A Relevance-Theoretic Account of the Property Predification Restriction

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A Relevance-Theoretic Account of the Property Predication Restriction[1]

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1. Introduction

As several linguists have pointed out, the occurrence of indefinite subject NPs (in initial or preverbal position) is more restricted than the occurrence of definite ones. There seems to be a widespread typological preference for definite preverbal subjects, and some languages (Arabic, for instance) even forbid the presence of preverbal indefinite subjects. Other languages (such as English or Spanish) do not grammaticalize that universal tendency in such a strong way, but nevertheless they do impose certain constraints on indefinite subjects as well. My aim is to show that these constraints are pragmatic in nature and thus not amenable to a purely syntactic explanation such as the one advanced in Diesing (1992), for instance. More precisely, I would like to suggest that the constraints on indefinite subjects follow from the Principle of Relevance and can ultimately be explained by means of Relevance Theory. First, I will present a sketch of the so-called Property Predication Restriction; then I will provide evidence for its pragmatic status, and a tentative explanation based on Sperber and Wilson's theory. Finally, I will try to extend the account to some additional data.

2. The Property Predication Restriction

2.1 Some basic distinctions

The basic data involve indefinite subjects such as the ones in (1) and (2):

(1)   a. A computer expert will come to have a look. (Rouchota (1994))
        b. A Masai is tall.

(2)   a. ?A girl has green eyes. (Lumsden (1988))
        b. ?A student is tall.

The examples in (1) are perfectly acceptable with a specific or a non-specific reading for the indefinite subject *a computer expert* in (1a), and a generic reading for *a Masai* in (1b). The indefinite subjects in the odd examples in (2), on the other hand, reject the non-specific reading, and in these cases specific or generic readings are not easily conceivable, in the absence of any additional information. However, if the situation forced such interpretations, the utterances would be acceptable (for instance, if the phrases *a girl / a student* were equivalent to *one of the girls / one of the students*, or *a girl I know of / a student I met in class*).

Definite subjects do not give rise to this kind of anomaly, as shown by the full acceptability of the examples in (3):

(3)   a. The girl has green eyes.

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b. That student is tall.

Since the unacceptability of the examples in (2) has to do with different readings for indefinites, and some of the notions involved are notoriously puzzling, it is worth stating explicitly how the terms indicating the three basic interpretations (*generic*, *specific* and *existential*) will be used.

A *generic* indefinite NP refers to an arbitrarily chosen member of a class, as in *An Italian drinks wine with his dinner*; it is not a kind-referring NP (though a taxonomic reading is also possible with indefinites in some cases). Being triggered by the genericity in the predicate, the generic (non taxonomic) reading is only possible for indefinite subjects of characterizing sentences.

A *specific* indefinite NP is used by a speaker when he intends to communicate that he has a particular individual/object in mind, irrespective of the fact that the hearer could identify it or not. This is a widely accepted definition of *specific indefinite*. There are actually at least three different notions of specificity to be distinguished, as Farkas 1995 has pointed out: *scopal specificity* (related to the issue whether the indefinite is dependent on some quantifier or intensional predicate, or not), *epistemic specificity* (based on the speaker´s cognitive state, i.e. his having an intended referent in mind) and *partitive specificity* (favoured by the existence of a familiar discourse set which includes the referent of the indefinite NP). Although the three notions are to be kept distinct, they share an important property: in each of these cases the indefinite receives a strong reading, in a sense that will be made clear below.

Finally, an *existential* (or *non-specific*) indefinite NP simply indicates the number of entities that must be taken into account to verify a proposition. In this interpretation the indefinite determiner functions as a cardinality predicate, so existential readings can also be referred to as *cardinal readings*. The NP receives its interpretation from its being bound by some sentential operator, or alternatively, by existential closure (Heim 1982, Diesing 1992). The existential reading of the subject in *Two students are absent* is an instance of existential closure (cfr. the explicit existential paraphrase *There are two students absent*); what is at stake here is the number of students who are absent, but not their identity or the possibility of identifying them.

Given this, the analysis of the examples in (1) and (2) raises the following question: why can we have acceptable indefinite subjects with an existential reading in (1a) — or in (4) below— but not in (2)?

(4)   a. Someone has been following me.
        b. Two students are absent.

To answer this question two important distinctions must be kept in mind: the distinction between *individual-level predicates* and *stage-level predicates*, and the distinction between *strong* and *weak* readings of indefinite NPs (see Milsark 1977, Carlson 1980, Lumsden 1988, Kratzer 1989 and Diesing 1992).

Individual-level (IL) predicates are property-denoting predicates, such as *to be tall*, *to have green eyes* or *to love pasta*; stage-level (SL) predicates are state-denoting predicates which correspond to temporary states and transitory activities, such as *to be absent*, *to be coming in five minutes* or *to be available*. Notice that the examples in (2) contain typical IL predicates.

As for the weak / strong distinction, weak readings are existential or non-specific, in the sense specified above, and strong readings are generic or specific (in any of the possible senses of the term *specific* discussed in Farkas 1995)[2]. The former are the so-called 'cardinal' readings, in

which the speaker just asserts the existence of some member of the mentioned kind (in (4), for instance, some man or some students); the latter are the so-called 'presuppositional' readings (in Diesing's terms, which I will not adopt), in which the speaker refers to the whole kind or to some particular individual(s).

As suggested by Reinhart 1987 and Lappin and Reinhart 1988, in weak NPs, determiners are cardinality markers operating on a set, and this set is defined "by the whole clause containing the weak NP and not by the NP itself" (Reinhart 1987: 143); more precisely, weak determiners define the cardinality of the intersection of the set denoted by the subject N´ and the predicate extension. A sentence like (4b), *Two students are absent*, is true, in the weak or cardinal interpretation, if the intersection of the set of students and the set of individuals who are absent contains two individuals. So, the processing of a weak indefinite subject involves a set defined at the clause level. In more intuitive terms, the quantifying domain in weak readings depends both on the properties of N´ and on the properties of the rest of the sentence; there are no referential properties independently of sentential context.

In strong NPs or strong readings, by contrast, "the determiner must first select subsets of the common noun set as a prerequisite for checking the intersection set" (Reinhart 1987: 147). In this case the evaluation of the N´ set is required to be the first step in the assessment of the sentence, prior to computing the relation of its cardinality to the cardinality of the intersection of the N´ and predicate sets. This means that the referential properties of the NP obtain independently of the cardinality of any other set at the clausal level. In a few words, weak interpretations are typically dependent on the determination of certain sets external to the NP, while in strong ones the reference of the NP can be established without relying on the evaluation of such sets.

The linguistic manifestations of this distinction are well known: strong NPs are acceptable preverbal subjects with any kind of predicates, they do not fall under the scope of sentential operators, and they are usually excluded from existential *there*-constructions. From now on I shall be concerned only with the global distinction between strong and weak readings of indefinites.

This contrast is also relevant to the distribution of indefinite subjects. Dutch provides us with a good example: as pointed out by Reuland 1988 and Rullmann 1989, weak (existential) indefinites are only allowed in existential or presentative constructions with *er*, but not as preverbal subjects in any other construction (all Dutch data are taken from Rullmann 1989):

(5)   a. *dat er mensen dronken waren / dat er iemand gebeld heeft*
         'that there were people drunk' / 'that somebody has called'
         b. **dat mensen dronken waren / *dat een rel uitgebroken is*
         'that people were drunk' / 'that a riot has broken out'

Such a restriction disappears when indefinites get a strong interpretation, i.e. generic or specific; in that case, indefinite NPs behave in the same way as definite NPs and are fully acceptable as preverbal subjects. This is shown in (6a) and (6b), with a generic and a specific subject respectively:

(6)   a. *dat brandweermannen lui zijn*
         'that firemen are lazy'
         b. *Ik hoorde dat een jongen uit mijn klas gisteren gearresteerd was*
         'I heard that a boy in my class had been arrested yesterday'

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Similar restrictions on weak indefinite subjects can be found in Chinese (Tsai 1994).

2.2 A constraint on weak indefinites

Going back to the contrast in (1) and (2), IL predicates seem to be acceptable with strong indefinite subjects (as in (1b), which has a generic subject) but not with weak ones. In fact, the examples in (2) are odd unless a strong interpretation is assigned to their subjects. SL predicates, on the contrary, are compatible with all kinds of indefinites, as one can see in (1a) or (4a,b) (with a specific or an existential reading). So it is IL predicates, but not SL predicates, that constrain the distribution of indefinite subjects. Following Milsark 1977:16 and Lumsden 1988: 184-186, the relevant generalization can be stated as in (7):

    (7)   PROPERTY PREDICATION RESTRICTION (PPR)
           Properties may only be predicated of strong NPs (i.e., NPs which receive a strong interpretation)[3].

Notice that such a restriction, which is essentially a ban on weak NPs as preverbal subjects, is just the opposite of the so-called *Definiteness Restriction*, which is a ban on strong NPs inside the VP in existential constructions (cf. **There are your friends in the bar*). Several linguists (Kratzer 1989, Diesing 1992) have pointed out that weak readings of indefinites are systematically associated with VP-internal positions; in fact, this observation, strongly confirmed in languages such as German, Dutch or Spanish, is the starting point of the current syntactic accounts of the PPR. In Spanish, for instance, bare plurals can only receive weak interpretations and they are consequently banned from the preverbal subject position, although they can appear as preverbal subjects under certain restricted conditions (focalization and coordination, among others); what connects these data to the PPR is the fact that focalization and coordination of preverbal bare plurals are licensed by SL predicates, but not by IL predicates, as observed by Contreras 1996: 145-146 in contrasts like the following ones:

    (8)   a. ESTUDIANTES invadieron la universidad.
           'STUDENTS invaded the university.'
           b. *ESTUDIANTES son inteligentes.
           'STUDENTS are intelligent.'

    (9)   a. Estudiantes y profesores escuchaban con atención.
           'Students and teachers were listening attentively.'
           b. *Estudiantes y profesores son inteligentes.
           'Students and teachers are intelligent.'

Thus, IL predicates block the only possibilities of having bare plurals (with obligatory weak readings) as preverbal subjects in Spanish, which follows from the PPR.

    This restriction raises at least two questions, which I shall try to answer in what follows[4]:

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a) What is its nature (syntactic, semantic, pragmatic...)?
b) Why are weak readings incompatible with IL predicates?

3. Against a syntactic account of the constraint

My answer to the first question is that the restriction is clearly pragmatic, as Galmiche 1986 and Lumsden 1988 have already shown. The following arguments support a pragmatic solution against a purely syntactic one (I am not going to engage in a detailed criticism of the syntactic explanations proposed in Reuland 1988, Rigau 1988, Zwarts 1992 and Diesing 1992).

3.1 The status of the IL/SL distinction

Kratzer 1989 and Diesing 1992 suggest that the IL/SL distinction has to be rooted in the syntax. However, there seems to be no clear evidence for this proposal.

Kratzer claims that only SL predicates, but not IL ones, introduce an event argument, a spatiotemporal variable which locates the utterance in space and time. It is the salience of the eventive argument (or the properties of Inflection, in Diesing's version) what determines a different kind of association between the subject argument and the preverbal subject position (Spec, IP) in the two predicate classes. This leads to two different mappings between S-structure and Logical Form, and, as a consequence, to different interpretive possibilities for the subjects of the two classes of predicates. Thus, the IL/SL distinction turns out to be a difference in clause structure.

The approach proposed by Kratzer and Diesing raises a number of technical difficulties which I cannot evaluate here (for instance, the necessity of "lowering" operations at Logical Form for the subjects of SL predicates, the unorthodox assignment of an additional thematic role by Inflection, or the treatment of the copula *ser* in Spanish as a control predicate, due to its association with IL predicates; see Brugger 1990, McNally 1994, Chierchia 1995a and Raposo and Uriagereka 1995 for a detailed criticism), and leads us to explore some alternative proposals which are not concerned with the characterization of the IL/SL distinction in purely syntactic terms.

IL predicates can be better characterized by some aspectual features without relying on syntactic mechanisms: Chierchia 1995a resorts to a form of inherent genericity to explain their typical properties, and McNally 1994 makes use of a default inference of temporal persistence and stability (both solutions highlight a characteristic property of IL predicates).

Actually, a crucial property of IL predicates, at least with regard to the PPR, seems to be that they give rise to categorical judgements, in Kuroda's 1973 terms, i.e., topic-comment structures where a property is predicated of an independently established entity which is the predication topic. This is a well known fact, and it has been explicitly stated on several occasions after Kuroda's paper, e.g. in Mejías-Bikandi 1993, Herburger 1994, Raposo and Uriagereka 1995, and Rosengren 1997. Thus, an utterance like (1b), containing an IL predicate, is always a categorical judgement: it is characterized by the partition of the clause in a topic and a comment, in conformity to the subject/predicate distinction of Aristotelian logic, with the indefinite NP *a Masai* as the logical subject of the predication —in fact, indefinite generic subjects are known to be licensed only in categorical judgements, as predication topics[5].

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On the other hand, an utterance like (1a), with a SL predicate, could convey a categorical as well as a thetic judgement[6]. Building on Kuroda's and Milsark's insights, Raposo and Uriagereka 1995: 185 claim that IL subjects are what the sentence is about (i.e. topics), and that IL predication is just a subclass of topicalization structures; their viewpoint is clearly summarized in the following quotation (1995: 179):

"In particular, we argue that what is at stake are differences in information (theme/rheme) structure, which we encode in the syntax through different mechanisms of morphological marking. There are no individual-level predicates, but simply predicates which in some pragmatic sense 'are about' their morphologically designated subject. There are no stage-level predicates, but simply predicates which, rather than 'being about' their thematic subject, 'are about' the event they introduce. The distinction corresponds roughly to what Kuroda once called a categorical and a thetic judgement (...): the former is about a prominent argument (...), while the latter is simply reporting on an event."

Although I do not agree with Raposo and Uriagereka´s identification of SL predicates with the thetic perspective, nor with their assumption about the predicational structure being basic in the categorical perspective (aspectual properties — permanent *vs* transient — being thus derivative with respect to the syntactic configuration), I will take for granted that IL predicates involve a categorical judgement.

An inmediate consequence of this approach is that the reason why weak indefinites cannot be subjects of IL predicates must be the same that causes weak indefinites not to be usually good topics. That the constraint affects topics instead of subjects is demonstrated by neat data such as the following ones from Spanish:

(10)   a. ?*A alguien le encanta la pasta.*
        (Lit.) 'To someone pleases pasta.' (Someone loves pasta)
        b. ?*A alguien, en el bar no lo vimos*.
        'Someone, in the bar we didn't see him.'

In (10a) the indefinite *alguien* ('someone'), which tends to receive weak readings, is moved to the canonical subject position (Spec, IP) while the real subject, *la pasta*, remains inside VP: this is a typical feature of the syntax of psychological predicates like *encantar* ('to please') in Spanish, and the raising of the PP *a alguien* (lit. 'to someone') to the preverbal position can be considered as a sort of topicalization strategy. The oddity of (10a) arises from the combination of the weak nature of the indefinite and the topical position where it appears. The same happens in (10b), this time with a clear instance of clitic left dislocation: the weak indefinite is again odd as a predication topic. The problem thus seems to involve topics instead of grammatical subjects[7], so the PPR should be restated as affecting topics.

Given this, I will assume that the most salient properties of IL predicates are their lack of aspectual features and their association with categorical judgements. The IL/SL distinction is thus semantic and has no inmediate structural consequences. Once Diesing's and Kratzer's account of the distinction is rejected, a purely syntactic explanation of the PPR seems quite difficult to obtain.

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3.2 The status of the weak/strong distinction

Rouchota 1994 has convincingly demonstrated that the referential / attributive ambiguity for indefinite descriptions is pragmatic in nature and can be successfully treated by means of Relevance Theory. Following her, and according to Modified Occam´s Razor, I am assuming that semantics is the same for both readings; basically, all indefinites are characterized by one negative property: they lack the procedural content typical of definite NPs, i.e., an instruction to the hearer to the effect that he looks for the most accessible representation fitting the description (recall that indefinites are treated as simple cardinality predicates). On this view the existential implication of indefinites (i.e., the operation of Existential Closure) is not part of linguistic semantics, but a default pragmatic inference, as proposed in Rouchota 1994:454 ("...hearers will assume that the individuals and objects that are being talked about exist unless they have reason to believe that such an inference is not warranted: for example, in fictional contexts or when a description falls within the scope of a possible world setting operator."). The various interpretations attributable to indefinite NPs (attributive, referential, specific, generic...) are not part of linguistic semantics either, but can be derived on the basis of general communicative principles. On Rouchota´s account the difference between these interpretations lies in contextual assumptions about the speaker having a particular individual in mind or not, or maybe expecting the hearer to identify that individual; this is a psychologically plausible account of the way indefinites are interpreted, and allows us to work with a very simple semantics. No syntactic machinery is needed (i.e., Quantifier Raising rules, or structural differences between weak and strong indefinites).

What Rouchota actually develops is a pragmatic account of the attributive, the specific and the referential interpretation; she does not deal with the weak / strong distinction nor with the PPR. Nevertheless, I believe that her analysis can be extended naturally to the weak / strong distinction for indefinites, given that, on the one hand, referential and specific interpretations are no more than particular instances of the general phenomenon of strong readings, and on the other hand, attributive interpretations are to be treated as a particular type of weak reading.

Let´s discuss first the specific / referential case. As the editors of this volume have pointed out to me, the way the term 'specific' is used in the literature on the PPR — especially in Diesing 1992, where it is equated to 'presuppositionality' and 'partitivity'— considerably differs from Rouchota's elaboration of specificity in Relevance-theoretic terms (where an indefinite NP is specific if the speaker employs it to communicate that he has a particular individual in mind). In fact there is a difference between the two notions, but I think it is not relevant here, as the varieties of specific interpretations I mentioned earlier, together with the referential one defined in Rouchota 1994: 461-471, are all ways of building strong readings, and this is the central point for my purposes (I would like to suggest that the terms 'weak' and 'strong' cover two families of interpretations, rather than two particular interpretations). Moreover, all of them can be pragmatically derived from the unambiguous semantics proposed by Rouchota: the whole weak / strong distinction can be treated within the framework of Relevance Theory as a pragmatic phenomenon (contrary to the solution adopted in Diesing 1992: 55-92 with a cardinal / presuppositional ambiguity for indefinites and the corresponding structural difference in logical representation).

Take for instance one of Diesing´s examples of presuppositional or partitive indefinites; according to her (Diesing 1992: 59), the sentence in (11) presupposes the existence of ghosts and the interpretation of the subject can be paraphrased as a partitive: 'three of the ghosts'.

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(11)   Some ghosts are in the pantry; the others are in the attic.

The presuppositional reading of *some ghosts* in (11) differs from the cardinal reading, that
would be most salient in *There are some ghosts in my house*, in the contextual availability of a set
of ghosts. An assumption about the existence of such a set can originate in a variety of ways, i.e. by
means of a previous explicit mention in the discourse, or simply by the presence of the NP *the
others* in the second sentence; but, in any case, is one of the contextual assumptions that the hearer
can access in the process of interpreting an utterance. It does not seem necessary to postulate a
semantic ambiguity between cardinal and presuppositional readings. Thus, Rouchota´s framework
seems to me to be perfectly adequate to capture these aspects of the interpretation of indefinites.

Let´s turn now to the attributive interpretation. Although it may not equal the cardinal or
existential interpretation in all respects (I am grateful to the editors for having signalled this to me), the
two interpretations share several characteristic features, basically their weak nature and the fact that
the referent´s identification is not at stake; as Rouchota 1994: 453 puts it, when an indefinite
description is interpreted attributively,

> "the speaker does not intend to communicate that she is speaking about an individual an
> individuated representation of whom she has in mind, nor does she expect the hearer to
> identify the individual she is talking about; she is speaking in a general way about some
> person who fulfils the descriptive content of the indefinite description; any further
> specification of this person is irrelevant".

This quote matches the current descriptions of the existential reading. Though the attributive
interpretation may be more salient in certain contexts in which the content of the indefinite description
is clearly highlighted, and the existential interpretation may be more natural in presentative contexts or
in thetic utterances, both of them must be classified as weak. This leads to generalize Rouchota´s
account to cover the distinction between weak and strong readings as a purely pragmatic matter.

3.3 The context-dependent nature of the constraint

The oddity of examples like (2), repeated below, does not show the strength and stability of
syntactic ungrammaticality. The problem seems to be restricted to the limited possibilities of utterance
contextualization. Thus the examples in (2) are not ungrammatical, but just difficult to contextualize[8].

(2)   a. ?A girl has green eyes.
        b. ?A student is tall.

If the assumption that the speaker has a particular individual in mind is made accessible, then
a specific interpretation could be assigned to the subject, which would restore the acceptability of the
whole utterance. In fact, this is what hearers usually do when trying to reach an interpretation for an
utterance like (2): as soon as a strong interpretation can be reached, the interpretation task is over.
To make such an interpretation easier to recover, a speaker who utters (2b) in an imaginary
conversation about the availability of substitute players for the faculty basketball team, can guide the

hearer towards the assumption that he has a particular individual in mind adding some modifier to the subject NP (something like *A student who is now attending my class*), constraining in this way the search for a context and so improving the acceptability of the utterance, in spite of the low informativity degree of a predicate like *tall*. Therefore, acceptability is here strongly context-dependent.

The behaviour of the Spanish indefinite *unos* provides some interesting pieces of evidence for the pragmatic nature of the PPR: as noticed by Laca and Tasmowski-De Ryck 1996:123, an indefinite subject with *unos* is usually incompatible with IL predicates, but it gives rise to perfectly acceptable utterances when embedded in a context whose structure in some explicit way imposes a categorical interpretation. Thus, the contrastive nature of the structure in (12b) makes it more acceptable than the simple statement in (12a), and this seems to require a pragmatic account:

(12)   a. ?*Unos niños son inteligentes*
       'Some boys are intelligent'
       b. *Unos niños son inteligentes, otros no tanto*
       'Some boys are intelligent, others not so much'

Some additional evidence can also be found in Lawler's 1973 classical pair of generic sentences:

(13)   a. A madrigal is polyphonic.
       b. ?A madrigal is popular.

As Lawler pointed out, (13b) is odd because being popular is only an accidental property of madrigals, not an essential one, and this precludes the possibility of getting an acceptable generic interpretation (i.e., a strong interpretation) for the indefinite subject (the predicates being IL in both cases). Of course, (13b) would be an acceptable utterance if a specific reading of the subject were available. Therefore, the anomaly stems from the occurrence of a weak indefinite as the subject of an IL predicate, and it is thus an instance of the PPR. The point I want to stress is that these are facts about which syntax has little to say, given that what is at stake here is the possibilities of conceiving an utterance as an analytic judgement (cf. Burton-Roberts 1977). Then (13b) is pragmatically odd, but not ungrammatical.

In addition, the degree of acceptability of utterances like (2a-b) seems to vary depending on the type of indefinite determiner: *some* and *many*, for instance, give better results with IL predicates, in an adequate context, than *a(n)* or the numerals. Several utterances containing an IL predicate are perfectly acceptable even with a weak indefinite subject; this is illustrated in cases like (14a-b):

(14)   a. Many elephants are really intelligent.
       b. Some linguists like Metallica.

It is important to bear in mind that (14a-b) can be adequately paraphrased by existential constructions as in (15a-b), which demonstrates that we are neither dealing with real generic readings of the indefinite subjects, nor necessarily with specific ones (specific or referential readings are obviously possible if, for instance, the assumption that the speaker utters (14b) with some particular linguists in mind plays a role in utterance interpretation):

(15)   a. There are many elephants who are intelligent.
          b. There are some linguists who like Metallica.

The indefinites in (14a-b) can be taken in their weak or cardinal sense, as shown by the paraphrases in (15a-b) and by the possibility of expressing a non categorical perspective when there are no contextually defined sets of elephants or linguists to quantify over.

Are these real counterexamples to the PPR? They are indeed, if the PPR is stated as in (7) and IL predicates are taken to constitute a well delimited lexical class. They are not if we restate the PPR as a constraint on weak indefinites as predication topics, as suggested above: in fact, as indicated by the paraphrases in (15a-b), (14a-b) are not examples of categorical judgements, in spite of the stative and permanent nature of the predicates; thus, the indefinite subjects would not be predication topics. But this goes against our assumption that IL predicates are systematically associated with categorical judgements. A possible way out of this paradox would be to consider this relation between IL predications and categorical predications as "soft" (i.e. non syntactic) and pragmatically motivated as the PPR itself, and therefore to leave open the possibility of having combinations of IL predicates and weak subjects in thetic utterances under certain limited conditions, apparently having to do with the presence of certain indefinite determiners and with the generic nature of the predication.

If this analysis is correct, the examples in (14a-b) reinforce the conclusion that the PPR is weaker than an absolute syntactic constraint, as it depends more on information structure than on strictly configurational properties. At the same time, they raise the question why they are acceptable, if (2a-b) are not. I shall give a tentative answer in section 4.2. All these facts (the nature of the IL/SL distinction for predicates and of the weak / strong distinction for indefinites, as well as the anomalous, but not ungrammatical, status of examples like (2a-b)) support a pragmatic account of the PPR.

4. A Relevance-theoretic account

4.1 Setting the bases for a pragmatic account of the PPR

If the PPR is a pragmatic constraint, we could try to answer the second question (why are weak readings usually incompatible with IL predicates?) by means of Relevance Theory. Let's begin with the aforementioned property of IL predicates: their association with categorical judgements (in spite of cases like (14a-b)). As Herburger 1994: 527 states,

"so called IL predicates typically describe events that are as such not epistemologically salient to us. (...) Therefore, IL events are not available for grounding, and we have to ground the IL assertion in something else, namely the subject. On the other hand, what are considered SL events are epistemologically salient enough to allow for a sentence to be grounded in them. (...) Because of the epistemological salience of SL events, SL assertions can be grounded in the event itself. Nothing, however, precludes that they are grounded in the subject, that is an available option. The difference between IL and SL assertions then

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reduces to whether it is an event description or the subject which is put forth as the topic of
the sentence."

This long quotation from Herburger 1994 brings into focus some intuitions already present in
Milsark 1977 and Galmiche 1986, and sets the basis for an account of the PPR. Let me illustrate this
point with an example. Headlines and captions are utterances which usually appear isolated of any
linguistic context, as independent discourse chunks; the fact is that it is really hard to make a headline
or a caption out of an IL predicate when there is no verb, as the examples in (16) show[9]:

(16)   a. ??Jones, a soldier
        b. ??Jones, intelligent

With SL predicates, on the contrary, we can obtain acceptable non-verbal predications such
as those in (17):

(17)   a. Jones, found guilty
        b. Jones, in his house in Ibiza

This is independent of the weak / strong distinction facts, but it is enough to demonstrate that
there is a clear asymmetry between the two types of predicates and that it is related to the
epistemological saliency of SL predicates, as mentioned in the quotation from Herburger 1994. In
the absence of a verbal head, not even a strong subject, such as the name *Jones*, is able to give rise
to an acceptable headline if the predicate is of the IL type. The crucial property underlying the
'saliency' of SL predicates seems to be the fact that they automatically trigger the recovery of a
spatio-temporal location for the evaluation of the proposition expressed (here we have a restatement
of Kratzer´s intuition about the presence of an event argument); this is why they do not give rise to
generic interpretations unless some explicit genericity marker appears in the sentence.

This is also the origin of their autonomy with respect to the referential properties of their
subjects. SL assertions are in any case anchored to some referential point, which provides the
"grounding" of the event (Jäger 1995: 308 assumes that in thetic utterances referential time "counts
as topic"). IL assertions do not trigger the search for such spatio-temporal coordinates, maybe
because of their inherent genericity. This semantic contrast is the starting point for a pragmatic
account of the PPR.

If we have to ground an IL assertion in the subject, then we need a subject NP whose refe-
rential properties are established independently of the cardinality of any other set denoted, as claimed
in section 2.2 (i.e a NP with a strong reading); this is unnecessary with SL assertions, as Galmiche
1986, Mejías-Bikandi 1993, Attal 1994 and Jäger 1995, among others, have noticed. Now, what is
wrong with weak NPs as subjects of IL predicates? Take again an example like (2b):

(2)   b. ?A student is tall.

Once we discard the generic reading for the subject — a hardly available interpretation,
given that tallness is not an essential property of students —, there are two remaining possibilities: the
specific reading and the existential reading. The first one is the natural interpretation when the
speaker adds some more specifications, as in *A student of mine / A student I know / A student in*

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the third course... (although the availability of a strong interpretation for the subject may not be enough to make (2b) perfectly acceptable or felicitous, given that *tall* is not a very informative predicate with respect to *student*, as I already mentioned). But (2b) does not drive the hearer towards the assumption that the speaker has a particular student in mind, at least in a clear way, so the existential reading is the only remaining possibility, and it is odd, as it does not provide a suitable context for grounding an IL assertion. Following a suggestion from Raposo and Uriagereka 1995: 191, we can assume that in categorical assertions the context of the predicate is embedded in, or within the scope of, the context of the subject. This means that in the case of (2b) the context of the predicate is dependent on the context of the subject and, as weak indefinites are in some sense unable to introduce the context necessary for IL assertions, the result is odd.

Why should weak indefinites be unable to support IL predications? I think that this constraint is clearly related to the semantics of weak readings: if, in those readings, indefinite determiners are a sort of cardinal adjectives which operate on a set defined at the clausal level, then the corresponding quantificational properties cannot be established independently of the evaluation of the predicate. But what an IL predicate needs is just the contrary, i.e. a subject whose referential / quantificational features obtain independently of the predicate.

Intuitively, we could say that IL predicates are 'weak', because of their inability to 'anchor' the proposition in the absence of a strong subject, while SL predicates are 'strong'. Therefore, the origin of the unacceptability of some utterances lies in the combination of a weak subject with a 'weak' predicate; if at least one of the two components is strong, the resulting utterance is acceptable. In the next section I will try to give an explanation for why weak subjects and 'weak' predicates are not able to support each other.

4.2 Processing effort and context recoverability

I would like to suggest that an account of the PPR must rely on a fundamental insight of Relevance Theory: the notion of processing effort as the counterbalance of the computation of contextual effects.

According to Sperber and Wilson 1986, relevance is defined in terms of contextual effect and processing effort. Contextual effects are the result of the interaction of newly-presented information with a subset of existing assumptions. The computation of contextual effects requires some mental effort, which depends mainly on the linguistic complexity of the utterance and on the accessibility of contextual assumptions. An utterance is optimally relevant if it achieves enough contextual effects to be worth the hearer's attention without putting him to any gratuitous processing effort in achieving those effects. Sperber and Wilson suggest that what the hearer looks for when interpreting an utterance is an interpretation that is optimally relevant. Any increment in processing effort causes a relative decrease in the degree of relevance, if no further effects are obtained.

The notion of processing effort plays a major role in Relevance Theory, and allows us to explain why one interpretation rather than another is preferred. It is also an important advantage of Sperber and Wilson's approach to interpretive processes with respect to other pragmatic theories which do not incorporate the notion of economy of effort (for instance, Grice´s theory of implicatures or Ducrot and Anscombre´s Argumentation Theory).

My proposal can now be sketched as follows: the PPR derives from the fact that utterances like (2b) put the hearer to unjustifiable processing effort in deriving no significant contextual effects. In a few words, they obstruct the search for an optimally relevant interpretation.

Due to the lack of grounding for the assertion, a speaker who utters (2b) gives no cues for recovering an appropiate context against which the utterance could be interpreted. The IL predicate does not offer any explicit spatio-temporal anchoring point, and the subject cannot provide a context to embed the predication (in Raposo and Uriagereka's 1995 terms). The crucial problem is that in (2b) there is no clear way to evaluate what are the limits of the assertion (a student is tall where? tall with respect to what?), this being essential for the recovery of the proposition expressed. The tasks involved in such a process, in particular reference assignment and enrichment, are not constrained enough to be carried out in optimal conditions. Some kind of enrichment (for instance, establishing the domain of quantification) should be completed in (2b) to avoid an interpretation as uninformative as 'There exists in the world at least one student who is tall', but no clear alternatives to this interpretation seem to be at hand. The hearer is not directed towards any accessible assumptions which could combine with explicit information to produce contextual effects. As a consequence, it will be rather difficult to achieve any contextual effect.

In his attempt to explain why *Des élèves sont gentils* ("Some students are kind") is odd in French, but *Des fourchettes sont sales* ("Some forks are dirty") is more easily interpretable, Galmiche 1986: 54 noticed that the key factor is that certain utterances allow the hearer to make a number of relevant inferences, which makes them informative and pragmatically appropriate: when a speaker utters *Des fourchettes sont sales*, the hearer can reach a variety of inferences, such as *We should not use them tonight*, *Go and wash them*, *Maybe you should replace them* or *There are still many things to do in the kitchen*; on the contrary, it is not clear what inferences one can get from *Des élèves sont gentils*. The contrast has to do with the IL/SL distinction, obviously (*gentil* is IL, *sale* is SL), but the crucial factor is the possibility of obtaining contextual effects to make the utterance worth the hearer's attention.

In a few words, the weak reading of the subject in (2b) is certainly not favoured by the presence of an IL predicate (this makes it relatively inaccessible) and precludes the possibility of building an adequate context for interpretation (this makes it difficult to obtain contextual effects). Its cognitive impact on the hearer's mind is hardly significant. It is in this sense that we can make the PPR follow from the search for optimal relevance in interpretation.

As an illustration of this perspective, we could reanalyze the example in (18), containing a bare plural subject and taken from Diesing 1992: 18, in pragmatic terms:

(18) Violists are intelligent.

Diesing claims that "It is difficult, if not impossible, to think of any contextual situations in which (5a) [= my (18)] could be taken to mean 'There are intelligent violists'." She denies the possibility of attributing the absence of the existential reading to pragmatic factors, but I think that it could be done by resorting to the notions advocated here. Again, an IL predicate allows a generic reading of the subject, but not an existential one, because in the last case neither the predicate nor the subject are able to create an appropriate context for each other. This causes an increase in processing effort, as the recovery of the proposition expressed is not adequately constrained.

But why then is the weak reading of the bare plural possible in an existential construction like *There are intelligent violists*? For two reasons, basically: first, *there*-constructions favour that reading in a precise way, and nothing inside them precludes such a possibility; second, *there*-constructions trigger some kind of enrichment to determine the range of the existential assertion, thus contributing to the recovery of the proposition. As Diesing notices, no contextual

situation seems able to make an existential interpretation acceptable in (18), but this is not necessarily incompatible with a pragmatic approach: the robustness of the ban against the weak reading in (18) may be explained bearing in mind that the absence of any quantificational information in bare plurals does not allow them to develop an interpretive property that is not inherited from the sentential context, and a weak reading for the subject cannot certainly be obtained from the sentential context in (18).

Notice that even with an IL predicate a weak indefinite can be an acceptable subject if the resulting utterance is sufficiently informative: this is the case of the examples in (14), given that they contain some explicit information about quantification (the content of quantifiers like *many* and *some*, plus plural), which makes it possible that the hearer reaches an optimally relevant interpretation. The generic nature of such examples frees us from the necessity to restrict the contextual limits of the assertion, which was the main source of processing costs in (2) (recall that a generic reading was impossible in (2)): in fact, a natural interpretation of the utterances in (14) would be something like 'The elephants that are really intelligent are many' or 'The set of linguists who like Metallica is not an empty set (there are some of them)', where the sets of elephants and linguists are not restricted in space and time. So, on the one hand, processing costs are not aggravated in (14), and, on the other hand, it is easier to achieve some contextual effects, for instance, from the assertion that there are many intelligent elephants than from the assertion that some student is tall (possible inferences from (14a) are, for instance, *You should treat them respectfully* or *This is why they are able to carry out several different jobs*). Therefore, the claim about the pragmatic status of the PPR is reinforced, as the restriction disappears as soon as contextual effects can be achieved without any significant increase in processing effort.

To sum up, I have relied on the following arguments to deal with the PPR. First: IL predicates are in some sense 'weak' due to their aspectual inertia; this makes them unable to ground an assertion. Second: as a consequence, IL predicates use to appear in categorical utterances, with a strong subject, and are excluded from thetic utterances (except for cases like those in (14)). Third: the combination of a weak indefinite subject and a 'weak' predicate gives rise to unacceptable utterances when the lack of anchoring points increases the cost of recovering the proposition expressed with no appropriate reward in contextual effects: weak subjects are unable to support the predication because their interpretation is not independent from the predicate (so they cannot be topics in a categorical utterance). Thus, the unacceptability of the utterances in (2) originates in the need to balance processing effort and contextual effects.

5. Some consequences

I would like to conclude by commenting on two consequences of the viewpoint advocated here.

The first is a theoretical one. If my proposal is on the right track, the conclusion is that restrictions on indefinite subjects, though varying in their range and degree of strength in different languages, derive ultimately from a general tendency towards the grammaticalization of the Principle of Relevance, given that it is the Principle of Relevance that constrains the distribution of indefinite subjects and topics with certain kinds of predicates. What remains to be determined is the precise mode of interaction between grammar and the Principle of Relevance in each case.

The second consequence I want to point out is that the suggested account of the deviant nature of utterances like (2b) should be extended to some well known data concerning the grammar of impersonal sentences in Romance languages, in particular the need for those adjuncts which behave as genericity triggers. Consider the following examples taken from Carlson 1989:

(19)　a. A red light comes on when you push this button.
　　　 b. A red light comes on.

(20)　a. It rains hard here.
　　　 b. (??)It rains.

In (19b) the absence of the temporal adjunct precludes the possibility of having a generic (universal) reading for the subject, which is available in (19a); something similar happens in (20b) with respect to (20a): while the latter is a complete and informative generic statement, the former is a vapid generalization, "leaving one hunting for some kind of natural interpretation" (Carlson 1989: 176), and thus it is not an understandable generic utterance. Intuitively, the b) examples appear to lack some crucial piece of information which could make them understandable generics.

In order to explain these facts, Carlson 1989 treats generic sentences as the combination of a matrix predicate and a "related constituent". The role of "related constituent" can be played by subjects (in standard generic sentences), but also by any other phrase (direct objects, locatives, adverbials...), and, significantly, by implicit information contextually supplied. In fact, a sentence like *An alarm sounds* can be generically interpreted[10] if it is embedded in a discourse which provides something like *What happens in the event of a fire* as the topic of conversation; so it is this contextual assumption which acts as the "related constituent" to make the generic interpretation available. Carlson's observation is just a way to state a condition on generic sentences which I have already mentioned: they are categorical judgements, i.e., topic-comment structures.

A different version of the same basic idea can be found in Brugger 1990, where the following condition is proposed: a context with non-specific time reference (typically, a generic context) must contain an appropriate element in the restrictive clause at Logical Form (outside the VP). The restrictive clause is usually the position where topics appear, so Brugger's condition can be restated as a requirement on the presence of some topical element in a generic (IL) assertion.

The problem in (19b) and (20b) is, therefore, the lack of a "related constituent" or suitable topic (the lack of grounding for an IL assertion), given that the indefinite *a red light* and the expletive *it* are typically "weak" subjects. All we have in these examples is two instances of violation of the PPR.

Let's turn now to the issue of impersonal *si/se* constructions in Romance. The following examples show a striking similarity with the previous ones from Carlson 1989:

(21)　a. *Qui si mangiano pansotti.* (Italian)
　　　　 'Here one can eat pansotti.'
　　　 b. ?*Si mangiano pansotti.*
　　　　 'One can eat pansotti.'

(22)　a. *Borracho se baila mejor*. (Spanish)
　　　　 'When you are drunk you dance better.'

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        b. ?*Se baila mejor.*
        'One dances better'

(23)   a. *Con esta vitamina se crece más*. (Spanish)
        'With this vitamine one grows more.'
        b. ?*Se crece más*.
        'One grows more.'

Once again, different kinds of modifiers and adjuncts appear to be obligatory in order to obtain a complete and informative interpretation. The explanation lies in the generic (and categorical) nature of the examples, and in the requirement on the presence of a topic constituent. Bearing in mind that the clitic *si/se* in impersonal constructions exhibits some typical properties of indefinites (see Chierchia 1995b for discussion) and that it counts as a weak element in some sense, it is easy to derive the anomaly of the (b) examples in (21), (22) and (23) from the PPR: as the clitic cannot provide the grounding for the IL generic assertion, a different constituent has to play the role of topic, and no constituent is a suitable candidate in the (b) sentences (notice that in (21a) the subject *pansotti* is a bare plural, and Romance bare plurals have only weak, existential readings; so *pansotti* cannot be the topic, cf. **Pansotti si mangiano qui*). In a few words, the (b) examples are odd because genericity (as a source of IL assertions) is incompatible with the absence of a topic element, due to the necessity to counterbalance an increase in processing effort with an appropiate reward in contextual effects.

If these data are to be considered just another instance of the PPR, and ultimately of the need to balance processing effort and contextual effects, we have some ground to believe that Relevance Theory can adequately deal with apparently syntactic phenomena such as the constraints on the distribution of indefinites. By means of the notion of economy of effort, Relevance Theory can offer a psychologically plausible explanation of why certain utterances are odd (but not ungrammatical). In this sense it is a highly valuable theoretical instrument not only to understand the interpretation of utterances, but also to state, in a more precise way, what are the limits and possibilities of syntactic theory.

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 NOTES

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Granada, Spain (March, 1996) and at the *Fifth International Pragmatics Conference* in Mexico
City (July, 1996), and especially Robyn Carston, Vicky Escandell-Vidal, Andreas Jucker and Villy
Rouchota, for valuable comments on earlier versions of this paper.

2. I am not going into the issue of why generic readings are considered as strong readings, along with
specific ones. See Diesing 1992: 94-96 and Hornstein 1984: 82-83 for a discussion. The strong
nature of indefinite generics seems to be the result of the combination of the semantics of weak
determiners with the role of topic in information structure and certain temporal and aspectual features
in the sentence.

3. The PPR manifests overtly in several different languages; here we have examples in Spanish,
Catalan, French and Modern Greek:

      i) Spanish: ?*Una chica tiene ojos verdes.*
                           'A girl has green eyes'

      ii) Catalan: ?*Un noi és llest.* (Rigau 1988:54)
                           'A boy is intelligent'

      iii) French: ?*Des chats ont les yeux verts.*
                           'Some cats have green eyes'

      iv) Greek: ?*Enas singhrafeas ine kalos.* (Stavrou 1996: 91))
                           'A writer is good'

4. The constraint also raises a much more general question which I cannot even try to answer here:
what kind of relationship links NP interpretation (in particular, quantificational features) to the
aspectual properties of predicates (for instance, telicity, or the IL/SL distinction). Several facts
indicate that aspectual factors are highly relevant to NP interpretation, as pointed out by de Hoop
1994. Notice that aspectual factors have effects not only on indefinites, but even on definite
determiners: Kleiber 1987 has shown that some puzzling contrasts between the definite article and
the demonstrative *ce* in French can be explained on the basis of the IL/SL dichotomy and its
connections with information structure.

5. See Lee 1996 for a defence of this claim, and Carlson 1989 for the connections between
genericity and information structure.

6. I assume the definition of the thetic/categorical dichotomy as a distinction between two
perspectivizations of events, as put forth in Rosengren 1997: 472:

     "*Thetic* stands for a perspective where an event is looked upon as a *stage*, that is, an event
     in the flow of other (potential) events; *categorical* stands for a perspective where an event is

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divided into two parts, one of which in turn is viewed as an entity to which something happens or which is doing something."

7. It is possible to find weak indefinites as topics especially when there is an intensional element inside the predicate which favours a non-specific reading:

(i) *Qualcosa di certo troverà.* (Italian)
 'Something sure (s)he will find'

(ii) *Con dos cebollas será suficiente.* (Spanish)
 'With two onions it will be enough'

I assume that in these cases the opaque context created by future tense licenses the weak reading of the topic phrase; this is a special case that must be kept apart from the rest of the data considered here.

8. The kind of unacceptability originated by the PPR is comparable to the infelicity of the examples discussed by Takami and Kamio 1996 in their analysis of the pragmatic principles which govern topicalization and multiple subjectivization in Japanese, as well as *Tough*-Movement constructions in English. Takami and Kamio explicitly affirm that the problems they address have nothing to do with syntax and rather belong to the discourse component of language analysis: in fact, the constructions they discuss become infelicitous when failing to obey certain pragmatic conditions causes an increase in processing effort with no reward in contextual effects (Takami and Kamio 1996: 217-220). Their approach shows how Sperber and Wilson´s theory can be exploited to trace the limits of syntactic generalizations, and in this sense it shares a number of basic ideas with my account of the PPR.

9. Notice that *Clinton, Gulf War soldier* is acceptable because the initially IL predicate *soldier* becomes a SL predicate in this context: in fact the expression means that Clinton has become a soldier or that he is dressed as a soldier, but not that he IS a soldier.

10. The generic interpretation in this case affects the sentence, but not the subject NP, which would be non-specific.

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