Differential Argument Encoding by Impoverishment

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Claim. We propose that differential case marking results from the mapping of a Minimalist syntax to post-syntactic morphology. In line with Aissen (1999, 2003) we derive the effects of differential argument encoding from harmonic alignment of scales but argue that differential encoding is the result of impoverishment rules and hence constitutes a purely morphological phenomenon. The evidence comes from the observation that Aissen's *zero/non-zero* alternations of exponents is insufficient to account for *degrees* of morphological marking. The *zero/non-zero* alternations are only part of a much broader *less/more* pattern.

Theoretical background. We presuppose a grammatical architecture that comprises a Minimalist syntax and Distributed Morphology, and assume that the hierarchy effects with differential argument encoding are real and not epiphenomenona (as in Brown et al. 2004, Harbour 2008, Richards 2008). The mapping from syntax to morphology involves impoverishment operations that are triggered by Optimality-theoretic constraint interactions. These constraint hierarchies are established by means of *harmonic alignment* of scales plus *local conjunction* with markedness constraints. *Impoverishment rules* can delete information of the syntactic representation, influencing marker insertion (Bonet 1991, Noyer 1998, Halle & Marantz 1993, 1994). Thus, *abstract case* (i. e. syntactic case) and *m-case* (morphological exponence) must be distinguished (Bobaljik 2007, Bobaljik & Wurmbrand 2007, Legate 2008). Furthermore, the relation between a marker's form and function is specified by *iconicity* (Halle & Marantz 1993, Müller 2004, 2007, Wiese 1999, 2004), in the sense that the phonological complexity of a marker is correlated with the complexity of its subfeatures. *Subanalysis* of case features ensures that impoverishment may only affect case subfeatures rather than completely delete the case specification of a DP. Hence, deletion does not necessarily yield a radically impoverished case specification.

Empirical evidence. For several languages it can be shown that there are *non-zero/non-zero* marker alternations that adhere to the Silverstein hierarchy (Hale 1972, Silverstein 1976). Since Aissen's analysis only derives *zero/non-zero* variations, these cases cannot be dealt with in terms of differential argument encoding although falling under identical principles. Relevant data come from Russian, Dyirbal (Carnie 2005), Kambera, Algonquian languages, Mannheim German and Finnish (Kiparsky 1998, 2001, Wunderlich 2000). The main claims can be illustrated with object case in Finnish. The relevant markers are /t/, /n/, /a/ and /∅/. The choice among them is conditioned by definiteness and boundedness of interpretation (cf. (2)).

Analysis. We argue that all the objects in (2) receive one and the same syntactic case specification. Morphologically, this case specification is analyzed as consisting of smaller subfeatures: [+gov(erned), –obl(ique), –subj(ect)]. The markers competing for insertion are the ones in (1). Among these markers, the one with the most specific subset of the syntactic subfeatures is chosen (the Subset Principle, Halle 1997). Varying exponence results from harmonic alignment of scales that triggers impoverishment of case features. The relevant scales are the *definiteness scale* (Pro(noun) > Name (PN) > Def(inite) > Indefinite Specific (Spec) > Non-Specific (NSpec)) and the *boundedness scale* (Bounded > unbounded (Bd > NBd)). *Harmonic alignment* and subsequent *local conjunction* with a faithfulness constraint MAX-CASE, which penalizes case feature deletion, yields the ranking of faithfulness constraints depicted in (3). Markedness constraints blocking certain case features are then inserted into this ranking ((4)); they trigger impoverishment. This yields the following result: Highly atypical objects are not impoverished at all. As a result, the exponent /t/ is attached. The more typical an object is in terms of markedness scales, the more of its case features are deleted. Every deletion step excludes one of the markers above, due to the Subset Principle's compatibility requirement. Thus, exponence of a single abstract case depends on markedness properties, resulting in differential object marking. This system reveals iconicity in that the phonological specificity measured in terms of sonority mirrors specificity of morpho-syntactic markers (/t/ > /n/ > /a/ > /∅/).

Consequences. The present analysis treats impoverishment rules as not being conditioned by an explicitly stated environment but by markedness constraints (Noyer 1997). Depending on the interaction of those markedness constraints with faithfulness constraints which in turn are derived by Silverstein hierarchies, impoverishment applies so as to delete features in hierarchically ordered contexts. Thus, on this view, impoverishment rules can be seen as being *functionally motivated*. Furthermore, differential argument encoding is correctly predicted to involve both *zero/non-zero* and *non-zero/non-zero* alternations, with the latter exhibiting a *less/more* pattern (given iconicity). More generally, on this approach Optimality Theory emerges as a theory of the morphology-syntax interface, much as in Pesetsky (1997).

(1) *Object case markers in Finnish*:

a. /t/ ↔ [+gov,–obl,–subj] b. /n/ ↔ [+gov] c. /a/ ↔ [–subj] d. /∅/ ↔ [ ]

(2) *Case marking of objects in Finnish* (Kiparsky (2001)):

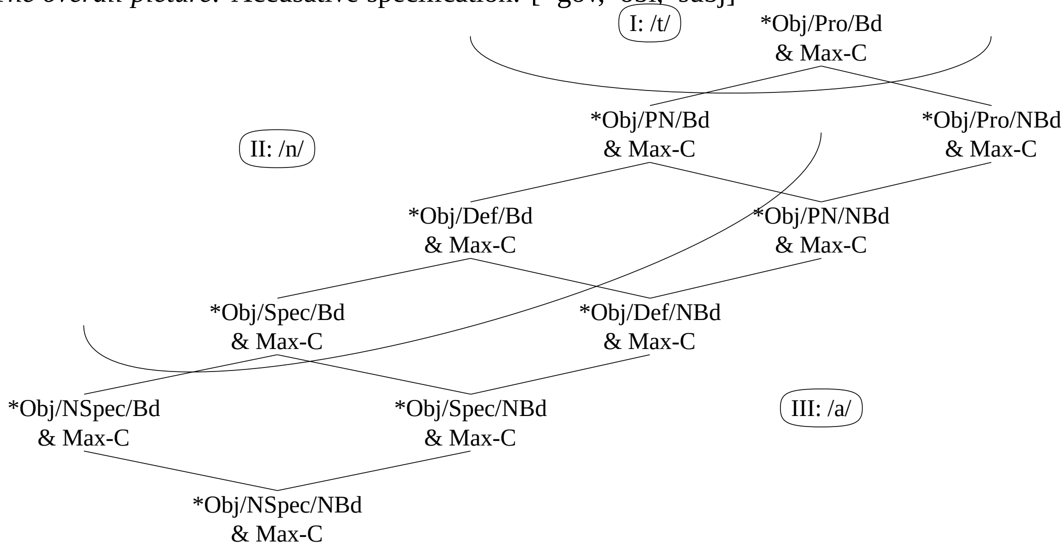
a. Tuo-n he-t
bring-1.SG he-ACC
'I'll bring him.'

b. Tuo-n karhu-n
bring-1.SG bear-GEN
'I'll bring the/a bear.'

c. Tuo-n karhu-∅
bring-1.SG bear-NOM
'Bring the/a bear!'

d. Etsi-n karhu-a
seek-1.SG bear-PART
'I'm looking for the/a bear.'

(3) *The overall picture:* Accusative specification: [+gov,–obl,–subj]



(4) *How impoverishment is triggered*:

$$\text{*Obj/Pro/Bd \& Max-C} \gg \text{*[–obl]} \gg \left\{\begin{array}{l}\text{*Obj/PN/Bd \& Max-C}\\ \text{*Obj/Def/Bd \& Max-C}\\ \text{*Obj/Spec/Bd \& Max-C}\end{array}\right\} \gg \text{*[+gov]}$$

$$\gg \left\{\begin{array}{lll}\text{*Obj/NSpec/Bd \& Max-C,} & \text{*Obj/Pro/NBd \& Max-C,} & \text{*Obj/Spec/NBd \& Max-C,}\\ \text{*Obj/PN/NBd \& Max-C,} & \text{*Obj/Def/NBd \& Max-C,} & \text{*Obj/NSpec/NBd \& Max-C}\end{array}\right\} \gg \text{*[–subj]}$$

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