(Argument) clauses and definite descriptions

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Abstract

For some types of clauses it had been proposed to consider them as definite descriptions (especially, free relatives, interrogatives, conditionals). I will propose a generalization: All clauses are or contain a definite description (as an argument). I will argue (i) that argument clauses are definite descriptions, (ii) that at least some species of adverbial and attributive clauses are predicates including a definite description, (iii) that independent clauses (as well as illocutive subclauses) include a definite description as the argument of the mood prefix. In each of these cases, it is assumed that the existence of a definite description is crucial in explaining fundamental semantic facts. Assuming (i), for instance, explains many startling semantic similarities between referential noun phrases and argument clauses. Four types of definite descriptions are distinguished, which are crucial for the semantics of noun phrases and clauses.

Keywords

Semantics, clause, argument clause, noun phrase, definite description, interrogatives

1 Introduction

I will argue that generally, there is an intimate connection between clauses – no matter whether they argumental, attributive, adverbial, parenthetical, or independent – on the one hand, and definite descriptions of various kinds, on the other. As a first step, I will try to show that there is strong evidence for argument clauses being definite descriptions. As a second step, I will take some species of non-argumental clauses and argue that they have a close connection to definite descriptions, too. We will receive a result that clauses might either be definite descriptions themselves or encompass a definite description (as an argument).

I will use definite description as a purely semantic notion: An expression is a definite description iff its semantics can be represented by the description operator (i.e., the iota-operator ι) and a predicate. This use of the term is a generalization of its use where definite descriptions are noun phrase resp. determiner phrases with the determiner being the definite article (see, for instance, Elbourne 2013: 1 for this quite common use). This restricted use is often extended to noun phrases beginning with a possessive or a Saxon genitive and extended to pronouns as well (see, e.g., Heim 2019). But even this modest extension already calls for a more general notion of a definite description. When now and then it is proposed that such and such a type of clause is a definite description (references

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see below), it is obvious that a semantic notion of definite description is necessary. With such a notion, expressions of various syntactic categories can be definite descriptions: There can be nominal definite descriptions, i.e., noun phrases that are definite descriptions, pronominal ones, clauses ones and perhaps others.

The question of whether definite descriptions are referential terms (as Frege suggested) or quantifiers (as Russell suggested) or something else is still subject to much controversy (see the overview in Elbourne 2013: 2 and the discussion in Heim 2019). It will become apparent that what we need is a referential, not a quantificational version of the description operator. Apart from this theoretical decision, I will try to be as neutral as possible in regard to any framework. The analyses I will propose could ideally be implemented in any semantical framework which provides for definite descriptions as defined above.

2 Properties of argument clauses

Relating argument clauses and definite descriptions suggests that there is a relationship between argument clauses and noun phrases. Depending on one’s syntactic framework, argument clauses and noun phrases are similar to a certain extent. It is an old idea that there is a relationship between the definite article and the subjunction *that* or *dass*. The 19th century grammarian Herling, for instance, called the subjunction *dass* a sentential article („Satzartikel“) in his *Syntax der deutschen Sprache* (1832).1 The article as well as the subjunction might be the head of their phrases. But, of course, we cannot take them to be instances of the same syntactic category. In many languages (including English and German), argument clauses and noun phrases differ in their distribution to a significant extent (see, among others, Dryer 1980 for English and a number of unrelated languages; Oppenrieder 1991; 2008: §4 for German). Thus, it is unreasonable to assume that argument clauses are noun phrases. In German, for instance, argument clauses are normally extraposed, only under very special conditions can they occur sentence-medial (in the „Mittelfeld“). For noun phrases it is just the other way round. Both types of phrases can, however, occur sentence-initial – either in the „Vorfeld“ or left-dislocated; they can both be right-dislocated too.

In semantics, we find much more similarities: Noun phrases and clauses can be arguments of verbs, adjectives, and nouns (cf. (1)); they behave similarly in logical reasoning (e.g., universal instantiation (cf. (2)), existential generalization (cf. (3)), and with respect to anaphoric reference (cf. (4)) or quantificational variability (cf. (5))); they are both possible topics (see the possibility of left-dislocation), etc.

(1)  *Dass er zurücktritt, stimmt* (ist wahr, ist eine Tatsache).

1 On the development of the declarative subjunction in German see Axel-Tobler (2017).
that he resign is-right (/is true, is a fact) 
‘It is true that he resigns.’

(2) a. He reads every book she reads. 
   She reads ‘Harry Potter’. 
   Thus, he reads ‘Harry Potter’.

b. He admires everything she admires. 
   She admires that the rescue succeeded. 
   Thus, he admires that the rescue succeeded.

(3) a. She is not convinced of the theory. Thus, there is something she is not convinced of.

b. He is not convinced that the theory is true. Thus, there is something he is not convinced of.

(4) a. Your are not the only one who heard of the rumour. I have heard of it too.

b. I have heard that the president will resign. But I do not believe that this might be true.

(5) a. For the most part, we know the reviewed novels. 
   ›We know most of the reviewed novels.‹

b. For the most part, we know which novels are being reviewed. 
   ›For most novels we know that they are being reviewed.‹

As arguments, clauses behave like referential terms, they are neither sensitive to negation nor to quantifiers: (6a) and (6b) as well as (7a) and (7b) have the same meaning, the same is true with respect to the pairs in (8) and (9):

(6) a. Marie weiß nicht, dass Peter kommt. 

   b. Dass Peter kommt, weiß Marie nicht. 
   ‘Mary doesn’t know that Peter is coming.’

(7) a. Marie weiß nicht, ob Peter kommt.

   b. Ob Peter kommt, weiß Marie nicht. 
   ‘Mary doesn’t know whether Peter is coming.’

(8) a. Einige wissen nicht, dass Peter kommt. 

   b. Dass Peter kommt, wissen einige nicht. 
   ‘Some people don’t know that Peter is coming.’

(9) a. Einige wissen nicht, ob Peter kommt.

   b. Ob Peter kommt, wissen einige nicht. 
   ‘Some people don’t know whether Peter is coming.’

Thus, it seems obvious that argument clauses are no quantifiers. In this respect, they are similar to proper names, demonstratives, and many uses of definites. Even free relatives do not behave as quantifiers: The two sentences in (10) have the same truth-conditional meaning:

(10) a. *Wer schweigt, redet nicht.*
    b. *Es ist nicht der Fall, dass redet, wer schweigt.*
    'Who is silent is not speaking.'

Against this background, I will assume that argument clauses are referential terms, but I will be indifferent with respect to the true nature of the referents of clauses – whether they are propositions, state of affairs, situations, facts, or whatever.\(^3\) I will mostly stick to the traditional term *proposition.*

If an argument clause is not a referential term in its own right, it should be a definite description, as the similarities to definites and demonstratives suggest. Since Jacobson’s (1995) and Dayal’s (1995) work on free relatives, it is standard to assume that one type of clause, i.e., free relatives, are definite descriptions (see Caponigro et al. 2012 for a more recent study). With respect to the plain relation between free relatives and *wh*-interrogatives, it is no surprise that there are proposals to analyze *wh*-interrogatives as definite descriptions (see Jacobson 1995 and Pafel 1999).

3 Argument clauses as clausal definite descriptions

Let us assume that argument clauses in general are definite descriptions of propositions. Now, we don’t seem to gain much when we analyze the argument clause in *It is quite certain that Peter came* as the description: *the p such that p is identical to being true that Peter came*. But let us take a look at the relation between sentences (11) and (12). The fact that (13) is a valid argument suggests that the *that*-clause and the *whether*-clause refer to the same proposition (cf. Groenendijk / Stokhoff 1982: §1.1).\(^4\)

(11) *Mary knows that Peter came.*
(12) *Mary knows whether Peter came.*
(13) *Mary knows whether Peter came.*
    *Peter came.*
    *Thus, Mary knows that Peter came.*

If the two embedded clauses are definite descriptions of the same proposition, the *whether*-clause must be a definite description which differs from the definite description representing the codenotational *that*-clause – otherwise (11) and

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\(^3\) Free relatives are a special case, since they can refer to various kinds of particulars.

\(^4\) Recently, Inquisitive Semantics argued for an *integrated theory* where declaratives and interrogatives express propositions (see Ciardelli et al. 2019).
(12) would be synonymous. This looks like a *Abendstern/Morgenstern*-case: „Same reference, different sense“. The *whether*-clause amounts to the description \( \text{the } p \text{ such that } p \) is true and either identical to being true that Peter came or to being false that Peter came. If Peter came, this description denotes the proposition that Peter came.

In the same vain, assuming that argument clauses are definite descriptions denoting propositions makes it possible to give a simple account of the relation between direct and indirect quotation.

(14)  a. Heine said that he likes Moritz the most.
   b. Heine said: „I like Moritz the most.“

The *that*-clause and the citation have the same reference, denote the same proposition, but differ dramatically in sense:

(15)  a. *that he likes Moritz the most*
   \( \triangleright \text{the } p \text{ such that } p \) is being true that Heine likes Moritz the most\( \triangleleft \)
   b. „*I like Moritz the most*“
   \( \triangleright \text{the proposition denoted by } I \text{ like Moritz the most } \)
   with Heine being the speaker in \( C \).

(For details and further arguments in favour of this propositional view on direct quotation see Pafel 2011: §7).

A definite can denote an individual (*the tree in front of me*) as well as a plurality (*the trees in front of me*).\(^2\) This seems to be the case with argument clauses, too. It is quite reasonable to assume that the interrogative clause in *Peter knows which novel Mary has been reading last year* denotes an individual proposition, whereas (16) denotes a plurality of propositions.

(16)  *Peter knows which novels Mary has been reading last year.*

If Mary has been reading novel \( a \), novel \( b \), and novel \( c \), the interrogative clause denotes the propositions \( \triangleright \text{Mary has been reading novel } a \text{ last year} \), \( \triangleright \text{Mary has been reading novel } b \text{ last year} \), \( \triangleright \text{Mary has been reading novel } c \text{ last year} \) (cf. Karttunen 1977). The clause denotes the plurality that encompasses all true propositions of the kind \( \triangleright \text{Mary has been reading } x \text{ last year} \), with \( x \) being a novel and encompasses nothing else. Thus, it denotes the smallest plurality that encompasses all true propositions of this kind. The phenomenon of quantificational variability (cf. (5b)) indicates that we really have a plurality here (cf. Berman 1991 and Lahiri 2002).

\(^2\) As for the notion of plurality (fusion, mereological sum), I rely on mereology (see, among others, Simons 1987, 2006 and Lewis 1991: 72ff. as well as the contributions in Kleinschmidt 2014). Mereology is ontologically innocent in the sense that it does not postulate additional entities besides the individuals which make up the plurality. If the part-of relation (\( \varepsilon \)) is taken to be primitive, the fusion of \( a \) and \( b \) or the plurality of \( a \) and \( b \) (formally \( a \circ b \)) can be defined as the entity that has all and only the parts of \( a \) and \( b \) as parts. Pluralsities in this sense are not sets in the sense of set theory.
Let $\lambda x[\phi x]$ denote the entity (individual, plurality, or mass) that is maximal with respect to $\phi$, i.e., that is $\phi$ and has all entities that are $\phi$ as parts. Then the entity which is smallest with respect to $\phi$ is denoted by
\begin{equation}
\lambda x[\phi x \land \forall y(\phi y \rightarrow x \leq y)].
\end{equation}
In (16) $\phi$ is the property of having all true propositions of the kind $\forall x$ Mary has been reading $x$ last year as parts, with $x$ being a novel (see Pafel 1999: §4 for a derivation of the semantics of (16) along these lines).

There are definite noun phrases which denote smallest pluralities too. Take the subject noun phrase in sentence (18).

\begin{equation}
The speakers of all factions met outside parliament.
\end{equation}

If there are three factions in parliament, and each one has one and only one speaker, the subject denotes a plurality of three persons. This is the inverse-linking reading of the subject noun phrase. Its meaning can be represented with a definite description of the kind (17): $\exists x$ the smallest plurality such that for each faction, its speaker is part of it (being the property of being an $x$ such that for each faction, its speaker is part of $x$)

By the way, the subject noun phrase in (18) behaves like a referential term, since it is not sensitive to negation.

\begin{equation}
\begin{align*}
a. & \text{ The speakers of all factions didn’t meet outside parliament.} \\
b. & \text{ It is not the case that the speakers of all factions met outside parliament.}
\end{align*}
\end{equation}

In many inverse-linking cases like (20), however, the noun phrase with the inverse-linking reading (at least one politician from each European country) is a quantifier. It is an existential quantifier whose meaning can be analyzed in a similar manner.

\begin{equation}
\begin{align*}
\text{Mary is in contact with at least one politician from each European country.} \\
\text{at least one politician from each European country} \\
\text{There is a plurality such that for each European country, at least one politician from that country is part of the plurality.}
\end{align*}
\end{equation}

An analysis of the inverse-linking reading along these lines doesn’t make use of any special tool. The semantic paraphrases can immediately be translated into the language of standard first-order predicate logic augmented with the mero-

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5 This became a standard way to give the semantics of iota-terms resp. defnites, since Sharvy (1980) proposed a generalization of Russell’s theory of definite descriptions based on the notion of maximality (see, recently, among others, Heim 2019, Schwarz 2013, von Fintel at al. 2014).

7 The inverse-linking reading of noun phrases is characterized by the fact that a quantifier which is contained in a noun phrase outscopes the operator introduced by the noun phrase’s determiner. For inverse-linking in German, see Pafel (2005: §3.5).
logical part-of relation and variables denoting pluralities (cf. (17)). The special feature is the additional operator on top (the iota-operator resp. the existential quantifier) and the part-of relation, which are not indicated by any overt element in the noun phrase. Compare this stipulation of additional semantic structure with the complexities assumed in recent analyses of the inverse-linking reading (Grudzińska / Zawadowski 2017, Joh 2008, Kobele 2010, Sailer 2015, Zimmermann 2002).

Let’s come back to referential smallest-plurality descriptions. With their help, it is possible to cope with the distributive or pair-list reading of wh-interrogatives (see Pafel 1999 for details).

(22)  \textit{I know which novel each of the three politicians read.}
(23)  \textit{which novel each of the three politicians read}

\(\phi\)the smallest plurality \(p\) such that for each politician \(x\) the proposition of the kind \(\forall y(x \text{ read } y)\) with \(y\) being the novel \(x\) read – \(\phi\) is part of \(p\).

The pair-list reading is a reading where a universal quantifier outscopes the \(wh\)-phrase.\(^8\) Hardly any semantics of interrogatives can handle this scope relation as a scope relation – an analysis based on smallest-plurality descriptions, however, can.

Up to now, we have two types of definite descriptions: the ordinary type and the smallest-plurality denoting type. When we take a look at the non-exhaustive, mention-some reading of interrogatives (see Xiang 2016 for a recent investigation), a third type of definite description pops up. Take sentence (24) as an example.

(24)  \textit{Mary knows where one can buy good food.}

The sentence can be true in a situation where Mary knows one or two shops which deliver good food but does not know all shops where one can buy good food. Thus, it makes no sense to assume that the interrogative denotes all true propositions of a certain kind. But it helps if we assume that the interrogative denotes a certain type of proposition, namely the type whose instances are the true propositions of the kind \(\phi\)One can buy good food in \(x\) with \(x\) being a location or shop. Sentence (24) is true if, for at least one proposition instantiating this type, Mary knows this proposition to be true.

The type whose instances are \(\phi\) is denoted by the definite description

(25)  \(\pi x[\forall y(\text{Instance-of}(y, x) \leftrightarrow \phi y)].^5\)

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\(^1\) For a concise summary of the empirical facts concerning the scope interaction between \(wh\)-phrases and ordinary quantifiers, see Kiss / Pafel (2017: §9) and Pafel (2005: chap. 5). For a comprehensive investigation of this kind of scope interaction in German, see Pafel (1991, 2000).

\(^5\) As for the nature of types, I assume that they are abstract entities and not identical to (the mereological sum of) their instances.
Descriptions denoting types are often assumed in the analysis of indefinites. We can take, for instance, the indefinite in (26) to denote a type whose instances are good restaurants.

(26) Mary knows (some) good restaurants.

The sentence is true iff Mary knows at least some of these instances.

The parallelism in the analysis of (24) and (26) is obvious: They have a type-denoting description in common as well as structurally similar truth conditions.

In a quite different domain, type-denoting descriptions are useful as well. Namely with respect to interrogative clauses as arguments of predicates like wonder. It is well known that wonder and know differ with respect to entailment and quantificational variability. As for entailment, (27a) is a valid inference, whereas (27b) is not (see Groenendijk / Stokhof 1982):

(27) a. Mary knows who came. Peter came. Ergo, Mary knows whether Peter came.
   b. Mary wonders who came. Peter came. Ergo, Mary wonders whether Peter came.

As for quantificational variability, (28a) does not have the reading (28b) (see Berman 1991 and compare (5b)):

(28) a. For the most part, we wonder which novels are being reviewed.
   b. For most novels we wonder whether they are being reviewed.

The embedded clause in Mary wonders who came cannot denote the proposition ›Peter came‹ even if this proposition would be true. Neither the denotation of the embedded clause nor the truth value of the sentence depends on the truth or falsity of the proposition ›Peter came‹. Thus, the embedded clauses in (29a) and (29b) must differ not only in sense, but also in reference.

(29) a. Mary wonders whether Peter came.
   b. Mary knows whether Peter came.

They differ if we assume that the interrogative clause being the argument of wonder denotes a type of propositions, namely the type whose instances are true propositions and are either identical to being true that Peter came or to being false that Peter came.

Generic causals seem to be an independent phenomenon which is evidence for clauses having the option of denoting types – types of propositions, state of affairs, situations, facts, or whatever. Compare the singular causal (30a) with the generic causal (30b).

(30) a. That I was sitting too long at the breakfast table had the consequence that I missed my train this morning.
   b. That I am sitting too long at the breakfast table has in general the consequence that I miss my train.
In (30b) we seem to refer to a type of situation, the I-am-sitting-too-long-at-the-breakfast-table-situation and quantify over typical instances of this kind.

Inverse-linking readings of indefinites point to a further kind of type-denoting description. The sentence (31) is true iff Mary is in contact with a group of people such that for each European country there is at least one inhabitant belonging to the group.

(31) Mary is in contact with people from all European countries.

The indefinite people from all European countries denotes the type whose instances are pluralites such that for each European country, there is one inhabitant belonging to the plurality and the plurality encompasses nothing else. The indefinite denotes the smallest kind whose instances are pluralities of people from each European country.

The smallest type whose instances are \( \phi \) is denoted by a definite description of the form

(32) \( \lambda x[\forall y(\text{Instance-of}(y,x) \leftrightarrow (\phi y \land \neg \exists y'(\phi y' \land y'<y)))]. \)

As for (31), \( \phi \) is the property of being a plurality such that for each European country, there is one inhabitant belonging to the plurality. Note that if Mary is in contact with a group of people such that for each European country there is an inhabitant belonging to the group, and, for one or more countries, more than one inhabitant belongs to the group – this group would not be an instance of the smallest type as defined in (32), because there is a smaller group such that for each European country, there is only one inhabitant belonging to the group. To be smallest, the type can only contain instances with exactly one inhabitant per European country. This restriction is compatible with the truth condition of (31), but might be unnecessarily restrictive.

The smallest-type description, however, is necessary to cope with the distributive or pair-list reading of interrogative clauses embedded by predicates like wonder.

(33) Mary wonders which novel each of the three politicians read.

The type of propositions Mary wonders about is the smallest type whose instances are pluralities \( p \) such that for each politician \( x \) the proposition of the kind \( x \text{ read } y \) – with \( y \) being the novel \( x \) read – is part of \( p \).

Now, we have four kinds of definite descriptions: ordinary ones, on the one hand, and definite descriptions denoting smallest pluralities, types in general, or smallest types, on the other.

By the way, one could think that concealed questions might be additional evidence that there is a relation between definite descriptions and interrogative clauses, as, prototypically, concealed questions are definite noun phrases whose meaning amounts to the meaning of an interrogative clause. However, I do not think that concealed questions are additional evidence for this view (that a definite description is expanded to an interrogative is no evidence that the interroga-
tive itself is a definite description). But the view I propose must be compatible with the properties of concealed questions. And that is the case, as far as I can tell. The sentence *Sam knows the governor of California*, for instance, means that Sam knows that *p* such that, for some *x – x* being the governor of California, *p* is identical to being true that *x* is the governor of California (cf. Nathan 2006: 18). I can be silent on the question of how the (literal) meaning of the noun phrase is mapped into the proposition.

Concealed questions are of interest in our context as it seems that they can lead up to definite descriptions beyond the ordinary type when we take into consideration quantificational and indefinite concealed questions (as discussed in Frana 2020). The meaning of a sentence with a quantificational concealed question like *Mara knows every book that Erin read this summer*, for instance, can be analyzed with the help of a smallest-plurality description. The concealed question denotes the smallest plurality *p* such that for every *x, x* being a book that Erin read this summer, the proposition identical to being true that *x* is a book that Erin read this summer is part of *p*. This amounts to the so-called set reading of quantificational concealed questions. A pair-list reading of such a concealed question can be analyzed in a similar vain. In the reading of *Clara knows every capital* where Clara knows the capital of every country, what is at stake is the smallest plurality *p* of propositions such that for every *x, x* being a country, there is a *y, y* being the capital of *x*, such that the proposition identical to being true that *y* is the capital of *x* is part of *p*. The meaning of a sentence with an indefinite concealed question like *Mara knows a book that Erin read this summer* can be analyzed with a typ-denoting description: The type of propositions whose instances have the form *xy* is a book that Erin read this summer with *x* being a book that Erin read this summer. The sentence is true if there is at least one proposition belonging to this type of propositions such that Mara knows it to be true.

4 The indispensability of clausal definite descriptions

If one follows the view I presented, one must go into many intricate details concerning compositional semantics and the syntax/semantics interface. Is it worthwhile?

We know that the notion of a definite description is a necessary tool for the semantic analysis of noun phrases. I have delivered evidence that definite descriptions are appropriate for dealing with the semantics of argument clauses too, i.e., evidence that their semantics can be covered by an independently required semantic tool. Applying this tool we could cope with diverse readings of declarative and interrogative clauses and the semantic relations between these clauses. If we consider definite descriptions as a common base, many similarities between noun phrases and argument clauses can straightforwardly be explained (cf. §2 above) and startling similarities between the semantics of noun phrases and clauses occur. Ergo, it is worthwhile, perhaps even mandatory, to
work out the technical details of a definite-descriptions approach concerning argument clauses.

5 A look beyond argument clauses

It might even be the case that definite descriptions are a required ingredient for the semantic analysis of clauses in general. Let’s look at independent clauses, i.e., sentences, first. It would be strange to assume that they be definite descriptions. But, this is not what we have to claim.

There is some aspect of a sentence which makes it the case that the sentence has a certain illocutionary potential. It has been assumed for a long time – Frege’s judgement stroke and Stenius’ modal signs being prominent examples – that there is some kind of mood or illocutionary ‘prefix’ which is combined with the propositional content of the sentence. With this background, the argument of the prefix could well be a definite description providing the propositional content.

Thus, independent clauses are no obstacle to the proposed definite-description view on clauses. On the contrary, assuming that sentences include a definite description of its propositional content is appropriate to explain inferences like the one in (13).

(13)  Mary knows whether Peter came.
       Peter came.
       Thus, Mary knows that Peter came.

We can look at parenthetical clauses and other subclauses with an illocutionary potential of their own – let’s call them ‘illocutive subclauses’ – in the same way (as for German, non-restrictive as well as continuative relative clauses, V2-parentheticals, and free dass-clauses belong to this group).

By what about clauses without an illocutionary potential, i.e., adverbial and attributive clauses in particular? They do not seem to be definite descriptions, but seem to be predicates instead.

Take the after-clause in (34) as an example. It is plausible that the temporal clause delivers a predicate on the topic time of the sentence. The predicate’s meaning can be sketched as: \(\tau\) is located after the time span in which they have been eating (cf. von Stechow 2002: §11).

(34)  They went for a walk after they had eaten.

Albeit a predicate, its semantics includes a definite description of a time span. It is uncontroversial that the after-clause introduces a temporal relation, a relation between two time spans. If the first argument of this relation is the topic time of the sentence, the second argument should be delivered by a definite description of a time span. The possibility of expressing a very similar meaning with the help of a prepositional phrase \(\text{After the meal they went for a walk}\) is enforcing this view. The preposition is a temporal relation, the first argument is the topic
time of the sentence, and the second argument must be a definite description denoting the time span of the event denoted by the noun phrase.\textsuperscript{10}

Not only after, but also the other temporal subjunctions (before, when, while, since, until, etc.) denote temporal relations between times, that’s for sure (temporal relations between events are ultimately temporal relations between times). It would, however, be premature to claim that in all these cases, the second argument be a definite description of a time (span). But it is a realistic possibility.

This view gets support by looking at the fact that in German there are two kinds of when-clauses – clauses with the subjunction als and clauses with the subjunction wenn. Semantically, they differ dramatically: In (35), the als-clause must be interpreted specifically (it refers to a concrete event), whereas the wenn-clause must be interpreted generically.

\begin{equation}
(35) \begin{array}{ll}
\text{a. Als Marie den Raum betrat, richteten sich alle Augen auf sie.} & \\
\text{‘When Mary entered the room, everyone was looking at her.’} & \\
\text{b. Wenn Marie den Raum betrat, richteten sich alle Augen auf sie.} & \\
\text{‘When Mary entered a room, everyone was looking at her.’} & 
\end{array}
\end{equation}

In (35a) the topic time of the sentence is determined as the time which is identical to the time of Mary’s entering the room. The second argument of the temporal relation is a definite description of a determinate point in time. (35b), however, means that whenever Mary entered a room everyone was looking at her. Here the second argument seems to be related to a type-denoting definite description: the type whose instances are (past) times of Mary entering a room. The sentence is a generic quantification on the instances of this type.

The relation between the two clauses is analogous to the relation between a definite noun phrase and a generic indefinite. We can observe a similar relation when we compare the if-clause of a singular conditional with the if-clause of a generic conditional (see Pafel 2022: §4; compare the causals in (30)).

Now, one might conjecture that every case where the subjunction denotes a relation is a case where the clause is a predicate with a definite description as argument (this would encompass causal, purpose, result, adversative and concessive clauses). Take causal clauses as an example. In the sentence She missed the train today because she was sitting too long at the breakfast table the causal subclause can be analyzed as the predicate if is caused by the fact that she was

\[\text{In Beaver / Condoravdi’s (2003) analysis of after- and before-clauses, the second argument of the temporal relation has the form earliest(T), with earliest being an operator that maps a set of times } T \text{ to the } i \text{ such that for all } i’ \text{ – being an element of } T – i \text{ is before or simultaneous to } i’. \text{ Thus, earliest(T) amounts to a definite description. It must be noted, however, that in Anscombe’s (1964) influential analysis the second argument of after is bound by an existential quantifier and the second argument of before by a universal quantifier. Beaver / Condoravdi (2003) argue that a uniform analysis of after and before is possible with the help of the earliest-operator, which reproduces the results of Anscombe’s analysis, but they admit that this operator cannot be the last word, as it inherits empirical problems from Anscombe’s analysis.}\]
sitting too long at the breakfast table. That’s the same for epistemic causals: 
She must have been sitting too long at the breakfast table, because she missed the train with the causal subclause meaning something like ‘if can be inferred from the fact that she missed the train’. In speech-act related causals we have such a predicate, too, but it is part of the propositional content of the causal clause, as in these causals the causal clauses are illocutive clauses with a propositional content of their own. In Has she been sitting too long at the breakfast table, because she missed the train we have a question (Has she been sitting too long at the breakfast table?) and a commentary (my question [is motivated by the fact that she missed the train] – predicate plus definite description in brackets).

But what if the subjunction does not seem to be denoting a relation, as is the case with the subjunction if and conditionals?11 Take the counterfactual (36).

(36) Wenn sie spazieren gegangen wären, hätten sie viel verpasst.
   ‘If they had been going for a walk, they would have missed at lot.’

The counterfactual’s meaning can be given as follows: ›That they missed a lot is true in the courses of the world which minimally differ from the actual course of the world in that they were going on a walk.‹ The conditional clause, thus, has a meaning like ›p is true in the courses of the world which minimally differ from the actual course of the world in that they were going for a walk‹ (see Pafel 2022 for the details).12 As for the meaning of the conditional clause, we find the same structure that we observed with respect to the temporal clause: a one-place predicate consisting of a two-place predicate (true in) and a definite description (the minimally different worlds). And there is, once more, a prepositional equivalent:

(37) In dem Fall, dass sie spazieren gegangen wären, hätten sie viel verpasst.
   ‘In case they had been going for a walk, they would have missed at lot.’

That there is an intimate connection between conditional clauses and definite descriptions is a widespread view – Bittner (2001), Schein (2001), Schlenker (2004), and Bhatt / Pancheva (2017) even take them to be definite descriptions. I deviate a bit from this view in taking them to be predicates encompassing a definite description.13

But what about relative clauses? Non-restrictive relative clauses are, as already mentioned, illocutive subclauses. Thus, it is reasonable to assume that the

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11 One might think that the subjunction that does not denote a relation, either. According to Kratzer (2006) and Mouton (2015: §2), however, it denotes the content relation (simplified: x is content of y). I can’t detect independent evidence for this assumption. As for the German counterpart dass, by minimally focussing the subjunction we get verum focus (Höhle 1992).

12 Minimal difference is an essential ingredient of many semantic accounts of counterfactuals. They differ in the way they conceptualize minimal difference. But this is not relevant here.

13 Verb-related counterfactual as if-clauses can be analysed in the same vain: The clause is a relational predicate of ‘manner’ with a definite description as argument (Uebel 2020).
argument of the mood prefix is a definite description. But what about restrictive 
relative clauses? Take the relative clause in the families who went for a walk. It 
is common to assume that semantically such a clause is a predicate with the 
relative pronoun being a variable (\( \exists x \) went for a walk) or creating a predicate 
abstraction (\( \lambda x. x \) went for a walk) (see Heim / Kratzer 1998: chap. 5).

In principle, however, the predicate could be more complex including a de-
finite description of a plurality: \( \forall \) belongs to the plurality of entities that went 
for a walk. There is even evidence for the necessity of this more complicated 
analysis. In relative clauses, we observe the distributive (or pair-list) reading 
that we are acquainted to in interrogative clauses. Take (38) for an example.

(38)  \( \text{die Bücher, die jeder gelesen hat} \)

'\( \text{the books which everyone has been reading} \)'

This noun phrase has a reading where it denotes a plurality of books such that 
for every \( x \), it encompasses the books \( x \) has been reading. As for German, there 
is every reason to assume that the universal quantifier (\( \text{jeder} \)) is clause-bound, 
i.e., cannot raise out of the relative clause. We can cope with the distributive 
reading if we (i) take the relative pronoun to be a quantifier which can be out-
scoped by the universal quantifier, and (ii) assume a definite description as part 
of the relative-clause semantics. In (38), this definite description has the mean-
ing \( \forall \) the plurality such that for every \( x \) there is a maximal \( y, x \) has been reading 
\( y \), such that \( y \) is part of the plurality. The relative clause is a part-of-predicate 
with the description as argument:

(39)  \( \text{die jeder gelesen hat} \)

\( \forall \) is part of the plurality \( w \) such that for every \( x \) there is a maximal \( y, y \) 
has been read by \( x \), such that \( y \) is part of \( w \)  \( \) [for short: \( \forall \) is part of \( w^* \)]

The noun phrase (38) is a smallest-plurality description.\(^{14}\)

(40)  \( \text{die Bücher, die jeder gelesen hat} \)

\( \) the smallest plurality \( v \) such that \( v \) are books and are part of \( w^* \)

Now, there is only a small step to free relatives. As I already have mentioned, it 
has been proposed for some time that they are definite descriptions. With the 
tools now at hand, we can give an analysis of ordinary free relatives and free 
relatives with a distributive reading.

(41)  \( \text{(Wir haben gekauft,) was wir brauchten.} \)

'(We bought) what we needed'

\(^{14}\) In Pafel (1999) I have argued that analyzing \( \text{wh} \)-phrases as existential quantifiers which intro-
duce maximality is an essential ingredient for the analysis of pair-list readings in interrogative 
clauses. Relative phrases and the pair-list reading in relative clauses can be analyzed in exactly the 
same way. By the way, the noun phrase (38) has, additionally, a reading where the relative phrase 
outscores the universal quantifier (\( \text{the books which all have been reading} \)).
the smallest plurality \( v \) such that, for some maximal \( x \), we needed \( x, x \) is part of \( v \)

(42) (Wir haben gekauft,) was jeder am liebsten mag.

(We bought) what each one likes most

\( \text{the smallest plurality } v \text{ such that for every } x \text{ there is a maximal } y, x \text{ likes } y \) most, such that \( y \) is part of \( v \)

(It might be the case that the so-called transparent free relatives – see, for instance, Grosu (2016) for a recent analysis – can be analyzed with the help of type-denoting descriptions.)

Thus, we are coming full circle as free relatives were our first example of a clause being a definite description.

6 Summary

For some types of clauses it had been proposed now and then to consider them as definite descriptions (especially, free relatives, interrogatives, and conditionals). In this article, I have been proposing a generalization: All clauses are or contain definite descriptions. I have argued that argument clauses are definite descriptions, that at least some species of adverbia and attributive clauses are predicates including a definite description and that independent clauses as well as illocutive subclauses include a definite description as the argument of the mood suffix. In each of these cases, assuming the existence of a definite description is crucial in explaining fundamental semantic facts. We became acquainted with four kinds of definite descriptions, which are crucial in the nominal as well the clausal domain.

References


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