Adjuncts as Complements: Evidence from Case Assignment

This paper is a contribution to the discussion of the treatment of adjuncts in HPSG. It presents Case Assignment (CA) phenomena which strongly support the "Adjuncts as Complements" (A-as-C; putting adjuncts on the ARG-S list, e.g. via a Lexical Rule) approach.[1]

CA in HPSG Pollard and Sag (1994) consider CA to be a lexical phenomenon, and thus strictly local: the morphological case of a lexical item's complements is encoded in the item's subcategorization requirements (SUBCAT list). However, as they acknowledge themselves (Pollard and Sag 1994, fn.25, p.30), this approach may not work for languages with richer case systems, in which 'structural' vs. 'inherent' case dichotomy is observed.[2]

Languages with such a dichotomy for which HPSG analyses have been put forward include Korean (Yoo 1993), German (Heinz and Matiasek 1994), English (Grover 1995, ch.2) and Polish (Przepiórkowski 1996a). However, none of these analyses deals with CA to NP adverbials, the tacit assumption being that they bear semantic case specified in their lexical entries, i.e., that they are their own case assigners (Larson 1985).

We show below that 1) in many languages CA to NP adverbials should be treated on par with CA to complements, 2) this observation can be captured neither under the 'standard' (Pollard and Sag 1994) approach to adjuncts, nor under the configurational CA of Heinz and Matiasek (1994) a.o., 3) the facts are an immediate consequence of the A-as-C approach and non-configurational CA technique of Przepiórkowski (1996b) (resolving structural case locally on ARG-S).

Korean A rough generalization about Korean CA is the following: unless verbs assign inherent (idiosyncratic) case to their arguments, the non-subject NP dependents (arguments and adjuncts) of a [−stative] verb get the accusative case, otherwise the NP (i.e., the subject of a [−stative] verb or any dependent of a [+stative] verb) gets the nominative case. This is illustrated with the examples from (Maling 1989) below:

(1) *Chelswu-ka chayk-ul sey sikan-tongan-ul ilk-ess-ta.*   'Chulsoo read books for three hours.'
     Chulsoo$_{nom}$ book$_{acc}$ 3   hours-for$_{acc}$ read$_{pst,ind}$

(2) *Mun-i han sikan tongan-i yel-ie-iss-ta.*   'The door remained open for an hour.'
     door$_{nom}$ one hour for$_{nom}$ open$_{pass}$ be$_{ind}$

Despite the fact that CA to adjuncts is somewhat more semantically predictable than CA to arguments, "the parallelism suggests that Case Theory does not draw a distinction between arguments and nonarguments" (Maling 1989, p.305).[3]

Finnish Also in Finnish some NP adverbials show case variation similar to that of complements. Maling (1993) notes the following generalization: unless a verb assigns inherent case

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to an argument, the dependents of this verb receive nominative or accusative case. More-over, only one NP dependent of the verb receives the nominative, namely the one which has the highest grammatical function; other dependents receive the accusative. Thus, if none of the arguments bears inherent case, the subject is in the nominative and other dependents are in the accusative (3), but if the subject bears an idiosyncratic case, it is the object that gets nominative (4). Furthermore, if all arguments (if any) bear inherent case, the next 'available' grammatical function is that of an adjunct, thus one of the adjuncts receives the nominative (5)–(6).[4]

(3) *Liisa   muisti   matkan vuoden.*   'Liisa remembered the trip for a year.'
    Liisa$_{nom}$ remembered trip$_{acc}$ year$_{acc}$

(4) *Lapsen täytyy lukea kirja   kolmannen kerran.*
    child$_{gen}$ must read book$_{nom}$ [third   time]$_{acc}$

    'The child must read the book for a 3rd time.'

(5) *Kekkoseen luotettiin yksi kerta.*   'Kekkonen was trusted once.'
    Kekkonen$_{ill}$ trust$_{pass}$ [one time]$_{nom}$

(6) *Kekkoseen luotettiin yhden kerran yksi vuosi.*
    Kekkonen$_{ill}$ trust$_{pass}$ [one   time]$_{acc}$ [one year]$_{nom}$

    'Kekkonen was trusted for one year once.'

Maling (1993) also shows that the adjunct which will be assigned the nominative (when 'higher' grammatical functions are not available) is semantically predictable: a measure adverbial will be assigned the nominative ahead of a duration adverbial. On the basis of this behaviour, Maling extends the grammatical function hierarchy from arguments to dependents in general: SUBJ > OBJ > MEASURE > DURATION > FREQUENCY.[5]

Let us examine how Finnish CA facts could be modelled in HPSG. First of all, note that it is impossible to account for the Finnish facts in the theory of Pollard and Sag (1994) (regardless of improvements in (Kasper 1996)). One reason is that adjuncts are supposed to modify *phrase*s (X') rather than *word*s: no information about the complements of the modified verb is accessible to adjuncts (COMPS is empty on *phrase*s, ARG-S is appropriate only for *word*s). This information, however, is crucial to determine if an adjunct can modify a VP: an accusative adjunct can modify a verbal projection only if one of the less oblique grammatical functions was assigned the nominative (object in (4), duration adverbial in (6)), otherwise the adjunct should bear the nominative, as in (5).[6] Allowing adjuncts to

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[4]All Finnish examples come from (Maling 1993). The subscripts *gen* and *ill* stand for genitive and illative respectively, two of inherent cases in Finnish.

[5]Measure adverbials pattern just as objects (but unlike duration/frequency adverbials) with respect to partitive of negation (cf. below for a similar phenomenon in Russian and Polish) and, hence, are classified as less oblique than other adverbials. For space reasons, we cannot discuss this phenomenon here, although it further supports our claims.

[6]Note that what matters here is really the case of the object rather than the transitivity status of the verb. Thus, this information cannot be approximated by the CONTENT information such as number of roles provided by the verb.

modify *word*s rather than *phrase*s creates more problems[7] than it solves: information about other adjuncts possibly modifying the same *word* is still unavailable to adjuncts, and—as (5)–(6) show—this information is just as necessary to determine what case an adjunct is assigned (nominative frequency adverbial is possible in (5) as there are no 'grammatically higher' adverbials, but not in (6) because the duration adverbial wins the nominative).

Introducing the structural vs. inherent case dichotomy and configurational CA does not immediately help either: the Case Principles of Heinz and Matiasek (1994) a.o. resolving structural case to a given morphological case (nominative, accusative, etc.) are assumed to operate on local trees only. In case of Finnish, a more thorough tree traversal would be necessary in order to resolve cases of adverbials as information about objects and other adjuncts would have to be collected. This would seriously aggravate the problem already present in those accounts, namely that they treat CA (an essentially local phenomenon) via tree-configurational constraints (in principle unbounded).[8] Moreover, as in the standard approach, the linguistic generalizations about Finnish CA (nominative assigned to the least oblique structural NP, accusative to the remaining structural NPs) are lost without a trace.

The only way to minimize these problems without introducing adjuncts on ARG-S we can see is to replace the standard head-complement and head-adjunct schemata by the one proposed by Kasper (1994), which allows all complements and adjuncts to be realized as sisters of the head (of type *word*). This way the problem of complex Case Principle searching the tree would be avoided, although such a principle would still be configurational. Moreover, in order not to miss the generalizations again, an additional attribute would have to be introduced whose value would be the concatenation of the subject, the complements and the adjuncts, in the right order: then nominative could be assigned to the first structural NP on this list, etc.[9] What is striking about this solution, however, is that the only purpose of this attribute would be to encode argument structure of the word, a clear case of unwelcome theoretical redundancy (ARG-S already fulfills this function!). Even if these problems were solved, one remaining problem would be more difficult to deal with: the order of adjuncts on ADJ-DTRS assumed by Kasper (adjuncts of wider scope earlier on the list) is not reconcilable with the 'grammatical hierarchy' order postulated by Maling. For example, if both frequency and duration adverbials are present, two different orders on ADJ-DTRS correspond to two different scoping relations between them, wrongly predicting that the case of these adverbials depends on their scope.

The attempts above should be contrasted with the A-as-C approach. Under this approach, since all the dependents are present on the ARG-S list, a simple Case Principle

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[7]What should be the type of a *word* modified by an adjunct? If it is a phrase, then modification cannot iterate (because now *word*s are modified, not *phrase*s). If it is a word, then even more serious problems arise: various principles operating on *phrase* do not apply (including HFP!) and head-adjunct schema cannot be construed as a part of a (disjunctive) constraint on the type *phrase*. See, however, the discussion of (Kasper 1994) below.

[8]This problem is noted by Pollard (1994).

[9]The function of this attribute would be similar to the function of SUBCAT, retained in Pollard and Sag (1994, ch.9) to handle BT facts; thus it is not technically necessary, but very useful for a straightforward and intuitively appealing account.

resolving the case of the first structural element on this list to the nominative and all the other to the accusative (regardless of specific grammatical functions, tree configuration, etc.) suffices. Such a Case Principle is strictly local, as it operates on *category* (or *synsem*, if semantic information should be taken into account) structures only.

Russian The Russian Genitive of Negation (GoN) is a well-known phenomenon having its counterparts in many other languages. In Russian, normally accusative dependents of a verb may appear in the genitive if the verb is negated. As noted by Timberlake (1986), this case variation is rather restricted and depends on many morphological, syntactic, semantic and stylistic factors. Strikingly, the GoN applies to accusative time adverbials just as it does to complements.[10] So, also in Russian CA mechanisms do not differentiate between arguments and nonarguments.[11]

Polish The characteristics of Polish GoN are different than Russian GoN: in Polish, it is a fully productive process in the sense that accusative objects obligatorily take the genitive if the governing verb is negated. Accusative NP adverbials also undergo the process, but only optionally, with a slight change in meaning. Despite this difference, Polish supports the A-as-C approach for two reasons.

First, what is apparently at stake is not the argument vs. nonargument distinction, but rather the adverbial-like vs. non-adverbial-like one (informally speaking). Thus, although the distance and measure NPs in the examples below are usually considered objects (they are obligatory), they exhibit optional GoN, just as adjuncts do.[12]

(7) *Bielany   nie   leżą milę/mili   od   Warszawy.*
Bielany$_{nom}$ NEG lie   mile$_{acc/gen}$ from Warsaw

'Bielany$_{nom}$ doesn't lie a mile a Warsaw.'

(8) *Ta   ryba   nie   waży kilogram/kilograma.*   'This fish doesn't weigh a kilogram.'
[this fish]$_{nom}$ NEG weigh kilogram$_{acc/gen}$

Moreover, when an NP adverbial modifies a negated transitive verb, only the object changes its case to genitive, the adjunct has to remain accusative (although judgements vary here). Thus, the case of the adjunct seems to depend on the internal structure of the modified VP, bringing about problems similar to those discussed in connection with Finnish.

Conclusion We showed that among three Case Assignment techniques available on HPSG market, namely case as a lexical phenomenon (Pollard and Sag 1994), configurational case assignment (Heinz and Matiasek 1994) and non-configurational case assignment (Przepiórkowski 1996b), and among three ways of dealing with adjuncts: 'standard' (Pollard and Sag 1994), 'flat' (Kasper 1994) and via ARG-S, only the combination of the last

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[10] However, the GoN of adjuncts is rarer than of arguments. Fowler (1987) argues that this is due to independent scopal reasons.

[11] See also (Franks and Dziwirek 1993) and (Borovikova 1996) for discussion on the status of genitive adverbials across Slavic.

[12] The data come from (Franks and Dziwirek 1993).

ones can in a simple, principled and descriptively adequate way model case variation phenomena observed in languages as different as Korean, Finnish and Polish. This results in an interesting empirical prediction that obliqueness hierarchy is highly relevant for CA.

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