

## Intermediary agents and unexpressed pronouns

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This paper brings together two phenomena which are usually treated independently. First is the issue of the syntactic expressibility of subjects, either overtly as noun phrases or pronouns, or as ‘unexpressed/incorporated’ pronouns or pronominal inflection in the so-called ‘pro-drop’ situations. The second is the so-called ‘subject-oblique alternation’, where for certain classes of verbs and semantic participants (often referred to as ‘intermediary agents’), a participant can alternate between being expressed as an oblique argument (e.g. an instrumental, or a locative) and a subject. A typical example from English is *David broke the window with a hammer* ~ *The hammer broke the window* (Levin 1993:80).

I extend existing accounts of both of these phenomena to the difficult area of variable syntactic expression of semantic participants in Polish, a pro-drop language in which intermediary agents are expressible as subjects. I argue that a certain type of clause which is often regarded as impersonal (due to the lack of a lexically expressed nominative subject, as well as the defocusing of the instigator – see Siewierska 2008:121-122), can be analysed as having a ‘pro-drop’ subject argument which co-refers with the overtly expressed instrument or location.

The main aim of the paper is to show the full range of possible participant-function mappings available for certain classes of verbs in Polish, in particular the classes analogous to the English FILL verbs and the AMUSE verbs (the transitive ‘psych-verbs’ with experiencer as object), as described in Levin (1993). These are compared with verbs of emission, SWARM verbs, and verbs expressing physical or psychological states due to a stimulus which can be interpreted as an intermediary agent. I offer argument structure analyses for all the observed patterns of mapping and compare the possibilities of formalising the hypothesised co-reference of arguments using the LFG binding mechanism.

The paper has the following outline:

(i) I apply the widely accepted LFG textbook formalisation of unexpressed pronouns (e.g. Bresnan 2001:144-177) to predicates expressing weather phenomena and natural forces. Contrary to tradition, these phenomena are now beginning to be recognised more widely as syntactically and/or morphologically personal in many languages in which weather verbs do not preclude the use of a lexical subject such as ‘rain’, ‘wind’, ‘sky’, ‘universe/world/time’ etc., and are capable of carrying corresponding inflection (e.g. all East Caucasian languages except Nakh – Daniel, Khalilova & Molochieva 2008; several Oceanic languages – Moyse-Faurie 2008; various Afroasiatic – Tosco & Mettouchi 2008; see also a 2008 discussion thread in *lingtyp*). In Polish, when weather verbs occur without a lexical subject, they can be analysed as a construction with an optionally unexpressed pronominal subject, where the understood subject is the indefinite pronoun referring to non-humans (*PRO*<sub>INDEF</sub>) (Kibort 2008).

(ii) I discuss the phenomenon of subject-oblique alternation. This has been argued to depend on the distinction between ‘intermediary’ and ‘facilitating’ instruments (Levin & Rappaport Hovav 1988 and references therein), with ‘intermediary instruments’ being able to alternate between obliques and subjects. This hypothesis has more recently been extended and complemented by an account of entailments projected by verbs (Grimm 2007, inspired by Dowty 1991). These tools enable us to predict which entities can become subjects of which eventive predicates. I give examples from Polish, including the equivalent of *The hammer broke the window*, as well as the so-called ‘demi-actives’ (Babby 1994) involving ‘locatum’ and other similarly behaving arguments, e.g. *The water filled the hole*, *The sun dried the bedsheets*, *Oil has replaced coal*.

(iii) I bring up the issue of resumptive pronouns expressing an ‘instrument’ shadowing the subject in ‘demi-actives’. With the use of resumptive pronouns in Polish, I confirm the semantic hypothesis referred to in (ii) that in some events causers are capable of being simultaneously interpreted as instruments, as in Polish sentences corresponding to *The water filled the hole with itself*, *Hot tarmac has covered with itself the whole surface of the road*, *The soldiers covered the hill with themselves*. In others events, however, this is not felicitous, e.g. in Polish sentences corresponding to *#The sun has dried the bedsheets with itself*, *#Death curtailed his creative output with itself*.

(iv) This leads to a discussion of the distinction between semantic participants and referents, since the former set of examples in (iii) is analogous to FILL and AMUSE verbs used as in (1) *Piotr zasłonił sobą słońce* ‘Peter covered the sun with himself’, which however has another variant as in (2) *Piotr zasłonił słońce parawanem* ‘Peter covered/shaded the sun with a screen’:

|     |       |     |                 |     |       |     |                 |
|-----|-------|-----|-----------------|-----|-------|-----|-----------------|
| (1) | $x_i$ | $y$ | $z_i$           | (2) | $x$   | $y$ | $z$             |
|     | { arg | arg | arg }           |     | { arg | arg | arg }           |
|     | SUBJ  | OBJ | OBL $\emptyset$ |     | SUBJ  | OBJ | OBL $\emptyset$ |

In brief, *zasłonić* ‘cover’ entails (in the sense of Dowty 1991, Ackerman & Moore 2001, Grimm 2007; see also Donohue & Donohue 2004 regarding instruments) three semantic participants:  $x$  (‘agent’),  $y$  (‘patient’), and  $z$  (‘instrument’), but it may involve only two (rather than three) referents, when the agent and the instrument corefer. Hence, *Piotr zasłonił słońce* ‘Peter covered the sun’, in (3), is ambiguous with regard to whether the action is accomplished with Peter as the instrument-causer, or with a distinct entity as an instrument used by Peter, and can be expanded as in (4):

- (3)  $\begin{matrix} x & y \\ \langle \text{arg} & \text{arg} \rangle \\ \text{SUBJ} & \text{OBJ} \end{matrix}$       (4)  $\begin{matrix} x_i & y & (z_i/j) \\ \langle \text{arg} & \text{arg} & \rangle \\ \text{SUBJ} & \text{OBJ} & \end{matrix}$

(v) I extend this analysis to Polish SWARM verbs, verbs of emission (of smell or substance), and verbs expressing physical or psychological states due to a stimulus which can be interpreted as an intermediary agent. I offer argument structure analyses of the variable participant-function mappings available for these verbs. For example, the verb *pachnieć* ‘emit fragrance’ typically involves two referents: the entity emitting the fragrance, and optionally also a location. Two simple mapping options involving these two referents are (5) ‘The coffee smells in the house’, and (6) ‘The house smells of (the) coffee’:

- (5)  $\begin{matrix} kawa & (w\ domu) \\ pachnie & \langle \text{arg} & \text{arg} \rangle \\ & \text{SUBJ} & \text{OBL}_{\text{LOC}} \end{matrix}$       (6)  $\begin{matrix} dom & (kawa) \\ pachnie & \langle \text{arg} & \text{arg} \rangle \\ & \text{SUBJ} & \text{OBL}_{\text{INSTR}} \end{matrix}$

In (5), the predicate entails an ‘instigator’ participant (term due to Siewierska 2008) which emits the smell, and an optional location; in (6) the predicate also entails an ‘instigator’ participant which propagates the smell, and an optional oblique participant (a kind of an ‘instrument’) with which the propagation is achieved. *Kawa* ‘coffee and *dom* ‘house’ can map in two different ways, because they can fulfil two different semantic roles.

(vi) I discuss the ‘dummy’ participant: an indefinite pronoun. I demonstrate that any verb that can express an event whose causer/instigator is non-human may occur with an overt indefinite pronoun expressing the subject (*coś cuchnie* ‘something stinks’, *coś mnie mdli* ‘something nauseates me’, etc.). I argue that many verbs which express an event whose causer is non-human may occur in a variant that entails three semantic participants: an (unidentified or undisclosed non-human) causer/instigator, a location [as in (5)] or patient, and an optional oblique participant which is understood as a kind of ‘instrument’ with which the activity of the causer/instigator is achieved [as in (6)]. Hence, we can have three semantic participants (and three syntactic functions), even though still typically only two referents:

- (7a)  $\begin{matrix} [pro_{\text{INDEF}}] & (w\ domu) & (kawa) \\ pachnie & \langle \text{arg} & \text{arg} & \text{arg} \rangle \\ & \text{SUBJ} & \text{OBL}_{\text{LOC}} & \text{OBL}_{\text{INSTR}} \end{matrix}$       (7b)  $\begin{matrix} v_i & z & x_i \\ pachnie & \langle \text{arg} & \text{arg} & \text{arg} \rangle \\ & \text{SUBJ} & \text{OBL}_{\text{LOC}} & \text{OBL}_{\text{INSTR}} \end{matrix}$

Finally, I discuss whether LFG can handle this coreference between a ‘PRO’ argument (the inflectionally expressed  $pro_{\text{INDEF}}$ ) and another within a simple predicate despite their possible different featural specifications, in comparison with an existing sample HPSG solution, as in Trawiński (2007).

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