Definiteness and Eventive Nominals

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1. Introduction

This paper discusses the interpretation of complex noun phrases. More specifically, it investigates the type of object that a noun phrase[1] denotes. It has been recognized for some time that noun phrases must be able to denote individuals in some circumstances, events in other cases, propositions in still others (Zucchi 1993, Peterson 1997). I will show that, on the one hand, there are various strategies by which different types of interpretation for noun phrases arise, and on the other hand, the choice of these different strategies is highly dependent on the internal structure of the noun phrases themselves, including in particular its argument structure and its definiteness.

This paper proceeds as follows. In section 2 I will discuss the concept of coercion of noun phrases into propositions for interpretation. In section 3 I will introduce the event-nominal exception to definiteness in implicit conditionals, and give my proposal for what causes this exception. In section 4 I will modify the proposal to account for further distributional differences. Section 5 discusses indefinites and a refutation of an alternative explanation for the exceptional behavior of event nominals, while section 6 discusses an outstanding problem for the account. Section 7 gives a brief conclusion.

2. Coercion Into Propositions

It seems, intuitively, that the basic meaning of most noun phrases should be either an individual or an event. The noun phrases in (1) arguably should denote events.

(1) a. the war
     b. the destruction of the city
     c. the event

However, in at least some cases there must at least be a proposition built on these nominals. That is the only thing that makes sense with certain verbs such as *regret* in (2a). To regret a war is to wish that it hadn't happened. (cf. the discussion of *sorry* in Kadmon and Landman (1993), von Fintel (1999).) But to wish that something hadn't happened is to have an attitude toward a proposition. There does not seem to be a reading which is properly understood as having an actual war as the semantic theme of *regret*, except the one that is understood. This is transparently possible with the event nominals:

(2) a. We regret the war.
     b. John was informed of the destruction of the city.
     c. The event surprised us.

Similar arguments go for *be informed of* in (2b); to be informed of the destruction of the city is to be informed that the city was destroyed. And although (2c) has one reading where what surprised us

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[1] I use the term "noun phrase" or "DP" to refer to a phrase containing a noun and possibly a determiner, that is, what is generally referred to as "DP" in current syntactic literature. When I use the term "NP", I refer to a constituent smaller than DP, that is, the projection of a noun including its arguments and modifiers, but excluding the determiner; this was until recently generally referred to as "N-Bar".

could be thought of as the event itself, it has another reading where what surprised us is clearly some particular property of the event, and not the event itself.

Zucchi (1993) proposes the possibility of two different mechanisms by which a noun phrase can come to denote a proposition.

One method is to allow the noun phrase to first denote an individual/event, and then have an operator which derives from is the proposition that property P holds of that individual, where P is a contextually bound property of events. He locates this operator within the verb meaning, but we could imagine it as an independent item in the syntax as well. I will refer to this as the "external method" of coercing a noun phrases into a propositional meaning.

Method #1: External Coercion:
- The noun phrase first denotes an individual/event, x.
- An operator, Op_1 then derives from is the proposition that property P holds of x, P a contextually bound property

(3) $[\![Op_1]\!] = \lambda x \lambda w.\ P(x)$ in w (1st version)

For the purposes of this paper, I will assume that the relevant property P is existence. So I will replace (3) with (4).

(4) $[\![Op_1]\!] = \lambda x \lambda w.\ x$ exists in w (1st version)

The other method that Zucchi considers operates on the *property* of events (or in principle individuals) denoted by the NP (or N-bar) within the noun phrase. It turns a property of events into the proposition that an instantiation of that property of events exists. He refers to this as the "ambiguity hypothesis", since it results in two possible denotations for the surface string that is the noun phrase. I will instead refer to it as the "internal method" of coercion, since the operator applies within the noun phrase.

Method #2: Internal Coercion:
- Coercion operates on the NP (or N-bar) within the noun phrase.
- The operator, Op_2, takes a property P and returns the proposition that an instantiation of that property of events exists.

(5) $[\![Op_2]\!] = \lambda P \lambda w.\ \exists e\ P(e)$ in w (1st version)

I propose, in this paper, that there is a constraint on when the "internal method" can be used. It can only be used when the noun phrase in question is an argument-taking event nominal. In general this class coincides with the *derived* eventive nominals, but nouns like *end* seem to fall in this pattern too. The data in section 3 below will be explained by reference to this difference of coercion strategy.

3. Definiteness and Implicit Conditionals
3.1. An Exception to a Definiteness Contrast

I have shown in previous work (Schueler 2006) that in the implicit conditional construction, indefinites have a special status. (6a) is felicitous with no context or accommodation, and in such a circumstance means roughly "If there were to be a war, John would protest it." (6b), on the other hand, requires a salient context, and means roughly "In the contextually given hypothetical circumstances, John would protest the contextually salient war."

(6) a. John would protest a war.
     b. John would protest the war.

That is to say, the presuppositions of the definite noun phrase *the war* in (6b) project to the entire sentence. This is in marked contrast to *the war* in (7), which serves as a near exact paraphrase to (6a), but which is not at all the same as (6b).

(7)   If there were a war, John would protest the war.

Some definite noun phrases, however, don't seem to project their presuppositions in ICs. The sentences in (8) do not require the same contextual accommodation as (6b) does; they can be said out of the blue, as long as we know what *the city* and *that e-mail* refer to.

(8)   a. John would protest the destruction of the city.
      b. John would protest the forwarding of that e-mail.

What seems to set apart the noun phrases which behave like (8), as opposed to (6b), is that the former are event nominals with full argument structure. Most of these are headed by nouns derived from verbs, but there seem to be some nonderived nominals which show the same behavior:

(9)   John would protest the end of the welfare program.

I will not, however, be considering event nominals with *indefinite* complements in this paper. Such constructions, as in (10), seem to have even more of the properties normally associated with indefinites, and I do not intend my analysis to extend to them.

(10)   John would protest the destruction of a city.

I will propose, in section 3.2, that in (8), the nominals are "coerced" into denoting something like a proposition, in a different way than is possible for (6b). I do not have in this paper an explanation for *why* the ability to be coerced in a certain way is dependent on the property of being a derived nominal with full argument structure; the intent here is more preliminary, an attempt to outline a generalization and a possible strategy for where the generalization arises from. First, however, we must introduce the idea of coercion in general.
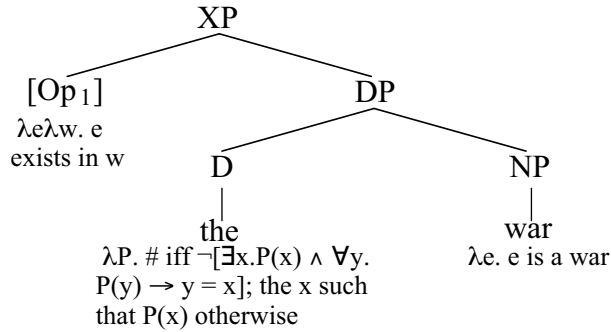
3.2   A Difference in Coercion Strategies

I propose that a noun phrase like *the destruction of the city* (a derived nominal with full argument structure) can be coerced internally, but a noun phrase like *the war* can be coerced only externally. I further propose that the definite article, in both cases, does what it always does; it imposes a presupposition of existence and uniqueness on the NP it takes as object.

Thus, let us see what happens when we use the external strategy on *the war*. For concreteness, let us suppose a structure as in (11)[2], with the denotations I assume given under the lexical terminal nodes.

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[2] In formal expressions, I use "x" and "y" as variables over individuals, "e" as a variable over events, "P" as a variable over properties of either events or individuals, "w" as a variable over worlds, and "p" as a variable over propositions.

(11) External Coercion:

$$
\begin{array}{c}
\text{XP} \\
\swarrow \qquad \searrow \\
\end{array}
$$

XP

[Op$_1$]
λeλw. e
exists in w

DP

D

the
λP. # iff ¬[∃x.P(x) ∧ ∀y.
P(y) → y = x]; the x such
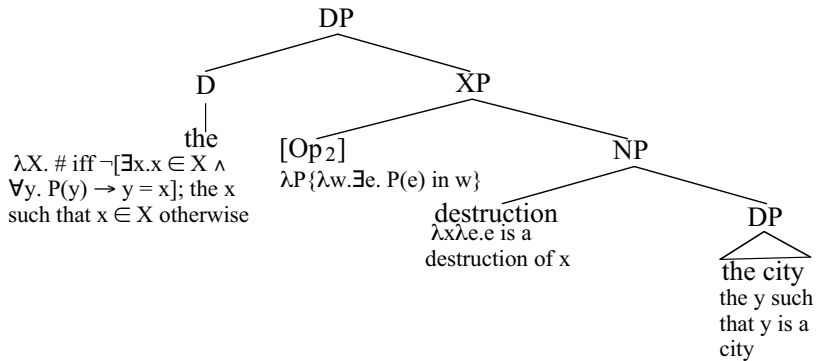that P(x) otherwise

NP

war
λe. e is a war

Given this structure, the DP node ends up denoting the unique war in the world under consideration, but fails to denote if such a war does not exist. Therefore, the proposition denoted by the entire XP is constrained by these same presuppositions.

Let us now see the structure for *internal* coercion of *the destruction of the city*. I will assume that the preposition *of* is semantically vacuous, and not represent it in the tree. I will also not be concerned with the internal structure of *the city*, and let it denote the individual that corresponds to the city in question.

The XP node here denotes, actually, a singleton *set* of propositions, that containing the proposition that "some destruction of the city exists", of which a more natural paraphrase is "the city is destroyed".

(12) Internal Coercion[3]:

DP

D

the
λX. # iff ¬[∃x.x ∈ X ∧
∀y. P(y) → y = x]; the x
such that x ∈ X otherwise

XP

[Op$_2$]
λP{λw.∃e. P(e) in w}

NP

destruction
λxλe.e is a
destruction of x

DP

the city
the y such
that y is a
city

The definite article then operates in the normal way; it picks out the single proposition which is a member of that set. It can be thought of as imposing the standard presupposition on its argument, the presupposition that its argument be a singleton set. This is, however, always satisfied, because there is always exactly one proposition of any given description[4]

The structure of the implicit conditional, as I propose in Schueler (2006), has the object noun phrase move at LF out of the scope of the attitude verb. The noun phrase, denoting a proposition, will serve as the restrictor for the conditional. The trace left by this movement is interpreted as a pronoun. (For example, *John would regret the destruction of the city* ends up meaning 'If the city were destroyed, John would regret that.') Therefore, there will be no presupposition projected from (12) that the city was destroyed in the actual world. The only presupposition projected is the vacuous one that the *proposition* that the city was destroyed, itself exists.

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[3] I assume a three-valued logic, in which # stands for presupposition failure; lexical items such as *the* specify explicitly the conditions under which they yield presupposition failure.

[4] This can be illustrated by the behavior of the noun *proposition*. (i) has no detectable presuppositions that we could imagine violating in any context.

(i) John mentioned the proposition that Mark was an idiot.

3.3 . Eventive Nominals Without Their Arguments

Eventive nominals without complements behave like noneventive nominals in implicit conditionals. The sentences in (13) require noticeably more context than (8), repeated below as (13). We either have to know what the intended patient of the destruction or the forwarding is, or we have to have some other contextual set-up of a hypothetical destruction or forwarding.

(13) a. John would protest the destruction.
    b. Mary would protest the forwarding.

(14) a. John would protest the destruction of the city.   (=8)
    b. John would protest the forwarding of that e-mail.

Notice that this cannot simply be a matter of identifiability of the hypothetical event in question, that is, that it is easier to identify a hypothetical destruction of a particular city than it is to identify a particular destruction out of the set of all possible destructions. In (14b), there could be many different events, in the same hypothetical world, that would count as a forwarding of one and the same e-mail. For example, I could be saying with (14b) that if the e-mail were to be forwarded any number of times, John would protest it. This would be true in worlds where the e-mail was forwarded by multiple people at the same time, for example, as well as those where it is just forwarded once.

What I propose here is to follow Grimshaw (1990) in saying that nominals without overt arguments are semantically different than nominals with arguments. Grimshaw cites various types of evidence for this, her distinction between *result* nominals and *process* nominals, mostly dealing with event structure. I am offering here a further difference between result nominals and process nominals; only process nominals can be internally coerced. I will leave it to further research, however, to express the relation between the semantic difference I discover here and the syntactic difference that Grimshaw proposes.

4. Event Nominals in Indicative Sentences and States of Affairs

The analysis given in section 3.2 might at first glance seem to overgenerate. It predicts that with process nominals, we can always avoid presuppositions as long as we use a propositional attitude verb. This is because whenever we use process nominals, internal coercion is claimed to be available, and with internal coercion, occurrence of the event is not presupposed. That prediction seems, prima facie, not to be borne out in simple, past indicative clauses. (15) presupposes the occurrence of the events in question.

(15) a. John didn't protest the destruction of the city.
    b. Mary didn't regret the forwarding of that e-mail.

I submit, however, that in these cases, it is the verb itself that is introducing the presupposition. *Regret* is, of course, standardly considered to be a presuppositional verb. *Protest* isn't as standardly considered to be factive, but that is because *protest* cannot take finite clauses as its object:

(16) *John protested that the city was destroyed.

However, this does not disconfirm the idea that *protest* is factive when it occurs with a proposition. I propose that *protest* is factive as well.

The immediate test to this line of reasoning is to see if non-presuppositional propositional attitude verbs will behave differently. However, there at first seems to be a conspiracy preventing us from doing the test; non-presuppositional attitude verbs are generally not good with nominals at all:

(17) a. *John believes the destruction of the city.
    b. *John said the destruction of the city.
    c. *John thinks the destruction of the city.

This fairly well recognized fact is explained by Zucchi as being due to a type difference between *regret*-type verbs and *believe*-type verbs.[5] While *believe* takes a proposition as its argument, *regret* and its like must take a "state of affairs" as its argument. A state of affairs is a primitive, a different ontological object than a proposition. But every proposition is related to exactly one state of affairs, and vice versa, in the following way: For all propositions p, there is a corresponding state of affairs s, such that for all worlds w, if p is true in w, then s holds in w, and if p is false in w, then s does not hold in w.

The revised position, then, is that the coercion operation proposed in section 3.2 produces states of affairs, not propositions.

(18) $\llbracket Op_1 \rrbracket = \lambda x.$ the state of affairs a such that $\forall w.$ Holds(a)(w) $\leftrightarrow$ x exists in w
(final version)

(19) $\llbracket Op_2 \rrbracket = \lambda P.$ the state of affairs a such that $\forall w.$ Holds(a)(w) $\leftrightarrow \exists e\ P(e)$ in w
(final version)

Coercion into real propositions seems not to be possible; I do not have an explanation for why this should be so. Notice that there is no prohibition on DPs in general denoting propositions:

(20) a. John believes the proposition that the city was destroyed.
      b. The proposition that the city was destroyed is true.

However, apparently the coercion mechanism available for nominals always produces states of affairs; states of affairs seem to be intricately connected with nominals. I leave it to further research to figure out why this should be so.

The states-of-affairs vs. proposition distinction actually crosscuts the factivity distinction. Verbs like *know* and *realize* are factive, but not good with event nominals with the expected propositional meaning:

(21) a. *John knows the destruction of the city.
      b. *John realized the destruction of the city.

Conversely, there are nonfactive attitude verbs that are good with event nominals:

(22) a. John proposed the destruction of the city.
      b. John wants the destruction of the city.

In these contexts, as our theory predicts, the fact that the city has in fact been destroyed is not presupposed. Avoidance verbs, which do not seem to be \attitude verbs exactly, behave the same way:

(23) a. We avoided the destruction of the city.
      b. John prevented the destruction of the city.

These verbs, when used with event nominals, contrast with other types of definites in the same context.

(24) a. John proposed the war.
      b. John wants the war.
      c. John prevented the war.
      d. We avoided the war.

(24) does not necessarily propose the existence of a war in the actual world, but it requires the salience of a particular hypothetical war. Perhaps there are descriptions of what countries would be involved, plans have been made, etc. This is the same pattern we see with implicit conditionals in (6b).

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[5] See Hooper (1975) for an alternative interpretation of these facts.

5. Indefinites With Indicative Attitude Verbs

I claimed in section 4 that factivity associated with certain verbs imposes presuppositions where ordinarily they would not arise. At this point, an alternative idea to the coercion hypothesis might present itself; perhaps process nominals are simply semantically indefinite, even though they occur with the definite article. Indeed, claims that definite article with process nominals are inert in some way, either semantically or syntactically, have been hinted at by Grimshaw and claimed explicitly by Davies and Dubinsky (2003).

However, for this alternative to work, we have to see what happens with morphological indefinites which are subject to external coercion in this position. Specifically, what happens with indefinites indicative (non-implicit-conditional) clauses?

(25) a. John protested a war.
    b. John regrets a war.

(26) a. John didn't protest a war.
    b. John doesn't regret a war.

(25) and (26) do not presuppose the existence of a war, in the way that (15a) presupposes that the city was destroyed. Therefore, although we still want to claim that *protest* and *regret* are factive, indefinite noun phrases obviously behave differently than definite process nominals.

Specifically, what seems to be going on is that the indefinites must have wide scope with respect to the coercion operator. We then have external coercion of the trace of quantifier raising; coercion of an individual as with (11). But since the indefinite is scoped out, it is *asserted* to exist before it can be presupposed to exist by the attitude verb. We then predict, for example, that (25b) can mean "there is a war such that John regrets that it happened" and that (26b) can mean "there is not a war such that John regrets that it happened.

Semi-formally (abstracting away from intensionality), what I propose is (27).

(27) a. John protested [a war].
    b. [a war]$_6$ John protested t$_6$.
    c. [a war]$_6$ John protested [Op$_1$ t$_6$]
    d. [λP$\exists$x. P(x) $\wedge$ x is a war][λx. John protested [λw. x exists in w]]

In order to explain the fact that the presuppositions of the factive verbs *protest* and *regret* are not projecting to the entire clause, we must say that the indefinites are scoping above the attitude verbs as well. That way, the presuppositions are imposed only locally, on the variable bound by the quantifier, while the sentence really *asserts* the existence of a war (or nonexistence when negation is present), by the force of the quantifier. So (25) and (26) can be paraphrased as (28) and (29), respectively.

(28) a. There is a war such that John protested the fact that it happened.
    b. There is a war such that John regrets that it happened.

(29) a. There is not a war such that John protested that it happened.
    b. There is not a war such that John regrets that it happened.

6. Non-Propositional Readings (and a problem)

The analysis above predicts that the effect that we see with eventive nominals should require that a propositional reading of the nominal is the only interpretation possible. There is mixed evidence in this area. Support from it comes from the interpretation of (8b), repeated here:

(30) John would protest the forwarding of that e-mail.

Intuitively, although the e-mail may indeed be forwarded by multiple people, i.e., there may be multiple forwarding *events*, any one of those events would be a sufficient condition for the protest. (30) does not entail that John would protest any particular forwarding event, nor does he have to protest the composite forwarding event involving, say, all the computers involved in the individual forwardings. This is captured naturally if the object of protest is the *proposition* that the e-mail is forwarded.

To test this, we try a verb which arguably can only take events as its arguments, not propositions. The judgments are not easy, but (31) seems strange if we contemplate the possibility of multiple forwardings at the same time, and that *each* of them would last 10 seconds.

(31) The forwarding of this e-mail would last 10 seconds.

However, there is a good reading of (31). It refers to the *total* event of forwardings. This is seen more clearly in (32).

(32) The destruction of the city would last 5 hours.

(31) and (32) don't seem to require any more context than (8). This is a problem for the propositional coercion account, which predicts that the improved status of process nominals should only occur with propositional readings. I do not currently have an account for this.

7. Conclusion

I have shown, in this paper, that definite process nominals behave differently from other definite noun phrases in their presupposition projections. Moreover, I have shown that difference does not simply reduce to a definite/indefinite distinction. I have shown that the best way to characterize the semantic behavior of the two types of noun phrases is with respect to coercion into propositions.

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