

# Two Ways of “Referring to Generalities” in German

Draft, November 30, 2010

## 1 Introduction

### 1.1 The Problem

In languages like English or French, the description of nominal determination for so-called generic judgements is quite simple, in the sense that there is only one possibility for plural count and mass nouns. In English, there is at least a strong tendency to avoid the definite article in such sentences (cf. (1)),<sup>1</sup> whereas in French, the presence of an article is obligatory (cf. (2)).

- (1) a. (\*The) whales are mammals.  
b. (\*The) dinosaurs are extinct.  
c. (\*The) beauty has no aim.  
d. (\*The) water boils at 100°C.
- (2) a. \*(Les) baleines sont des mammifères.  
the whales are DES mammals.  
b. \*(Les) dinosaures sont éteints.  
the dinosaurs are extinct.  
c. \*(La) beauté n’ a pas de but.  
the beauty NEG has NEG of aim.  
d. \*(L’) eau bout à 100°C.  
the water boils at 100°C.

There are, however, languages such as German, where we observe a situation that looks very much like free variation: German mass nouns and count plurals can receive a generic interpretation either as bare nouns or with a definite determiner (cf., e.g., Zelinsky-Wibbelt, 1992).

- (3) a. (Die) Wale sind Säugetiere.  
(The) whales are mammals.  
b. (Die) Dinosaurier sind ausgestorben.  
(The) dinosaurs are extinct.

---

<sup>1</sup>In English, the issue of bare vs. definite noun phrases does not seem to be an issue of grammaticality vs. agrammaticality either, as pointed out by Bolinger (1975), and as we will see below in section 3.1, p. 13.

- c. (Die) Schönheit ist zweckfrei.  
(The) beauty is aimless.
- d. (Das) Wasser kocht bei 100°C.  
(The) water cooks at 100°C.

Out of context, it is hard to tell what difference there is (if there is any) between the version with definite determiners and those with bare plurals. In contemporary German, in a large number of contexts, it simply does not seem to matter which version one uses.

A point which makes the issue particularly intriguing is that there does not seem to be a general way of assigning reference to a generality to one of the two forms. As we will see, there are contexts in which either one of the two fails to be fully general: the bare form is in some configurations interpreted as an existential (indefinite); however, in other configurations, it turns out to be the more general generality than the definite determined determiner phrase (DP) could denote.

The article restricts its attention to direct reference to nominal ‘generalities’ (often described as “kinds”). Therefore, I will only study certain properties of nouns or noun phrases or DPs, and I will not get involved with sentences that contain phrastic generic quantifiers. While in many cases, this may not matter, sticking to DP-denotations permits to neglect a certain number of thorny issues.

As the not-too-distracted reader will have noticed by now, the title of the article mentions “generalities”, where many semanticists would rather have put the shorter, and much more precise “kind”. This is likely to be seen as a step backward, before the results of Carlson (1977).

Similarly, the fact of recurring to the notion of “reference to a generality” entails that I will not limit myself to so-called “generic” judgments, as defined and described in Krifka et al. (1995) — although the vast majority of examples still qualifies as generic judgements. This may likewise be interpreted as an unfortunate regression.

I think it is important to make explicit why I think that broadening the domain of investigation is necessary, or, at least, helpful. Let me address therefore first in section 1.2 the issue of “generality” vs. “kind”, and then, in section 1.3, the issue of “reference to a generality” vs. “generic judgement”.

## 1.2 Kinds vs. Generalities

The reason I prefer to stick with the much less precise “generality”, and refer to “kind” only in some quite limited cases, is the following: I am not sure that “kind” is always the precise notion that we are looking for.

One instance of this problem can be shown in German with examples like the following:

- (4) a. ?\*Der Dinosaurier war ein Reptil.  
The dinosaur was a reptile.
- b. (Die) Dinosaurier waren Reptilien.  
The dinosaurs were reptiles.
- (5) a. Die Katze ist ein Säugetier.  
The cat is a mammal.
- b. (Die) Katzen sind Säugetiere.  
The cats are mammals.

There is a marked contrast in acceptability between (4a) and (4b), whereas (5ab) seem to be equally

good. The descriptive generalization seems to be the following: In German, with definite singular DPs, it is rather difficult to obtain reference to a generality with non base-level predicates other than in contrastive cases (cf. Laca (1992)). Now, *dinosaur* is not a base-level predicate, whereas *cat* is, and (4a) has as most salient reading a token-reading. As Bernard Nickel (p.c.) pointed out, with a plural, one gets the impression of a higher level of taxonomy. This intuition would be consistent with the idea that (4b) is not about one and unique generality, but about a collection (or set or sum) of (base-level) generalities. In any case, there is no guarantee that it denotes any single one entity.

One way of avoiding such a difficulty is supposing with Moltmann (to appear) that there are at least two “sorts” of kinds or of kind reference available in natural language: *kind terms* (corresponding to what a bare plural or a bare mass noun denotes),<sup>2</sup> which refer plurally to the various instances of a kind, and *kind referring terms* (corresponding to what a singular definite description denotes), which refer to the kind as a single entity.

Those among the readers that are confident that “kinds” do exist, or that Moltmann’s distinction solves all issues, may often substitute the word “generality” by “kind” (or “kind term”). However, it should be pointed out here that there is considerable doubt among scholars that German bare plurals are kind referring in a direct way (cf. Brugger (1993); Krifka (2004)). We will see some of the arguments below. I will try to minimize ontological commitment as to what is referred to by the definitely determined and bare mass singulars and count plurals.

Therefore, I will use the following terminological precaution: I will refer to any non-token entity as a “generality”; whereas I will use “kind” for a subgroup of that state of affairs, namely the denotation of noun-phrases that appear in argument-slots which do not allow for individual entities, like in (6).

- (6) a. Dinosaurs are extinct.  
 b. \*John is extinct.

The issue of “generality” vs. “kind” is therefore — as I see it — essentially one of ontological scepticism, although it does have some repercussions on the second issue at hand as well, namely the distinction between “references to generalities” vs. generic judgements.

### 1.3 Reference to Generalities vs. Generic Judgements

This distinction is the more important one of the two. Generic judgements are essentially circumscribed to subject positions (and to a few direct object positions). A reference to a generality, on the contrary, may appear in almost any kind of syntactic environment that allows for a noun or determiner phrase.<sup>3</sup> I do not deny that generic judgements are special; I merely try to draw attention to the fact that they are a special case of a reference to a generality. Now, why should one want to investigate the larger issue, rather than the more specific one, to which this volume is dedicated more specifically?

<sup>2</sup>One consequence of this type of definition of “kind term” is they denote rather *pluralities* (maybe *modalized pluralities*, cf. Moltmann (to appear)) than global instances of a type *k* (for “kind”). One may wonder if one really wants to speak of “kinds” in such circumstances.

<sup>3</sup>The article by Brugger (1993), for instance, contains interesting data about references to generalities in prepositional phrases (PPs), which cannot really be discussed if we restrict our attention to genericity in the narrow sense. While lack of space prohibits a discussion of this data, I do not think that — in contemporary German — reference to generalities in PPs obeys fundamentally different constraints than those we observe in subject or object positions.

One reason is the following: under the assumptions of grammaticalisation theory (cf., e.g., Lehmann (2002)), the contemporary German state with respect to generic judgments is a plausible transition state between an English- and a French-type language.<sup>4</sup> A reasonable question in that context is: how and why did a change in the presence or absence of a definite article in generic judgments come about, and what domain might have induced such a change? My tentative answer is that — since generic judgments are a special case of references to a generality — it may very well pay to look at the more general case of references to a generality in order to get insights about generic judgments: references to generalities make a plausible candidate for importing definite DPs into generic judgments (cf. the topicality issue, as discussed in section 2.1). While a diachronic analysis is outside the scope of this paper, a synchronic analysis is a valuable prerequisite to such an enterprise: understanding a possible synchronic state of transition may be essential in understanding the diachronic processes which led into and out of this transitional state.

On a purely synchronic perspective, the position of considering “reference to a generality” rather than “genericity” also allows to assume that the two versions we have observed are not completely identical in meaning, but to maintain nevertheless the idea that these two forms have an important meaning component in common — namely the ability of referring to a generality.

Having thus laid out the motivations that led me to (possibly controversial) choices in the general orientation of the paper, let me give a brief outline of what is to come: first, in section 2, we will consider the role of information structure in a large sense with respect to the acceptability of either construction in German. Then, in section 3, we will investigate the role of the definite determiner in reference to a generality, and argue that definite determiners come with a contextual restriction attached to them, whereas the bare alternative lacks such a restriction. This idea will be formalized in the situation-theoretic framework of Wespel (2008).

## 2 The Role of Information Structure

### 2.1 Topicality

It has been pointed out (among others, by Laca (1992)), that there is a link between topicality and the use of the definite article in reference to generalities in German. Namely, it has been claimed that the definite article is used as a way of ensuring that a given constituent receives topic-status, even though it occurs in a syntactic position where topicality seems a priori compromised. Laca

---

<sup>4</sup>Whether French generic judgments actually looked at some moment in history like the ones in contemporary German, I do not know. However, Latin had no articles, and as we have seen, nowadays, the presence of an article is obligatory in generic judgments in French. Certainly there was some kind of a transitional state. For German proper, a similar argument might be made: Old High German had not yet developed a definite article in a modern sense (cf. Braune (1921)). So, at some time, the definite article must have “invaded” the area of generic judgments. In Hildebrand & Wunderlich (1984) (entry “*der*”), one finds the following example from H. Sachs (1494–1596):

- (7) und verbot ihn (den säufern) den wein bei groszer straf, auf dasz sie schier fürbasz nur  
and forbade them (the drinkers) the wine at great punishment, for that they sheer in the future only  
solten trinken bier.  
should drink beer.

They comment as follows (my translation): “wine *has an article*, because it refers to something definite, the daily drink; beer *lacks it*, because it is taken as an *appellativum* [name of a kind].” Clearly, (7) is no generic judgement, but it is a reference to a generality.

illustrates such a situation with the examples in (8) and (9):<sup>5</sup>

- (8) a. An dieser Schule werden die Kinder der Oberschicht ausgebildet.  
In this school become the children of the upper class educated.  
'As for upper-class children, they are educated in this school.'
- b. An dieser Schule werden Kinder der Oberschicht ausgebildet.  
In this school become children of the upper class educated.  
'In this school, (some) upper-class children are educated.'
- (9) a. In diesem Zoo laufen die Affen frei herum.  
In this zoo run the monkeys free around.  
'In this zoo, monkeys can move freely.'
- b. In diesem Zoo laufen Affen frei herum.  
In this zoo run monkeys free around.  
'In this zoo, there are (some) monkeys running around freely.'

According to Laca, only in (8a) and (9a), the topic status of the subject noun phrase *die Kinder der Oberschicht* or *die Affen* is guaranteed, namely by the presence of the definite determiner.<sup>6</sup> For (8b) and (9b), without the definite article, topicality of the subject cannot be guaranteed, such that these subjects are interpreted existentially or, as Moltmann (to appear) puts it, extensionally (there exist some upper-class children/monkeys such that ...). Notice that in (8)–(9), the preverbal position — generally associated in German with the topic — is not occupied by the subject, but by a locative modifier. Therefore, one may argue that for syntactic reasons, the subject cannot be a topic here, and that therefore, we obtain the existential interpretation.

Interestingly, I find (9b) quite easy to interpret as a generic, whereas (8b) is quite difficult to interpret as a judgement about (a contextually restricted group of) upper-class children in general.<sup>7</sup> Especially, if *Affen* is a contrastive topic, (9b) is perfectly normal as judgement concerning every monkey in that zoo.<sup>8</sup> However, a contrastive topic being a topic, the general idea of topicality being related to the distribution of the article is very probably a correct assessment, and should be retained.

There are a certain number of other elements of the respective distributions of bare vs. determined noun phrases which have been described in the literature and may be related in some way to issues of information structure.

## 2.2 Existential Presuppositions

Laca makes a second claim about the distribution of the definite article in generics, which can be easily connected to the topicality of an element, namely that the definite article comes with a presupposition of existence, whereas the bare version lacks such a presupposition. Laca shows that,

---

<sup>5</sup>Examples taken from Laca (1992: 270), my glosses and translations. The English translations try to stress the difference between (a) and (b), and do not cover the whole range of possible meanings of the German sentences.

<sup>6</sup>By which exact mechanism a definite determiner induces topicality is not important here.

<sup>7</sup>I do not have any clear idea why there is such a difference.

<sup>8</sup>This reading is especially salient if there is a 'hat' contour with a rise on *Affen* and a lowering on *frei herum*. In that case, the sentence is false in a situation where two monkeys escaped from their cages, but one is still imprisoned. On the existential interpretation — where there is a fall in height on *Affen*, such a situation renders the sentence true.

in (10a), the existence of aids-infected children may be denied, whereas the same manipulation leads to a contradiction in (10b).

- (10) Manche Leute fordern, dass ...  
Some people demand, that ...
- a. AIDS-infizierte Kinder — falls es solche gibt — von den öffentlichen Schulen  
AIDS-infected children — if it such gives — of the public schools  
ausgeschlossen werden.  
excluded become.  
'Some people demand that aids-infected children — should there be any — be  
excluded from public schools.'
- b. die AIDS-infizierten Kinder — #falls es solche gibt — von den öffentlichen  
the AIDS-infected children — if it such gives — of the public  
Schulen ausgeschlossen werden.  
schools excluded become.

The effect of a presupposition is very robust here. However, the presupposition of existence does not seem to stem only from the presence or absence of a definite determiner. There are contexts in which a definitely determined noun phrase lacks such a presupposition, and others, where even the bare version comes with an existential presupposition. These contexts seem once again to be related with given information structure patterns.

We will illustrate this with the two versions of (3b), which are repeated below:

- (11) a. Dinosaurier sind ausgestorben.  
dinosaurs are extinct.  
b. Die Dinosaurier sind ausgestorben.  
The dinosaurs are extinct.

For our demonstration, it is important to notice that — entirely orthogonal to the bare vs. determined issue — the examples in (11) have (at least) two different grammatical analyzes: both might be interpreted either as copula plus adjective (cf. the English (12a)), or as a present perfect (cf. (12b)).

- (12) a. Dinosaurs are extinct. [copula construction]  
b. Dinosaurs (have) died out. [present perfect]

I will start to investigate the copula construction. Intuitively, (11) seem to provide here a direct predication on a kind-term, and should receive a (simplified) semantic representation according to (13a), or (13b):

- (13) a.  $\text{extinct}(\text{DINOSAURIA})$   
b.  $\exists s[\text{be\_extinct}(s) \wedge \text{theme}(s, \text{DINOSAURIA}) \wedge s \circ n]$  (where  $n$  = moment of utterance, and ' $x \circ y$ ' denotes a relation of overlap between the intervals  $x$  and  $y$ )

(13b) provides truth-conditions in a neo-davidsonian framework (cf. Parsons, 1990). Now, under what circumstances does such an interpretation arise? A possible context in which this interpretation arises is if *dinosaurs* is the topic. For instance, this would be the case if (11) were the answer to a question like *What about dinosaurs?*

Now, under the copula construal, there is no presupposition of existence, be it with or without the definite article; both (14ab) are perfectly acceptable:

- (14) a. Die Dinosaurier, falls es die jemals gegeben hat, sind (längst) ausgestorben.  
The dinosaurs, if it them ever given has, are (long) extinct.  
'Dinosaurs, if they ever existed, are long extinct.'
- b. Dinosaurier, falls es die jemals gegeben hat, sind (längst) ausgestorben.  
Dinosaurs, if it them ever given has, are (long) extinct.

The *if*-clause in (14) can be seen here as a concession in the sense of Merin (2003).<sup>9</sup> Yet, in any case, should the definite article really be endowed with a presupposition of existence, (14a) should be ungrammatical, which it is not.

Let us now move to the present perfect construal. Under this grammatical analysis, both versions — with or without the definite determiner — of the sentence are infelicitous, because both come with an existential presupposition:

- (15) a. \*Die Dinosaurier, falls es die jemals gegeben hat, sind ausgestorben, weil  
The dinosaurs, if it them ever given has, have died out, because  
ihre Futterquellen versiegt sind.  
their food sources run dry are.
- b. \*Dinosaurier, falls es die jemals gegeben hat, sind ausgestorben, weil ihre  
Dinosaurs, if it them ever given has, have died out, because their  
Futterquellen versiegt sind.  
food sources run dry are.

How can this state of affairs be explained? A crucial clue comes from the conditions which trigger an interpretation of (11) as a present perfect. Such a reading may arise if we present the sentence as an answer to the question *What happened?* This configuration is generally taken to instantiate athetic judgment, with all-focus. Yet, this is not entirely true: according to the sense Krifka (2007) gives to the notion of 'topic', the event variable is the topic in such sentences: there is a presupposition attached to the verb *happen*, restricting felicitous answers to eventualities containing an event variable. Stative sentences — for instance, the stative interpretation of (3b) — do not qualify as a felicitous answer to such a question.

Let us now attempt to explain the existential presupposition attached to both sentences. In any case, if the existence of an event is presupposed, we are looking for an event description. This is provided by the *extinction*-predicate, coming from the verb. However, one cannot assert the existence of an extinction-event, and deny the existence of a theme. Therefore, we obtain in this context the presupposition of existence of (*the*) *dinosaurs* via their involvement in the event.

Aside from the presupposition of existence, there is another interesting point to be made about the dino-sentences: they seem to be a good argument against ascribing direct kind-reference to

---

<sup>9</sup>In Merin's view, a speaker always argues for a conclusion, whereas the hearer argues for the opposite conclusion. The speaker's utterances always support some conclusion (which corresponds therefore more or less to a discourse topic). This might be here "Do not be afraid". Of course, the absence of dinosaurs is an argument for not being afraid. The speaker might grant or concede the previous existence of dinosaurs to the hearer, which does not weaken his argument.

bare plurals in German.<sup>10</sup> Let us consider (16), containing a *because*-clause in order to force the present perfect construal:

- (16) a. Die Dinosaurier sind ausgestorben [weil ihre Futterquellen versiegt sind].  
The dinosaurs are died out [because their food sources run dry are].  
b. Dinosaurier sind ausgestorben [weil ihre Futterquellen versiegt sind].  
Dinosaurs are died out [because their food sources run dry are].

(16a) and (16b) have radically different truth conditions. (16a) retains a global generality reading, as illustrated in (17a). However, (16b) has what one might call an ‘existential taxonomic reading’: there were some subkinds of dinosaurs such that they died out, as represented in (17b). Crucially, (16a) entails that there are no dinosaurs today, whereas (16b) implicates that some (sub-)kinds of dinosaurs have survived.

- (17) a.  $\exists e[\mathbf{die\_out}(e) \wedge \mathbf{theme}(e, \text{DINOSAURIA}) \wedge e < n]$   
b.  $\exists e \exists x[\mathbf{die\_out}(e) \wedge \mathbf{R}(x, \text{DINOSAURIA}) \wedge \mathbf{theme}(e, x) \wedge e < n]$

In (17b), **R** represents the Carlsonian relation of instantiation, which, given the selectional restrictions of “die out” gives rise to subkinds. Such a subkind-reading is however completely unexpected if the base denotation of the bare plural were a kind (either as only possibility, or as one possibility amongst others, for instance in an underspecified setting).<sup>11</sup>

This is not the only context in which the bare plural fails to have a globality-reading, and thus, where a basic kind-denotation of a bare plural in German seems doubtful: Laca (1992) remarks that collective predication, as opposed to a distributive one,<sup>12</sup> is only possible with a definite article. This is illustrated by (19), taken from Laca (1992: 268):

- (19) a. Die Deutschen trinken im Durchschnitt 500 Millionen Liter Bier pro Jahr.  
The Germans drink in the average 500 million liter bear per year.  
‘Germans drink (collectively) on average 500 million liters of beer a year.’  
b. Deutsche trinken im Durchschnitt 500 Millionen Liter Bier pro Jahr.  
Germans drink in the average 500 million liter bear per year.  
‘Germans drink (individually) on average 500 million liters of beer a year.’

<sup>10</sup>At least, it is an argument against taking bare plurals in German to refer to kinds as single entities, that is, that bare plurals are what Moltmann (to appear) calls “kind-referring terms”. Yet, they might still be “kind terms”, which refer plurally to the various instances. This would be consistent with their obligatorily distributive nature, cf. (19b), p. 9.

<sup>11</sup>A short note on how these readings can be derived: Assuming that the definite article + N denotes the supremum of N, the complete extinction of the kind follows straightforwardly.

The derivation of the existential taxonomic reading is less clear (as far as the author of this paper is concerned). In any case, the bare plural behaves in a strikingly similar way to the indefinite article in the singular (adding simply plural):

- (18) a. Ein Dinosaurier ist ausgestorben.  
A/one dinosaur is extinct.  
b.  $\exists e \exists !x[\mathbf{die\_out}(e) \wedge \mathbf{R}(x, \text{DINOSAURIA}) \wedge \mathbf{theme}(e, x) \wedge e < n]$

Notice however that (18) has a taxonomic reading under both the stative present, as well as under the present perfect construal.

<sup>12</sup>Laca opposes *totum* vs. *omnis*-quantification.

Only (19a) can be interpreted in the sense that the global average beer-consumption per year of all Germans together amounts to 500 million liters. (19b) asserts that each and every German drinks on average 500 million liters of beer a year, which is a heavy dose, even for the willing and able drinker. Should the sentence (19b) involve a predication on the kind-referring term *homo germanicus cerevisiophilus*, the necessity of distributivity in this relation would remain completely mysterious.

Before passing on, let us summarize briefly the findings of the section: i) as considered by Laca (1992), globalizing predications are impossible with a bare noun phrase; but contra Laca (1992), ii) there is no presupposition of existence intrinsically attached to the use of a definite determiner in a context of reference to a generality.

Now, let us consider one more influence information structure in a large sense might have: namely, the bare vs. definite opposition could be sensible to information-packaging in discourse, marking old vs. new, along the familiar definite vs. indefinite pattern.

## 2.3 Indefinite vs. Definite Generalities?

Information structure is also mirrored in discourse structuring, where topic vs. focus, or given vs. new, do appear in various forms, and notably in the familiar opposition between indefinites vs. definites. A reasonable preliminary hypothesis would be that the bare plural version has the discourse properties of an indefinite, whereas the definite determined version simply is a definite, along the pattern — illustrated with token-referring entities — in (20).

(20) A man and a woman entered the room. [...] One could see that the man was tired.

If the data supports this idea, reference to generalities should be introduced with the bare plural, and then subsequently referred to with the definite plural. In fact, as it turns out, this is clearly not the case, as shows a small corpus study, and subsequent manipulations. The German wikipedia.org article on *dinosaurs* starts off as follows:<sup>13,14</sup>

(21) Die Dinosaurier [...] waren die Gruppe der Landwirbeltiere (Tetrapoda), die  
The dinosaurs [...] were the group of the terrestrial vertebrates (T.), that  
im Mesozoikum (Erdmittelalter) [...] die festländischen Ökosysteme dominierte.  
in the Mesozoic era (earth middle age) [...] the terrestrial ecosystems dominated.  
'Dinosaurs were the group of terrestrial vertebrates, which dominated the ecosystems  
from the Mesozoic Era up to the Cretaceous-Tertiary boundary.'

Subsequent references to the kind *dinosauria* are also in the definite. Therefore, there does not seem to be a rule “discourse-new entities require a bare plural”.

Furthermore, it is not true that the bare plural is restricted to discourse-new entities, as is shown by (22) (same article, further down):

---

<sup>13</sup>It is true that this sentence is below the title “Dinosaurier”. As the further data shows, I do not think that this fact can alter the general picture that emerges.

<sup>14</sup>Article <http://de.wikipedia.org/wiki/Dinosaurier>, retrieved on 01/09/20010.

- (22) Viele Wissenschaftler dachten lange, Dinosaurier seien eine polyphyletische Gruppe und bestünden aus miteinander nicht näher verwandten Archosauriern  
 Many scientists thought longtimes, dinosaurs were a polyphyletic group and consisted of with one another not closer related archosaurs  
 -- heute werden Dinosaurier als selbstständige Gruppe angesehen.  
 — today are dinosaurs as independent group considered.  
 “Many scientists thought for a long time that dinosaurs were a polyphyletic group and consisted of archosaurs that are not closely related among each other. Today, dinosaurs are considered as an independent group.”

Now, the first occurrence of *Dinosaurier* is below an subtitle, which may qualify as a new start of the discourse; the second, underlined occurrence however is definitely discourse-old. Yet, it stands in the bare version.

An anonymous reviewer suggested that there is a tendency towards the use of the definite article in some contexts, like the previous mention of contrasting kinds, illustrated in (23):

- (23) Dinosaurier und Krokodile beherrschten die Erde in der Kreidezeit. Die Dinosaurier  
 Dinosaurs and crocodiles ruled the earth in the Cretaceous. The dinosaurs  
 waren warmblütige Reptilien, während die Krokodile wechselwarm waren und sind.  
 were warm-blooded reptiles, whereas the crocodiles poikilotherm were and are.

(23) seems preferable to a version where in the second sentence, crocodiles and dinosaurs would appear in the bare plural, so it may be true that there is a trend. However, at least in my judgement, the following pattern is also acceptable:

- (24) In der Kreidezeit beherrschten die Dinosaurier und die Krokodile die Erde.  $\emptyset$   
 In the Cretaceous ruled the Dinosaurs and the crocodiles the earth.  $\emptyset$   
 Dinosaurier waren warmblütige Reptilien, während  $\emptyset$  Krokodile wechselwarm  
 dinosaurs were warm-blooded reptiles, whereas  $\emptyset$  crocodiles poikilotherm  
 waren und sind.  
 were and are.  
 ‘In the Cretaceous, dinosaurs and crocodiles ruled earth. Dinosaurs were warm-blooded reptiles, whereas crocodiles were and still remain poikilotherm.’

In (24), the first mention is — just like in the encyclopedia-article — with a definite, while following occurrences are bare.

So, while the exact pattern with respect to the discourse status (discourse-new vs. discourse-old/familiar) is not quite clear, in a wide range of contexts, the use of one or the other version seems to be optional, and left to speaker preference. In any case, the familiar definite-indefinite partition, as one observes with singular individual referents (cf (20)), does not obtain with these references to generalities in the plural.

One may wonder whether this is that surprising a result, given that the only clear restriction against bare plurals we had seen in section 2.1 seemed to be their need for topical status. Sure enough, having been mentioned before in a discourse is a way of ensuring topicality.

## 2.4 Restrictive vs. Appositive Modification

Brugger (1993) claimed that there are restrictions against modifications of generality-denoting nouns along the lines of restrictive vs. appositive relative clause modification.

Brugger claims that bare plurals, if they are modified by a relative clause, must be restricted by the relative clause.

- (25) a. Studenten, die links sind, konsultieren das *Kapital*.<sup>15</sup>  
students, who leftwing are, consult the Kapital  
b. Die Studenten, die links sind, konsultieren das *Kapital*.  
the students, who leftwing are, consult the Kapital

If (25a) is acceptable, so Brugger, it is only because the relative clause can be interpreted as restrictive modifier. If we block this possibility, for instance by adding the particle *ja* for instance, which marks the content as being common ground, Brugger claims that the bare plural is ungrammatical:

- (26) a. \*Studenten, die ja links sind, konsultieren das *Kapital*.<sup>16</sup>  
students, who yes leftwing are, consult the Kapital.  
b. Die Studenten, die ja links sind, konsultieren das *Kapital*.  
the students, who yes leftwing are, consult the Kapital.

Before I criticize this claim, let me show how this could be related to issues of information structure. Should Brugger be right, this might be an indication that bare plurals cannot be completely topical, since otherwise, the restrictive modification should be possible. Indeed, this would be data in favor of Brugger's hypothesis that bare plurals are indefinites.

However, I do not concur with the judgement in (26a); for me — as for other native speakers —, with a special kind of intonation, this sentence is perfectly acceptable. Furthermore, examples like (26a) are attested and do occur in German:<sup>17</sup>

- (27) Moslems, die ja angeblich keine Organisation haben sollen, organisieren  
muslims, who yes supposedly no organization have should, organize  
europaweit perfekt vorbereitete Demonstrationen gegen ein Kopftuchverbot.  
throughout Europe perfect prepared demonstrations against a headscarf ban.  
'Muslims, who supposedly do not have any organization, organize throughout Europe  
perfectly prepared demonstrations against the ban of the headscarf.'

It seems therefore that restrictive modification does not constitute an exclusive context for the determined variant, and that both types of modification are possible with both variants.

## 2.5 Beyond Information Structure — Ontology

Bosch (2006) claims that in German, reference to abstract entities like *life* or *beauty* takes (close to) obligatorily a definite. However, as we have already seen by the acceptability of examples like (3c) (on page 2), this is not true, and seems rather to be an artefact of a certain type of examples (cf. *infra*).

---

<sup>15</sup>Taken from Brugger (1993: 6–7).

<sup>16</sup>Data and judgements taken from Brugger (1993: 6–7).

<sup>17</sup>(27) is a web example, further attestations could easily be gathered.

- (28) \*(Das) Leben ist hart.<sup>18</sup>  
The life is hard.  
Intended: ‘Life’s a bitch.’

(28) is indeed unacceptable under the given translation. Yet, it should be noted that the sentence as such is perfectly acceptable; it only means something else, namely “Living is hard/It is hard to live”.

The problem could therefore be linked to the fact that the subject *Leben* — which can mean “life” — can be interpreted as well as the infinitive verb “(to) live”.

Indeed, both corpus search and intuition shows that very often, abstract nouns can and do appear both with and without definite article.

- (29) a. Hoffnung ist das Brot der Armen.<sup>19</sup>  
Hope is the bread of the poor.  
b. Die Hoffnung ist das Brot des armen Mannes.  
The hope is the bread of the poor man.

The issue why (28) is infelicitous in the desired reading seems therefore not to be caused by some ontological difference between nouns denoting abstract objects and those denoting concrete objects, or between *life* and *hope*.

The problem is rather that the German noun *Leben* is homonymous with the infinitive *leben* (‘to live’), and that in the absence of the definite determiner, the resulting sentence is interpreted obligatorily as containing the infinitive. *Hoffnung*, with its *-ung* suffix, is unambiguously nominal. Therefore no such interference with another form arises, and the bare version is available.

The conclusion one may derive from examples (28) – (29) is that the infelicity of (28) is due to a blocking effect: the infinitive cannot combine with an article, whereas a noun can. The use of an article is therefore one way of ensuring a nominal interpretation for an ambiguous item.<sup>20</sup>

## 2.6 Intermediate Conclusion

It seems that one of the key functions of the definite determiner is to guarantee topicality in contexts where the bare version would fail to do so. Furthermore, the definite determiner may provide a means of categorial identification of a constituent as a nominal one.

However, in cases where no categorial ambiguity is at stake, and where contextual or intonational clues provide evidence for (possibly *contrastive*) topic-status, both version seem to be in free variation.

## 3 The Impact of the Definite Determiner

In what we have seen so far, it seems that by and large, the definite and bare version are in free variation, with here and there some restrictions, which might be due to blocking effects. In order

---

<sup>18</sup>Example and judgement taken from Bosch (2006).

<sup>19</sup>Both examples from the internet.

<sup>20</sup>As pointed out by Patricia Cabredo Hofherr (p.c.), there may be other ways of ensuring nominality a part from the article, for instance, N+N coordinations, or the like.

to get closer to the nature of these blocking effects, I propose to take into account in this section the semantics of the (German) definite determiner.

### 3.1 Introductory Excursion: A Second Look at English

At the beginning of the paper, in examples (1), I suggested that English references to generalities always take a bare plural. However, the picture is less clear as pointed out by Bolinger (1975): In English, there are two different ways of ‘referring to a generality’ as well (cf. (30) vs. (31)).<sup>21</sup>

- (30) a. The airlines charge too much.  
b. The generals usually get their way.
- (31) a. Airlines charge too much.  
b. Generals usually get their way.

(Bolinger, 1975: 181) observes that “[...] The airlines [...] refers to those actually in existence [...]; Airlines [...] can cover all those in existence and all those yet to be [...]”. More generally, according to Bolinger, statements with a definite article single out the thing mentioned against a larger background.

This observation can be interpreted in a way according to which the definite article (in English) provides a way of restricting a generic assertion to a present period that would closely resemble the effect of a Romance *imparfait* with respect to a past period.

- (32) Les dinosaures *étaient* des animaux gigantesques et redoutables.  
The dinosaurs were *des* animals gigantic and fearsome.  
‘Dinosaurs were gigantic and fearsome animals.’

If this were the correct interpretation of what Bolinger has in mind, the observation would need to be nuanced for German, however: German definite generics are not restricted in a clear way like to an actual period (otherwise, one would not expect them to appear in an encyclopedia article). Furthermore, as example (21) shows, definite articles are compatible with definitional (or intrinsic, or essential) properties of a taxon like *dinosaurs*.

Yet, in what follows, I will pursue a different interpretation of Bolinger’s idea, and elaborate on it. I will apply it to German, building on the proposal made by Wespel (2008). Crucially, I will try to identify a semantic impact of the presence or absence of the definite determiner in reference to generalities in German.

### 3.2 The Semantics of the Definite Article

I will adopt here (part of) the semantics used by Wespel (2008) in order to characterize definite descriptions. Wespel does not commit to a specific form-meaning mapping for German (or other languages); the purpose of his classification is rather to get a clear conceptual background in order to assess cross-linguistic variations of encoding with respect to definite descriptions.

---

<sup>21</sup>These examples do not contain a direct reference to a kind, but include a generic (or habitual) quantifier. The observation by Bolinger, however, still remains relevant for the analysis of the German data, as I will try to show below.

Wespel makes use of situation semantics, which allows him (and hopefully, us) to account for a certain number of properties of definite descriptions in German. According to Wespel, one can give the following formula for a definite description:<sup>22</sup>

$$(33) \quad \llbracket \text{the table} \rrbracket = \iota x [\text{table}(x)(s^r)]$$

*Table* is here a two place predicate, giving a relation between an entity  $x$  and a resource situation  $s^r$ , which provides something like a domain restriction for the interpretation of the noun, and which must be contextually saturated. Resource situations are required in disambiguating examples like the following:

(34) In the 1980s, the President of Syldavia was a fierce smuggler.

(34) has two different interpretations: either, the person who is the President of Syldavia at the moment of speech was a fierce smuggler in the 1980, or: the President of Syldavia in the 1980 was during his time in office a fierce smuggler. In the first case, the resource situation is identified with the utterance situation; in the second case, the resource situation is identified with the information given by the localizing temporal adverbial.

Furthermore, I assume that the iota-operator in the German equivalent of (33) is contributed by the definite determiner. This means that the definite determiner requires that the entity must be the unique one in the given situation.

Now, a kind-referring term abstracts away from a particular resource situation, which always remains  $\lambda$ -bound, even after functional application to another predicate, as illustrated in (35):

$$(35) \quad \llbracket P\text{-kind} \rrbracket = \lambda s. \iota x [P(x)(s)] \text{ (where } P \text{ is a plural property)}^{23,24}$$

As one can see, (35)— which is a situation-semantic equivalent of the kind-denotation from Chierchia (1998) — contains an iota-term just like (33). I am not interested here in this particular point; in what will follow, I will concentrate on the presence or absence of a contextually bound resource-situation variable. This is what I assume to be the denotation of a generality-referring bare noun (mass singular or bare plural) in German.

### 3.3 Cases Where the Definite Article is Required in German

There are some contexts in German where clear meaning effects can be associated with the presence of a definite article, and I will argue that this can be easily explained by the assumption that a definite determiner in German comes with a free situation variable.

Bolinger observed a rather striking difference between the bare and the definite version of a general statement for English. As the following examples show, this observation can be replicated in German:

<sup>22</sup>The formula in (33) is extrapolated from Wespel (2008: 110); (35) is directly taken from there. Wespel makes a more fine-grained distinction between different types of definite descriptions, which need not concern us here.

<sup>23</sup>The constraint is the one by Wespel (2008). A plural property is a property that does not only apply to an atomic entity.

<sup>24</sup>Should this become a viable representation of a bare plural or mass noun in German, we would need to make sure that the result is obligatorily distributive. In principle, this could be solved by introducing a distributivity-operator. Another tack would be to derive the property of distributivity by a blocking mechanism, which would require that the definitely determined version be non-distributive.

- (36) a. Eisen ist gut für ??(das) Blut. [adapted from Bolinger (1975)]<sup>25</sup>  
 Iron is good for the blood.
- b. ??(Die) Wahrheit mag weh tun, aber sie tut nicht so weh wie Jack Bauer.  
 (The) truth may hurt do, but it does not so hurt like J. B.

Both (36a,b) sound highly strange without the definite article at the indicated location. This cannot be a positional effect, based on subject vs. non-subject position of the noun.

Intuitively, (36a) should be a statement about human blood, and with respect to its metabolic purposes (i.e., transporting oxygen). In this sense, (36a) would be true. What makes (36a) strange without the definite article is the following: the bare version suggests that the statement holds for any liquor that one could call ‘*blood*’, and for any purpose such a liquor could serve. Therefore, the bare version is a much more general, and problematic claim: some life-forms may have blood in which iron is useless, or even toxic;<sup>26</sup> second, for some things that people may use blood for, iron could be counterproductive.<sup>27</sup>

Similar considerations apply to (36b): ‘*truth*’ should be interpreted as the truth of some utterances in some situation(s), and hurting should not be understood as an intrinsic property of truth.

Therefore, it seems that in German as well, the definite article can introduce restrictions that are absent with the bare version, just as Bolinger claims with respect to English. Given the examples we have seen so far, the restrictions seem to be rather idiosyncratic; however, the use of a free resource situation variable, which needs to be bound, provides us with the right tool to deal with that matter.

Wespel (2008) argues that some definite descriptions have implicit arguments. I adopt this view, and propose that the restrictions we have seen here can be seen as instances of resolving this implicit argument by a contextual parameter, which restricts the noun (phrase) interpretation in a suitable way. In some sense, this is not that different from a well-known property of definitely determined DPs in languages like English or German, namely the ability to establish an associative anaphora (a fact also known as “bridging”). This can be illustrated by a sentence like (37):

- (37) We arrived at the village. The [church ~~of the village~~] was in ruins.

In the second sentence of (37), “the church” has no overt antecedent, yet it is interpreted as the church of that particular village. This is dealt with by the resource situation: *church* must be unique with respect to a certain domain, which needs to be contextually resolved, and the domain is identified here with the village.

The idea is that a definite in examples like (36) also come along with such a resource situation, with respect to which the noun denotation has to be relativized. On the other hand, the bare plural seems to lack such a restriction.

An interesting effect of such a hypothesis is that it can account for cases in any kind of syntactic position, be it argumental or not, or subject or not. Let us consider (38):

<sup>25</sup>Bolinger does not mention if the definite article is required in English or not. A google search shows that the large majority of attestation display the definite article in this context, and that those who use the bare noun stem from an enumeration context: “*u is good for v, x is good for y, iron is good for blood...*”.

<sup>26</sup>A well known species exemplifying this state of affairs are Vulcans (like Mr. Spock), whose greenish blood is copper-based. Introducing iron — which binds oxygen — might diminish the amount of oxygen bound by copper, reducing the oxygen load available to the organism.

<sup>27</sup>It might alter its taste, for instance.

- (38) a. Vitamin C ist gut für die Gesundheit.  
 vitamin C is good for the health.
- b. Die Gesundheit wird durch Vitamin C positiv beeinflusst.  
 The health becomes through vitamin C positively influence.  
 ‘Health is positively influenced by vitamin C.’

*Vitamin C* appears as a bare noun; *Gesundheit* combines with a definite determiner. Now, *health* is an inherently relational concept — it is the health of somebody. Examples (38ab) are most easily interpreted in the sense that *for a human being*, vitamin C is good. The distribution of the article is exactly as we would expect: vitamin C appears bare, since it is not relational, and any instance of it will do. However, *health* has to be relativized with respect to a given group of entities, namely human beings.

The hypothesis that definite determiners allow the relativization of a predicate with respect to a resource situation is also consistent with (at least some) contexts in which the definite article is infelicitous, and which we will examine in section 3.4.

### 3.4 Cases Where the Definite Article is Infelicitous

Whereas in the previous section 3.4 we examined examples in which the bare version is inappropriate, there are also contexts in which the definite article leads to strange effects:

- (39) (??Die) Industrialisierung bezeichnet allgemein die Einführung und Verbreitung  
 (The) industrialisation designs in general the introduction and deployment  
 industrieller Formen der Produktion und Distribution von Waren und  
 industrial.Gen forms.Gen the.Gen production and distribution of goods and  
 Dienstleistungen.<sup>28</sup>  
 services.

(39) has a metalinguistic flavour to it, which one might paraphrase as follows: “one uses the word ‘*Industrialisierung*’ in order to refer to ...” From a more theoretical point of view, this can be seen as an assertion with respect to a predicate without any contextual restriction.<sup>29</sup>

Such a stance is compatible with the fact that *die Industrialisierung* (‘the industrialization’), or also *die Globalisierung* (‘the globalization’) denote a specific historic period or process when used today, and do not generally refer to any process or period satisfying the conditions as spelt out in (39).

The infelicity of (39) can therefore be seen as a meaning clash between the semantic import of the definite determiner, requiring a relativization of the noun denotation to some situation, and the proviso contained in (39) that it should be able to refer in a general fashion (which is provided by *allgemein*, i.e., “generally”).

Could we strengthen further this statement to arrive at the conclusion that bare nouns generally denote predicates, and that using a bare noun — coming along with no contextual restriction — amounts to predicating an essential property of the noun?

First of all, this may pass for bare mass nouns:

<sup>28</sup>Example adapted from <http://de.wikipedia.org/wiki/Industrialisierung>.

<sup>29</sup>Alternatively, in a non-situation semantic framework, this could be phrased as follows: the predicate (of type  $\langle e, t \rangle$ ) — or the concept (of type  $\langle s, \langle e, t \rangle \rangle$ ) is defined in such and such a way.

(40) ?\*Wasser ist 30°C warm.  
water is 30°C warm.

(40) gives rise to the extremely odd interpretation that water — by definition, or as a consequence of a strange natural law — has a temperature of thirty degrees. Whether the noun *water* is focus or topic does not seem to play a role here; it systematically seems to fail in obtaining an existential (or: extensional) reading.

However, such a hypothesis is clearly not generally acceptable for bare plurals: contrary to fact, this would predict that (41) should be out, since *being extinct* cannot be a definitional property of dinosaurs — otherwise their extension should always be empty:<sup>30</sup>

(42) Dinosaurier sind ausgestorben.  
Dinosaurs are extinct.

Still, the example in (42) displays a plural, which may influence this behavior. Assuming that a plural is a classifier (contributing a [+DIV] feature), as suggested by Borer (2005), the semantics would be more elaborate than those of a non-plural marked bare singular (as exemplified in (41)).

On the other hand, the reverse generalisation does not hold, either: in German, the definite article is able to express an essential, definitional property (3 out of 4 examples in (3), p. 1 are definitional).

\*\*\*

The conclusion to be made seems somehow paradoxical: first of all, there are quite some contexts in which bare plurals — or a bare singular in case of mass nouns — is infelicitous in order to refer to a generality in German. Yet, several other contexts seem to entail that the bare version is the more general way of referring to a generality in German, and that the use of the definite article equals to providing a domain-restriction on the noun.

The contexts rendering obligatory a definite article include cases of homonymy between nouns and infinitives, where the nominal nature of the noun needs to be confirmed (cf. section 2.5), as well as cases where the topic-hood (including contrastive topics) of a noun phrase cannot be guaranteed otherwise. In the first case, the bare form gives us an interpretation as a verbal form, in the second case, an existential indefinite interpretation arises. Similarly, the property of some nouns of being relational (or to allow for a relational interpretation in some contexts), requires them to be determined by the definite article in German. Following Wespel (2008), I argued that this can be accounted for by the tool of a resource-situation.

In cases where the bare noun is in a well-established topic position (either by intonation, or by syntactic position), it may express a general, definitorial property of the noun phrase under discussion. I argued that this can be accounted for under the assumption that the situation-variable remains  $\lambda$ -bound under such circumstances.

---

<sup>30</sup>As Patricia Cabredo Hofherr (p.c.) pointed out, the perfect might influence this behavior, cf. (41):

(41) ?\*Dinosaurier sind tot.  
dinosaurs are dead.

Here, the same strange effect as in (40) obtains.

## 4 Conclusion

In this paper, I have examined more closely the fact that in German, generic judgements, as well as purely nominal references to generalities, can occur in a wide variety of contexts with either bare or with definitely determined nouns.

I have examined cases where the choice between bare and definite version is not free, and argued that they can be explained mainly as the consequences of the presence/absence of implicit contextual restrictions, as encoded by the presence or absence of a definite determiner. I have also shown that — pace Bosch (2006) — German abstract nouns may appear in generic judgements with or without a definite article, as long as their categorial status is clear.

The more general point this article tried to make is that there may be several grammatical possibilities in a natural language (or in natural languages) in order to achieve reference to a generality. One way would be of constructing a situation-independent (or intensional) object, another consists in establishing a sum or maximal object of all instantiations of a given predicate in a given situation (or at a possible world – time couple). These two possibilities (and there might still be others) should not be conceived of as being mutually exclusive, neither on the level of the grammar of a single language, nor in on the level of cross-linguistic variation with respect to the reference to a generality.

**Acknowledgements** I had the occasion of presenting previous versions of this paper at the Genericity Conference, the seminar of the research group “Languages with and without articles”, and the Franco-Brazilian workshop on bare nouns (all in Paris). I would like to thank Claire Beyssade, Patricia Cabredo Hofherr, Carmen Dobrovie-Sorin, Jacqueline Guéron, Manfred Krifka, Brenda Laca, Bernhard Nickel, Orin Percus, Christopher Piñon, Henriëtte de Swart, and Anne Zribi-Hertz for their comments and remarks, which contributed to changing (and hopefully improving) what I had thought, said or written earlier on this matter. Yet, none of them should be assumed to endorse anything in this article; all errors are mine.

## References

- Dwight BOLINGER (1975). “A Postscript to Poston on the Article”. In: *The Modern Language Journal* 59, 4, pp. 181–185.
- Hagit BORER (2005). *In Name Only*. Oxford: Oxford University Press.
- Peter BOSCH (2006). “What sort of thing is life? or \*The life is a bitch”. In: Hans-Martin GÄRTNER, Sigrid BECK, Regine ECKARDT, Renate MUSAN, Barbara STIEBELS (eds.), *Between 40 and 60 Puzzles for Krifka*. URL <http://www.zas.gwz-berlin.de/publications/40-60-puzzles-for-krifka/pdf/bosch.pdf>.
- Wilhelm BRAUNE (1921). *Althochdeutsche Grammatik*. Halle (Saale): Niemeyer.
- Gerhard BRUGGER (1993). “Generic Interpretations and Expletive Determiner”. In: *University of Venice Working Papers in Linguistics* 3, 1, pp. 1–30.
- Greg CARLSON (1977). *Reference to Kinds in English*. Ph.D. thesis, University of Massachusetts.
- Gregory N. CARLSON, Francis J. PELLETIER (eds.) (1995). *The Generic Book*. University of Chicago Press.
- Gennaro CHIERCHIA (1998). “Reference to Kinds Across Languages”. In: *Natural Language Semantics* 4, 6, pp. 339–405.

- Caroline FÉRY, Gisbert FANSELOW, Manfred KRIFKA (eds.) (2007). *Working Papers of SFB 632, Interdisciplinary Studies on Information Structure (ISIS)*, vol. 6. Potsdam: Universitätsverlag Potsdam.
- Rudolf HILDEBRAND, Hermann WUNDERLICH (eds.) (1984). *Deutsches Wörterbuch von Jacob und Wilhelm Grimm*. München: dtv. URL <http://urts55.uni-trier.de:8080/Projekte/DWB>.
- Manfred KRIFKA (2004). “Bare NPs: Kind-Referring, Indefinites, Both, or Neither”. In: R. B. YOUNG, Y. ZHOU (eds.), *Proceedings of SALT XIII*. Cornell: CSLI Publications.
- (2007). “Basic Notions of Information Structure”. In: Féry et al. (2007), pp. 13–56.
- Manfred KRIFKA, Francis Jeffrey PELLETIER, Gregory N. CARLSON, Alice TER MEULEN, Gennaro CHERCHIA, Godehard LINK (1995). “Genericity: An Introduction”. In: Carlson & Pelletier (1995), pp. 1–124.
- Brenda LACA (1992). *Studien zur Generizität. Kontrastive Untersuchungen zur Artikeldistribution und zur Semantik “generischer” Nominalphrasen*. Habilitation, Freie Universität Berlin, Berlin.
- Christian LEHMANN (2002). *Thoughts on Grammaticalization*. Arbeitspapiere des Seminars für Sprachwissenschaft der Universität Erfurt. Erfurt: Universität Erfurt, 2 edn.
- Arthur MERIN (2003). “Replacing ‘Horn-Scales’ by Act-Based Relevance-Orderings to Keep Negation and Numerals Meaningful”. In: *Forschungsberichte der DFG-Forschergruppe ‘Logik in der Philosophie’* 110.
- Friederike MOLTMANN (to appear). *Abstract Objects and the Semantics of Natural Language*. Oxford: Oxford University Press.
- Peter-Arnold MUMM (1995). “Generische Bezeichnung. Onomasiologische Aufgaben und ihre Lösungen durch das neuhochdeutsche Artikelsystem”. In: *Sprachwissenschaft* 20, 4, pp. 420–467.
- Terence PARSONS (1990). *Events in the Semantics of English. A Study in Subatomic Semantics*. Cambridge: MIT Press.
- Johannes WESPEL (2008). *Descriptions and their Domains. The Patterns of Definiteness Marking in French-related Creoles*. Ph.D. thesis, Universität Stuttgart.
- Cornelia ZELINSKY-WIBBELT (1992). “Exploiting Linguistic Iconism for Article Selection in Machine Translation”. In: *COLING*. pp. 792–798. URL <http://acl.ldc.upenn.edu/C/C92/C92-2118.pdf>.