the pocket])

It is interesting to note the effect of replacing these definite NPs by indefinite ones (with non-stressed articles), cf.:

(4) John stoppade en hand i en ficka. (John put a hand in a pocket.)

In this case, my intuition leads me to reflect on the possibility of there being hands and pockets other than John's involved. The use of an indefinite instead of a definite NP dissociates the hand and pocket from their possessor John. It may be noted that the exact constraints on the use of definites that was illustrated in example (3) are not very well understood, and that analyses attempting to rescue the uniqueness criterion have been proposed. For the present discussion it will suffice to note that there are cases in which the fact that the referent stands in a one-to-many relation to its anchor does not allow for the use of an indefinite NP if the relational interpretation is to be preserved. In these cases, the definiteness of the NP can be seen as a signal of relationality rather than of uniqueness. A similar effect can be seen in (5b), as compared to (5a).

(5) (a) The door was locked, and a key hung on a nail beside it.
(b) The door was locked, and the key hung on a nail beside it.

Assuming that there has been no previous mention of a key, *a key* in (5a) may or may not refer to the key of the door, while *the key* in (5b) necessarily does. Thus (5a), but not (5b) might be followed by a sentence like: *{And that was / But that was not} the key to the door*.

The third observation that suggests that there is a close relationship between relationality and definiteness concerns frequency in natural discourse.

While relational definite NPs are very common, it appears that relatively few occurrences of indefinite NPs have a relational interpretation like *a page* in (1) above[6].

4.2 Inherent properties and temporary perspectives

So far in my characterisation of Individuals, Functionals and Instances as three main ways of conceiving of and talking about things in the world, I have focused on cases in which the classification is based on what can be seen as more or less constant inherent properties. For example, some entities have names and thus are inherently Individuals; and some entities are inherently Functionals in that they are unique parts of a whole and almost obligatorily referred to by definite NPs. However, as illustrated above by the possibility of referring to Thorstein Fretheim by means of either the name or the relational description *the husband of Gine* or the 'type description' *a Norwegian linguist*, there are cases where one and the same entity can be conceived of and talked about alternatively as an Individual, a Functional, or an Instance by different people, in different discourses, and even at different points in the same discourse. In particular, this applies to persons.

For example, some people are not Individuals to me, though (hopefully!) to someone else, and vice versa. If I complain about the postman being late today, I am not concerned about the identity of this person and the fact that it may vary from day to day. We may say that I conceive of (and hence talk about) the postman as a Functional entity (while, for example, the wife of the actual referent certainly conceives of him as an Individual). Furthermore, the perspective taken on a particular referent may vary within one and the same discourse. One case is the occasional use of a relational description for referring to a named main actor of a discourse, often motivated by a temporary shift of point-of-view to another participant. In the following example from an article about Franz Schubert, the relational NP *the son* occurs in an embedded that-clause, which expresses the view of Schubert's father (something that, incidentally, is also shown by the quoted pejorative):

(6) … och 1814 blev Schubert hjälplärare i faderns skola. Det var nog skräcken för många års militärtjänst, som kom honom att gå med på faderns önskan. Denne hoppades å sin sida, att skolrutinen skulle få sonen att lämna "konstnärsgrillerna".

> (… and in 1814 Schubert became an assistant teacher in his [lit.: the] father's school. It was probably the fear of many years' military service that made him accept his [lit.: the] father's will. He [lit.: that-MASC.], on his part, hoped that the school routine would make his [lit.: the] son abandon the "artist whims".)

Contrary to what is implied by the term 'ontology' in its more traditional sense, then, my notion of a cognitive ontology is intended to capture also idiosyncratic as well as *more or less* temporary perspectives or ways of conceiving of entities. Further analysis and discussion of this issue is of course required in order to get a clear picture of the relationship between inherent properties and temporary perspectives. But for the moment, I believe that it is worth examining how the distinction between Individuals, Functionals and Instances, as defined above, could be applied in an analysis of the way various NP forms may encode different perspectives or ways of conceiving of entities – at various levels of permanence.

4.3. Degrees of individuation

Another point, which is especially important when looking at things in a more dynamic perspective, concerns the distinction between Individuals and other entities. Whether a certain entity is conceived of as an Individual is not a categorical question, but rather a matter of *degree of individuation* that is determined by the interaction of a number of factors. Some of these factors have to do with certain properties of the entities and the expressions used for referring to them. In Timberlake (1977), individuation is related to the distinctions: proper–common (nouns), human–animate–inanimate, concrete–abstract, singular–plural, and definite–indefinite, where the first notion in each pair or triple is said to stand for a higher degree of individuation. At this point I must confine myself to emphasising the need for further study of the role of such general factors in individuation and, consequently, in discourse reference.

Another important factor determining the degree to which we conceive of something as an individuated entity is the amount of knowledge we have about it. In the minimal case, our knowledge of an entity is confined to what is conveyed by the definite or indefinite NP referring to it. This comes close to what Dahl (1988b) calls 'unstable individual concepts' "characterized by there being some simple property without which the concept would no longer identify a specific individual". (Recall also what was said above about degrees

of token knowledge and Donnellan's attributive definites.) The more we know about an entity, or – metaphorically speaking – the more 'weight' it has in our memory, the more individuated it will be. Consequently, as our knowledge of a certain entity increases, it gradually becomes more and more individuated in our minds. This evidently takes place in discourse, as more and more is said about a referent. Something that is initially described and conceived of as an Instance or a Functional may thus, in the course of the developing discourse, gradually 'grow into' an Individual. For any entity that is mentioned repeatedly, the need arises for a way of conveniently and non-ambiguously referring to it. It is therefore interesting to study how the individuation process may be reflected in subsequent references. Consider, for example, the way the speakers in a conversation may agree upon a convenient and often abbreviated description for a recurrent referent through 'negotiation'. A similar process can also be seen in written discourse, as for example, when a character first mentioned as *a man with fiery red hair* subsequently is referred to as *the red-haired man*, and in the following is referred to by the abbreviated and name-like form *red-hair*. This process is paralleled by the historical development of definite descriptions into proper names. Further examples of this gradual 'proprification' of definite descriptions, in discourse as well as historically, are discussed by Ariel (1990: 38), (though not in connection with individuation).

In this connection, I also like to mention some name-like uses of definite descriptions which are not necessarily preceded by such an individuation process. Especially in fiction, the narrator may, from the very beginning of a story, fix the reference of a definite description or even a personal pronoun by 'naming' a (main) character *the man* or *he*, and use these expressions very much like proper names in the rest of the story. Another case in question are definite descriptions like *the moon* and *the sun*, referring to entities that are 'unique' in the sense of being the only ones of their kind – at least as we think of them in everyday life. Such definite descriptions function as proper names in that they directly identify the referents. It is no coincidence that phrases like *the moon* are among the more controversial cases when trying to delimit proper names from common nouns or definite descriptions. Nouns like *moon* also receive a special treatment in more practical accounts of the lexicon, as for example in Longman Dictionary of Contemporary English (1978), where they are marked by the feature [R], indicating: "nouns that are names (*God*, the *Earth*) or namelike (the *sack*). They are used either always with *the* or never with *the*." (ibid.: xxx).

In conclusion, the suggested correlation between Individuals and proper names may, in less categorical cases, manifest itself as a correlation between degrees of individuation of entities and degrees of 'namelikeness' or 'proprification' of the NPs used for referring to them. A recurrent entity will often be named, since, to cite Garrod and Sanford (1988: 522), "a proper name is an ideal means of introducing a character to whom one will want to keep referring in the future – it effectively fixes the reference".

4.4. Proper names and sub-classes of Individuals

At the level of a more general and permanent ontological classification (cf. section 4.2), categories of entities differ with respect to whether all, some or no members of the category have proper names. For example, we name persons and novels, and sometimes animals and ships, but not things like pencils, glasses of wine and peoples' noses. Naming can be seen as a way of establishing a means for directly identifying a particular entity. Hence noses are examples of entities that there is no sense in naming since they are easily distinguishable by reference to their anchors. Things like pencils and glasses of wine differ from noses in that they may be conceived of independently, also they differ from 'unique' entities like the moon and sun, discussed above, in that there are many of their kind. In these two respects, pencils and people are alike. The crucial difference is that it matters much more to us to distinguish people than pencils. While a need to identify a particular pencil may arise occasionally (and hence can be met by the use of a context-bound demonstrative or a definite description like *the pencil I lent you*), there is a recurrent need for directly identifying persons.

In fact, the entities that we give proper names all belong to a fairly limited set of categories. The most important of these are included in the following list (partly based on Allerton 1987): persons, animals, some classes of artefacts, such as certain vehicles (trains) and vessels (boats, ships), works of art (books, paintings, sculptures), periodicals (newspapers, magazines), social organisations (institutions, political parties, companies), and geographical locations. While persons, works of art, periodicals, organisations and some varieties of locations obligatorily have names, the naming of animals and artefacts such as vehicles and vessels is optional. For example, among animals, we only name those which are important to us and that are seen as individuals in the colloquial sense of the word, such as pets and race horses.

This has to do with another factor involved in naming; to give something a proper name is also, in a sense, to give it a higher status. The status raising effect of naming is particularly evident in those cases where it is optional. Naming animals, for example, makes them in a sense more 'human', as illustrated by the following piece of anecdotal evidence. At the small zoo in the Stockholm open air museum Skansen, the new-born bear cubs are given names after an annual competition in the daily newspapers. A few years ago there was a minor scandal when it was discovered that some of the bear cubs which had recently been named had been killed and even eaten by the zoo employees. One of the reasons that people were especially upset was formulated in the following way: "How can you give someone a name and then eat him?"[7]. A parallel to this status raising effect of naming in general is seen in discourse, where the use of a proper name rather than a description may raise what may be called the 'discourse status' of the referent. It has been shown that introducing (human) characters by means of a proper name increases the probability of subsequent reference and the accessibility for pronominal anaphora (Sanford, Moar & Garrod 1988, Dahl 1988a, Hellman 1992 and personal communication). In short we may say that naming is motivated by a need for a means of directly identifying an entity that is recurrent and has a certain status.

Let us now turn back to the various categories of proper names, which can be seen as representing different sub-classes of Individuals. These differ in important ways, particularly in the way they are subsequently referred to in discourse. Although I can not – due to space considerations – present the Swedish data on which some of the generalisations are based, I want to mention some observations as an illustration of how Individuals, and possibly the other two classes of the simple cognitive ontology, can be further sub-classified on the basis of an examination of subsequent references.

As regards what was earlier referred to as pronominalization propensity, there is a clear difference between persons and other named entities, in particular organisations and certain locations. Subsequent references to persons introduced by a proper name are most frequently pronouns, comparatively less often names, and sometimes definite descriptions such as titles and the like. In contrast, subsequent references to organisations and locations are more often either repetitions of the name or definite NPs containing a basic-level noun corresponding to a default description of the referent, e.g., *NATO…the organisation, Ollo-Food…the company, Japan…the country,* and *Tokyo…the city* – even when the antecedent is close and in contexts where a person would

have been referred to by means of a pronoun. In fact, a basic-level definite description often appears to be the most appropriate form of anaphor when the immediate antecedent is a name of a location or organisation. At this point we may note that, for persons, there are instead constraints on the use of basic-level descriptions for subsequent reference. Thus, once a person has been introduced by name, we do not normally use the nouns *person*, *human being*, or – unless a pejorative effect is intended – *man* or *woman*, cf.:

(9) Ollo-Food has been very successful in the last five years.
The company has now over 50.000 employees.

(10) John Smith has been very successful in the last five years.
The {man/person/human being} has now over 500 people under him.

For animals this use of basic-level descriptions is acceptable, and for works of art and other inanimate entities it is common, cf. *Fido…the dog, Le Baiser…the sculpture, Gaudy Night…the book/novel*. It also seems to be the case that these sub-classes of Individuals, in terms of pronominalization, fall between persons and organisations/locations. On the basis of these observations regarding subsequent references, we may tentatively discriminate three main sub-classes of Individuals, represented by persons, artefacts and organisations. Incidentally, this division also appears to be reflected in the principles for gender assignment to proper names in Swedish (Fraurud, forthcoming).

5. Conclusion

In this chapter I have suggested that the categorisation of entities according to a cognitive ontology based on the dimensions of individuation and relationality constitutes one important independent factor governing the choice of NP form. I will conclude by returning to the question of the relationship between this cognitive ontology and givenness.

Let us first consider whether and how the ontological properties or ways of conceiving of entities captured by my notions of Individuals, Functionals and Instances could be integrated into a givenness account of NP form. One possibility might be to say that such ontological properties should be added to the list of factors that determine the givenness of the referent. If we take this approach, it still is necessary to investigate more precisely how ontological factors influence givenness. What I find problematic with this approach is that

the notion of givenness runs the risk of being equated with the outcome of an interaction between whatever factors determine NP form. 'Givenness', thus, would become a rather vacuous term, deprived of its original sense. I think it is clear that a more strict notion of givenness – capturing the aspects of attentional state and previous knowledge (cf. Introduction) – is indispensable to any comprehensive account of NP form. My point is that both givenness and the factors captured by my cognitive ontology should be analysed as separate and independent parameters involved in the choice of NP form. Moreover, I would like to suggest that, in a certain sense, givenness is secondary to the cognitive ontology. By 'secondary' I do not mean that givenness would be a factor of less relative importance, but that considerations regarding givenness are logically posterior to the assignment of ontological class in the choice of NP form. The methodological implication of this assumed relationship between the cognitive ontology and givenness is that we should distinguish, and separately examine, the co-reference chains of different types of entities. Let me try to illustrate what I mean by giving some examples of when and how I think givenness may come into the picture for different classes of entities.

As regards the choice between proper names and other forms of NPs, we may first note the obvious fact that the choice between a proper name and other forms of NPs only comes into question for named entities, i.e., typical Individuals. Hence, average frequencies of, for example, first- and subsequent-mentions or recency of mention for proper names as compared to other forms of NPs, tell us little about the factors behind the choice between names and other forms of NPs in first- and subsequent-mentions, since for most entities mentioned there simply is no such choice. In order to get at these factors, we need to discriminate, and separately examine, those NP occurrences, or rather the entire co-reference chains, whose referents are Individuals[8].

Whether or not an Individual is introduced by a proper name is determined by a number of factors (which may differ for different sub-classes of Individuals), including what other means are available for reference, the status that the speaker/writer wants to assign to the referent, and the givenness of the referent and its name. However, I think that, in this case, the main role of givenness is to determine the choice between 'bare' proper names and names accompanied by a definite or indefinite description (e.g., *my sister Eva* or *Eva, a friend of mine*) (cf. Ariel 1990: 39 ff.). As regards subsequent mentions of Individuals, givenness clearly influences the choice between pronouns and fuller forms. But it is important to acknowledge that it does not have the same

effect for all sub-classes of Individuals (cf. section 4.4) and that it interacts with other factors, which – again – differ for different sub-classes. (For example, point-of-view is probably only a relevant factor in references to persons.)

In the case of entities conceived of as Functionals, the choice of a definite NP is determined by relationality rather than the givenness of the referent. As illustrated by the carburettor examples discussed above, even if the addressee is not assumed to have previous knowledge of either the referent, the relation, or the type, the use of a definite NP is, in most cases, not only possible but obligatory. For Functionals, I would like to suggest that it may be more interesting to study the givenness not of the referent but of the *anchors*, both generally and as one factor influencing the choice between complex definite NPs like *Thorstein's nose* or *the windscreen of the car*, whose anchors are provided by the modifiers, and simple definite NPs like *the nose* and *the windscreen*, whose anchors are provided by the linguistic or situational context. This issue falls outside the scope of this chapter, but let me point out that it does not seem possible to account for 'anchor givenness' in terms of focus or any other notions linked to attentional state, at least as they are currently defined (for a discussion, see Fraurud 1990).

As regards the use of definite NPs in subsequent-mentions, it is again important to distinguish, and separately examine, occurrences whose referents are Functionals, introduced by definite NPs, from subsequent mentions of Instances (or 'embryos' of Individuals), introduced by indefinite NPs. It is only in the latter case that the definiteness of the subsequent NP is due to previous mention. In the former case, previous mention may instead be reflected in abbreviations of the introductory definite NP, or have no effect at all. For many cases of subsequent mentions of Functionals it is simply not relevant whether or not the referent has been mentioned (cf. Fraurud 1990).

In this chapter, I have tried to show how the ontological class we ascribe to an entity determines or influences: (i) the range of NP forms that are 'available', i.e., from which we can choose, (ii) the choice of NP form for first-mentions, (iii) the preferences for certain NP forms over other in subsequent-mentions, and sometimes (iv) what other factors may influence the choice of NP form. I believe that the question of how a speaker or writer makes the choice of NP form may be more adequately answered if we – prior to considering factors such as givenness – differentiate references according to a cognitive ontology as outlined above. As briefly illustrated by the discussion of different sub-classes of Individuals in section 4.4, however, it is necessary to

develop a more elaborate and detailed cognitive ontology, which, for example, also captures all relevant sub-classifications of entities. This task calls for further study along the lines of thought presented in this chapter.

Notes

[1]. I would like to thank Östen Dahl for valuable comments on earlier drafts of this chapter.
[2]. It is, however, difficult to give a precise definition of 'focus' and other notions that have to do with attentional state. Definitions tend to either become circular or be left to intuitive judgements. In particular, this is an important theoretical and methodological problem when designing or evaluating empirical studies aimed at finding correlations between NP form and givenness.
[3]. One of the few exceptions to this tendency is found in Brown (1983).
[4]. 'Definite NP' is here used in the restricted sense of NPs with a definite head noun (enclitic article), thus excluding NPs with a demonstrative or genitive/possessive determiner.
[5]. My 'cognitive classes' should not be confused with Gundel, Hedberg & Zacharski's (1993) 'cognitive statuses', which denote degrees of givenness as defined by the authors.
[6]. In addition, it may be noted that it may be questioned whether NPs like *one of the tires* and relational occurrences of *a tire* are truly semantically indefinite. They cannot, for example, occur as the subject of there-insertion clauses: **There is one of the tires in the garage*.
[7]. I am grateful to Östen Dahl for pointing out this example to me.
[8]. For the purpose of corpus studies, we may choose to define Individuals operationally either (i) as those referents that belong to one of the sub-classes of entities that are obligatory or potentially named or (ii) as those that are actually named in the present discourse.

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