WHAT CAN PRAGMATIC INFERENCE TELL US ABOUT THE SYNTAX AND SEMANTICS OF SECONDARY PREDICATION?*

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This paper addresses the theoretical and descriptive relevance of pragmatic inference with the purpose of exploring the syntax-semantics interface in secondary predication in English. Most standard syntactic analyses proceed on the assumption that there is a uniform, one-to-one correspondence of the postverbal NP (NP₂ henceforth) and the following XP with the semantic interpretation of these phrases as direct object and complement/modifier (or adjunct), respectively. However, upon closer examination of sentences like “I found John gone/out of sight” or “I have a tooth missing”, it appears that such an assumption can be challenged on both theoretical and descriptive grounds. Since these pragmatically marked predication structures involve the cancellation of the conventional implicature of the NP₁ V NP₂ string, it is suggested that the syntactic analysis of these instances cannot be established solely on the basis of formal properties alone, but rather needs to be seen in terms of the interaction of the inherent meaning and form properties of the syntactic constituents of the construction with the actual interpretation of these properties by the subject/speaker in a given discourse scenario. At a descriptive level, it is argued that these marked instances of secondary predication can be more aptly analyzed, both syntactically and semantically, as involving complex predicates taking the postverbal NP₂ as their sole object argument.

Key words: secondary predication, syntax, semantics, pragmatics, implicature, complex predicate

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1. Introduction

Standard syntactic analyses of secondary predication,\(^1\) whether of a formal or functional nature, usually proceed on the shared assumption that there is a one-to-one correspondence between the expected semantic interpretation of a syntactic constituent and its actual interpretation. Thus, consider (1) below:

(1) “I found John sad/naked/gone” (Example created by the author and approved by native informants)

While the first two configurations imply, in varying degrees, some sort of direct experiential perception of “John” (i.e. When I found John, he

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\(^1\) The term “secondary predicate” will be understood here in the sense outlined, among others, in Aarts (1995:75), that is, as “phrases which are predicated of a constituent which stands in a thematic relation to the main verb of the sentence (…), typically a direct object.” Semantically, secondary predicates may be obligatory (e.g. “He considers her intelligent”) or optional (e.g. “She likes her soup cold”). Semantically, obligatory secondary predicates have been analyzed as complements, while optional ones have been treated as modifiers (Dowty 1972) or object adjuncts (Allerton 1982). Secondary predicates have been syntactically analyzed in the literature as small clauses (Chomsky 1981) or as instances of complex-transitive complementation (Quirk et al 1985). See Aarts (1995) and Cardinaletti & Guasti (1995), inter alia, for an account of recent analyses of secondary predication.

\(^2\) See Borkin (1973, 1984) and González (2000) for a semantico-pragmatic characterization of secondary predicates selected by cognitive predicates as conveying the speaker’s direct, personal experience of the NP XP string.
was sad/naked), no such implication can be said to obtain in the case of the third, where the lexical semantics of the XP gone in this frame cancels, without any immediate evidence as to a difference in syntactic structure, the standard pragmatic inference that the subject/speaker actually found John.

In view of the puzzling contrasts in interpretation above, two important questions arise which will be taken as the main sustaining thread in the present paper: (i) What is the theoretical and descriptive relevance of pragmatic inference for the interpretation and syntactico-semantic analysis of secondary predication in English?, and (ii) how can the cancellation of the inference activated by the italicized XP’s in (2)-(3) below be adequately accounted for in semantic terms and, accordingly, translated into syntactic terms with a view to explaining the putative discrepancy between its formal configuration as a modifier and its overtly predication-like function?

(2) “I get home, as I said, to find your mother in tears, Cassie screeching on about Jack being dead and your dog being to blame for it and you well out of sight” (ICE-GB Corpus, W2F-001-43)

(3) “You’ve got your arms and legs missing and you’ve got a squint as well!” (ICE-GB Corpus, S1B-049-48)

2. A literature overview of the role of pragmatic inference in the formal and functional literature

2.1. Kirsner and Thompson (1976)

Kirsner’s & Thompson (1976)’s pioneering work makes a number of theoretical and descriptive claims which can be duplicated in some way for secondary predication in English. These can be briefly summarised for the purposes of this paper as in (i)-(ii) below:
(i) The “correct” syntactic analysis of sensory verb constructions is less obvious than it first appears, since these sentences are used to communicate far more than they actually claim. Accordingly, many putative properties of sensory verb complements should not be regarded as the exclusive by-product of their linguistic structure but can rather be said to arise out of PRAGMATIC INFERENCES from (a) knowledge of assumptions about the nature of the event/state of affairs/process encoded in the complement clause, and (b) the semantic oppositions between the particular meanings encoded and other meanings available in the linguistic system. Thus, consider the examples reproduced in (4)(a)-(d) below:

(4) (a) “We saw the invisible nerve gas kill all the sheep”—-> (although of course, we didn’t actually see the invisible gas nerve itself but the sheep dying).

(b) “We heard the farmer slaughter the pig”—-> (although of course, we didn’t necessarily hear the farmer but the pig screaming”

(c) “I smelled Sylvia spraying the living room”—-> (although of course, I didn’t necessarily smell Sylvia, but it is very likely that I smelled the living room and/or the spray)

(d) “We heard it thundering”—-> (although of course, we didn’t hear “it” but the thundering)

(ii) With regard to the implications of pragmatic inference so as to determine the syntactic status of the NP and the non-finite clause in the case of sensory perception complementation, Kirsner & Thompson note the

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3 In much the same vein, Levinson (2000: 14) contends that what is CODED by the linguistic system is the sum of what is SAID (roughly the truth-conditional content) and what is CONVENTIONALLY IMPLICATED.

4 The term “meaning” is taken here to embrace both lexical meaning and constructional meaning (i.e. the semantico-pragmatic contrast, where available, between an encoding with “that”-clause, a non-finite clause, and a verbless clause).

following:

(...) Whether the complement subject can be further interpreted as direct object depends on whether the event or situation referred to by the complement can only be perceived as specified by the sensory verb if the referent of the complement subject is so perceived. But this is clearly a matter of pragmatics. (Kirsner & Thompson 1976: 158, emphasis added to the original).

An interesting conclusion ensuing from the above is that the intervening NP usually corresponds to the object of perception, but it is also possible, given an adequate supporting context, to perceive an event globally without the NP being necessarily perceived. In the words of Gee (1977):6

(...) With NI-constructions one need not perceive the NP-object, one need only perceive the NP. Take the case where John is behind an opaque screen where we cannot see him, but we all know he is there. He can, with magnets, move small geometrical objects on the front side of the screen from the back. I can say, it seems to me, when John moves some objects “Now, I can see John moving the little figures”, “I just saw John move one of the little figures” (...) (Gee 1977: 474).

Thus, it can be concluded that the grammar does not necessarily characterize the NP as direct object in this frame,7 and, accordingly, the syntactico-semantic analysis of these constructions cannot be safely established on the basis of formal properties alone,8 but should rather be

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6 See Declerck (1982: 12) and Hoekstra (1988: 117-118), among others, for a concomitant view on the issue from a generative standpoint.

7 According to Kirsner & Thompson, this point was first noted by De Geest (1970, 1973).

8 Dik & Hengeveld (1991) can be taken to be a paradigmatic case in this respect. In their discussion of sensory perception complements, they explicitly admit that their previous (three-place predicate) analysis "disregarded the counterexamples against the entailment condition (...). If these examples [i.e. examples like those in (3) above] are taken into account, we have to conclude that [these] are two-place [predicates] after all and that they solidly represent the IPSoA case." (Dik & Hengeveld, 1991: 254, square brackets mine). More recently, Felser (1999: 18ff), drawing on evidence from pronominalisation and conjunction facts, tough-movement and the distribution of expletives, has concluded that
handled in terms of the interaction of the meaning and form properties of the linguistic structure, on the one hand, with the actual interpretation of these in a given discourse scenario.  

2.2. Brugman’s (1988, 1999) constructional analysis

Within the framework of CONSTRUCTION GRAMMAR (CG henceforth), Brugman (1988, 1999) addresses the issue of what appears to be a mismatch between the syntactic structure of the XP and its semantico-pragmatic interpretation in secondary predication instances like the one in “I have a tooth missing”. More specifically, Brugman (1999: 3) tackles the lack of isomorphism between both levels of linguistic analysis as follows:

The attribution of missingness to the tooth is expressed by means of the parataxis of missing as a syntactic modifier of tooth; I will argue that semantically, missing is a predicate which takes tooth as its argument, which is why “I have a tooth missing” is propositionally synonymous with (5) and (6), in which missing is also predicated of tooth. The relationship of “inalienable possession” between the interested person and the tooth is determined on the basis of entailment of the propositional content of the sentence in conjunction with extralinguistic knowledge, and is not the semantic basis for the construction.

infinitival perception verb complements exhibit the behaviour of clausal constituents.

The assumption that pragmatic inference is crucial to determine the syntactic and semantic properties of a given construction is not accepted by some advocates of an autonomous syntax framework (Mendívil Giró 1999: 381ff). Their argument boils down to claiming that pragmatic inference operates only at the grammatical output. However, see Matthews (1995) and, more recently, Levinson (2000) for some empirical counterarguments against the Chomskyan program as a tenable way of thinking about a theory of meaning. More specifically, Levinson (2000: 8-9) argues that “pragmatic processes play a crucial role in the “correspondence rules” mapping syntactic structures onto semantic representations, and again mapping semantic representations onto communicated thoughts or utterance meanings.”

For an outline of the CG framework, see Fillmore & Kay (1988) and Goldberg (1995), inter alia.

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(5) “I have a missing tooth”
(6) “My tooth is missing” / “One of my teeth is missing”

At a descriptive level, Brugman contends that *missing* is a secondary predicate (that is, a subcategorised-for predicative complement of the matrix verb HAVE) taking the NP *a tooth* as its argument. Furthermore, Brugman stresses the fact the argument of HAVE is not *tooth*, but rather the proposition expressed by the string *a tooth missing*, as shown in Brugman (1988).11

3. Pragmatic inference and the syntax-semantics interface

So far we have outlined a number of formal and functional proposals in favour of incorporating pragmatic inference into the syntactic analysis of a given construction.12 The question that now arises is whether pragmatic inference can be seen as forming part of the semantic component, and in turn, of the syntactic system, too. With regard to the former issue, it must be emphasized that pragmatic inferences of the type at hand here are in fact

11 In our opinion, the main shortcoming of Brugman’s analysis lies in not being easily generalizable to the other marked instances of secondary predication examined here (e.g. “I found John gone/out of sight/missing”), which select an entity reading rather than a proposition, and which are not, therefore, propositionally synonymous to any kind of primary predication counterpart (e.g. “John is gone”, “I found a gone John”). See 4.1 for further discussion of this point.

12 In this respect, it must be noted that Jackendoff (1990: 38ff) raises a number of doubts as to the viability of formalizing inferences that involve non-logical items, mainly because of the difficulty of generalizing among the inferential properties of different lexical items as well as finding vocabulary for lexical decomposition that permits significant generalizations. In the case of the instances under discussion here, these two shortcomings are overcome in the sense that the XP’s involve some negative meaning which can be glossed as “fail to” (e.g. “He found John/the book *missing/gone*” => “He failed to find the book”) or “no longer” (e.g. “He has a tooth missing” => “He no longer has a tooth”). Therefore, while acknowledging that “each item is a world onto itself”, we disagree with Jackendoff when he concludes that “there can be no general principles”. See section 4 for an outline of our proposal.

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akin to what Grice (1975: 44f.) called “conventional implicatures”. However, the problem nonetheless remains as to whether one can separate pragmatics from semantics.

In this respect, Matthews’ (1995: 58) proposal runs as follows:

Semantics will deal with ‘linguistic meanings’, with the features that a form or construction always has. Pragmatics will then study the further meanings that a sentence has for specific individuals in specific contexts of utterance.

More specifically, Matthews (1995: 51) proposes a two-fold distinction between semantics in a wide sense (‘Semantics$_1$’), which is the study of meaning; and in a narrow sense (‘Semantics$_2$’), which is what is left of semantics$_1$ when pragmatics, and, if syntax is included, syntax also, are subtracted from it. With regard to the latter question, the relationship between semantics and syntax, it can be argued that semantic relations are also (at least in part) syntactic relations. As Matthews (1995) has put it:

One problem (…) is to distinguish the “sense relations” that belong to syntax from those that would belong to “semantics$_2$”. For example, it might be a fact of syntax that persuade has a valency like those of order or ask; but a fact of “semantics”, in a narrow sense, that I asked him to leave and I persuaded him to leave have different ‘senses’. But the difficulty is precisely that the meanings of words cannot be partitioned in that way. On the one hand, one cannot describe meaning independently of distribution, and then say that distributions follow from it. (Matthews 1995: 55, emphasis added to the original).

Therefore, if the above line of reasoning is accepted, it follows that a cut-and-dried division between syntax, semantics and pragmatics should not

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However, it must be recalled, as Levinson (2000: 14) notes, that “pragmatic inference is the outcome of a set of rather different kinds of pragmatic principles.”

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be retained, and that pragmatic inference can be plausibly subsumed under the semantic representation\textsuperscript{14} and be regarded as being relevant to the syntactic component.\textsuperscript{15}

4. Pragmatic inference and complex predicates

In this section we shall attempt to demonstrate that a complex predicate analysis\textsuperscript{16} makes a sound solution at both a theoretical and descriptive level to account for the “discrepant” readings of the italicised XP’s below in the secondary predication frame:\textsuperscript{17}

\begin{align*}
(5) & \quad (a) \text{“He rushed downstairs, examined the wallet and found £2 }\underline{\text{missing}}\text{” (BNC Corpus, B24 1131)} \\ & \quad (b) \text{“I’ve got a tooth }\underline{\text{missing}}\text{ now” (BNC Corpus, KBW 2204)}
\end{align*}

In what follows, we shall briefly pinpoint a number of semantic

\textsuperscript{14} Levinson (2000: 231) goes as far as to claim that pragmatic inferences may “end up embedded in semantic representations or their interpretations”, which he refers to as ‘intrusion’.

\textsuperscript{15} This view is commonly accepted in functionally-oriented linguistic models in general, and CG in particular, where no strict division is posited between grammar and the lexicon. An outstanding exception in this respect is Levinson (2000: 9), who argues that “we should think about both semantics and pragmatics as being component processes which offer their own distinctive contributions to a single level of representation. The processes remain distinct in kind, and thus the distinction between pragmatics and semantics must be retained.” (emphasis added to the original).

\textsuperscript{16} The complex predicate analysis goes back as far as to Chomsky (1955/75). We are using this concept here in a theory-neutral fashion that could be taken to be compatible with a formal or functional model. See Alsina, Bresnan & Sells (1997) and Ackerman & Webelhuth (1998) for an outline of competing motivations and applications of this concept. See also Contreras (1995) and Rapoport (1995) for an account of the latest implementations of this analysis within the generative framework.

\textsuperscript{17} It should be emphasized that we are concerned here exclusively with instances in which the XP obligatorily cancels the conventional implication of the primary predication, thus leaving out instances of the type “You have your bread to earn”, where, as Jespersen (1940: 226) comments, “the meaning may even be ‘you have no bread’), or “You have a pound to pay”, which may imply that “he does not have a pound” (Palmer 1988: 53).
and syntactic motivations for a complex predicate analysis of these marked instances of secondary predication.

1. The sentences in (5)(a)-(b) exhibit a semantic clash between the existence or possession meaning of the NP1 V NP2 sequence, which implies the subject/speaker’s perceptual report of, or a possession of the entity encoded in the NP2, with that of the XP, which cancels the conventional implication of the sequence concerned. Thus, a sentence such as “He found two pounds missing” does not by any means implicate “He found two pounds”, and so forth. It must be emphasized that the semantic incompatibility holds at both a lexical and constructional level. It is lexical because there is a “conflict” between the existence or possession meaning of the matrix verbs (e.g. FIND, HAVE, SEE) with the non-existence or non-possession meaning of the XP’s (e.g. “gone”, “out of sight”, “absent”, “missing”, “lacking”). Moreover, it is constructional because the incompatibility holds when the XP’s occur in the secondary predication frame, and not in most instances of primary predication (e.g. “John is gone”) or modification structures (“e.g. “I found the missing pages”+> “I found the pages”), 18 where no such discrepant readings hold between the syntax and semantics of these configurations.

Accordingly, a syntactic analysis of the NP2 as direct object of the matrix verb FIND would appear to be at best semantically inadequate. On the other hand, the small clause analysis, which treats the NP2 and the XP together as the sole argument of the matrix verb, appears to be semantically unmotivated, too. Notice, incidentally, that these matrix verbs select an entity reading rather an state of affairs, as shown by the fact that these matrix verbs never allow, in these marked predication instances, a clausal complement in the NP2 or XP slots.19

(6) (a) * “I found it gone” :: “I found it evident that John had gone”

18 The notation +>, taken from Levinson (2000), is taken to stand for “implicates” throughout this paper.

19 See Williams (1997: 13ff) for a similar use of extraposition as a diagnostic for complex predicate formation.
(b) * “I had it two pages be missing”

Moreover, if those XP’s which activate the cancellation of the implicature occur in the secondary predication frame with a matrix verb which unequivocally selects a state of affairs (alias propositional) reading, no such cancellation can be observed, as illustrated in (7) below:

(7) (a) “The following limestone routes have been listed missing in despatches, so don’t come crying to us if you can’t find them” (BNC Corpus, A15 189) :: +> “The routes have been listed, but they may not be found”

2. The matrix verbs and XP’s which give rise to the cancellation of the implicature exhibit robust semantic restrictions which can be accounted for in a natural and elegant way if a complex predicate analysis is invoked. Moreover, the lexical items in question can be said to form in a way a semantically homogeneous group composed of semantically impoverished, highly idiomatic, though by no means completely fixed, units.20

(8) (a) “I found/ *caught/ *encountered John gone/ out of sight/ absent/ *left/ *departed/ *travelled away”
(b) “They found/ *sensed/ *experienced her missing/ *disappearing/ *disappeared”
(c) “They saw/*glimpsed/*watched/*looked at a book missing”

3. Under a complex predicate analysis, in which both the matrix verb and the XP (i.e. FIND-GONE, HAVE-MISSING), rather than the matrix verb alone, semantically select the NP2, a number of semantic features concerning the selection of the NP2 receive a much more natural interpretation, such as (i) the unacceptability of expletives (e.g. empty “it” or existential “there”), and

20 At a higher level of delicacy, it can be claimed that the matrix verbs allowed to occur as complex-predicates in this frame are light verbs (e.g. find, have, see) without an agentive (i.e. intentional) reading, which would explain the acceptability contrasts in (8c) above. See González (2001) for an outline of the relevance of this parameter in shaping configurations of the type “I found myself walking”.

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(ii) the selectional restrictions concerning the XP.

(9) (a) *“I found there missing” :: “I found there to be missing a book”
(b) “I found/saw John gone/absent”:: “I found/saw my money missing/gone/*absent”:: “I found such evidence lacking/*gone”

4. At a syntactic level, evidence from extraction, and the unacceptable results yielded by the application of topicalization and pseudo-clefting seem to point to a complex predicate analysis as being more adequate than a clausal one. Thus, consider (10)-(12) below:21

(10) (a) “What did you find?”:: # “John gone” (EXTRACTION)
     (a’) “Who did you find gone?”:: “John”
     (b) “What do you have?”:: *“a tooth missing”
     (b’) “What do you have missing?”:: “A tooth”

(11) (a) *“Gone is how I found John” (TOPICALIZATION)
     (b) *“Missing is how I have a tooth”

(12) (a) # “What I found was John gone”:: “The person/The one I found missing was John” (PSEUDO-CLEFTING)
     (b) # “What I have is a tooth missing”:: “What I have missing is a tooth”

In addition, the complex predicate analysis fits in well with the fact that the XP is often found adjacent to the matrix verb, as shown in (13) and (14) below:

(13) “…One of the things I’ve found missing this evening is the specific things that people would like to see in this playhouse …” (BNC Corpus, D91: 569)

21 Additional support for a complex predicate analysis comes from cross-linguistic evidence from Romance languages such as Spanish, Italian or French, where configurations such as “I have a tooth missing” appear to function as intransitive complex predicates: “Mi manca un dente” (Italian), “Me falta un diente” (Spanish), “Il me manque une dent” (French), and so forth.
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(14) “Well, I don’t really want an electric one, I can see missing a hole on here …” (BNC Corpus, KDM: 8500)

Consequently, the following informal generalization can be made:

**THE XP IMPLICATURE INTRUSION PRINCIPLE:** If the XP in a secondary predication instance [NP1 V NP2 XP] can be conventionally taken to cancel the implication of the [NP1 V NP2] string, the V and the XP together can then be regarded, both syntactically and semantically, as a complex predicate [V XP], taking the NP2 as its object argument.

Such a principle ultimately shows that semantics, pragmatics and syntax do interwave in unexpected, though by no means chaotic, ways in the production and interpretation of sentences in a given discourse scenario. And, what is even more important, that principle provides substantial evidence against assigning a uniform syntactico-semantic analysis to configurations like the ones in (15)-(18) below:

(15) “And I mean it, I find that really horrendous!” (BNC Corpus, FL6 171) [+> I think something about that, namely, that it is horrendous]

(16) “…Almost all the methods and conventions of art and life found their highest expression in parody” (BNC Corpus, A05 502) [+> Almost all the methods and conventions of art and life found their highest expression somewhere, namely, in parody]

(17) “…All have found themselves caught up in the nightmare that is the US capital law system.” (BNC Corpus, A03 696) [+> All have found themselves in a specific situation, namely, in the nightmare that is the US capital law system]

(18) “It is not uncommon to find cycles missing in proximal areas…” (ICE-GB Corpus, W2A-023-93) [+> It is not uncommon to fail to find cycles in proximal areas…]

Thus, despite their formal resemblance, which is evidenced by the
fact that these can be taken to be instantiations of secondary predication, the italicised units in (18) above differ from those in (15)-(17) in one important respect, namely, in their failing to qualify as either complements/modifiers and/or adjuncts of the matrix verb. It is only by making appeal to pragmatic information in general and implicature in particular that we can begin to understand their true syntactico-semantic behaviour as complex predicates which select the postverbal NP₂ as their sole object argument.
References


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