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Definiteness without determiners in German

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The paper investigates conditions for the bare occurrence of noun phrases in the topic position of specificational copula clauses in German. It is shown that this is a predicate position for non-referential NPs. Specificational clauses in German are special because of the unusual alignment of the predicative position with the topic position. I show that the condition for the bare occurrence of NPs in this position is that the head noun denotes a functional concept. According to the theory of concept types by Löbner (2011), nouns denoting functional concepts are relational and unique. I argue that relationality ensures the anchoring of bare NPs in the discourse via an anaphoric link to a bridging antecedent in the previous discourse and qualifies them to be a topic in the sense of discourse-familiarity. The uniqueness of such NPs is the key to understanding why they can occur bare without a definite article: they belong to the type of definite descriptions in which definiteness is based on uniqueness. The article in uniqueness-based DPs encodes uniqueness and indicates morphological case. Since NPs denoting functional concepts are already unique, and as complements of the copula are not assigned case, the article need not be realized.

1. Introduction

In German, countable nouns in the singular generally need an article if they occur in the subject position. This also applies to nouns such as *Präsident* 'president', *Vater* 'father', and *Auslöser* 'trigger'; cf. (1)–(3).

(1) **Der Präsident** ist beleidigt.
     the president   is insulted
     'The president is offended.'

(2) **Der Vater** des   Jungen ist Sportler.
     the father of-the boy   is athlete
     'The boy's father is an athlete.'

(3) **Der Auslöser** des   Feuers war unklar.
     the trigger   of-the fire   was unclear
     'The cause of the fire was unclear.'

However, in some constructions, the article with such NPs can be omitted. The following examples have been extracted from the COSMAS newspaper corpus provided by the Institute for the German Language in Mannheim and other newspapers.

(4) **Präsident** des Seegerichtshofs   ist seit Oktober 2011   der Japaner Shunji Yanai.
     president   of-the maritime court is since October 2011 the Japanese Shunji Yanai
     'Since October 2011 the president of the International Tribunal for the Law of the Sea has been the Japanese Shunji Yanai.' [NUN13/NOV.00588]

(5) **Vater** des   Babys ist der […] Schauspieler Pete Dwojak.
     father of-the baby is the   actor   Pete Dwojak
     'Father of the baby is the actor Pete Dwojak.' [NUZ09/ FEB.02029]

(6) **Auslöser** der   Protestaktionen war die Krise in Spanien.
     trigger   of-the protests   was the crisis in Spain
     'The protests were triggered by the crisis in Spain.' [RHZ 011/ MAI.26559]

Examples (4)–(6) have the following commonalities: They consist of the copula verb *BE* and two noun phrases, one in the sentence-initial position and another one in the postcopular position. The sentence-initial NP occurs without an article. In what follows, I will refer to the initial NP as NP1 and to the postcopular NP as NP2; cf. (4').

(4') [**Präsident**]$_{NP1}$ ist [der Japaner   Shunji Yanai]$_{NP2}$
      president   is the Japanese Shunji Yanai
      'President is the Japanese Shunji Yanai.'

Although NP1 in (4)–(6) has no article, it is interpreted as definite. The definite article can be added without a meaning change.

(4'') **Der Präsident** des Seegerichtshofs ist seit Oktober 2011 der Japaner Shunji Yanai.
'Since October 2011 the president of the International Tribunal for the Law of the Sea has been the Japanese Shunji Yanai.'

(5') **Der Vater** des Babys ist der Schauspieler Pete Dwojak.
'The father of the baby is the actor Pete Dwojak.'

(6') **Der Auslöser** der Protestaktionen war die Krise in Spanien.
'The protests were triggered by the crisis in Spain.'

Under certain contextual conditions in some examples, an indefinite article could be added instead: Example (6') may have an indefinite counterpart as in (6''). However, the interpretation is different, since the indefinite article requires a non-unique interpretation (= there must be other causes for the protests in Spain); cf. (6'').

(6'') **Ein Auslöser** der Protestaktionen war die Krise in Spanien.
'One trigger of the protests was the crisis in Spain.'

Since the bare version in (6) has the same interpretation as the definite version in (6') and differs from the indefinite one in (6''), we can conclude that what is omitted in (6) with the bare NP1 is the definite rather than the indefinite article. The question I want to answer in this paper is what the syntactic and semantic conditions are that allow omission of the definite article with initial NPs in such constructions. Although there is much literature on the syntax and semantics of the copula construction in question, to the best of my knowledge, the phenomenon of article drop in this construction has not been discussed before. In order to give an answer to the intriguing question why article drop with initial NPs in such constructions is possible, I will analyze the structure, meaning, and discourse properties of this construction in Section 2. In Section 3, I will identify the type of the bare noun using corpus data. In Section 4, I will provide an analysis of bare NPs in these constructions at the syntax-semantics interface and relate their bare use to a broader phenomenon of uniqueness-based definiteness. The bare NP will be analyzed as a uniqueness-based DP that encodes the same uniqueness as the weak definite article. Section 5 concludes the main results.

2. Characterization of the construction

2.1. Sentence type

According to the philosophical literature (e.g., Russell 1919), two basic types of copular sentences can be distinguished: predicational and identity sentences. The function of predicational sentences

is to provide more information about some individual via predication. In such sentences the postcopular phrase NP2 predicates a property of the subject referent introduced by NP1; cf. (7). Equative sentences, such as (8), also called identity sentences, equate the referents of the two NPs flanking the copula. Higgins (1979) introduces two additional types. One of these types is of particular relevance in this paper – the type of so-called specificational clauses as in (9).

(7)   John is a teacher / young.

(8)   Mark Twain is Samuel Clemens.

(9)   a.   The president of the club is John.
        b.   The biggest problem is the recent budget cuts.
        c.   A doctor who might be able to help you, is Harry Barcan. (Mikkelsen 2004: 173)

Specificational clauses differ from the basic types in two respects. First, intuitively, in specificational clauses the NP2 specifies the "value" of the description given in the precopular NP1. Thus NP1 in (9a) *the president of the club* sets up a variable ("the x that is the current president of the club at the given time") and the NP2 *John* provides the value for that variable.

Second, specificational clauses in German have one peculiarity with respect to verbal agreement: the copula agrees not with the sentence-initial NP1 but with the sentence-final NP2. This can be seen when NP1 and NP2 do not match in number as in (10): NP1 is singular, while NP2 is plural.[1]

(10)   [Die/eine / ∅ **Ursache** der   Flut]$_{NP1}$ *war/waren [heftige Regenfälle]$_{NP2}$.
        the/ a/ ∅   cause   of-the flood   was/were   heavy   rain-falls
        'The flood was caused by heavy rainfalls.'

Since in (10) the copula agrees with NP2, this NP can be assumed to be the subject and specificational clauses to have an "inverse" structure.

Third, it has been shown in the literature that specificational clauses have a fixed information structure, whereas the information structure of other types of copular clauses is not fixed in the same way (Heggie 1988, Heycock 1992, among others). Hartmann (2019) experimentally supports this observation: the postcopular NP has to be focused and the rest of the clause is the background. Thus, the sentence *The culprit was John* can be understood as being intended to answer the question in (11a). In the answer (11b), *JOHN* corresponds to the *wh*-phrase of the question and is the focus, while the rest of the sentence is the background. NP1 cannot be focused even in an appropriate question context as in (12).

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[1] Hartmann and Heycock (2014) provide experimental evidence for the inverse agreement in canonical specificational clauses with a definite NP1.

(11) a. Who was the culprit?
      b. The culprit was [JOHN]$_{FOC}$. (Heycock & Kroch 2002: 148)

(12) a. What was John?
      b. *[THE CULPRIT]$_{FOC}$ was John. (Heycock & Kroch 2002: 149)

Thus, only the postcopular NP can bear focus in a specificational clause. It has been observed that the requirement of postverbal focus is typical for inversion structures in general (Birner 1996). For this reason, specificational sentences are considered inversion structures (Hartmann 2019, Heycock 2012, among others). According to this view, specificational and predicational clauses are derived from an underlying structure in which the copula takes a small clause consisting of a predicate-NP and a referential subject-NP, an idea that originally goes back to Heggie (1988). If the predicate-NP bears focus, the subject-NP moves out of the small clause into the sentence-initial position and the result is a predicational sentence with "canonical" order. A specificational sentence emerges if the subject-NP bears focus and the predicate-NP moves out of the small clause into the sentence-initial position, yielding "inverse" order.

(13) a. [NP$_{subject}$ [be [~~NP~~$_{subject}$ NP$_{predicate}$]$_{small\ clause}$]] *predicational*
      b. [NP$_{predicate}$ [be [NP$_{subject}$ ~~NP~~$_{predicate}$]$_{small\ clause}$]] *specificational*

The inverted agreement in German additionally supports the predicate inversion analysis in this language.

2.2. Discourse conditions on NP1

The assumption that specificational copula clauses are inversion structures has been further elaborated by Mikkelsen (2004). Following Birner (1996), she considers inversion an information packaging device that "serves a discourse connective function by letting material that is relatively familiar in the discourse appear before material that is relatively unfamiliar in the discourse" (Mikkelsen 2004: IX.) The condition for the placement of NP1 in the initial position of specificational clauses should then be that it is relatively familiar, i.e., more familiar than NP2. According to Mikkelsen (2004), the relative discourse-familiarity of NP1 qualifies it to be the topic of the specificational clause. But what kind of topic is it?

As will become clear in the next sections, NP1 is not an aboutness topic. According to Reinhart (1981), aboutness topics must be referential in order to create an address under which the information contributed by the rest of the clause could be stored. As I will argue below, NP1 is non-referential and denotes a property. Property-denoting NPs do not qualify as aboutness topics. Mikkelsen suggests, however, that properties can be assumed to be topics in the discourse-familiarity sense. To distinguish such non-referential topics in specificational clauses from aboutness topics, I will call them *specificational topics*.

What does it mean for a specificational topic to be discourse-familiar? Is pre-mentioning it enough? As a reviewer pointed out, the pre-mentioning of *Genies* 'geniuses' in the first sentence in (14) makes it given, but it doesn't make its continuation, the specificational sentence in (14b), felicitous. The predicational sentence as its continuation is, however, acceptable.

(14)   a. Ich finde Genies bewundernswert. (anonymous reviewer)
        'I find geniuses admirable.'

       b. #**Ein Genie** war mein Onkel Peter.   *specificational*
         'A genius was my uncle Peter.'

       c. ^{OK}Mein Onkel Peter war **ein Genie**.   *predicational*
         'My uncle Peter was a genius.'

Based on Prince (1992), Mikkelsen discusses different ways by which an NP in general and a specificational topic in particular can become discourse-familiar. The main idea of this discussion is this: the specificational topic is always related to some antecedent or "trigger" in the previous discourse or in the utterance situation. Although this relation may be different in each case, the familiarity/discourse-oldness of the trigger always projects to the whole specificational topic.

To examine the linking of specificational topics to preceding discourse, I conducted a corpus study. I collected examples from the newspaper corpus of the COSMAS database, the archive TAGGED C2, which contains morphosyntactically annotated newspaper texts from 2010–2014 from German speaking countries. The search was restricted to newspapers from Germany. I searched for specificational copular clauses in which NP1 was accompanied by an article and analyzed the first 160 examples (supplementary file 1). My study supports the view of Mikkelsen that specificational topics are related to a discourse-old trigger. In the collected examples the trigger is introduced in the previous discourse or in the same clause. I identified three types of relations to the trigger: (i) bridging, (ii) inclusion, and (iii) identity. In what follows, I will look at these relations in turn. First, consider the specificational clause in (15).

(15)   **Das Ziel** dieser Wettbewerbsreihe ist die Begabtenförderung. [RHZ14/APR.10207]
         'The aim of this series of competitions is to promote gifted young people.'

In (15) *Ziel* is the head of the complex NP1 containing a genitive modifier *dieser Wettbewerbsreihe* 'of this series of competitions'. *Ziel* is relational and unique: there is an associative possessive relation between the series of competitions and its unique goal – the series of competitions has one particular goal.[2] The NP1 *das Ziel* is clearly discourse-new since it is not used previously in the text. However, the demonstrative *dieser* in the modifier DP *dieser Wettbewerbsreihe* indicates that the *Wettbewerbsreihe* has been introduced in the previous discourse and is hence discourse-old. As

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[2] I use the term "possessor" and "possessive relation" in a very general sense following Löbner (2011); for more on this term, see Section 3.3.

Mikkelsen (2004: 213) observes, in such a case the NP can inherit discourse-familiarity from its trigger/possessor. The examples in (16) show that the trigger/possessor of specificational topics must be discourse-old. If it is discourse-new, i.e., indefinite, the construction is not felicitous:

(16)   a.   **Das Ziel** dieser /#einer Wettbewerbsreihe ist die Begabtenförderung.
              'The aim of this / a series of competitions is to promote gifted people.'

        b.   **Der Vater** des Kindes /#eines Kindes ist Peter Schmidt.[3]
              'The father of the child / a child is Peter Schmidt.'

Note that the trigger need not be explicitly mentioned as part of the NP1. It can be evoked from the utterance situation or be inferred from the context, as in the next example.

(17)   Die aesthetic clinic bietet ein ganzheitliches Konzept […]. **Das Ziel** ist eine Rund-um-Versorgung. [RHZ12/APR.29033]
        'The aesthetic clinic offers a holistic concept […]. The goal is comprehensive care.'

In (17) *das Ziel* is associated with *ein ganzheitliches Konzept* in the previous clause by an associative possessive relation, such that the goal is interpreted as being the goal of that clinical concept.

In the above examples (15/17), the trigger introduces a referent and NP1 requires an inference from the trigger on the basis of background knowledge. The relation between the trigger and the NP1 can be captured as a possessive relation in a very general sense. This type of discourse link between the trigger and a unique discourse referent has been dubbed bridging (Clark 1975).

Another type of relation I have identified in my corpus sample is the inclusive or sub-part relation. An example of such a relation is given in (18), where the (implicit) trigger of *eine Person* and *die andere Person* is a group of people implicitly introduced in the question, and the NP1 gets a partitive interpretation.

(18)   Wer hat es im Jahr 2009 am häufigsten in unsere Samstagskolumne geschafft? **Eine Person** hat […]. **Die andere Person** ist […] Bundestagsabgeordneter Erwin Rüddel. [RHZ10/JAN.00064]
        'Who made it into our Saturday column most often in 2009? One person has […]. The other person is [...] the member of the Bundestag Erwin Rüddel.'

Since the trigger, the group of people, is discourse-old, the NPs *eine Person* and *die andere Person* inherit the discourse-familiarity from it. This example differs from the others discussed before

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[3] As a reviewer pointed out, there is an exception. If NP1 is generic, its modifier may be discourse-new:

(i)   **Vater** eines Kindes ist der Mann, der zum Zeitpunkt der Geburt des Kindes mit der Mutter verheiratet ist. [Bürgerliches Gesetzbuch §1592]
       'The father of a child is the man who is married to the mother at the time of the child's birth.'

Besides being generic, this construction differs from the specificational clauses discussed here in being a type of definition. I leave the analysis of such clauses for future research.

not only in the inclusive relation to the trigger but also in the prosodic properties. The NP1 bears a contrastive stress and a rise contour (or complex fall-rise contour). The rising accent on NP1 *die andere Person* and the falling accent on the last constituent *Erwin Rüddel* in the comment build the so-called "Hutkontur" (literally 'hat contour'). The rise contour on NP1 indicates a contrast to contextually invoked alternatives. These are characteristics typical for *contrastive topics* (Büring 2003, among others). Thus, the partitive interpretation of NP1 in specificational sentences is an indicator of a special type of specificational topic, namely the *contrastive specificational topic*.

The third way in which NP1 can be linked to its discourse-old trigger is the strongest one – the direct anaphoric relation: the potential referent of NP1 is identical to the referent of the trigger.

(19)   Die [Financial Times] hatte am Morgen […] einen neuen Artikel veröffentlicht, die fragwürdige Buchungspraktiken des Konzerns [Wirecard] deutlich machen sollen. „**Der heutige Artikel** der Financial Times ist eine Ansammlung einer Reihe von falschen und irreführenden Anschuldigungen", schreibt Wirecard. [https://www.finanzen.ch 15.10.2019]
'The [Financial Times] had published a new article that morning [...] intended to reveal the questionable booking practices of the [Wirecard] group. "Today's article in the Financial Times is a collection of a number of false and misleading allegations," writes Wirecard.'

The NP1 *der heutige Artikel der Financial Times* is clearly discourse-old, as it is anaphorically related to the NP *einen neuen Artikel* in the previous sentence.

The literature on specificational clauses (Mikkelsen 2004: chapter 8, Heycock 2012: 219) points to the fact that specificational topics need not be definite but may be realized by NPs with indefinite articles too. Heycock claims that only strong indefinites, which generally have also been called "specific indefinites", can occur in this position. According to her, the strong reading of an indefinite in English can be favored by different modifications, including the use of *one* rather than *a* and modification by a relative clause. Although in German the indefinite article and the numeral *one* have the same form, the specific interpretation may be triggered by the prosody: indefinite NPs can have a focus accent on the article and be realized as a contrastive topic as shown in (20a). The use of the stressed *ein* with the NP *Ursache* 'reason' here evokes the existence of other possible reasons, and a partitive interpretation of the indefinite NP with an inclusive relation to the trigger emerges. Another use of indefinites as specificational topics is illustrated in (20b). Here the article is unstressed.

(20)   a.   […] der Kasse klafft ein Defizit […]. **Eine Ursache** ist die Covid-19-Pandemie. Doch machen sich auch die gesetzlich bedingten Ausgabensteigerungen bemerkbar. [RHZ20/NOV.11 p.5]
'[...] the fund has a deficit [...]. One of the reasons is the Covid-19 pandemic. But the statutory increases in expenditure are also making themselves felt.'

b. **Ein Thema,** das uns ständig umtreibt, ist die Finanzierung. [Z14/FEB.00111]
'An issue that we always worry about is financing.'

I follow von Heusinger (2002) in the assumption that the referent of a specific indefinite, not only in its partitive reading as in (20a), must always be linked by a contextually salient relation to some already established trigger – to the speaker or another discourse item. In (20b) the salient relation – the relation of worrying about – is introduced in the relative clause. It explicitly anchors *ein Thema* 'a topic' to *wir* 'we'. *Ein Thema* is discourse-new, while *uns* is discourse-old. The whole NP inherits the discourse-familiarity of its trigger. This case is similar to the case of bridging described above. The difference is that here the trigger of the relation is introduced not in the previous discourse but as the modifier of the NP itself. What is also interesting in (20b) is that the anchoring relation is explicitly mentioned. All in all, we can conclude that specific indefinites used as specificational topics, like definites too, are anchored to a discourse-old trigger.

To sum up, specificational clauses are inverted structures with the focused subject in the clause-final position and a topic-NP in the sentence-initial position. This structure is remarkable since, according to standard assumptions, subjects tend to be topics and to occur sentence initially. Inversion of the predicate NP1 is subject to the discourse condition that it must be discourse-old. This condition can be captured as follows:

(21) **Discourse condition on specificational topics**
An NP as a specificational topic must be linked to a discourse-old trigger by some contextually salient relation including bridging, inclusion, or identity.

2.3. The referential type of NP1

In this subsection I want to discuss the referential status of NP1. In specificational clauses, the postcopular NP2 refers to an individual; the referential status of the sentence-initial NP1 is, however, controversial. Depending on the semantic type assigned to the NP1, different types of analyses of the specificational clauses have emerged. I will discuss two types of analyses. Some linguists assume that NP1 is individual-denoting and since NP2 is also individual-denoting, the whole sentence is an *equative* one. Other linguists assume that NP1 is a predicate and the whole sentence is an *inverse predicational* sentence. I will evaluate these analyses.

2.3.1. Arguments against the analysis of NP1 as individual-denoting or as an individual concept

Heycock & Kroch (1999) and Rothstein (2001) propose that NP1 in specificational clauses refers to an individual of type e and specificational clauses equate two referents. Two arguments have been presented against this analysis in the literature. First, it is observed by Mikkelsen (2004) for

Danish that strong referential NPs such as proper names and personal pronouns are excluded from the NP1 position. This also applies to German. Second, following Heycock & Kroch (1999) and Mikkelsen (2004) for English, Geist (2006) shows for German that NP1 cannot be pronominalized by gender-matching demonstrative or personal pronouns which pick up human individuals. NP1 can only be pronominalized by the pro-predicative pronouns *es* or *das*.

(22)   (Der) Sieger, *d(ies)er / *er /es / das war Arthur Techtow.
       the winner   that.M / he / it / this   was Arthur Techtow
       'The winner, it was Arthur Techtow.'

Provided that the form of a pronoun reflects the semantic type of its antecedent, and the NP1 in specificational clauses can only be pronominalized by the pro-predicative pronouns, we have to assume that NP1 is not referential but rather predicative. This assumption is strengthened by the observation that in an equative sentence such as (23), as opposed to in specificational clauses, NP1 can be picked up by a gender-matching pronoun.

(23)   Mary$_i$ ist Georg Preuße. Die(se)$_i$ /sie$_i$ ist eine bekannte Figur im Showgeschäft.
       Mary is Georg   Preuße   this.F / she   is a well-known   figure in show business
       'Mary is Georg Preuße. She is a well-known figure in show business.'

To conclude, the analysis of specificational clauses as equative sentences with NP1 denoting an individual is rendered inadequate by the pronominalization arguments. Alternatively, Comorovski (2007), Romero (2005), and Sharvit (2003) propose that NP1 denotes an individual of a special type, an individual concept, a function of type ⟨s,e⟩. The copula *BE* is taken as the cross-categorial expression of identity ('=') asserting that the individual denoted by NP2 is the value of the individual concept denoted by NP1 in the current world w and time t in the context of utterance c; cf. (24). Under this view, the specificational clause can be taken as a subtype of the equative type.

(24)   BE: $[\![\lambda x\, \lambda u\, [^{\lor}u = x]]\!]^{M, w, t, c, g}$
       where x is a variable over individuals and u is a variable over individual concepts
       (Comorovski 2007: 72)

Individual concepts are formalized in intensional logic as a function from possible worlds to individuals. For example, the definite description *der Präsident* 'the president' as an individual concept should denote a function which gives us at every world-time index of the context an individual which is the president at that world-time index (25). If an individual concept is used as a subject of a predicate such as *wählen* 'elect' as in (26), the function of the individual concept may return different individuals at different world-time indices. Thus the value of the individual concept *the president* may vary.

(25)   *Der Präsident* as individual concept: $[\![der\ Präsident]\!]^{M, w, t, c, g,}$ type ⟨s,e⟩

(26)   **Der Präsident** wird   jedes fünfte Jahr gewählt.
      the   president   becomes every fifth   year elected
      'The president is elected every fifth year.'

The question is now whether NP1 in specificational clauses can be adequately analyzed as an individual concept. For such an analysis, NP1 in specificational sentences and individual concepts should share the properties of NP1 in specificational sentences. As we have seen, first, NP1s in specificational sentences are pronominalized with pro-predicative pronouns and not with gender-matching pronouns, and second, they can occur bare without an article. Originally, DPs denoting individual concepts were assumed to be arguments, not predicates. Thus, they are not expected to share the properties with predicate-NPs as specificational topics. First, as shown in (27), the individual concept *the president* used as a syntactic subject with the predicate *changes every 5 years* can be pronominalized with a gender-matching pronoun but not with the pro-predicative pronouns *es* or *das*. Second, (28) shows that the definite article cannot be omitted.

(27)   **Der Präsident,** d(ies)er /er/*es/*das wird   jedes fünfte Jahr gewählt.
      the   president   that / he / it / this   becomes every fifth   year elected
      'The president, he is elected every fifth year.'

(28)   *****Präsident** wird   jedes fünfte Jahr gewählt.
      president   becomes every fifth   year elected

Since definite NPs occurring as specificational topics do not share the core properties with DPs denoting individual concepts, an analysis in terms of individual concepts cannot be applied to them.

2.3.2. NP1 as a predicate

Partee (1986), Mikkelsen (2004), and Geist (2007), among others, propose that NP1 in specificational clauses is a predicate. According to this view, specificational clauses can be seen as inverted predicational clauses, as was also argued in Section 2.1. As has been shown above in Section 2.3.1, the main piece of evidence for the non-referential status of NP1 comes from pronominalization. The NP1 of a specificational clause pronominalizes with pro-predicative pronouns as opposed to gendered pronouns (cf. (22) vs. (23)). Predicational and specificational clauses also share a core predication relation. For this reason they can be assumed to involve the same copula verb *BE* of predication represented in (29). The copula of predication takes a predicate and applies it to an individual. In a predicational clause, the initial NP denotes an individual and the postcopular NP is the predicate. In a specificational clause, the initial NP is a predicate and the postcopular NP denotes an individual. This semantic analysis can be combined with a syntactic analysis of specificational clauses as predicate inversion.

(29) BE_{PRED}: $\lambda P \lambda x [P(x)]$ (Dowty 1979; Partee 1986)

However, not every predicational clause has a specificational clause as an inverted counterpart. Specificational clauses seem to be constrained since not every predicate that is acceptable in a predicational clause can serve as a specificational topic. Heycock & Kroch (1999: 379) point to the fact that in English some indefinite NPs which can occur as predicates in predicational clauses cannot occur as the NP1 in specificational clauses. This restriction is also present in German. Sortal nouns such as *Genie* 'genius' or *Philosoph* 'philosopher', which occur with an indefinite article in the predicate position, cannot serve as specificational topics; cf. (30a) vs. (30b). We can explain this restriction based on Mikkelsen (2004: 228): As we have seen in Section 2.2, predicate inversion in specificational clauses is subject to a discourse-familiarity condition. Only discourse-old NPs, i.e., NPs related by some contextually salient link to a discourse-old trigger, qualify as specificational topics. In (30b) no antecedent or trigger is available and no such link can be established. Thus, *ein Genie* is not discourse-old and therefore does not meet the conditions for specificational topics: there is no motivation for raising it into topic position. The sentence improves, however, if an antecedent is introduced and a link to it can be established. In (30c), *ein Genie* (with the stress on *ein*) is related to the group antecedent *zwei Genies* 'two geniuses' by a sub-part relation and receives a partitive interpretation. In (30d), *ein Genie* (with the stress on *Genie*) is connected to the discourse-old trigger, the speaker, by a relation introduced in the relative clause.

(30)   a.   Udo war **ein Genie**   *predicational*
           'Peter was a genius.'

        b. #**Ein Genie** war Udo.[4]   *specificational*
           'A genius was Udo.'

        c.   Wie hatten zwei Genies in der Klasse. **Ein Genie** war Udo, das andere war Anna.
           'We had two geniuses in the class. One genius was Udo, the other one was Anna.'

        d.   **Ein Genie**, das ich schon lange bewundere, ist Udo.
           'A genius I have admired for a long time is Udo.'

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[4] Fronting of such predicates is natural with negation and triggers contrastive focus on the predicate (i). However, as Mikkelsen (2004: 23ff) argues, such clauses are not specificational clauses.

(i)   {EIN GENIE$_{FOC}$} war Udo nicht.   *inverse predicational*
      a genius   was Udo not
      'Udo was not a genius.'

Whereas inverse predicational structures can be considered to result from Ā-movement, the raising of the specificational predicate into the sentence-initial position can be seen as a result of A-movement to Spec,TP (Mikkelsen 2004).

All in all, the arguments presented in Section 2.3 lead me to assume that the NP1 in specificational clauses of the type investigated here is a predicate.

To conclude, in Section 2 we identified the construction in which the initial NP can occur bare as a specificational clause. Specificational clauses in German are inverted structures with a sentence-final subject-NP which is focused, and a predicate-NP in the sentence-initial position as a topic. The inversion of the predicate into the topic position is subject to the discourse condition captured in (21) that the predicate-NP must be linked to a pre-established discourse referent by some contextually salient relation which includes bridging, inclusion, and identity.

3. Bare NPs as specificational predicates

In the previous sections I discussed general conditions on specificational topics. For this I analyzed NPs with definite and indefinite articles in this position. In this section I will focus on the main issue of this paper, namely the question of under what conditions NPs as specificational topics may drop the article and occur bare. To answer this question, I will analyze the results of my corpus study and discuss them within the framework of the theory of concept types by Löbner (2011) in subsection 3.1. In subsection 3.2 I will link the discussion of bare NP topics to the wider domain of bare predicate noun phrases.

3.1. Empirical observations

To identify the types of nouns that are used bare as specificational topics, I conducted a corpus study in which I collected specificational copular clauses with a bare NP1 from the newspaper corpus of the COSMAS database. For the search the archive TAGGED C2 containing morphosyntactically annotated texts was used. The search was restricted to four years 2010–2014 of the supra-regional newspaper *Die Zeit* (cf. supplementary file 2). The search query was a copula sentence of the type [bare NP1 … *ist* … NP2 …].[5] The automatic search yielded 5.741 copula sentences. After analyzing the matches, I identified 158 sentences as examples of specificational clauses. The examples were collected (cf. the supplementary file) and analyzed. The examples contained 85 different bare nouns as specificational topics. While 57 of them were used only once, the other 28 were used more frequently. The list in (31) presents these nouns with the frequency given in brackets.

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[5] Note that I only consider nouns as heads of NP1 for which an article is obligatory in an argument position. I do not discuss mass (*Luft* 'air'), collective (*Gemüse* 'vegetables'), and abstract nouns (*Frieden* 'peace') in the singular, or indefinite NPs in the plural (*Bücher* 'books'), which do not need an article even in argument positions.

(31)   *Aufgabe* 'task' (2), *Besitzer* 'owner' (2), *Bühne* 'stage' (2), *Eigentümer* 'owner' (2), *Empfänger* 'recipient' (2), *Hauptursache* 'main cause' (2), *Herzstück* 'centerpiece' (2), *Hintergrund* 'background' (2), *Kern* 'core' (2), *Spitzenreiter* 'leader' (2), *Symbol* 'symbol' (2), *Thema* 'topic' (2), *Träger* 'holder' (2), *Vorreiter* 'pioneer' (2), *Vorsitzender* 'chairman' (2), *Absender* 'sender' (3), *Ort* 'place' (3), *Schauplatz* 'setting' (3), *Treffpunkt* 'meeting point' (3), *Auftakt* 'beginning' (4), *Ausgangspunkt* 'starting point' (4), *Grundlage* 'basis' (4), *Voraussetzung* 'prerequisite' (4), *Höhepunkt* 'highlight' (5), *Vorbild* 'example' (5), *Auslöser* 'trigger' (6), *Anlass* 'occasion' (7), *Ziel* 'goal' (10), *Grund* 'reason' (11)

In the next step I analyzed how NP1 fulfills the condition of discourse-familiarity in terms of a link to a discourse-old trigger. In Section 2.2 we identified three ways an implicit link to a discourse-old trigger can be established: by an anaphoric identity relation to an antecedent, by an associative binding relation to a possessor, or by an inclusion relation to a group antecedent. In my sample I found neither examples of the anaphoric relation nor examples of the inclusive relation. All examples of bare specificational topics for which a broader context could be found in the corpus display the same pattern: the bare noun is used as a relational noun that relates its referent to some discourse-old trigger by bridging. The bridging relation between the potential referent of NP1 and the trigger can be characterized in a broader sense as a possessive relation. The possessor argument is sometimes introduced in the previous discourse as in (32) (possessor = *ein Boom* 'a boom') or as a modifier of the bare NP itself. The modifier can take different forms, e.g., as an adverb (32b) or an NP (32c/d), or it can be realized as the first part of a compound (32e).

(32)   a.   Solche ambulanten Behandlungszentren […] erleben in den USA einen Boom. **Auslöser** ist Präsident Barack Obamas Gesundheitsreform. [Z14/JUN.00127]
       'Such outpatient treatment centers [...] are experiencing a boom in the USA. The trigger is president Barack Obama's Health Care Reform.'

      b.   **Grund** dafür ist die Gewalt. [Z14/APR.00142]
       'The reason for this is violence.'

      c.   **Höhepunkt** des Menüs ist die Taube mit Sauce Salmis. [Z10/NOV.04332]
       'The highlight of the menu is the pigeon with Salmis sauce.'

      d.   Gerhahers **Ideal** ist […] der junge Dietrich Fischer-Dieskau. [Z10/JUN.02204]
       'Gerhaher's ideal is [...] the young Dietrich Fischer-Dieskau.'

      e.   **Gesprächsthema** ist ein Vogel, der […]. [Z12/APR.00222]
       'The topic of conversation is a bird that […]'

To see that the relationality of the bare noun is one crucial condition for the bare use, we can compare the use of the inherently relational noun *Autor* with the non-relational *Schriftsteller*.

As (33a/b) shows, both nouns can be used as specificational predicates with the definite article. However, only *Autor* can also be used bare, while the definite article with *Schriftsteller* cannot be omitted.

(33)   a.   Damals ist ein revolutionäres neues Buch erschienen. (**Der**) **Autor** (des Buches) war John S.
'At that time a revolutionary new book was published. The author (of the book) was John S.'

   b.   Damals ist ein revolutionäres neues Buch erschienen. ***(Der) Schriftsteller** (, der dieses Buch geschrieben hatte,) war John S.
'At that time a revolutionary new book was published. The novelist (who had written this book) was John S.'

While the possessor argument of the relational noun *Autor* can be introduced in the genitive NP (*der Autor des Buches*), *Schriftsteller* seems not to have such an argument in (33b) since this noun is not relational (**der Schriftsteller des Buches*); cf. Schwarz (2009: 129).[6] Thus, relationality is one crucial factor in licensing bare specificational topics. However, my further analysis of the data suggests that relationality is not sufficient.

According to my intuition, the bare use of NP1 always triggers a unique interpretation. In my corpus sample I did not find any context which would trigger or support a non-unique interpretation. From this I conclude that uniqueness is the second precondition for a bare use of an NP as a specificational topic. With respect to uniqueness, the nouns in my corpus sample can be divided into two groups. Nouns of the first group such as *Hauptstadt* 'capital', *Besitzer* 'owner', and *Vorsitzender* 'chair' are clearly unique: in a default context, they assign to a given possessor only one entity (e.g., a country has, or "possesses," normally only one capital city). Other nouns such as *Aufgabe* 'task', *Schwerpunkt* 'important point', and *Sponsor* 'sponsor' are not restricted in this respect and can apply to one or more entities related to a given possessor (e.g., one institution can have more than one task, a program can have more than one important

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[6] An anonymous reviewer pointed out the following example to me, in which *Schriftsteller* occurs bare:

(i)   Die Arbeitsgruppe benötigt jeweils einen Vertreter aus allen Berufen des Literaturbetriebes. Der Vertreter der Kritiker ist selbstverständlich Marcel Reich-Ranitzki, **Schriftsteller** in der Arbeitsgruppe ist Günther Grass.
'The working group needs one representative from all professions in the literature business. The representative of the critics is of course Marcel Reich-Ranitzki, the novelist in the working group is Günther Grass.'

My explanation for the bare use of *Schriftsteller* is the following: Although *Schriftsteller* is not inherently relational, in (i) it is coerced and used as a relational noun with the possessor *die Arbeitsgruppe* 'the working group': der *Schriftsteller in der Arbeitsgruppe* 'the novelist in the working group'. In contrast to previous examples of relationality based on associative relations of the type "the book has an author – the author of the book", the relation here is a part-whole one ("the group has/includes one novelist – the novelist in the group"). This part-whole relation conveyed by the discourse serves as the basis for bridging in this case.

point, etc.). Interestingly, if nouns of the latter group occur bare in the predicate position of a predicational clause, they seem to allow a unique as well as a non-unique interpretation.

(34)   Digitalisierung ist **Schwerpunkt** des Programms. Die Erhöhung der Sicherheit ist ein weiterer Schwerpunkt.
        'Digitization is a focus of the program. Increasing security is another focus.'

The second clause in (34) triggers a partitive non-unique interpretation, so that in the first clause *digitization* is interpreted as being one of many important points of the program; an indefinite article could be added. What is intriguing is that if *Schwerpunkt* occurs as topic in a specificational clause as in (35), only a unique interpretation is possible. The second clause triggering a non-unique interpretation leads to incoherency.

(35)   **Schwerpunkt** des Programms ist Digitalisierung. #Ein weiterer Schwerpunkt ist die Erhöhung der Sicherheit.
        'Digitization is the focus of the program. Another focus is on increasing security.'

The descriptive generalization we can draw at this point is that if relational nouns occur bare their interpretation with respect to uniqueness is restricted: as specificational topics they may only receive a unique interpretation. The shift from non-unique to unique may be implicit. Sometimes it is, however, triggered by combination with a uniqueness-establishing adjective such as *zentral* 'central', superlatives or by compounding with a nominal stem such as *Haupt-, Kern-,* or *Grund-* that forces a unique interpretation (*Hauptkritikpunkt* 'main criticism', *Kernbestandteil* 'core component', *Grundvoraussetzung* 'basic condition'). Thus, nouns that occur bare as specificational topics need not be inherently unique. Uniqueness may be established in the context or emerge in the course of semantic composition.

I conclude from my empirical study that relationality and uniqueness are the two key features that license the use of bare NPs as specificational topics, cf. (36): the uniqueness licenses the bare use and the bridging to a discourse-old possessor based on the relationality of the noun qualifies it for use as a specificational topic.

(36)   **Condition on bare specificational topics**
        A bare NP as a specificational topic must be unique and be linked to a discourse-old trigger by bridging evoked by the relationality of the NP.

If we compare this condition with the general conditions on specificational topics in (21), we will see that bare NPs as specificational topics are more restricted than NPs with articles. While specificational topics with articles can be discourse-old in several different ways, bare NPs can acquire discourse-familiarity only by bridging.

3.2. Bare NPs in predicational and specificational clauses

As we have seen in the previous sections, specificational clauses have been analyzed as predicate inversion structures triggered by the topicalization of the predicate-NP. In this subsection I will compare the restrictions on the bare use of topicalized predicate-NPs identified in (36) with those on non-topicalized predicate-NPs.

In German, predicate nouns can also occur bare in the postcopular position of predicational copular sentences such as (37a), where they are not topics but are part of the comment. Traditional literature (e.g., Duden 2005) explains the bare use of predicate nouns in such sentences by their well-establishedness and stereotypicality: sortal nouns denoting well-established social groups of people such as professions or nationalities occur bare; cf. the recent analysis of such bare nouns in Geist (2019) and the literature cited there. However, there are other occurrences of bare predicates which cannot be explained with well-establishedness. Nouns such as *Thema* 'subject', *Hauptziel* 'main goal', and *Grundproblem* 'basic problem', which are unique and relational, may also occur bare; cf. (37b). Furthermore, Zobel (to appear) observes that nouns such as *Bestandteil* 'component' or *Mitglied* 'member', which are relational but non-unique, may also occur bare in the postcopular position (37c).

(37) Predicational sentences:

    a. Er ist **Arzt** in Recklinghausen. [Z11/JUL.00218]
        'He is a doctor in Recklinghausen.'

    b. Die Situation der Frauen im Iran ist **Thema** eines Vortrags, heute um 19 Uhr. [BRZ08/FEB.06696]
        'The situation of women in Iran is the subject of a lecture today at 7 p.m.'

    c. Das Schreiben über Politik ist **Bestandteil** der Politik. [Z12/AUG.00185]
        'Writing about politics is a component of politics.'

As can be seen in (38), not all NPs that can occur bare in predicational clauses can also occur bare in specificational clauses.

(38) Specificational sentences:

    a. (Wer ist hier Arzt?) ***Arzt** ist er.
        '(Who around here is a doctor?) A doctor is he.'

    b. ^{ok}**Thema** des Buches ist […] die Langeweile. [Z13/NOV.00135]
        'The subject of the book is [...] boredom.'

    c. ***Bestandteil** der Politik ist das Schreiben über Politik.
        'A component of politics is writing about politics.'

As I argued above, bare predicate-NPs can serve as specificational topics only if they obey three conditions: they must be unique, relational, and the trigger or bearer of the relation must be

discourse-old. Obviously bare predicate-NPs such as *Arzt* in (38a) and *Bestandteil* in (38c) don't fulfill these conditions: The predicate-NP *Arzt* is neither unique nor relational. The predicate noun *Bestandteil* is relational but not unique. The predicate noun *Thema*, however, fulfills the conditions on bare specificational topics: it is unique, relational, and its trigger can be discourse-old. However, even *Arzt* and *Bestandteil* can occur as a bare NP1 if they are modified by an adjective or word formation contributing to unique interpretation, and a relation to an old discourse trigger is explicitly or implicitly established in the context; cf. (39a/b).

(39)   a.   **Leitender Arzt / Chefarzt** (der Abteilung) ist Professor Miller.
              'The chief physician (of the department) is Professor Miller.'

        b.   **Kernbestandteil** des Glossars ist eine Liste von Fachbegriffen. [Z13/DEZ.00236]
              'The core component of the glossary is a list of technical terms.'

One question remains: Why can't relational nouns such as *Bestandteil* or *Mitglied* occur bare as specificational topics? They can occur in this position only if combined with a definite or indefinite article. The definite article would trigger a unique interpretation, and the indefinite article a non-unique partitive one; cf. (40a)

(40)   a.   **Ein Bestandteil** der Politik ist das Schreiben über Politik. Ein anderer Bestandteil ist …
              'One component of politics is writing about politics. Another component is …'

        b.   *****Bestandteil** der Politik ist das Schreiben über Politik. Ein anderer Bestandteil ist …

But why isn't the bare NP in (40b) able to express partitivity? I do not have a straightforward answer to this question now. However, one possible explanation could go in the following direction: In Section 2.2 we have seen that only indefinites which are specific can occur in the initial position of specificational clauses and receive a partitive interpretation. Specific indefinites are strong and for that reason cannot be used bare. The article drop and bare use would "weaken" the form of such NPs and, possibly, prevent them from being specific.

To conclude, different types of predicate-NPs can occur bare in the postcopular position of predicational sentences. Only one type of them, namely NPs with the features [+unique, +relational], can also occur bare as a topic in specificational sentences because only such NPs obey the condition on bare specificational topics identified in (36).

3.3. The concept type of bare specificational predicates

According to the condition on bare specificational topics in (36), only NPs which can bear the features [+ relational, + unique] are felicitous predicates in specificational clauses. To identify the class of NPs with such features and to distinguish them from other types, I use the classification of nominal concept types proposed by Löbner (2011). He introduces a classification

of nouns according to the concept they inherently denote. The concept types are identified by two binary features: [U] for inherent uniqueness and [R] for inherent relationality. The four basic noun types correspond to the four logical types, cf. **Table 1**.

	[–U] non-unique	[+U] unique
[–R] non-relational	Sortal noun ⟨e,t⟩ *stone, book, adjective, water*	Individual noun e *moon, weather, date, Maria*
[+R] relational	Relational noun ⟨e,⟨e,t⟩⟩ *sister, leg, part, attribute*	Functional noun ⟨e,e⟩/⟨e,⟨e,t⟩⟩[7] *father, head, age, subject*

Table 1: Concept types based on Löbner (2011: 307).

The meaning of sortal nouns is sortal concepts that characterize their potential referents in terms of properties. The meaning of individual nouns is individual concepts that assign a unique referent to every appropriate context of utterance. Relational nouns characterize their referents in terms of a particular relation to some other object, usually called a *possessor*. Relational nouns proper are non-unique, the relation between the possessor and the referent is not one-to-one; for example, for the relational noun *sister* (*of*) in a given context of utterance and for a given possessor there may be any number of potential referents. Functional nouns combine the features of uniqueness and relationality. The meaning of functional nouns is functional concepts that characterize their referents in terms of a particular one-to-one relation to the possessor. For the functional noun *father* (*of*), for example, in a given context of utterance and for a given possessor, there may be only one potential referent who is the father of that possessor.

Löbner identifies a correlation between the concept type of the noun and the type of the determiner. According to his theory of determination, only inherently unique concepts are available for definite use and only non-unique concepts are compatible with indefinite reference. However, determiners of each type can be combined with nouns of each concept: if the restrictions of the concept type are not met, the noun is shifted to an appropriate concept type. On this basis, congruent and incongruent determinations can be distinguished. For example, *Vater* 'father' primarily denotes a functional concept, it is relational and unique. The definite determiner *der Vater* preserves the functional concept type. If *Vater* is combined with an indefinite article yielding *ein Vater*, the uniqueness (and in this case also relationality) is canceled and the nominal concept is changed into a sortal one. Löbner (2011) uses statistical, typological, and historical

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[7] I depart from Löbner's assumption that functional concepts are always of type ⟨e,e⟩ and assume that they are of that type only if they are arguments. They can also occur as predicates of type ⟨e,⟨e,t⟩⟩ like relational nouns, but still differ from relational nouns by the uniqueness feature; cf. Section 4 for more on this topic.

evidence to corroborate the hypothesis that incongruent determination is a marked option and involves a type shift of the noun.

My analysis so far suggests that bare NPs licensed as specificational predicates are unique and relational, and hence are functional concepts. I also assume that the concept of the noun can be modified by adjectives and word formation, as was shown above, thus the concept type of the NP emerges in the course of semantic composition.

What about nouns denoting concepts other than functional ones, e.g., individual nouns? Individual nouns such as proper names, pronouns, or nouns like *Mond* 'moon' and *Wetter* 'weather' do not occur as specificational subjects in my corpus sample. Interestingly, the latter nouns are not appropriate specificational predicates even if they are combined with an article. The exclusion of individual nouns in this position is expected since according to Löbner (2011) such nouns are inherently individual-denoting (type e) or individual concepts (type ⟨s,e⟩). Such nouns are excluded in a position where a predicate is required.

What about relational non-unique nouns such as *Bestandteil* 'component'? As we have seen above, if a noun preserves its relational concept and non-uniqueness, it cannot serve as a bare specificational topic (cf. ex. 38c). In an appropriate context, however, some relational nouns such as *Schwerpunkt* can be shifted to a functional concept (ex. 35 above).

As to sortal nouns, they are neither unique nor relational and hence do not obey the condition on bare specificational topics. However, conceptual shifts seem to be possible even with such nouns. One interesting example of such a shift is (41).

(41)   Eine Fahrgemeinschaft ist ein Ensemble, das gemeinsam ein Stück aufführt, dessen Inhalt keiner der Beteiligten vorher kennt. **Bühne** ist die Autobahn. Regisseur der Zufall. [Z13/JUN.00146]
       'A car pool is an ensemble that performs a piece together, the content of which none of the participants knows beforehand. The stage is the motorway. The director is chance.'

Assuming that *Bühne* 'stage' is primarily a sortal noun, in the given example it is used as a functional concept "die Bühne des Ensembles" ('the stage of the ensemble') and means something like 'the area of activity of the ensemple'. Interestingly, such a meaning shift and the drop of the definite article seem not to be licensed as easily if *Bühne* occurs in the postcopular position; cf. (42).

(42)   #Die Autobahn ist **Bühne**.
       'The motorway is the stage.'

This suggests that topicality per se supports a shift of the non-unique sortal concept to a unique one. In a predicational clause where *Bühne* is not a topic, such a shift is harder to get. At this point it is not particularly clear why a concept shift from [−unique] to [+unique] is easier for

topics than for non-topics. I leave this issue for further research. What this example suggests is that, in principle, almost every noun can denote a functional concept in an appropriate context and be qualified for a bare use as a specificational topic. As a conclusion of the discussion in this section, we can formulate the following generalization:

(43) **Generalization on the bare use of NPs as specificational topics**
      Only NPs denoting functional concepts may occur bare as a specificational topic.

Before we come to the analysis in the next section, I would like to summarize my findings so far. In this paper I analyze noun phrases that occur as a predicative complement of an inverted copular sentence, called a specificational sentence. To occur in the sentence-initial position the predicate-NP must qualify as a topic of a special kind. The topical status of the NP requires its potential referent to be related to a discourse-old trigger. Three types of relations to the trigger can be identified: identity, a bridging/possessive relation, and inclusion. The topic of specificational clauses may be realized not only by NPs with definite and indefinite determiners but also by bare NPs. Only NPs that can be interpreted as a functional concept, i.e., are [+relational, +unique], may occur bare in this position. Their relationality is a precondition for topicality: if the possessor argument of the NP is discourse-old, a bridging relation can be established. On the other hand, the uniqueness of NP1 seems to be a precondition for the omission of the definite article.

4. Analysis

The discussion so far shows that only nouns that combine uniqueness with relationality are qualified to occur as bare specificational predicates. The question now is how these features are captured in the structure of NPs. Since uniqueness is related to definiteness introduced by definite articles in DPs, I will first sketch the research on definiteness and use the main insights of it for the analysis of bare NPs as specificational topics.

4.1. Two levels of definiteness

Recent research on definiteness in different languages suggests a distinction between an anaphoric and a uniqueness-based notion of definiteness. This distinction can be made explicit by two different forms of the article (e.g., the weak and strong article in Fering), or no determiner in one of the two cases (e.g., in Mandarin) (Schwarz 2009, 2013). Anaphoric definites (realized in German by a so-called strong form of the article) refer to objects that have been introduced in the discourse. In contrast, unique definites (realized in German dialects[8] by the weak form of the definite article) pick up a referent which is the unique or maximal element in the property

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[8] In standard German, unique definiteness shows up in the form of the article in PPs. Here the definite article may have a weak or reduced form and be contracted with the preceding preposition (cf. Schwarz 2009, among others); cf. _zu_ (preposition) + _de<u>m</u>_ (def. article Dat.Masc.Sg.) > _zum_ (contraction).

denoted by the NP. Cheng, Heycock & Zamparelli (2017) map the anaphoric/unique distinction to the semantic distinction individuals vs. singleton/maximal properties. This distinction is in turn mapped onto two distinct syntactic levels, a high DP, with a pronominal index i (argumental), which I will call the a(naphoric)DP, and a lower DP, which I will call the u(niqueness-based) DP[9] (predicative or argumental). The authors assume that the heads aD and uD may be filled or empty. Even if the head is empty, the projection can still be semantically active and visible for interpretation, if material of the appropriate type moves to its head or specifier.

The definite article enters the syntactic representation in uD and signals uniqueness. Since the uDP resists having an antecedent, the existence of an individual having the property denoted by the NP is not presupposed. In argument positions, uDPs can be turned into the argument type e via the free type-shifting operator MAX, which takes singleton/maximal properties and returns their unique/maximal element.

The aD-layer can be made visible for interpretation by the head-movement of the definite article from uD to aD; cf. **Figure 1**. aDPs always have an antecedent in the discourse.
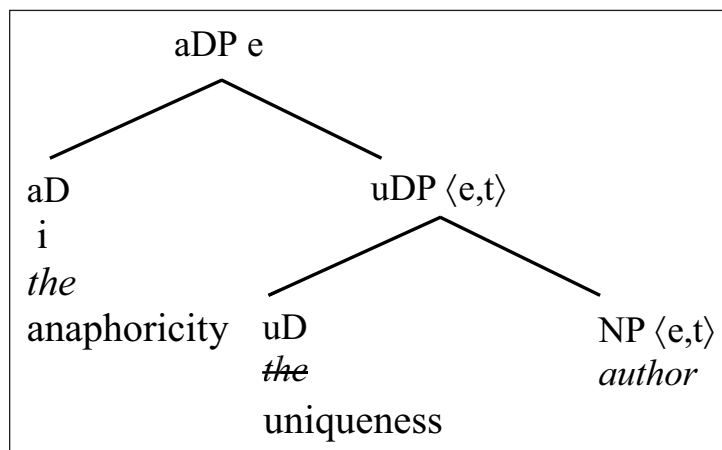

Figure 1: Definiteness at the syntax-semantics interface (based on Cheng, Heycock & Zamparelli 2017).

The semantic analysis of definites by Coppock & Beaver (2015) goes in a similar direction. They claim that the basic use of definite expressions is their predicative use and the basic

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[9] Cheng, Heycock & Zamparelli (2017) call the higher DP "s(trong)DP" and the lower DP "w(eak)DP". They use the term "weak DP" as a cover term for definites whose definiteness is based on uniqueness and may be expressed by a weak form of the definite article. However, originally the term "weak DP" or "weak definite" was used for definite descriptions like *school* occurring in VPs denoting well-established activities like *to go to school* (= to attend the lessons at school as a pupil). This use is limited to certain lexical items. To avoid terminological confusion between weak definites and weak DPs, I simply call DPs with definiteness based on uniqueness uDPs (= uniqueness-based DPs) and assume, following Schwarz (2013), that in some languages uDPs may have a weak or zero article form.

contribution of the definite determiner is to indicate uniqueness without indicating existence. The existence can be contributed by an operator which shifts the predicate noun into the unique satisfier of that predicate. To support the assumption that predicative definites are non-referential and lack an existence presupposition, Coppock & Beaver use cancelation tests. They apply such tests to predicate-NPs in predicational sentences like (44). Example (44) shows that the existence of the ambassador can be canceled.

(44)   He is not the ambassador to Spain, because Spain doesn't have an ambassador here.

The next test of Coppock & Beaver (2015) examines the status of uniqueness. It shows that unlike existence, uniqueness cannot be canceled.

(45)   a. #He's not the ambassador to Spain — there are two.
        b. #There are two ambassadors to Spain; therefore, he is not the ambassador to Spain.
           (Coppock & Beaver 2015: 383)

To capture the observation that the definite article primarily contributes uniqueness and not existence, the authors suggest the representation in (46), where $\partial(|P| \leq 1)$ codes the uniqueness presupposition.

(46)   *the*: $\lambda P. \lambda x [\partial(|P| \leq 1) \wedge P(x)]$ (Coppock & Beaver 2015: 395)

According to this representation, the definite article picks out the singleton set of (or the property of being the unique) P if there is just one and the empty set (or empty property) otherwise. The definite article preserves the predicative status of the NP and only adds a uniqueness requirement. Going back to **Figure 1**, the representation in (46) can be assumed to capture the semantic contribution of the uniqueness-based definite article as an exponent of the functional head uD.

The commonality in the analyses of unique definites by Coppock & Beaver and Cheng, Heycock & Zamparelli (2017) is in a nutshell the following: in both analyses uniqueness-based definites are treated as singleton properties. They are semantically and syntactically more basic, and a free type shift to an argument type is possible. The definite article of uniqueness-based definites has the semantic contribution captured in (46). Cheng, Heycock & Zamparelli additionally take into account the fact that in some languages the article as an exponent of the functional head uD may have a weak or zero form, as was discussed by Schwarz (2013), among others. The capturing of all these characteristics of uniqueness-based definites in one model is attractive and will be used in the analysis of bare specificational topics in the next subsection.

The analyses discussed above were developed for definite NPs occurring in the postcopular position of predicational sentences. The question we will answer in the next subsection is whether precopular predicate-NPs in specificational sentences behave similarly and can be analyzed in an analogous way.

4.2. Bare specificational topics as uniqueness-based definites

The task is now to consider how bare NPs used as specificational topics fit the representation of two levels of definiteness in **Figure 1**. First, we have seen that bare NPs in the position of specificational topics are predicates that require a unique interpretation. This profile is the hallmark of uDPs. Second, according to my corpus study presented in Section 3, bare NPs as specificational topics are not used as direct anaphors to refer to an object introduced in the previous discourse. Example (47) illustrates this fact: the bare NP *Universitätsrektor* cannot pick up the antecedent in the previous clause.

(47)   In die Sendung wurde ein Universitätsrektor und ein Schulrektor eingeladen.
        #**Universitätsrektor** war Professor Schmidt.
        'A university rector and a school rector were invited to the show.
        The university rector was Professor Schmidt.'

The analysis of the corpus examples in Section 3.1 has also shown that bare specificational topics do not pick up a referent from a group of referents introduced in the previous context either. Does this mean that bare NPs have no existence presupposition? To test this I applied the cancelation test used in the study of Coppock & Beaver (2015). Most informants accepted sentences like (48). Thus, the existence of the referent of the specificational predicate can be canceled.

(48) ^{OK}**(Der) Leiter** des Goethe-Gymnasiums ist nicht Peter Schulz, denn es gibt momentan gar keinen Leiter.
        'The principal of the Goethe High School is not Peter Schulz, because there is currently no principal.'

Since specificational predicates with an optional definite article, although they are unique, have no existential presupposition, Coppock & Beaver's (2015) analysis for unique definites can be applied to them. For the uniqueness-indicating determiner, I assume the representation in (49) proposed by Coppock & Beaver (2015).

(49) der_{unique} : $\lambda P. \lambda x [\partial(|P| \leq 1) \wedge P(x)]$

This determiner realizes the head uD. It combines with an NP denoting a functional concept with the features [+unique, +relational] and forms an uDP that can serve as a specificational topic, cf. **Figure 2a**. But how can we account for the fact that unique specificational topics can also be used without an article?

In this case, I assume that the head uD with the feature [+unique] is empty, but the uDP projection is still semantically active. The empty head is licensed by the phrasal movement of the NP with the feature [+unique] into [Spec,uD] – an option discussed by Cheng, Heycock & Zamparelli for the licensing of functional projections with zero heads, cf. **Figure 2b**, cf. **Figure 2a**.
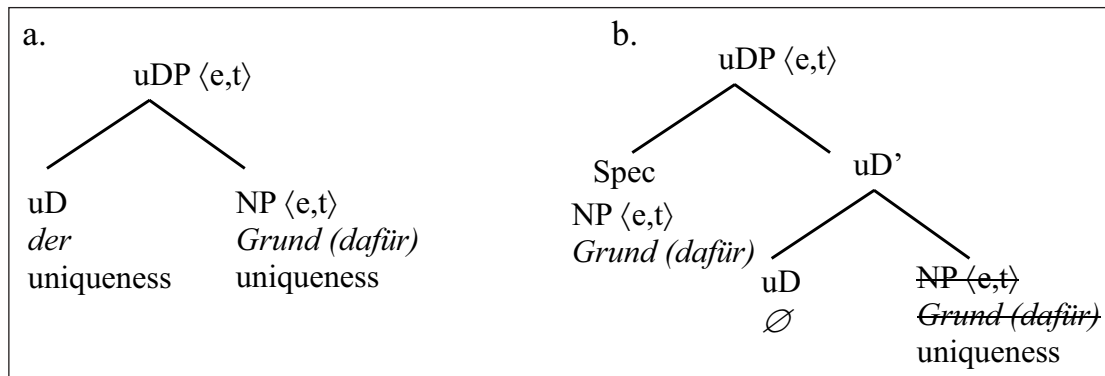
Figure 2: Uniqueness-based DPs as specificational topics: Two alternative realizations.

The next feature of NP1 we have to account for is relationality: the noun has a possessor argument, to which its potential referent is linked by a possessive relation. To fulfill the condition on specificational topics, the possessor argument must be discourse-old. The representations in (50) capture the two features of specificational predicates, uniqueness and relationality, as follows.

(50) a. $[Grund]_{NP}$: $\lambda x\ [\partial(|\text{reason}| \leq 1) \wedge \text{reason}(x) \wedge \text{poss}(x) = y]$
    b. $[B\ddot{u}hne]_{NP}$: $\lambda x\ [\partial(|\text{stage}| \leq 1) \wedge \text{stage}(x) \wedge \text{poss}(x) = y]$

(50a) represents the meaning of the NP with the head noun *Grund* denoting a functional concept, while (50b) represents the meaning of the NP with the head noun *Bühne* denoting a sortal concept that is shifted to a functional concept. For the representation of uniqueness of predicate nouns in (50) I use Coppock & Beaver's (2015) representation for definite articles. In order to account for relationality I assume that the predicate *poss* establishes a possessive relation between the referent of the noun x and the possessor argument y. According to (50), *Grund* denotes a singleton set of the reasons for y and *Bühne* denotes a singleton set of the stages of y, if there is just one and the empty set otherwise. If *Grund* or *Bühne* are used as specificational topics, the possessor argument gets an anaphoric index that indicates that it must be pre-established in the context; cf. (51).

(51) a. $[Grund]_{NP}$: $\lambda x\ [\partial(|\text{reason}| \leq 1) \wedge \text{reason}(x) \wedge \text{poss}(x) = y_i]$
    b. $[B\ddot{u}hne]_{NP}$: $\lambda x\ [\partial(|\text{stage}| \leq 1) \wedge \text{stage}(x) \wedge \text{poss}(x) = y_i]$

According to (51) the bare noun encodes the same uniqueness as the uniqueness-indicating definite article. This NP may be combined with the definite article in uD or be moved to [Spec, uD] and be used as a bare uDP.

That uniqueness-based definites crosslinguistically may occur bare or be combined with a reduced form of the article has already been shown in the literature (cf. Schwarz 2013 and the

literature cited there). In standard German, the article reduction is attested in prepositional phrases: the reduced definite article may be contracted with the preposition; cf. (52a) and footnote 8. Schwarz speaks of "weak article definites" in this case. As (52b) shows, an absolute reduction of the article to zero is not possible in this case. If weak article definites are an instance of uDPs, the question arises why the weak article cannot also be reduced to zero, as in the case of predicate uDPs; cf. (53).

(52) a. Ich gehe zum Abteilungsleiter.
    'I am going to the department manager.'

   b. *Ich gehe zu Abteilungsleiter.

(53) a. Peter ist (der) Abteilungsleiter.
    'Peter is the department manager.'

   b. (Der) Abteilungsleiter ist Peter.
    'The department manager is Peter.'

The reduction of the unique article to zero in standard German seems to be syntactically restricted. Note that the function of the definite article in German, besides marking definiteness, is to mark morphological case. Prepositions assign case to the noun phrase and the article makes this assignment visible. This is the reason why in PPs the definite article is generally not reduced to zero, but only to a weak form that can still indicate case. I think that the reason for zero realization of the weak definite article with predicate noun phrases is that such phrases occur in the predicate position, which is a syntactically ungoverned position. In predicational copula clauses, the copula, which has been assumed to be the bearer of merely grammatical features, takes a predicate complement but does not assign case to it (Lang 1999, Geist 2013). The predicate NP occurs in its default form, which is the nominative singular. Since no case is assigned to the predicate noun phrase, there is no need to indicate case and the article need not be realized.

All in all, these considerations seem to indicate that weak article definites in PPs and uniqueness-based specificational topics can be considered to be two instances of the same category of uniqueness-based DPs and a unified analysis of definite descriptions involving uniqueness is possible, although I will not attempt to apply my analysis to weak article definites here.

The last remark concerns the scope of the analysis. The proposed analysis has been developed to capture the syntax and semantics of specificational topics under unique/non-anaphoric interpretation. As we have seen in Section 2.2, (ex. 19) some specificational topic-NPs with definite articles can serve as direct anaphors in the discourse. This behavior is more typical for anaphoric definites. The limits of this paper do not allow me to provide a detailed analysis for such cases and I have to leave this topic for another paper.

To conclude, bare NPs used as specificational topics are an instance of uniqueness-based definites. The article with such definites indicates uniqueness. In German it can have a reduced form, which is still able to indicate morphological case assigned to the noun phrase. Since bare specificational NPs as topics are already unique and are not assigned case by the copula, the definite article is redundant and can be dropped. This is possible because the bare unique DP encodes the same uniqueness as the unique definite article, which can still be optionally realized.

5. Conclusion

The aim of the paper has been to identify the syntactic and semantic conditions for article drop in NPs used as topics of specificational clauses. After an examination of the sentence type and the type of nouns that occur bare as specificational predicates, we reached the following explanation: Specificational clauses in German are inverted structures with a sentence-final subject-NP which is focused, and a predicate-NP in the sentence-initial position which serves as a topic. The condition for the bare occurrence of NPs in this position is that the NP denotes a functional concept. According to the theory of concept types by Löbner (2011), NPs denoting functional concepts are relational and unique. The relationality of the NP ensures the anchoring in the discourse via an anaphoric link to a bridging antecedent in the previous discourse – this qualifies it to be a topic in the sense of discourse-familiarity. The uniqueness of such NPs is the key to understanding why they can occur bare without a definite article: the article in uniqueness-based DPs encodes uniqueness and morphological case. Since NPs denoting functional concepts are already unique, and as complements of the copula are not assigned case, the article need not be realized.

My investigation suggests that relational definites, anaphoric definites, and specific indefinites can denote predicates and serve as topics of specificational clauses. The common property which these noun phrases share is that they may evoke a pre-established entity in the discourse, to which the property they denote must be anchored.

One issue that remains open is the nature of the uniqueness condition for bare specificational topics. My first corpus study shows that specificational topics need not be unique in general: NPs with definite and indefinite determiners, i.e., unique and non-unique interpretations, may occur in the topic position. However, NPs that occur bare in this position must be unique. Why should this be so? One possibility could be that non-unique NPs in this position are automatically interpreted as indefinite. Since according to Heycock (2012) only specific/strong indefinites can serve as specificational topics, and assuming that specific/strong reference correlates with "strong" form, the article simply cannot be dropped.

Sources

COSMAS (newspaper corpus) http://www.ids-mannheim.de/cosmas2/

(provided by the Institute of German Language in Mannheim)

The examples used in this paper come from the following newspapers:

BRZ08: Braunschweiger Zeitung

NUN: Nürnberger Nachrichten

NUZ: Nürnberger Zeitung

RHZ: Rhein-Zeitung

Z: Die Zeit

Additional files

The additional files for this article can be found as follows:

- **Supplementary file 1.** Appendix. Empirical data from the first corpus study (specificational sentences with NP1 combined with a definite or indefinite article). DOI: https://doi.org/10.16995/glossa.5708.s1
- **Supplementary file 2.** Appendix. Empirical data from the second corpus study (specificational sentences with a bare NP1). DOI: https://doi.org/10.16995/glossa.5708.s2

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Competing Interests

The author has no competing interests to declare.

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