

Preface

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Since the discovery of scales (or hierarchies) for grammatical categories in the 1970s, many cross-linguistic generalizations have been noted in the functional-typological literature, especially in such domains as person/number marking, argument encoding by case or agreement (Silverstein 1976, Dixon 1979), diatheses and direction marking (Comrie 1981, DeLancey 1981), as well as in other domains (Keenan & Comrie's (1977) Accessibility Hierarchy for relativization being a celebrated example). The formulation of scales as "implicational hierarchies" has enabled researchers in this area to formulate some of the most robust generalizations about language. More recently, the concept of scales has received considerable attention in grammatical theory as well. In particular, the work of Aissen (1999, 2003), framed within Optimality Theory (OT), has triggered a surge of research occupied with the question of how the effects of scales are related to general principles of morphosyntactic theory. Furthermore, recent work in psycholinguistic and neurolinguistic theorizing has argued for cross-linguistic principles of language processing which employ the notion of a scale. The idea is that scales may help to guide incremental argument interpretation by serving to shape the interpretive relations that are established between different arguments online (Bornkessel & Schlesewsky 2006).

As fruitful as this general approach has been, a number of empirical and theoretical issues surrounding the notion of scale or hierarchy remain unresolved and, indeed, the subject of some controversy. In particular, we might identify the following three groups of questions as they pertain to different areas of linguistic research:

(i) How well-established is the cross-linguistic evidence for implicational scales? Various potential counter-examples have been discussed in the recent literature (see Filimonova 2005). This question becomes especially pressing as the availability of large databases (WALS, TDS) and recent comprehensive

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fieldwork studies promise a better understanding of the relevant empirical generalizations. At the same time, we might ask whether there is evidence for new scales that have so far gone unnoticed. And could it be that scales are organized in a meta-hierarchy with respect to each other?

(ii) What is the status of scales in grammatical theory? Are they part of grammar itself (Noyer 1992, Aissen 1999, 2003), or are they epiphenomenal? If the latter, are they epiphenomena of (a) functionality or frequency distributions in language use (Bresnan, Dingare & Manning 2001, Newmeyer 2002, Hawkins 2004, Haspelmath 2008), or (b) other grammatical mechanisms such as feature geometries and/or syntactic movement (Harley & Ritter 2002, Bejar 2003)? In terms of phrase structure, we might seek to determine the relation between feature hierarchies and the order of functional projections in the syntax (Cinque 1999, Starke 2001).

(iii) What role do scales play in the language processing architecture? Should they be afforded independent status or can they be viewed as epiphenomena of other information types (e.g. frequency of occurrence)? Is there evidence for the interaction of different scales during language processing and, if so, how does this interaction take place?

These were some of the main questions that were raised and addressed by the international Workshop on Scales, organized by DFG-Forschergruppe 742 ('Grammar and Processing of Verbal Arguments'), which took place in Leipzig on March 29-30, 2008, at the Max Planck Institute for Evolutionary Anthropology. The present volume of *Linguistische Arbeits Berichte* represents a selection of the papers presented at that workshop. This selection covers the full range of questions identified above, and includes not only ten contributions by members of Forschergruppe 742 but also six of the papers that were presented by invited speakers from outside the research group.

The volume opens with a pair of critical articles casting various degrees of caution and doubt on the ways in which scales are usually employed. Balthasar Bickel & Alena Witzlack-Makarevich's paper reviews the typological evidence to question the empirical validity of Silverstein-type generalizations as universal scales determining the distribution of case-marking patterns, arguing that areal and historical factors may be a better explanation for the attested systems. Martin Haspelmath's "Descriptive scales versus comparative scales" then makes the case for distinguishing between at least two notions of scales, which, in turn, are claimed to be derivative from the distinction between descriptive (language-particular) categories, and comparative (cross-linguistic) concepts. The author argues that once this distinction is acknowledged, it can also resolve the problem of exceptions to universal

scales, where particular reference is made to person-animacy scales. By contrast, Carlotta Viti, in her paper, explains apparent counterexamples to the animacy hierarchy by appealing to other, interfering factors such as economy and redundancy, which are argued to introduce “noise” into the system. Corinna Handschuh then compares two possible explanations of Silverstein’s generalization (her ‘overt marking hypothesis’ and ‘alignment hypothesis’) using typologically interesting marked nominative systems as a test case.

While the above papers discuss typological aspects of scales in general, and of the animacy scale in particular, the next group discusses the theoretical status of scales from a variety of formal perspectives. Stefan Keine & Gereon Müller take issue with certain aspects of Aissen’s influential optimality-theoretic account of differential case-marking, in particular its limitation to zero-nonzero alternations. They suggest a revision based on *impoverishment*, that is, the postsyntactic deletion of morphosyntactic features. Couched within the framework of Distributed Morphology, their paper thus provides a morphological solution to the effects of the animacy hierarchy on case marking. The remainder of this group of papers then investigates the nature of scales from a more syntactic perspective. As noted by Carnie (2005), animacy hierarchy effects are manifested not only morphologically (as in differential case-marking) but also in word-order phenomena (such as the scrambling of definite noun phrases). This point is taken up in Marc Richards’s paper, which proposes a general analysis of case alternations and other phenomena associated with nominal hierarchies of the Silverstein type. The analysis is based on the agreement system of Chomsky 2000, which allows for defective probes (functional heads which are unspecified for person features) to assign a different case compared to non-defective probes. This not only provides a basis for the core properties of the Person-Case Constraint and differential case-marking to be captured in a simple way, but also readily extends to scrambling phenomena, which frequently target nominals which rank high on the animacy/definiteness scale.

Petr Biskup & Gerhild Zybatow investigate the status of prominence scales in grammatical theory by looking at the interaction of theta-role and case scales in the domain of prefixation in Russian and Czech, proposing a structural, c-command-based approach to these scales that proceeds from independent minimalist principles and operations (including Full Interpretation and Agree). They argue for a kind of ‘harmonic alignment’ in the mapping between scales, such that unmarked mappings are those which involve no crossing associations and respect c-command relations; certain marked associations (“reciprocal crossings”) can then be repaired by special morphological marking, if available. Fehrmann & Junghanns discuss another aspect of

Slavic syntax, comparing and contrasting overt versus non-overt realization of subjects in Russian, Czech and Polish and concluding that only the latter two languages involve *pro*-drop. A scales-based approach to the non-realization of subjects in the non-*pro*-drop system of Russian is then considered, with a person/animacy hierarchy as the determining factor, but this approach is ultimately rejected in favour of an account in terms of the weak pronominal systems of the languages in question.

The two papers which follow, by Patrycja Jabłońska and Pavel Caha, share a similar theoretical perspective, in that they both propose to derive prominence scales from the order of functional projections in DP structure; both, too, assume the same conception of the syntax-morphology interface as allowing the lexicalization of nonterminals in accordance with a superset (rather than subset) principle. Jabłońska suggests a fine-grained decomposition of nominal projections covering different segments of Silverstein's hierarchy, illustrating her approach with a case study of the Polish *-n/t-* morpheme, which performs a passivizing or nominalising function, and the attendant referential restrictions. Pavel Caha's paper, "The Case Hierarchy as Functional Sequence", then applies a similar complex sequence of nominal functional projections in order to reconstruct the effects of the Case Hierarchy of Blake (1994) and others – individual case features head their own functional projections in a particular sequence. The author shows how this analysis can provide a syntactic account of the attested patterns of case syncretism.

Returning to the verbal domain, the next three papers investigate the effects of the person/animacy scale in direct-inverse systems. Fernando Zúñiga reconsiders the empirical validity of the person hierarchy 2nd > 1st > 3rd for Algonquian languages, offering evidence against a unique "Algonquian person hierarchy" and suggesting a way to resolve the problem of multiple hierarchies. Like Zúñiga, Bethany Lochbihler examines direct/inverse marking in Algonquian, but does it from a formal perspective based on Béjar & Rezac's (2005) *Cyclic Agree*, a version of Chomsky's (2000) probe-goal agreement system. In particular, she argues that the inverse marking in Ojibwe involves multiple Agree by a Voice head which checks against two arguments (subject and object), with inverse marking being the result of valuing 'entailed' features on the second Agree cycle. Jochen Trommer then addresses a non-canonical case of direct-inverse marking ("Quirky Inverse Marking") in the agreement system of Turkana, an eastern Nilotic language, and proposes a more restrictive formalism for morphological spellout than those based on harmonic alignment (cf. Aissen 1999, 2003), proceeding from the simplifying

assumption that zero realization is the only kind of morphological hierarchy effect.

The final three papers are more general or cross-disciplinary in nature, extending the domain of scales research into other areas. Andrej Malchukov proposes a general approach to the syntagmatic interaction of grammatical categories which relies on the notions of local markedness and markedness hierarchies. He applies his approach to the domain of tense/aspect/mood categories by focussing on one functionally “infelicitous” combination in this domain, namely perfective presents, and shows how this approach can be reconstructed in Optimality Theory, making use of both OT syntax (production optimization through harmonic alignment of scales) and OT semantics (comprehension optimization). Michael Cysouw argues that the concept of scale can be generalized to cover any restriction on form-function mapping and can be conceived, in its most general form, as a dissimilarity matrix. This naturally leads to the conclusion that one-dimensional scales have to be discarded in favour of multidimensional ones, which lend themselves to analysis by computational techniques designed for capturing similarities, such as multidimensional scaling. He illustrates this approach by way of inchoative-causative alternations, where different lexical items show different encoding similarities across languages. In the final paper of the volume, a collaborative effort is undertaken by four members of project P1 (‘Typological variation in the processing of verbal arguments’) – Ina Bornkessel-Schlesewsky, Kamal Kumar Choudhary, Alena Witzlack-Makarevich and Balthasar Bickel – to investigate the connection between processing (comprehension) and typology (distribution) in the area of accusative versus ergative alignment. In particular, the correspondence between the preferences exhibited in both domains for accusative over ergative (re)alignment is examined via a study of control constructions in Hindi, the results of which suggest that a reconciliation of the differences between the two domains may well be attainable – a convergence which would be of considerable interest for other domains too, such as grammatical theory.

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