ASPECTS OF INDIVIDUAL-LEVEL PREDICATION
Diana PILI

0. Introduction

The classification of predicates in the two main natural classes of individual-level and stage-level predicates relies on a large number of well attested asymmetries (see among others Carlson 1977, Stump 1985, Kratzer 1989, Chierchia 1995, Diesing 1992). One of the properties differentiating individual-level and stage-level predicates is the predicate’s potentiality to occur as an adjunct. This fact was noticed for English among others by Rothstein (1985). Consider the following data from Italian (and the correspondent English glosses):

(1) Stanco, Giovanni se ne andó
(2) Tired, John went away
(3) Felice, Giovanni tornó a casa
(4) Happy, John went back home
(5) *Intelligente, Giovanni rispose alla domanda
(6) *Intelligent, John answered the question
(7) *Biondo, Giovanni diventó un attore
(8) *Blond, John became an actor

In this paper I will try to give an account of the pattern in (1) to (8). The difference in the behaviour of individual-level and stage-level predicates will turn out to be a natural consequence of the conjoined application of the Mapping Hypothesis (Diesing 1992) and of standard assumptions on predication (Williams 1980, Rothstein 1985). After that I will briefly discuss Stowell’s (1991) theory of Mental Property adjectives and show that constructions like (9), which display an AP-internal sentient argument, are only apparently counterexamples to the Mapping
Hypothesis, which requires that individual level predicates lack predicate-internal subjects.

(9) It was intelligent of John to go away

Furthermore, a deeper inquiry into the properties of predicates will show that the simple distinction between individual-level predicates and stage-level predicates (hence i-level and s-level predicates) is not sufficient to account for interesting generalizations with respect to the derivation of adverbs from adjectival predicates and that some refinements are independently needed. As a result, we will end up with a more fine grained taxonomy of i-level and s-level predicates with particular attention to the nature and the behavior of i-level predicates that indicate a mental property (e.g. intelligent, nice, stupid, etc.....).

1. The quality of predication: individual- level versus stage- level predicates

Since the end of the seventies it has been observed that there is at least one important qualitative difference among predicates enabling us to classify them in two main categories with respect to the properties they ascribe to the subject of predication: on the one side predicates that indicate invariant properties and on the other predicates that indicate stages and in general temporary properties. In the work of Carlson (1977), these observations found their first formalization, refined then in subsequent work (among others Kratzer 1988/89, Diesing 1992). The two classes are currently known in the literature as individual-level predicates and stage-level predicates, respectively. S-level predicates are predicates that express transitoriness, linking to a precise time/space (tired, sick, drunk, on the table, etc....). On the other side, i-level predicates express permanence, unalterable properties (intelligent, stupid, tall, blond, orange, etc.....).

One of the first asymmetries between the two classes to be discovered involves the particular behavior of bare plural subjects as to their generic versus existential interpretation. Stage-level predicates, in fact, allow both generic and existential readings for their bare plural subjects, while in the case of individual level predicates the existential reading seems to be excluded systematically. In the following examples (modelled after Diesing 1992), the bare plural subject in (10) can have either a generic or an existential reading, while the bare plural in (11) can be interpreted only as a generic:

(10) Vegetables are in the fridge

\( \exists x, x \text{ is a vegetable } \land x \text{ is in the fridge} \)

Gen x, t \( [x \text{ is a vegetable } \land t \text{ is a time}] x \text{ is in the fridge at } t \)
Aspects of individual-level predication

(11) Vegetables are green
  *∃x, x a vegetable ∧ x is green
  Gen x [x is a vegetable ∧ x is green]

Further syntactic evidence of the different behaviour of i-level versus s-level predicates provided by Diesing (1992) is related to the observation that the different reading possibilities of i-level and s-level predicates have a precise syntactic correlation with the position in which the bare plural subjects are generated.

Diesing adopts the idea of semantic partition introduced in the Kamp-Heim Theory (Kamp 1981, Heim 1982) following which existential closure semantically divides the sentence into a restrictive clause, to which generic interpretation of nominals is related, and a nuclear scope, related to existential interpretation and applies it to the syntactic representation of the sentence. Assuming the VP-internal subject hypothesis and that the existential reading is licensed in the Spec of VP (being this the domain to which existential closure applies) while the generic reading is licensed in the Spec of IP, Diesing proposes a Mapping Hypothesis (12), a rule mapping syntactic representation into semantic interpretation:

(12) (Diesing 1992, (14) pp. 10)
  Material from VP is mapped into the nuclear scope
  Material from IP is mapped into the restrictive clause

Given the MH, Diesing claims that bare plural subjects of i-level predicates, as opposite to those of s-level predicates, are generated directly in the Spec of IP (the Spec of VP position being occupied by a PRO controlled by the subject\(^1\)). On the other side bare plural subjects of s-level predicates are generated in the Spec of VP and raise to the Spec of IP, so that both readings can be licensed (Diesing assumes that, in English, when the subject raises overtly to Spec of IP the existential reading

---

\(^1\) The presence of PRO in Spec of VP seems to be required exclusively to provide a position for floating quantifiers inside the VP. It is a matter of fact that floating quantifiers occur both with s-level and with i-level predicates (see Bonet 1989 and, again, Diesing 1992) and this is a problem for a Kratzer and Diesing style analysis (and even for the approach defended here). However, both the movement analysis and the control analysis of floating quantifiers rely on the assumption that floating quantifiers actually occupy a subject position inside the predicate projection, a controversial point in much recent literature (see among others Baltin 1995, Torrego 1996). The relevant facts emerging from Diesing’s analysis show that, in the case of i-level predicates, the lower VP subject position is unavailable for DP base generation. It seems to me that, as far as Diesing data on extraction are concerned one could even assume that the VP subject position is not projected at all without affecting the core of her proposal.
is recovered by means of LF lowering, an option which is not available for i-level predicates.

Following the lines of this proposal the examples (10) and (11) could be assigned the bracketings in (13a/b) and the structures in (14a/b) respectively:

(13) \[\text{Vegetables are } [v_p \text{ in the fridge }] \]
\[\text{Vegetables are } [v_p \text{ PRO green }] \]

(14) a. \[
\begin{array}{c}
\text{Spec} \\
\text{IP} \\
\text{I'} \\
\text{VP} \\
\text{NP} \\
\text{V'} \\
\text{V} \\
\text{XP}
\end{array}
\]

b. \[
\begin{array}{c}
\text{Spec} \\
\text{IP} \\
\text{I'} \\
\text{VP} \\
\text{PRO} \\
\text{V'} \\
\text{V} \\
\text{XP}
\end{array}
\]

If (12) applies, mapping the sentence in two main domains (IP and VP), so that existential interpretation is assigned only to subjects that can be generated at the VP level, it can account, among others, for the following three properties: extraction facts, there insertion and the different behaviour of the two predicate classes as to the occurrence of quantifiers requiring existential reading. As to the first point, following Diesing (1992), we will consider two kinds of extraction, the was-für-split and NP-split (topic-split) in German. With s-level predicates extraction is allowed while this is not the case for i-level predicates²:

(15) \[\text{Was sind für Wissenschaftler schön?} \]
\[\text{What scientists are handsome?}\]

(16) \[\text{Was sind für Professoren verfügbar?} \]
\[\text{What professors are available?}\]

² We should nonetheless mention the fact that there seems to be some variability in the judgements of the contrast in (15)-(16) and (17)-(18) among German native speakers (G. Fanselow, p.c.).
The asymmetry can be easily explained if we rely on the assumption that subjects of individual-level predicates are base-generated in the Spec of IP, contrary to subjects of stage-level predicates which are generated in the Spec of VP. In fact, movement would only be possible from Spec of VP, a governed position. This contrast even holds in the case of split-topic extraction:

(17) *Wissenschaftler sind viele schön
scientists are many handsome

(18) Wissenschaftler sind viele in diesem Institut
scientists are many in this department

A further asymmetry is related to the possibility of s-level predicates versus i-level predicates of occurring in there-sentences like the following, where i-level predicates give ungrammatical results:

(19) There are tomatoes available
There are [VP tomatoes available]

(20) *There are watermelons heavy

Even in this case, the asymmetry is accounted for under the assumption that only stage-level predicates have an available subject position for the subject. In fact, if there is inserted in [Spec,IP] in both sentences, only the sentence with the stage-level predicate can be grammatical, since only in that case is a lower slot for the subject available.

The asymmetries presented in this paragraph refer basically to the distinction between generic and existential readings for subjects of i-level and s-level predicates. On the other hand the contrast we introduced in (1)-(8) seems, at first sight, independent on the kind of semantic considerations we considered up to now. Nevertheless we will show that it is directly related to the application of the Mapping Hypothesis and to the distribution of subject positions in different predicate classes.

What the data in (1)-(8) show us, is that with respect to the adjunction of an adjectival predicate the two predicate classes behave differently, namely that adjunction of s-level predicates is allowed while adjunction of i-level predicates is clearly ruled out. Again, our task will be to find the reason why this has to be so.

3 In addition, note that, in the case of i-level predicates, the sentences improve if the i-level predicate is modified:
Intelligente nel capire le situazioni, Giovanni rispose alla domanda
Intelligent in understanding situations, John answered the question
Summarizing, in this section we examined contexts (cf. (10)-(20)) in which the behavior of s-level predicates on the one side and of i-level predicates on the other was neat and clear. That is, for every test we considered s-level predicates as a class behaved homogeneously in an opposite way from i-level predicates, so that, we could say, this distinction alone is sufficient to isolate the natural classes which are relevant in order to capture the syntactic behavior of the predicates.

It amounts to saying that, as far as our tests are concerned, it seems that the distinction [± individual level] (or [± stage level]) is fine-grained enough. In the next paragraph we will show evidence that, as soon as we consider further contexts, this generalization proves to be incorrect.4

1.1. Deriving -mente/-ly adverbs from adjectives

What we are going to check now is how i-predicates and s-predicates behave with respect to the formation of -mente/-ly adverbs. That is, given an adjective Adj, we want to make sure whether for every of the predicates we will consider the forma-
Aspects of individual-level predication

formation of an adverb of the form *Adj-ly is possible. In (21) the correspondence between these two predicative units is sketched:

(21) Adj → Adj-ly

In the following examples, i-predicates (alto/tall, intelligente/intelligent) and s-predicates (stanco/tired, triste/sad) are tested with respect to the availability of modification in the sense of (21). In the (a) sentences we will simply test if the predicate can be used as an adjoined adjective. In the (b) and (c) sentences, we show the possibility of deriving sentence adverbs and manner adverbs respectively.

(22) a. *Alto, Giovanni vinse la gara
   b. *Tall, John won the match
   c. *Altamente, Giovanni vinse la gara
   d. *Tall-ly (sent.adv.) John won the match
   e. *Giovanni vinse la gara altamente
   f. *John won the match tall-ly (mann.adv.)

(23) a. *Intelligente, Giovanni se ne andò
   b. *Intelligent, John went away
   c. Intelligentemente, Giovanni se ne andò
   d. Intelligently (sent. adv.), John went away
   e. Giovanni se ne andò intelligentemente
   f. John went away intelligently (mann. adv.)

(24) a. Triste, Giovanni lasciò la Spagna
   b. Sad, John left Spain
   c. Tristemente, Giovanni lasciò la Spagna
   d. Sadly (sent.adv.), John left Spain
   e. Giovanni lasciò la Spagna tristemente
   f. John left Spain sadly (mann. adv.)

(25) a. Stanco, Giovanni andò a letto
   b. Tired, John went to bed
   c. *Stancamente, Giovanni andò a letto

5 Given the extensive regularity and productivity of adverb formation from adjectival predicates in a number of languages, we will assume that something like (21) holds. Nevertheless we will leave the question open whether (21) is to be given the status of a syntactic transformation or the relevant process takes place already at the lexicon level.
d.  *Tired-ly (sent.adv.), John went to bed
f.  John went to bed tired-ly (mann.adv.)

In (22) _alto/tall_ is an individual level predicate and cannot be used as an isolated adjective with appositive function; furthermore it is impossible to build any kind of _mente_ adverbs from it.\(^6\)

In (23) _intelligente/intelligent_ behaves as _tall_ with respect to adjunction, but, unlike the previous case, _mente_ suffixation is now highly productive, for both sentence and manner adverbs are allowed. The behaviour of _intelligent/intelligente_ is unexpected. In fact, being _intelligent_ an i-level predicate, we would predict a pattern similar to _alto/tall_. Unlike _intelligent/intelligente_, predicates of the type of _tall/alto_ resist _-ly/-mente_ modification.

In (24) we have the paradigm for _stanco/tired_, a stage-level predicate. Unlike individual level predicates, stage-level predicates can occur as adjoined adjectives in the sentence, as it seems to be a general property of the whole class. As to the formation of _-mente_ adverbs, the main characteristic of a predicate of the kind of _stanco/tired_ seems to be essentially that the formation of sentential adverbs is not admitted, while _stancamente_ can occur as manner adverb (though without a subject-oriented reading).

Finally, in (25) we have _triste/sad_ another example of a s-level predicate. Predicates of the kind of _triste_ admit the formation of sentential adverbs thought not of the subject-oriented kind. On the other side, they allow the formation of _-mente_ manner adverbs allowing a subject oriented reading in this case.

1.2. A feature matrix for adjectival predicates

The way predicates in the paradigms from (22) to (25) are chosen is obviously deliberate. We have considered the pairs _alto (tall/intelligente (intelligent))_ on the one side and _stanco (tired)/triste (sad)_ on the other with the aim of introducing a clear case in which the description of predicates as a pure opposition of i-level and s-level is insufficient to account for the facts. The result is that, in order to maintain a descriptively adequate analysis especially with the introduction of more fine-grained tests as in the case of _-mente_ suffixation, we may want to introduce a further feature in the description of predicates adding it to the opposition [± individual level]. Let us

---
\(^6\) The existence of sentence adverbs like _altamente, bellamente_ which at first sight could be taken to be dependent on the adjectives _alto, bello_ is misleading. The relevant adverbs, in fact, are no longer related to the adjectives with respect to their meaning.
Aspects of individual-level predication

take the additional feature we need to be strictly linked to the adjective potentiality of being predicated of an event.

The relevant test would be the possibility of the adjectival predicate to enter a construction like (26):

(26) (That) S is Adj / It is Adj (that) S

So that, for example, an adjective like intelligent or sad can enter it, while adjectives like tall or tired cannot.

Now, reconsidering the predicates in (22)-(25), we can describe them by means of a feature matrix of the form [+/-ind.level, +/-eventive] in the following way:

[+ ind. level, -eventive]: alto/tall belonging to the same class: biondo/blond, rosso/red, carino/ nice, bello/handsome, etc....
[+ ind. level, +eventive]: intelligente/intelligent belonging to the same class: stupido/stupid, acuto/keen, etc....
[- ind. level, +eventive]: triste/sad belonging to the same class: felice/happy, etc....
[- ind. level, -eventive]: stanco/tired belonging to the same class: malato/ill, aperto/open, chiuso/closed, divertito/amused, etc....

Now, coming back again to the data in (22)-(25), let us summarize the behaviour of the four predicate classes we individuated; the table below shows for each of the four classes, its behaviour as adjunct adjective, sentence adverb and manner adverb.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>Adjoined adjective</th>
<th>Sentence adverb</th>
<th>Manner adverb</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>[+ind.level,-evt]</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>alto</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>2</td>
<td>[+ind.level,+evt]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>[-ind.level,+evt]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>[-ind.level,-evt]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legenda: * ungrammatical; ✓ grammatical.
Paradigms from (1) to (4) show first of all that the semantic notion of „being predicated of an event“ is syntactically relevant even if it remains to be made precise. In fact, the simple notions of i-level versus s-level predicate, as already noted, are not sufficient to account for the syntactic regularities we find in our paradigms. If they were, we would expect, for example, intelligente, an i-level predicate to show the same distribution as alto, which is not the case. On the other side, we would expect stanco to behave as felice, which the examples also show to be incorrect.

Given the classification above, another interesting fact to be observed is that the possibility of building adverbial predicates (both sentence and manner adverbs) seems confined to adjectives that can be predicated of an event.

Further interesting observations address predicates of the kind [+ind. level; -eventive]. Predicates of the kind of alto/tall, bello/handsome do not admit any kind of modification and in this regard their behaviour is very similar to that of nouns. On the other side, predicates of the type [-ind. level, +event] admit sentence and manner adverb formation, although with interesting differences as to the adverb orientation. Adverbs deriving from predicates of the kind of sad are speaker oriented when used as sentence adverbs and manner oriented when occurring as manner adverbs.

The paradigms from (1) to (4) show that the semantic subdivision of the predicates into the classes of s-level and i-level is necessary but at the same time not sufficient to capture relevant generalizations. At least another property seems crucial to the syntactic status of predicates, namely the fact that some predicates can take events in the form of propositions as subjects.

1.3. Predication

Now let us turn back to the relevant examples we presented in (1) to (8). From a syntactic point of view the adjectives in the relevant examples can be described as free external adjuncts (cf. Stump 1985, Nakajima 1989).

From the point of view of predication theory, the adjoined adjectives are secondary predicates assigning a supplementary theta-role to the subject of the sentence they are adjoined to (cf. configurational requirements for secondary predication in Rothstein (1985) among others). Following Rothstein (1985) the essential property of secondary predicates is that they fulfil (27) (Rothstein’s (29), pp. 89):

Nevertheless note that although -ly/-mente modifiers are not possible suffixes for English/Italian nouns, German admits the derivation of -weise adverbs from nouns:

*Proofly, Mary opened the door
*Provamente, Maria ha aperto la porta
Proberweise hat Maria die Tür aufgemacht

7 Nevertheless note that although -ly/-mente modifiers are not possible suffixes for English/Italian nouns, German admits the derivation of -weise adverbs from nouns:

*Proofly, Mary opened the door
*Provamente, Maria ha aperto la porta
Proberweise hat Maria die Tür aufgemacht
Aspects of individual-level predication

(27) X is a secondary predicate of Y if and only if Y is an NP theta-marked by a lexical head other than X.

Following (27) the adjoined adjectives, e.g. in (1)-(2), behave as secondary predicates in that they assign a theta-role to an NP which is independently theta-marked by another lexical head. In (1) *stanco* is predicated of the subject of the matrix clause *Giovanni*, which in turn receives a theta-role by the verb *andare*. The same holds of *felice* and *Giovanni* in (3)-(4).

The question is now whether from the point of view of predication some conditions are not met by *intelligent* and *tall* in (5)-(6) and (7)-(8) so that the relevant structures are ruled out. Rothstein noted the contrast between predicates of the kind of *intelligent* and of the kind of *stanco* observing that the *intelligent*-type cannot occur as a free adjunct. However these observations are individually listed as exceptions to the rule of predication, which otherwise applies to adjectival predicates in this kind of constructions and no principled account is offered.

Additionally, in her framework secondary predicates must obey a rule of predicate linking that sets off the configurational requirements predicates and their subjects must meet to be linked:

(28) Predicate Linking

Every non-theta-marked XP must be linked at S-Structure to an argument which it immediately c-commands and which immediately c-commands it.

In Rothstein’s approach the notion of c-command is the crucial one to understand the predication relation. However, as can be easily observed, the configurational requirement alone does not seem to be able to rule out sentences like (5)-(6).

An alternative instantiation of how the rule of predication operates linking the predicate and the subject of predication was suggested in Williams (1980).

Williams (1980) characterizes the level of Predicate Structure (PS) as an independent level of representation in which the subject-predicate relation is established by means of indexing. Moreover Williams unified the syntactic phenomenon of control with predication introducing a condition related to the specific form of predicates must display in order to enter the rule of predication adding it to a c-command requirement. The specific condition is that, as required by control, predicates must provide an open subject position identified with PRO. Consider for example (29):

(29) John left [PRO singing]

---

8 Here we will limit ourselves to the discussion of cases of obligatory control.
In (29) at PS, PRO has the function of a predicate variable, the open position which makes [PRO singing] a one-place predicate. The predication relation instantiates through a rule of indexing involving [PRO singing] (not directly PRO) and an NP in the matrix clause which fulfills the configurational requirements on c-command. Simultaneously the PRO will be coindexed with the predicate inside the predicative clause. The relevant coindexing relations for (29) are sketched in (30):

(30) John i left [PRO k singing k]

In the remainder of this paper we will take a rule of the kind applying in (30) as the relevant rule of predication. Nevertheless we will not bring arguments for the existence of an independent PS level in syntax in this article, as it is at present not directly relevant to the aim of the discussion.

1.4. A solution

Now consider again data from (1) to (8). Given our assumptions on the general nature of the predication relation and the consequences of the Mapping Hypothesis for the form of i-level and s-level predicates, the reason why adjunction of i-level predicates and in particular of intelligent and tall in (5)-(6) and (7)-(8) is ruled out is clear at this point. Since adjoined adjectives in (1) to (8) are predicative structures, following Williams approach to predicates and given (30), they must provide an open position for the predicative rule to apply successfully, hence they must necessarily be of the form (31):

(31) [XP PRO XP]

Note that the PRO subject position in (31) is the internal subject position, that is for XP = VP PRO is a Spec slot in the VP, and if, as in our case, XP = AP, PRO occupies the subject position internal to AP.

This seems to be the only option given the absence of an INFL projection in the adjoined adjective, hence of the standard subject position [Spec,IP]. Note however that the claim that INFL is completely absent from adjoined predicates remains problematic since, e.g. in Italian, adjectival predicates in constructions such as (i)-(iv) show full inflection paradigms in gender and number:

Stanco, Giovanni lasciò la festa
Stanca, Giovanna lasciò la festa
Stanchi, i ragazzi lasciarono la festa
Stanche, le ragazze lasciarono la festa

If we want to maintain our claim that in the cases of secondary predication above it is the subject position internal to the predicate projection to be involved since a standard INFL projection is unavailable for the adjective, as opposite to cases of Infl-mediated predication, we have to make an additional assumption, for example that the feature crucially relevant for the realization of an outer subject position is the one related to tense (cf. Chomsky 1995).
On the other side, following the Mapping Hypothesis, we predict a fundamental difference in the behavior of i-level as opposed to s-level predicates, namely we expect that in the case of i-level predicates the internal subject position is not available, or, maybe, not projected at all (cf. fn. 1).

Note that if we were to assume that i-level adjectival predicates have an available open position inside their projection (as Diesing would do, cf. 14b) this would lead us to make a wrong prediction. In fact in that case we would predict that i-level predicates can occur as free adjoined predicates in constructions of the kind of (5)-(6), since the adjectival predicate would display the form [PRO XP].

On the other side, in the case of s-level predicates, the predicate internal subject position is available and can be occupied by PRO, yielding grammatical result in case such predicates are adjoined in secondary predication contexts.

Consequently, a structure of the kind of [PRO XP] is available in the syntax and, given that it fulfills standard requirements for predication it can occur as a free adjectival adjunct in (1)-(2)/(3)-(4).

Summarizing, given that the adjoined adjectives in (1) to (8) constitute instances of secondary predication and considering again the asymmetry between e.g. tired and intelligent in the adjunction contexts we conclude that tired, unlike, intelligent exhibits the form (32), a special case of (31) (for a similar analysis of adjectival predicates cf., among others Wyngaerd, 1994):

(32) [PRO Adj]

Given (32), we will argue that the impossibility of i-level predicates to adjoin in, say, (5)-(8) is directly dependent on the structure we assume for those predicates. In other words the reason why predicates of the kind of intelligent cannot adjoin is that they do not display the structure (32), hence (33) must hold:

(33) *[PRO intelligent]

2. The „intelligent„ case

The feature matrix we introduced resulted in a more accurate classification of adjectival predicates which is descriptively adequate for the purpose of accounting for -mente/-ly adverb derivation. In this section, we will provide additional evidence of the fact that a classification of the kind of Tab.1 is needed.

Consider the class defined as [+ ind. level, +event]; it includes adjectives of the kind of intelligent, stupid, cunning, mean, nice, etc.... This class was identified in Stowell (1991) as the class of Mental Property adjectives (MP adjectives). Stowell classified i-level adjectival predicates in the three following groups with respect to how many arguments they allow in their thematic grid:

I. Mental property (MP) adjectives. Adjectives of the kind of intelligent, cunning, mean, nice, etc., belong to this class. In our classification, they are marked
Following Stowell, MP adjectives allow two arguments, a sentient argument and an event argument. The sentient argument and the event argument are respectively the individual (in (34), John/of John) and the event (in (34), to leave the party), the property expressed by the adjective is ascribed to. The examples discussed in Stowell (1991) are of the kind of (34). In (35) we show that the same pattern is to be found in Italian.

(34) a. It was clever of John to leave the party
    b. John was clever to leave the party
    c. To leave the party was clever of John

(35) a. È stato intelligente da parte di Giovanni lasciare la festa
    b. Giovanni è stato intelligente a lasciare la festa
    c. Lasciare la festa è stato intelligente da parte di Giovanni

In the examples above John/of John and to leave the party are respectively the sentient argument and the eventive argument of intelligent (in this view they correspond to two different theta roles assigned by the adjectives in fulfilment of the theta criterion).

The analysis Stowell adopts to account for the alternations in (34) is a raising type analysis where the arguments of the adjective are embedded in a Larsonian shell. Stowell considers both the sentient and the eventive argument to be external (even if, as we will see, the status of the two arguments differs crucially in that the event argument, unlike the sentient argument, is optional in these constructions).

(36) Stowell’s (1991) analysis

Given (36), the pattern in (34b) is obtained by raising of John to the Spec of IP of the copula while (34a and c) are obtained by raising of clever to e, to which the
Aspects of individual-level predication

licensing of the preposition of in of John is related (for reasons of case assignment, in a GB style analysis). Examples (34a) and (34c) differ only in that in (34c) the subject position of the copula is occupied by the event argument while in (34a) it is occupied by an expletive.

II. Adjectives that indicate physical properties: tall, handsome, blond, etc.... In our classification they are singled out as [+ind. level,-event]. Stowell describes them as strictly monadic predicates in the sense that they allow just one argument, namely the individual the relevant property is predicated of.

III. Adjectives that denote properties of an individual in relation to a context: famous, important, powerful, etc.... This kind of predicate can take a sentient or an event argument but not both at the same time. We do not have a slot available for these predicates in our classification and that is mainly because I would not classify these kind of predicates as i-level in the first place. The very fact that they intrinsically denote properties of individuals that vary with respect to the context is in contradiction with the idea of individual level predicates as denoting invariant, non-temporary and non-context dependent properties, i.e. in contrast with the definition of i-level predicate we are adopting.

Let us now draw our attention to Stowell’s MP adjectives. The structure in (36), for which Stowell argues, is apparently against what the MH would predict for i-level predicates. In fact, the Larsonian shell proposed by Stowell hosts internal subject positions, one for the sentient argument (John/of John) and one for the eventive argument (to go home early). Both positions are internal to the maximal projection of the lexical adjectival head, hence this case counts as a potential counterexample to the MP and to our assumptions on the nature of i-level predicates, since following the MH no subject position internal to the predicate should be available.

Our classification of i-level predicates in two main classes as exemplified in Tab 1 maintains the fundamental distinctions found in Stowell’s classification, with the exception that we will not classify adjectives of group (3) as individual level predicates. Let us then focus our attention on the class [+ind. level,+event] (Stowell’s group (I)). This group has two major properties that suggest it is a natural class:

a) Predicates belonging to this group are the only adjectival predicates to allow a pattern of the kind displayed in (34), from now on the Adj-of-NP construal. Structures of this kind are not available for predicates belonging to the other classes as (37) to (39) show.
(37) a. John was tall
   b. *It was tall of John Ø
   c. Giovanni era alto
   d. *Era alto da parte di Giovanni Ø
   e. Johann war groß
   f. *Es war groß von Johann Ø

(38) a. John was tired to always repeat the same things
   b. *It was tired of John to always repeat the same things
   c. Giovanni era stanco di ripetere sempre le stesse cose
   d. *Era stanco da parte di Giovanni di ripetere sempre le stesse cose
   e. Johann war müde, immer dasselbe zu wiederholen
   f. *Es war müde von Johann, immer dasselbe zu wiederholen

(39) a. John was happy to wash dishes
   b. *It was happy of John to wash dishes
   c. Giovanni era felice di lavare i piatti
   d. *Era felice da parte di Giovanni di lavare i piatti
   e. Johann war glücklich, Teller zu waschen
   f. *Es war glücklich von Johann, Teller zu waschen

b) The second property which distinguishes [+ind.level,+event] predicates involves sentential -ly adverbs that are derived from these adjectives.

   The following data from Italian, English and German clearly show\[10\] that subject-oriented readings in the case of sentential adverbs are only possible with a very restricted class of predicates, namely those singled out by our feature matrix as [+ind.level,+event].

(40) a. *Altamente, Giovanni vinse la gara
   b. *Tall-ly (sent.adv.) John won the match
   c. *Großerweise gewann Johann den Wettkampf

(41) a. Intelligentemente Giovanni se ne andò
   b. Intelligently (sent. adv.) John went away
   c. Klugerweise ist Johann weggegangen

\[10\] In (40) to (43) the star indicates that the sentence adverb is unavailable under all readings while the symbol # indicates that the form is available but the subject-orientated reading is excluded.
2.1. The nature of the event argument and of the sentient argument

In his analysis, Stowell shows that both the sentient and the eventive arguments are external, collecting evidence for their non-internal status and showing that a predicate of the kind of intelligent does not behave as an ergative adjective.

In this respect, following his analysis, predicates of the kind of intelligent are not ergative structures despite the fact that they display a raising pattern similar to that of ergative adjectives (cf. Cinque 1990). Consider the pattern shown by likely, an ergative adjective in Cinque’s analysis:

(44) a. This result is likely
   b. *It is likely (of) this result
   c. *There is likely (of) this result

(44’)

a. He is likely to write a dissertation on time
   b. ??To write a dissertation on time is likely of him

(45) a. It is likely that John will buy a new car
   b. That John will buy a new car is likely
   c. John is likely to buy a new car

The data in (44)-(44’) show that in the case of adjectives of the kind of likely the preposition of is not licensed, a fact that Cinque takes to be typical of ergative adjectives. The fact that of is not licensed, is in turn related to the obligatory raising of the NP theme to a [Spec.IP] position, for reasons of case assignment. This conclusion is strengthened by the fact that we do not have forced raising when the theme argument of the adjective is a sentence, as in (45a/b).

Under Cinque’s assumptions on the unavailability of of insertion for ergatives, the data in (44)-(45) are interpreted by Stowell as a first piece of evidence that the sentient argument of the intelligent-type predicates, allowing for example (34a), is not comparable to the internal argument of ergatives.
On the other side, Stowell uses these data to show that the eventive argument is external. Comparing argument structure in the VP and in the Adjective, Stowell assumes that genitive case can be internally assigned by the adjective to its complement only if the latter assigns an external theta role additionally. In the case of (34a), the external theta role would be assigned to the eventive argument. This leads Stowell to conclude that the eventive argument is in fact an external argument.

Further evidence that the sentient argument of adjectives like intelligent does not behave as the argument of an ergative predicate, i.e. is not generated in a complement position, comes from ne-extraction, a standard diagnostic for ergativity and D-structure complement status.

(46)  a. Ne sono disponibili pochi
       b. Of-them are available a few
       c. *Ne sono stupidi pochi
       d. Of-them are stupid are few
       e. *Ne sono buoni pochi
       f. Of-them are good a few
       g. *Ne sono alti pochi
       h. Of-them are tall a few
       i. *Ne sono arancioni pochi
       l. Of-them are orange a few

As shown in the examples in (46), ne-extraction seems to be impossible for i-level adjectives in general, and, in particular, for adjectives of the kind of intelligent/stupid.

Another fact we expect from of-NP complements of ergative adjectives is that they can undergo wh-movement, given that the trace they leave will be properly governed by the adjective. On the other side extraction from the external argument is expected to be ungrammatical on standard assumptions\(^\ref{11}\).

\(^{11}\)Stowell’s assumption here is clearly that predicate internal subject position in (36) is not governed, otherwise the extraction facts are not expected. However is not clear why this should be so since in (36) the lexical head A c-commands John, fulfilling standard conditions for lexical government. To avoid this situation we will adopt the more natural assumption that John is governed in (36) and that it undergoes adjunction ending up in a non-governed position. Moreover, note that in this case the configuration obtained (e.g. in (49a)) turns out to be a case of ambiguous binding in the sense of Müller (1995), the trace of John being simultaneously bound by a trace in an adjoined position and by the wh-phrase in [Spec,CP].
Aspects of individual-level predication

(47) a. What was Mary tired of t?
   b. Of what was Mary tired t?

(48) a. Who was John similar to t?
   b. To whom was John similar t?

This pattern is not available for MP adjectives:

(49) a. *Of whom was it stupid t to answer the question?
   b. ??Who was it stupid of t to answer the question?

As the data show, the of-NP argument seems to be unable to licence any kind of variables, in the cases above wh- traces. The conclusion is that A'-movement is not a possible option for these arguments either when they move, or some element is extracted from them.

This still does not make any prediction about the predicate internal subject position and we will see that the evidence against the fact that the arguments of intelligent are internal cannot be extended to exclude that they can be generated in the predicate internal subject position.

Let us suppose that the sentient argument John is in fact generated in the internal subject position of intelligent in, say, (34)c. Let us furthermore assume that in (34c) John is adjoined to AP and a preposition must be inserted for case reasons. It follows that of John finds itself in an ungoverned position at s-structure, hence the extraction facts in (47)-(48) as opposite to (49) are expected.

Summarizing, we share Stowell’s conclusions in the relevant respects, i.e. we take the argument John to be an external argument and the assignee of an external θ-role by the lexical head intelligent.\(^\text{12}\).

On the other hand we will reject Stowell’s claim that intelligent has to be always assigned the structure in (36) in that it makes at least one problematic prediction. It predicts not only that two subject position are available in the sentence (standard assumption for the VP-internal subject hypothesis) but that they can be both generated predicate internally, an hypothesis that cannot be maintained, as we will see.

2.2. Revisiting Stowell’s proposal

Let us consider again the data in (36) here repeated as (50). Stowell suggests that the sentences in (50) belong to the same paradigm. It means roughly that they share the same underlying structure, namely (36).

Moreover note that the sentient argument is semantically obligatory in construction of the kind of (i), that is, it must be implicit in case it is not overtly realized.

i) That was stupid (of Mary)!
(50) a. It was clever of John to leave the party
    b. John was clever to leave the party
    c. To leave the party was clever of John

What we are going to show in this section is that the claim made by Stowell holds only partially, since only (50a-c) are transformationally related while (50b) must be assigned an independent derivation.

Let us first of all briefly summarize how the structures in (50) are derived in Stowell’s analysis. In (50a) clever raises to the empty head position in the AP projection, the preposition of is licensed and the expletive it occupies the [Spec;IP] position of the copula.

In (50b) John raises to the matrix subject position and the CP13 argument remains in situ as in (50a). In (50c), finally, the CP argument raises to the matrix subject position while clever raises to the empty head position inside the adjective and the preposition of is licensed as in (50a).

What are the implication of this raising analysis?

First of all it underlines the fact that both of John and the CP argument in (50) are external arguments. As already seen, they behave differently from complements with respect to wh-extraction and ne-extraction. Secondly the external CP argument as opposite to the sentient argument is optional as (51a/b) apparently suggest.

(51) a. John was intelligent
    b. John was intelligent to leave the party

As far as a raising type of analysis is concerned, (51) leads us to conclude that the eventive argument is optionally realized on a pre-existing kernel structure containing the predicate and the sentient arguments as shown in (52a vs. b).

(52) a. [was [ [John clever]]
    b. [was [e [John clever]] to leave the party]

It follows that, in our analysis of the structure of the predicate intelligent, we have to explore at least two possibilities: the case in which the event argument is realized and the case in which it is not. In case the event argument is not realized (and is not implicit, see later on), Stowell assumes that the structure of intelligent in (36) reduces to the kernel structure dominated by the lowest AP in (36). In this case the additional head e and the structure projected by this head are not available. If this is

13 From now on we will use the term CP-argument to designate the sentential argument. Note however that a precise connotation of the sentential argument as CP or IP will not affect our argument.
the case, we have a straightforward account of why raising of intelligent and related of-insertion are not available in a small clause of the kind of (53b).

(53) a. I consider [John intelligent]
   b. *I consider [intelligent of John]

   If the part of structure dependent by the projection of the head e were available, (53b) could be obtained after raising of intelligent to the empty head position in the Larsonian shell. This movement is not constrained otherwise and, hence, should be possible. On the other side under the assumption that when the event argument is not projected the relevant head is not projected either, the data in (53) are accounted for.

   Similarly, if the head e is available independently of the eventive projection, Stowell analysis makes the wrong prediction that we should be able to insert, for example, an expletive subject in the matrix subject position and raise intelligent as in (53b).

(54) *There was intelligent of John

   Following the same reasoning, unacceptability of (54) depends again on the unavailability of raising for intelligent.

   Consider now the case in which both the sentient argument and the event argument are projected. Following Stowell and maintaining the structure in (36), we should be able to derive in principle all of the three following cases: the case in which both arguments are realized, the case in which the event argument is realized and the sentient argument is implicit (see ft. 12) and, finally, the case in which the sentient argument is realized and the eventive argument is implicit, a possibility also acknowledged by Stowell.

   Presenting Stowell’s (1991) analysis we already introduced the first and the second of these cases. In order to exemplify the latter, we will consider again the small clause John intelligent and embed it as the complement of the perception verb see, in order to force a reading in which intelligent does not behave as a pure i-level predicate, and where the property of being intelligent is predicated of John in relation to an eventive context. In this sense, the reading for (55) would be one in which the behavior of intelligent is similar to that of a s-level predicate.

(55) I saw [John intelligent]

   In this case, since the eventive complement of intelligent must be present, we expect that the whole AP in (36) will be projected including, crucially, the head e. This leads us to the prediction that movement of intelligent and related of-John licensing will be possible, incorrectly.

(56) *I saw [intelligent of John]
Moreover, note that raising of *intelligent* is ruled out even in case the eventive argument is realized (in 57), which is, again, an unexpected result if the raising analysis holds.

(57)  a.  *There was intelligent of John to go away
    b.  *That was intelligent of John that he went away

The discussion of the above cases is meant to weaken an analysis in which the raising of *intelligent* and the presence of an eventive argument are correlated and, more generally, constitutes evidence against the presence of the empty head e. A way of straightforwardly explaining the data without having to introduce an additional head in the description would be to adopt the idea that the eventive argument, when available, is directly base generated in the [Spec;IP] position of the copula. In case *John* is generated in the subject position of the copula, as in (58b), we have the possibility to adjoin the infinitival sentence. The fact that the sentence must be adjoined if *John* occupies the subject position of the copula is straightforward if we consider that only infinitival sentences can occur in these contexts, while *that*-sentences, which cannot be adjoined, are always excluded.

(58)  a.  *John was intelligent that he went away
    b.  John was intelligent to go away

(59)  a.  ?That he went away was intelligent of John
    b.  To go away was intelligent of John

(60)  a.  It was intelligent of John that he went away
    b.  It was intelligent of John to go away

Another argument in this sense comes from the consideration of the kind of readings that can be associated with the *to*-sentence in (58b). Comparing (58b) to, say, (60a) Stowell’s analysis implies that in both cases the event argument (the sentence) can be interpreted as the external argument (subject) of *intelligent*.

Nevertheless, in (58b) we do not have the reading for which the event/action described in the *to*-sentence was *intelligent*. On the other hand (58b) has a reading paraphrasable with „John was intelligent in that he left the party“ where the sentence specifies the situation or the context with respect to which *John* is predicated to be *intelligent*. Given these observations, I will consider the *to*-sentence in (58b) as an adjunct without entering in this paper the question of the location at which this ad- junction takes place.\(^{14}\)

\(^{14}\)Note however that the sentence adjoins almost certainly to a position higher than AP under the hypothesis that of *John* in (i) adjoins to AP. We conclude this from the observation of the fact that the sequence CP-of NP is always unacceptable.
Aspects of individual-level predication

It amounts to saying that, contrary to what assumed by Stowell, the case of (58b) is not comparable with (59)-(60), since in (58b) there is no way for a sentential argument to be interpreted as the subject of intelligent. I will take occurrences of the predicate intelligent as in (58b) as cases in which intelligent is specified as [-eventive].

As to the classification of predicates we introduced in sec. 1.2, we will classify only the intelligent which can function as an eventive predicate in the class [+ind. level; + eventive], while the intelligent which cannot function as an eventive predicate will be an instance of the class [+ind. level; -eventive], i.e., comparable to tall.

In other words, it seems the case that intelligent can be described as having a [+eventive] value or a [-eventive] value with two different lexical entries. In the first case it will display a structure that differs from (36) in that the eventive argument does not raise to the subject position of the copula from a predicate internal position but is base generated in [Spec,IP].

In this case, of the two possible external arguments, only the eventive argument can occur in [Spec,IP]. Consequently, raising of John to [Spec,IP] to give rise to i.e. (58a) is correctly ruled out.

As already noted, Stowell assigns intelligent a representation equivalent to (61) in the case the predicate does not project an eventive argument.

(61) John is [\text{AP intelligent}]

However, (60) has the disadvantage that it cannot account for the extensive evidence in favor of the Mapping Hypothesis, predicting that i-level predicates do not generate their subjects predicate internally. As there seems to be no independent evidence to assume (61), I will opt for (62), a simpler structure in which John is always base generated in [Spec,IP] and where the AP intelligent has the status of a minimal-maximal projection (cf. Chomsky 1995).

(62) John is [\text{AP intelligent}]

As a consequence of our discussion, Stowell’s paradigm (50) must be revisited. In particular, given our observation, (50b) must be eliminated as non comparable to (50a-c). If our premises are correct, only in the first case intelligent has a [-eventive] value with the consequence that it can be only predicated of individuals and not of events. If our observations are on the right track, in (50b) the predicate intelligent has a non-eventive value, that is, it is lexically different from the predicate in (50a-c). Only in (50a-c) the sentence is a genuine external argument of the

(i) *It was intelligent to go away of John
predicate while in (50b) it is adjoined, thus not integrated in the theta structure of the predicate.

Summarizing, a crucial point in the analysis of the predicate intelligent is its possibility of taking an event or an individual as subject of predication. In the first case the predicate is marked [+ind. level;+eventive] in the lexicon, in the second case it is marked [+ind.level;-eventive].

In the case intelligent is marked [+eventive] it will take an event as subject of predication and the eventive argument will be generated in the matrix subject position (cf. (63)). The data we considered led us to the conclusion that the occurrence of a sentence in the matrix subject position is regularly related to a predicate internal occurrence of a second external argument that we take to be generated in [Spec,AP], a subject position internal to the adjectival predicate. The fact that intelligent does not assign case will be in turn responsible for of-insertion. We take of John to be in an adjoined position, since extraction from it is generally very bad (cf. sec.2.1).

$$\begin{align*}
&\text{IP} \\
&\quad \text{CP} \\
&\quad \quad \text{I'} \\
&\quad \quad \quad \text{is} \\
&\quad \quad \quad \quad \text{AP} \\
&\quad \quad \quad \quad \quad \text{John} \\
&\quad \quad \quad \quad \quad \quad \text{A} \\
&\quad \quad \quad \quad \quad \quad \quad \text{intelligent}
\end{align*}$$

In the case intelligent is marked [-eventive] it will not display a predicate internal subject position, as required by the MH, and it will take only individuals as subjects (cf. (64)). Consequently, the additional occurrence of a CP can succeed only if it can be adjoined (maybe to IP). In this case intelligent behaves like a genuine individual level predicate, i.e. like tall.

$$\begin{align*}
&\text{IP} \\
&\quad \text{John} \\
&\quad \quad \text{I'} \\
&\quad \quad \quad \text{is} \\
&\quad \quad \quad \quad \text{AP} \\
&\quad \quad \quad \quad \quad \text{intelligent}
\end{align*}$$
2.3. A final note on predication: intelligently

As we saw, it seems the case that two kinds of i-level predicates are available in the lexicon, one specified [-eventive] and one specified [+eventive].

The first kind includes adjectives like tall, blond, and intelligent, typically indicating properties which are predicated of individuals. The second kind is a subclass of the former and includes i-level adjectives that not only express properties of individuals but that, additionally, can be predicated of events; they are to be included in the group [+ind.level, +eventive] in our classification (see Tab 1).

Only i-level predicates which are specified [+eventive] display a predicate internal subject position. Crucially for the discussion of our data in (1) to (8) the adjoined adjectives in (5)-(6) are only of the [-eventive] kind.

Maintaining our assumption on the nature of the predication relation (cf. sec. 1.3), the reason why [-eventive] individual-level predicates do not enter the rule of predication when they occur as adjoined adjectives is by now clear. In (5)-(6) the structure of intelligent is the one sketched in (64), i.e. the predicate does not display a predicate internal subject position, it follows that this position cannot be occupied by PRO and ungrammaticality is expected.

On the other hand, we predict that, in case intelligent has a [+eventive] value, the PRO position controlled by the subject of the matrix clause will be available, and in fact this seems to be the case. A predicate related to intelligent, but that unlike intelligent can be used as an adjunct, is intelligently. We will take this predicate to provide an open position coindexed with the event argument of the matrix clause. As expected, near a reading for which that John answered the question was intelligent we have at least another for which John is intelligent.

(65) a. Intelligentemente Giovanni rispose alla domanda
   b. Intelligently John answered the question

In (65a/b) intelligentermente/intelligently is both predicated of the event expressed in the matrix clause and of the subject of the matrix clause (subject-orientation is, in fact, a typical characteristic of adverbs derived from individual-level adjectives).

Again, given that a [+eventive] predicate always requires an eventive argument to be the subject of predication and that only in this case is a predicate internal subject position available, the fact that we have two readings for the sentences in (65) is accounted for. In particular the subject oriented reading is available because in (65),

---

15 It is not clear whether this position can be directly compared to PRO. We will limit ourselves to say that an open position \( e \) must be available since the rule of predication applies.
being the predicate *intelligently* of the [+eventive] kind, an additional predicate internal subject position hosting PRO is projected.

The pattern we find here is then comparable to that in (50a/c). Tentatively we could assign *intelligently* the structure in (66).\(^{16}\)

\[ (66) \]

\[
\begin{array}{c}
\text{ADVP} \\
\text{e} \\
\text{ADV'} \\
\text{-ly} \\
\text{AP} \\
\text{PRO} \\
\text{intelligent}
\end{array}
\]

3. Conclusion

A deeper inquiry in the properties of the distinction between s-level and i-level predicates led us to the conclusion that a feature we called [+eventive] and that simply indicates the availability of the adjective as predicate of events is to be introduced. A discussion of the distinction between s-level and i-level predicates led to the conclusion that a mere opposition of these two types is not accurate enough to account for the whole of the data we considered.

In section 1 we presented evidence for the behaviour of s-level and i-level predicates with respect to their possibility of deriving -ly adverbs. This turned to be a first case in which the [+eventive] distinction proved to be useful.

Secondly, the distinction [+eventive] is crucially relevant to make distinctions inside the class of i-level predicates. The two kinds display, in fact, different syntactic structures. I-level predicates which are [+eventive] opposite to those who are [-eventive] do not display predicate internal subjects.

I-level predicates which have a [-eventive] value can be strictly predicated of individuals while i-level predicates which are marked [+eventive] take eventive arguments as subjects of predication. With respect to the class of i-level predicates dis-

---

\(^{16}\) For a control account of subject orientation see Lonzi (1995)

\(^{17}\) Moreover note that, in the case of *intelligentemente*, the occurrence of a sentient argument in the form of an adjunct is possible in Italian (even if with different degrees of acceptability among native speakers).

\[ i) \text{Intelligentemente da parte sua, Giovanni non ha partecipato alla conferenza} \]

Intelligently of him, Giovanni did not take part to the conference

---

102
Aspects of individual-level predication

cussed e.g. in Stowell (1991) as Mental Property adjectives, including for example intelligent, we concluded that instances of both [+eventive] and [-eventive] predicators are available. They are not only distinct with respect to their semantic properties but display different argument structures as well.

In particular this led us to the conclusion that two kinds of intelligent are listed in the lexicon, one which is [+eventive] (this class includes the derived adverbial predicate intelligently) and one which is [-eventive].

In general we observed that i-level adjectives marked [-eventive] do not display a predicate internal subject position and their external argument is generated directly in the Spec position of the copula as required by the Mapping Hypothesis.

In the case of [+eventive] i-level predicates the [Spec, IP] position of the copula will be occupied by the eventive argument and the data show that the presence of a sentient argument is obligatory (even though the argument can be implicit). This argument originates in the predicate internal subject position of A and undergoes adjunction to AP.

As to the peculiar status of [+eventive] i-level predicates a particularly interesting question is posed by the obligatory co-occurrence of predicate internal subjects and the [+eventive] value of the predicate. Though the fact that eventivity and the availability of a predicate internal subject position are strictly connected is well established and descriptively adequate, the way in which this dependency is to be derived syntactically remains to be cleared.

References

Diana Pili