Types of secondary predication*

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This paper focuses on adjectival secondary predicates and argues that they are functional projections of a secondary predicate (SP) category realized as two major varieties: DEP for depictives (and other SPs associated with the depictive) and RES for resultatives. These functional heads are each semantically specified to temporally link the state denoted by the adjective to an event (Pylkkänen 2002, Kratzer 2004). The present analysis assumes that the host NP is base-generated as an argument of the adjective and ends up occupying the specifier position of the secondary predicate phrase (SP-P). Based on Hornstein’s (2001) movement analysis of Control, the specifier of the SP-P moves into a θ-position (see also Grebenyova 2005 and Marušič et al. 2003). The syntactic and semantic distribution of secondary predicates support two configurations: syntactically-dependent SP-Ps (depictives and resultatives) are merged as complements of V; syntactically-independent SP-Ps (circumstantials and absolutes) are adjoined to VP.

1. Introduction

Secondary predicates are pervasive in languages around the world. However their structure is still under debate in the current linguistic analysis (Chomsky 1981, Stowell 1981, Rothstein 1983, Roberts 1988, Carrier and Randall 1992, Koizumi 1994, Bowers 2001, etc.). The general approach is to differentiate depictives from resultatives not only semantically, but also by their syntactic characteristics: depictives are analyzed as adjunct phrases merged at the level of VP if they refer to direct objects and to the level of vP if they modify the external argument; resultatives, in contrast, are complements merged to the V layer.

This paper elaborates on empirical observations from Albanian and Slavic and Romance languages, where depictives form a tight constituent with the noun they modify (their host), and proposes that both depictive and resultative phrases are merged as complements to V. The real adjuncts are the circumstantials and absolutes; they behave syntactically independent, as they can easily move to different positions in the clause.

The structure of the paper is as follows: section 2 shows that, as opposed to English which does not allow indirect objects and DPs inside PP-hosted depictives, in many (families of) languages like Romance, Slavic, and Albanian, DP inside PP modification is permitted only if the adjective and the noun it modifies are not stranded. The same observation is valid

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for indirect objects (applicatives), with the exception of Slavic languages, where they can be separated from the depictive. What these languages have in common is the obligatory overt phi-feature and case marking on the adjective, as well as the systematic refusal to permit adjectival resultatives.

Section 3 outlines a semantic account of secondary predication, based on formalizations proposed by Pylkkänen (2002) and Kratzer (2004). Section 4 proposes a syntactic analysis and Section 5 presents the conclusions of this paper.

2. Romance, Slavic and Albanian vs. English

Analyses of secondary predicates have shown that in English a depictive cannot modify an indirect argument (1c) or a DP inside PP (1d):

(1)   a. Mary ate tired.
     b. I gave Mary the meat raw. (Pylkkänen 2002: ex.34 a).
     c. *I gave Mary the meat hungry. (Pylkkänen 2002: ex. 34 b).
     d. *I talked to Sue drunk. (Pylkkänen 2002: ex. 35 b).

This observation is not valid cross-linguistically. There are languages (e.g., Romance, Slavic, and Albanian3) in which indirect arguments and DPs inside PPs can be hosted by a depictive. In the latter case, the secondary predicate can refer only to the constituent that is close to it on the surface form. Neither the preposition, the DP or the SP can be stranded, as sentences will become incomprehensible. Examples in (2) and (3) from Romanian (Romance) and Albanian illustrate these observations:

(2) Romanian
    a. Tânărul a plecat cu prietenul lui beat.
       Young.the.m.sg. AUX.3.sg. leave.PPRT with friend.the.m.sg. his.m.sg.
       drunk.m.sg.4
       ‘The young man left with his friend drunk’. (The man left with his friend and his friend was drunk when they left).

    b. *Tânărul a plecat cu prietenul lui beat.
       Young.the.m.sg. AUX.3.sg. leave.PPRT. with friend.the.m.sg. his.m.sg.
       drunk.m.sg.
       ‘The young man left with his friend drunk’. (The man left with his friend and the man was drunk when they left).

In the Romanian example, the depictive can potentially agree with either the subject or the DP inside the PP (it is morphologically marked for masculine, singular). Nevertheless,

3 See also Pylkkänen 2002 (Venda) and SBH 2004 (Walpiri).
4 In Romanian there is no morphological difference for NOM and ACC case marking. NOM/ACC contrasts with DAT/GEN.
native Romanian speakers understand and accept only the DP inside PP-oriented reading\(^5\); the subject-oriented reading (where *drunk* would refer to *the young man*) is not easily intelligible. The same is valid for Albanian (3).

(3) **Albanian**

a. Burri  shtëtitë  me  gruan  e  
Man.m.sg.NOM  walk.PST.3.sg  with  woman.f.sg.ACC  AGR.f.sg.ACC.

\textit{lodhur.}  
tired.f.sg.AC  
‘The man walked with the \textit{woman tired}’.

b. *Burri  shtëtitë  me  gruan  
Man.m.sg.NOM  walk.PST.3.sg  with  woman.f.sg.ACC.

\textit{i}  
AGR.m.sg.NOM.  tired.m.sg.NOM.  
‘The man walked with the \textit{woman tired}.

Evidence regarding the impossibility of stranding any of the elements inside the secondary predicate phrase also comes from Slavic languages. Although these languages are known for their scrambling possibilities, they are similar to Romance and Albanian in prohibiting preposition stranding. An example from Slovenian is given in (4):

(4) **Slovenian** (Marušič et al.’s 2003, ex.7a and 7b)

a. Kosilo  vedno jem pri  Špeli  vsej  utrujeni  
Lunch  always  eat  at  Spela.f.sg.LOC  all.f.sg.LOC  tired.f.sg.LOC  
\textit{od  dela.}  
from  work.  
‘I always eat lunch at Špela’s and she is very tired from work’.

b. Pri  Špeli  vsej  utrujeni  od  dela  vedno  
at  Spela.f.sg.LOC  all.f.sg.LOC  tired.f.sg.LOC  from  work  always  
\textit{jem kosilo.}  
eat  lunch.  
‘I always eat lunch at Špela’s and she is very tired from work’.

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\(^5\) In order to check this observation, native Romanian speakers were asked to judge the grammaticality of various types of secondary predicates constructions and to explain why some examples were considered correct or incorrect. The same test (whose structure is not given here as it included aspects that are not discussed in this paper) was used with consultants for Albanian. For Russian, examples of secondary predicates from different other sources (usually papers discussing secondary predication in Slavic) were tested with native speakers. It is interesting to note that answers were identical regarding the interpretation of depictives predicated of a DP inside a PP. A kind of locality principle (“this element, i.e., the depictive, refers only to the noun that is near it, even in cases where it has the same morphological agreement marking as other elements in the sentence”) seemed to be in effect across the languages.
c. \*Vsej utrujeni od dela vedno jem kosilo
   all.f.sg.LOC tired.f.sg.LOC from work always eat lunch

   pri Špeli.
at Spela.f.sg.LOC.
‘I always eat lunch at Špela’s and she is very tired from work’.

d. \*Pri Špeli vedno jem kosilo vsej utrujeni
   at Spela.f.sg.LOC always eat lunch all.f.sg.LOC tired.f.sg.LOC

   od dela.
   from work.
‘I always eat lunch at Špela’s and she is very tired from work’.

These restrictions, as well as the existence of absolutes (sentence-like SP-Ps phrases that are added to the main predicate without any overt connective; see Table 1) constitute a strong empirical argument for postulating the existence of secondary predicate phrases that have the same structure as sentences.

In order to understand the internal constituency of secondary predicates, an analysis of their semantic interpretations is necessary. The numerous accounts formulated for depictives and resultatives do not answer one crucial question: How can two eventualities (used here as a cover term for both events and states, following Bach 1981) be put together without any overt connective? We propose that secondary predicates are projections of a secondary predicate functional head that is inherently specified to temporally relate the state expressed by an adjective to the event of the main verb. The difference between depictives and resultatives is given by the semantic specification of this functional head: DEP (depictive functional head) asserts that the event and the state temporally overlap while RES (resultative functional head) asserts that the state is caused by the event.

Table 1 presents the semantic and syntactic classification of the four types of secondary predicates and section 3 offers the detailed semantic analysis.

3. Semantics of secondary predicates

This paper argues that the main difference in secondary predicates is between resultatives and non-resultatives. This distinction arises first of all from the choice of two functional heads: RESULTATIVE (RES) for resultatives and DEPICTIVE (DEP) for depictives, circumstantials and absolutes (types of depictives). The further difference between the three types of depictive secondary predicates is purely structural; in depictives (and resultatives, that are syntactically bound) the DEP-P (or the RES-P in the case of resultatives) is merged as a complement to the V; in circumstantials and absolutes, the DEP-P is merged by adjunction, giving rise to the supplementary meanings.
## Types of Adjectival Secondary Predicates

<table>
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<th>Types of Adjectival Secondary Predicates</th>
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<th>Examples</th>
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<td>I. Syntactically dependent</td>
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<tr>
<td><strong>1. Depictive</strong></td>
<td>• Simultaneity/overlap with the main eventuality (formalized by $\sigma$)</td>
<td><em>The man left drunk.</em> $\lambda e:\ll_0\lambda x\ll_0 e.leaving((e))&amp;agent((e, \text{the man})&amp;(\exists s)\text{drunk}(s)&amp;In((\text{the man}, s))&amp;\epsilon_0 s.$ (The man left and he was drunk when he left.)</td>
</tr>
<tr>
<td></td>
<td>2 types of languages:</td>
<td></td>
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<tr>
<td></td>
<td>• Depictive-prominent: Romance, Slavic, Albanian</td>
<td></td>
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<td></td>
<td>• Depictive-less: English, Georgian</td>
<td></td>
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<tr>
<td><strong>2. Resultative</strong></td>
<td>• The result of the main eventuality (formalized by CAUSE)</td>
<td><em>John pounded the metal flat.</em> $\lambda e,\exists s,\lambda x\ll_0 e.pounding(e)&amp;agent((e, \text{John})&amp;(\exists s)\text{flat}(\text{the metal})(s)&amp;\text{CAUSE}(s)(e)$ (John made the metal flat by pounding it.)</td>
</tr>
<tr>
<td></td>
<td>2 types of languages:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Resultative-prominent: English, German, Finnish, Dutch (also allow depictives)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Resultative-blocking: Romance, Slavic, Albanian, Georgian</td>
<td></td>
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<td>II. Syntactically Independent (variable position)</td>
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<td>Types of depictives</td>
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<td><strong>3. Circumstantial</strong></td>
<td>• Independent adjunct</td>
<td><em>He didn’t leave, outraged.</em> or <em>Outraged, he didn’t leave.</em> (He did not leave, because/although he was outraged.)</td>
</tr>
<tr>
<td></td>
<td>• Simultaneity/overlap with the main eventuality</td>
<td>Well-represented cross-linguistically; no difference between the two language classes</td>
</tr>
<tr>
<td></td>
<td>• Supplementary information regarding the circumstances of the main event (cause, temporal, concession)</td>
<td></td>
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<tr>
<td></td>
<td>• Never resultative</td>
<td></td>
</tr>
<tr>
<td><strong>4. Absolute</strong></td>
<td>• Independent clause</td>
<td><em>They got off the plane, their hands full of dust.</em> (When they got off the plane they had their hands full of dust.)</td>
</tr>
<tr>
<td></td>
<td>• Supplementary information regarding the circumstances of the main event (cause, temporal, concession)</td>
<td>Well represented cross-linguistically, if expressed by non-finite verbal forms.</td>
</tr>
<tr>
<td></td>
<td>• (Seldom)simultaneity/overlap with the main eventuality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Never resultative</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Types of Secondary Predicates

Both DEP and RES are specified to link a state to an event. The difference lies in the aspectual characteristics of the linking mechanism. More specifically, DEP introduces a temporal overlap relation, that is, it can link a state to the entire duration of an event.
(therefore an individual-level predicate expressing long-lasting, immutable characteristics cannot be used as a secondary predicate). A depictive describes a state (or more accurately, an eventuality, as there are non-adjectival depictives that are not states) that holds true during the span of an event. In contrast, RES does not refer to an overlap relation. It takes a state and links it to an event, expressing that the state is the result of the event (the resultative is assumed to be constructed by a type of CAUSE). Therefore, both DEP and RES take an adjective as their complement and relate the state denoted by the adjective to an event.

The formalizations proposed for the DEP functional head capture the semantic specifications outlined above. For example, Geuder (2000) proposes the following truth conditions for a sentence containing a depictive secondary predicate:

(5) Geuder’s (2000) semantics for depictives (Geuder’s example 18, p. 186)

We had eaten tired.
∃t{t<t₀&λx[∃e(eat(e)(x)&∃s[e₀s&tired(s)(x)])&t=AFTER(e)] (we)}.

Geuder (2000) does not expressly propose a classification for different types of depictives; but he assumes that depictives have “constructional meanings” (p.17) and that their interpretation is given by the syntactic structure in which they occur.

Another semantic account for depictives is proposed by Pylkkänen (2002). Since a depictive links a state to an event, she suggests that it should have the specification in (6). Moreover, similar to the assumptions of this paper, Pylkkänen emphasizes that depictives have a compositional analysis. The depictive functional head takes an adjective as its complement to form a depictive phrase and relates the state of the adjective to an event.6

(6) Pylkkänen’s (2002) semantics for depictives

We had eaten tired. (ignoring the tense specifications)

a. DEP: λf<e<s,t>>. λx.λe.(∃s)f(s,x)& e₀s

b. DEP-P λx.λe.(∃s) tired(s)&In(x,s)&e₀s

The depictive phrase is of type <e,<s,t>>, that is, it has an event argument and an unsaturated argument of type <e>. One paper that presents the semantics of CAUSE (resultatives) is Kratzer’s (2004):

(7) Kratzer’s (2004) semantics for CAUSE (resultatives)

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6 Pylkkänen (2002) proposes a complex predicate analysis for depictives. The depictive phrase formed of the depictive functional head and the adjective is attached to VoiceP in subject-oriented depictives, to V in object-oriented depictives, and to the high APPL-P in high-applicative-oriented depictives (the only ones allowed in her analysis).
We drank the *teapot empty*. (We drank and as a result the teapot is empty).

\[ T (((\text{the teapot}) \text{ empty}) \text{ drink}) = \lambda e, \exists s, [\text{action}(e) \& \text{drink}(e) \& \text{state}(s) \& \text{empty (the teapot)(s) \& CAUSE (s)(e)}. \]

In Kratzer’s (2004) framework variables of type \(<s>\) are taken to range over eventualities (events and states). The variable “s” (not the type \(s\)) is used to show that the analysis refers to states.

A complete analysis of secondary predicates also needs a representation that explains agreement patterns and the overt morphological markers in Romance, Slavic and Albanian languages. Section 4 gives an account for agreement patterns and introduces the main structures for secondary predicates.

4. Syntax of secondary predicates

This paper follows a hypothesis proposed by recent approaches to the morphology-syntax interface that considers categories such as nouns, verbs, and adjectives not as syntactic primitives, but rather as notions derived from functional structure in the syntax (Marantz 1997, Pesetsky 1994). More specifically, this paper assumes that what enters the syntactic computation are category-neutral roots (marked with \(\sqrt{}\), following Pesetsky 1994) and category-defining functional heads (Marantz 1997, Pylkkänen 2002) such as \(n\) (to derive nouns), \(a\) (to derive adjectives) and \(sp\) (to derive secondary predicates).

The core assumptions are as follows. Due to their role of linking a state to an event, functional heads take an adjectival root as their complement. The adjectival root has uninterpretable phi-features that cannot be checked by the SP functional head, since the SP head does not carry such features. Thus, the adjectival root has to send a second-cycle probe (Béjar 2003) to \(n\) which is specified with interpretable phi-features. Therefore, the agreement mechanism for the depictive sequence *the meat raw* in “He ate the meat raw” has the representation in (8).

\[(8) \quad \text{The depictive phrase}\\n\text{*the meat raw* in He ate *the meat raw.*}\\
\]

\[
\text{DEP-P} \\
\quad n \\
\quad \text{DEP} \\
\quad \text{aspect} \\
\quad \text{DEP'} \\
\quad \sqrt{\text{raw}} \\
\quad \lambda e, \exists s, [\text{aspect}(s) \& \text{case}(s) \& \text{Case}[]] \\
\quad \lambda e, \exists s, [\text{tense}(s) \& \text{Case}[]] \\
\quad \lambda e, \exists s, [\text{tense}(s) \& \text{Case}[]] \\
\quad \lambda e, \exists s, [\text{tense}(s) \& \text{Case}[]] \\
\quad \lambda e, \exists s, [\text{tense}(s) \& \text{Case}[]]
\]
The mechanism introduced above provides a syntactic account for the morphological agreement marking present on the secondary predicates. The paper assumes therefore that secondary predicates are constructed as small clauses.

(9) The depictive phrase The resultative phrase
a. He ate the meat raw. b. He pounded the metal flat.

DEP-P

\[
\begin{array}{c}
\triangle \\
DP' \\
\lambda e. (\exists s)f(s,x) \& e_{os} \\
\text{the meat}
\end{array}
\quad
\begin{array}{c}
\triangle \\
DP' \\
\lambda x. (\exists s)f(s,x) \& e_{os} \\
\text{DEP: raw}
\end{array}
\]

RES-P

\[
\begin{array}{c}
\triangle \\
DP \\
\lambda e. (\exists s)f(s,x) \& e_{os} \\
\text{the metal}
\end{array}
\quad
\begin{array}{c}
\triangle \\
DP \\
\lambda x. (\exists s)f(s,x) \& e_{os} \\
\text{CAUSE: flat}
\end{array}
\]

The position in which these phrases merge into the configuration gives the distinction between the different types of secondary predicates. DEP-P and RES-P merge as complements of V; circumstantial and absolutes merge as adjuncts. Merging DEP-P and RES-P as complements predicts two patterns regarding case assignment: a) when DEP-P or RES-P modify a direct object, the case and thematic role of the latter is checked in-situ, and b) when DEP-P or RES-P modify an external argument, the latter has to raise in order to get its case checked, because nominative case cannot be assigned in-situ. The structures in (10) present these two possibilities.

(10) Direct object and external argument modification
a. I saw him happy: transitive verbs b. He ate tired.

VoiceP

\[
\begin{array}{c}
DP_1 \\
\text{I}
\end{array}
\quad
\begin{array}{c}
DP_1 \\
\text{V}
\end{array}
\]

Voice

\[
\begin{array}{c}
\text{VP} \\
\text{ate}
\end{array}
\quad
\begin{array}{c}
\text{VP} \\
\text{DEP-P}
\end{array}
\]

DEP

\[
\begin{array}{c}
\triangle \\
\text{DEP': ADJ (\checkmark)}
\end{array}
\quad
\begin{array}{c}
\triangle \\
\text{DEP': ADJ (\checkmark)}
\end{array}
\]

(\text{patient) theta-role}

\[
\begin{array}{c}
\text{DP}_2 \\
\text{him}
\end{array}
\quad
\begin{array}{c}
\text{DP} \\
\text{the man}
\end{array}
\]

\[
\begin{array}{c}
\lambda f. c_{r,s} \cdot \lambda x. (\exists s)f(s,x) \& e_{os} \\
\text{ACC case/}
\end{array}
\quad
\begin{array}{c}
\lambda f. c_{r,s} \cdot \lambda x. (\exists s)f(s,x) \& e_{os} \\
\text{(patient) theta-role}
\end{array}
\]

7 Kratzer (2004) and Baker (2003) argue that adjectives should be prohibited from projecting a specifier position, since they lack Voice. I observe that for secondary predicates the elements entering the computation are not simple adjectives. I assume that the possibility of projecting a specifier is a characteristic of any element inherently specified as constructing a predication relation. By consequence, one hypothesis that needs further analysis is the possible presence of EPP features on the secondary predicate head. Another possibility that can bring fruitful results is the observation that secondary predicates can be structurally similar to unaccusative verbs (there are analyses that draw a structural comparison between adjectives and unaccusatives). In this paper, therefore, secondary predicates have the specifier position occupied by the constituent they modify.
The movement to a $\theta$-position of the external argument follows Hornstein (2001). For circumstantials and absolutes, the adjunction structures are as follows:

(11) **Circumstantial**

*Tired, he talked to his friend.*

In the case of absolutes, the entire secondary predicate phrase moves to different positions within the sentence.

5. Conclusions

The structures proposed for secondary predicates in this paper are basic and they can explain the difference between subject-oriented depictives and object-oriented SPs, as well as the distinction between syntactically-dependent SPs (depictives and resultatives) and syntactically-independent SPs (circumstantials and absolutes). However the interaction of secondary predicates with indirect objects still has to be addressed; we assume that fruitful results can be obtained by taking into account Pylkkänen’s (2002) insightful analysis of applicatives, focusing on the syntactic and semantic possible interactions between predicates that introduce applicatives and secondary predicates.

References


Cormack, A., Smith, N. *Why are depictives different from resultatives?* Cormack’s web page.
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