# Introduction



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Principles and Prediction: The analysis of natural language

. Papers in honor of Gerald Sanders

**Edited by Mushira Eid and Gregory Iverson** 

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#### INTRODUCTION

The papers in this volume are submitted in honor of an inspiring teacher, and good friend, Gerald Sanders. Jerry's work in linguistics has been remarkably 'before its time', both in syntax and phonology, and has served as a catalyst as well for studies in areas ranging from typology to discourse. The papers gathered here reflect that influence, whether related to questions of rule ordering and underspecification in phonology, structure and derivation in syntax, form and function in discourse, or categorization and natural domain in typology.

## Typological Issues

Two of the three papers in the typology section are closely related in that they both study the structure and organization of category systems. One focuses on the three values usually assigned to the category 'person' (Greenberg), the other on the Dakota split intransitive and possessive paradigms and the Ojibwe noun class system (Schwartz). The third paper address questions of language typology and universals, but from the perspective of first and second language acquisition (Eckman).

As its title states, Joseph Greenberg's paper argues that "The Second Person is Rightly So Called". In the major grammatical traditions (Western, Sanskrit, and Semitic) which posit a three-value person system, the second person always occupies the intermediate position between first and third person positions, with the latter two never in a relation of proximity. Greenberg provides a host of cross-linguistic evidence that supports the intermediate position of the second person: linguistic systems where second person aligns with first with respect to some linguistic feature(s), and cases where it aligns with third. (But, Greenberg points out, there is no evidence that first and third ever align in opposition to second.) The two sets of

oppositions, Greenberg proposes, can be explained on the basis of the distinction between the ego and the non-ego together with the notion 'conversational pair' (i.e., opposition between those involved in the conversation and those not involved). Greenberg shows that a feature system based on these two oppositions would correctly predict the intermediate position of the second person: only second person would differ by one feature from the other persons (first and third).

In "The Structure of Category Systems", Linda Schwartz examines lexical categories where subcategory membership can also be predicted, at least partially, on the basis of semantic properties. Schwartz proposes to account for the distinction in terms of an analysis based on what she calls 'determined' vs. 'defined' category systems. Determined category systems are fully predictable (i.e., their category membership is stated on the basis of both necessary and sufficient conditions), whereas defined category systems are only partially so, their subcategory membership being stated on either necessary or sufficient conditions. Schwartz uses this distinction to argue that lexical categories whose subcategory membership is not fully predictable can still be assigned an internal structure depending on the nature (determined vs. defined) of the supercategory and subcategory systems. Among the category systems she examines are the Ojibwe noun class systems and the split intransitive systems of Dakota, which constitute the focus of the paper.

Fred Eckman's paper, "On the Natural Domain of Linguistic Universals", defends the proposition that primary languages (learned natively by children) and secondary languages (learned in adulthood) are more similar than they are different, and that they in particular are subject to the same class of linguistic universals. The view is controversial, for some researchers in second language acquisition theory maintain that the differences between primary and secondary languages are fundamental, reflecting basic qualitative distinctions in cognitive structure and in the language learning mechanisms. Eckman's examination of these arguments leads instead to the hypothesis of 'structural conformity', an assertion to the effect that "universal generalizations that hold for primary languages hold also for interlanguages", i.e., the languages intermediate between native and target (second) languages. He finds confirmation of this hypothesis both within studies of universal grammar, or UG, and

language typology, and concludes that especially the typological paradigm presents a testable basis for uniting the universals of first and second language acquisition.

## Syntactic Issues

The papers in this section are of three types, reflecting in many ways Gerald Sanders' interests and direction: those that deal with 'general' issues of linguistic theory/domain (Moravcsik, Tai), those that address specific analyses and their implications from language particular and theoretical perspectives (Eid, Kac, Hedberg, Hutchinson), and those that relate theoretical concepts and analyses to other fields, in this case to natural language processing (Dahl, Rindflesch).

Edith Moravcsik's essay poses the question, "Why is Syntax Complicated?". The answer is not obvious, she points outs, especially in view of the paradox that, "Conceptually, syntax is simple", needing, at least in terms of its minimal goal, only to characterize the choice and arrangement of meaningful parts, and their semantics. Yet syntax of course is indeed complicated in the actual formulation of its various rules and principles, whatever the particular theory. Moravcsik ascribes the difficulty of syntactic theorizing to four major types of contradictions inherent in syntactic data; these relate to the presence, quantity, quality, and location of syntactic entities. She proposes that the multitude of syntactic theories can be reduced to various strategies used to resolve contradictions, involving the reinterpretation of two contradictory predicates as a single noncontradictory one or the reinterpretation of a single entity that predicates apply to as more than one entity.

Michael Kac's paper addresses the question raised in its title: "What is Categorial Grammar Really Good For?". Categorial grammars are based on the assumption that there is a need for order-free representations. But when applied to natural languages, a host of problems arise in the determination of constituency, problems due to discontinuancies, functor-argument relations, among others. Kac focuses on accusative-infinitive constructions and control predicates to argue that categorial grammar is of less value to syntax than it is to semantics, and suggests that the question of what syntactic categories

exist must be separated from the question of what does or does not count as a meaningful expression.

In "The Logic of Relative Adjectives", Larry Hutchinson examines five logical analyses of sentences with relative adjectives (e.g., large, small) where the adjective is used attributively, i.e., serves to delimit the denotation of the noun by subsetting. He finds that they have all incorporated pragmatic factors into logical form, thus making the logical analysis more complex than it need be and obscuring the pragmatic aspects involved by not maintaining a distinction between logic and pragmatics. It is this position (separation of logic and pragmatics) that Hutchinson advocates in the paper.

Nancy Hedberg's paper, "On the Subject-Predicate Structure of Pseudoclefts", raises the question of what analysis to assign to pseudoclefts like What Mike drinks is tea and inverted pseudoclefts like Tea is what Mike drinks, where the pseudoclefted clause appears in precopular position in one case but in postcopular position in the other. The most transparent analysis is to assign a structural subject position to the pseudoclefted clause in the former case and a structural predicate position in the latter. Hedberg reviews recently proposed alternative treatments of these structures and argues on empirical grounds in favor of the most transparent analysis. In doing so, she relies on some of the 'accepted' tests for subjecthood in English, e.g., tag-questions.

Mushira Eid's paper, "Negation and Predicate Heads", also deals with subject-predicate structures, but in Arabic. She examines 'verbless sentences'—primarily, those equivalent to sentences with have and be in English, which in Arabic have no corresponding surface verb. She argues that although the Arabic sentences have no overt verb, in the absence of a verbal head certain other predicate heads take over syntactic features (or functions) of verbal predicates. The issue that the paper raises then has to do with the relationship of these findings to current analyses defined on the category Verb, suggesting that these be generalized and defined on Predicate Head, rather than just Verb.

James Tai addresses some basic questions related to the nature of the human language faculty in his contribution, "Iconicity: Motivations in Chinese Grammar". He adduces evidence from Chinese to argue against the predominant view, embodied in Chomsky's 'innateness' hypothesis, that humans possess a language-specific faculty which is autonomous and independent of other human cognitive systems. Tai argues for an alternative view, what one might call the 'iconicity' hypothesis, which claims that linguistic structure corresponds to human beings' conceptual structure of the world, thus viewing language as being nonautonomous, nonarbitrary, hence iconic. Tai cites cases from five aspects of Chinese syntax (specifically, linear order, distance, separateness, juxtaposition, and reduplication), and provides iconic motivation for them by relating them to other (nonlinguistic) principles of cognition. Evidence of the type presented in the paper, Tai argues, suggests that language is not an arbitrary, self-contained system as proponents of the innateness hypothesis maintain.

In "Hypothesizing Case Frames", Deborah Dahl reports on an experiment in automatic acquisition of the lexical semantics of unknown predicates in natural language processing. The experiment uses semantic information derived from processing a corpus as a basis for making informed guesses about the semantics of unknown predicates. The corpus in this case consists of one thousand spoken sentences in the domain of Air Travel Planning. The paper describes a technique (based on a quantitative analysis of the corpora) for allowing a natural language processing system to make informed guesses about two types of semantic information: the case frames of new verbs and the syntax-to-semantics mapping rules associated with them.

In "Local Ambiguity and Natural Language Processing", Thomas Rindflesch addresses the problem parsing devices face in dealing with sentences like Jim persuaded the girl Dean likes, in which likes is part of a relative clause, versus Jim persuaded the girl Dean likes beer, in which likes is part of a complement clause. Assuming left-to-right processing, Rindflesch notes, the parser has to make a sudden grammatical decision with respect to such structures, viz., whether or not the object of likes is the girl; but at the point it encounters likes the parser doesn't have enough information available to ensure that the decision can be made correctly. Working within an eclectic grammatical framework known as F (Kac's "corepresentational" grammar), Rindflesch invokes a special look-ahead procedure to resolve local ambiguities like these, one which is more tightly

constrained, and much better motivated linguistically, than alternatives that have been suggested before.

#### Discourse Issues

Two of the papers in the discourse section deal with interpersonal conflict and its resolution—or lack thereof. One approaches the issue in the context of 'storytelling' (Barry), the other from the perspective of gender relationships, primarily same sex discourse (Sheldon). The third paper in this section addresses a more intrapersonal kind of conflict, that which surrounds the selection between direct and indirect speech forms (Yule). The remaining two papers consider ways in which choices among, or variation in, some grammatical and semantic categories may be explainable on pragmatic and discourse grounds (Delisle, Clamons).

Although a storytelling situation usually involves a teller constructing a narrative for a listener, in some storytelling situations the listener participates with the teller in constructing the narrative. In situations of this type, communication will depend on how the narrative agendas of the listener and the teller relate to each other. In "Constructing a Courtroom Narrative", Anita Barry examines courtroom witness testimony as a form of storytelling where the lawyer and the witness take the responsibility of constructing a narrative for the jury. She examines three segments of a courtroom trial to show what happens to narrative construction when two people are in control, or wish to be. When the narrative agenda is shared by both lawyer and witness, a complete and coherent narrative is constructed. But when their narrative agendas differ, the conflict results in serious communication problems.

Conflict in conversation and its resolution is also the topic of "Saying it With a Smile", where Amy Sheldon examines gender differences in strategies used by young (preschool) girls and boys to negotiate dissent during conflict. She uses the concepts of double- vs. single-voice discourse to characterize girls' vs. boys' conflict resolution styles in single sex discourse. In double-voice discourse conflict is negotiated with a preference for agreement, whereas in single-voice discourse, conflict is negotiated with a preference for disagreement and confrontation. In mixed-sex conflict talk, Sheldon argues, girls become style-shifters whereas boys continue to maintain

single-voice discourse style. Sheldon argues against what may be called 'the male as norm' approach to the study of gender. Instead she takes a more context-dependent approach whereby gender becomes an activity that is continuously being constructed and negotiated depending on social situation, among other variables.

George Yule considers the grammatical role of direct speech forms in English reported discourse in "Vera Hayden's Dilemma, or the Indirection in Direct Speech". Vera Hayden, assistant city clerk in Amite, Louisiana, has responsibility for producing a written record of the town council meetings each month. Yule's review of that record reveals Hayden's extensive use of "zero" quotatives (as they would be understood under Gerald Sanders' sense of the overt analog criterion relative to zero derivation); these are indirect speech forms which are not preceded by overt quotative frames, such as He said. Rather than serving simply as verbatim reports, however, Yule suggests that Vera Hayden employs zero quotatives in resolution of a scribal dilemma: "she has to attest to an accurate record of what was said during the meetings, yet she also has to make composing decisions that will influence what will become part of that record"—to strike a stylistic balance between mimesis (total imitation) and diegesis (pure summary) which "captures desired aspects of both the 'facts' and the 'acts' that were present during the meeting being reported."

Helga Delisle's paper, "Anaphora in German Discourse", examines the function of demonstrative and personal pronouns in Standard German discourse, as evidenced from a large sample of telephone conversations. She starts from the position that the two types of pronouns share the same categorical features and can occur in the same syntactic configurations, and shows that there are differences in the ways the two types of pronouns are used, the choice between them being dependent on pragmatic considerations. Both personal pronouns and demonstratives provide the hearer with referential as well as pragmatic and social information about the intended referent. But whereas personal pronouns usually appear in more neutral situations, demonstrative pronouns are typically used for focus, which in Delisle's view is always contrastive in nature, whether based on syntactic, pragmatic, or affective grounds.

In "Gender Assignment in Oromo", an East Cushitic language spoken in Ethiopia, Cynthia Clamons argues that gender is assigned on

the basis of a small set of mechanical and semantic rules; but a speaker may shift the gender of inanimate nouns in discourse in order to express a certain attitude towards the referent (e.g., diminutive) or an evaluation of it (e.g., pejorative). Oromo dialects differ in their assignment of gender. Clamons discusses these differences, showing how utterances that are nearly equivalent formally may have quite different semantic values.

## Phonological Issues

The papers in the phonology section are focused on two major themes: underspecification and borrowing. Four of the papers in this section address the issue of underspecification in phonological representations, two of them on the basis of data from child phonology (Dinnsen, Stemberger), two on the basis of languages other than English (Bing, Iverson). Two other papers deal with questions of borrowing, one (Stenson) from a synchronic perspective, the other (Schaarschmidt) from a historical one.

In "Underspecification and Phonological Disorders", Daniel Dinnsen advances the hypothesis of 'shadow specification' as a means of accounting for the distinctions that many children perceive among phonological structures which, in their own production, appear to be the same. For example, some children pronounce "wolf" and "roof" homophonously, as [wof], yet are capable of consistently identifying the /w/ versus /r/ contrast in the speech of others. These and similar phenomena in phonological development have received largely unconvincing explanations in the past, Dinnsen observes, most often in the form a model requiring separate lexicons for production and perception. Dinnsen's idea in this paper is to apply the concepts of (radical) feature underspecification theory to developing phonologies as well as to fully developed ones, with the special provision that otherwise predictable or 'default' feature values may also be specified for a period until learning is complete. This allows for three kinds of feature representations in phonological development: unspecified (for which default values are provided at the surface), shadow specified (for which default values are lexically listed), and specified (whose lexical listing is the opposite of the default value). There are many implications connected with this novel proposal, including the raising of familiar methodological questions relating to the extraction of ternary distinctions out of binary features; but shadow specification presents a considerably more concrete, theory-motivated approach to the issues in phonological development than does any of its predecessors, and may even bear on the analysis of similar phenomena, such as absolute neutralization, in more mature phonologies.

Like Dinnsen's contribution relating to underspecification, or 'simplex feature representation', Joseph Stemberger's paper, "Rule Ordering in Child Phonology", pursues in the context of language acquisition another issue in which Gerald Sanders was a pioneer. Stemberger surveys the range of crucial rule orderings noted in diary studies of his own three children; though "derivations are very shallow, and most rules seem to be nonaffecting", he finds numerous instances of feeding and bleeding interaction, and some of counterbleeding and counterfeeding as well. Most of these fall into line with the predictions of various principles of rule interaction developed in the 1970s, such as Proper Inclusion (or Overlap) Precedence and Obligatory Precedence. Stemberger also considers. however, that the strata or level ordering which inheres in the theory of lexical phonology might also account for some of the observed ordering requirements, or that processing accessibility (determined in part by frequency) as in connectionist models of phonology might play a determining role in establishing rules interactions. He concludes that very few rule orderings in child phonology appear to be incompatible with universal principles of rule applicational interaction, and that these in any case may well be derivable from the performance factor of accessibility.

Janet Bing's paper, "Default Features in Contour Tones: Evidence from Krahn/Wobé", is one of several in the volume concerned with issues of underspecification. Bing's novel approach to the representation of tone is based on her long term analysis of the Kru (West African) language Gborbo Krahn, also known as Wobé. Other recent theoretical accounts either fail to accommodate the actual range of tonal distinctions found in Krahn/Wobé (along with five level tones, the language displays three contrasting rising contours), or they allow for many more (up to 81) distinctions than ever seem to occur in any language. Bing, by contrast, assumes operation of a small group of universal postlexical default rules along with just two

features (high and low), specified to appear in either or both of two geometric planes (tonal and register). This is a very constrained model indeed, one which "predicts that lexically no language will have more than five contrasting tonal levels or six contrasting contour tones", a limitation on the range of variation that appears to be observationally adequate.

Gregory Iverson's paper, "Lexical versus Postlexical Rule Application in Catalan", considers the argument recently raised in the theory of lexical phonology that, in some cases at least, a single rule must be accorded postlexical as well as lexical status. The clearest of these cases concerns the rule of nasal consonant assimilation in Catalan, which in some derivations must both precede and follow another, presumably lexical rule of consonant cluster simplification. Iverson shows that the apparent ordering paradox (of a rule's applying both before and after another) falls aside under the general conceptions of grammatical function first articulated by Gerald Sanders in his work on rule interaction and feature representation, and as a consequence that the basic lexical/postlexical dichotomy remains intact for these rules in Catalan, both of which are interpretable as postlexical.

Restricting herself to a study of consonant phonology in single-word borrowings, Nancy Stenson's paper, "Variation in Phonological Assimilation of Irish Loanwords", argues that modern Irish employs strategies of both assimilation (adaptation of foreign sounds to the native phonological system) and adoption (acceptance of novel foreign sounds essentially without modification). For example, the interdental fricatives of English are regularly borrowed as dental stops since these fricatives are foreign to Irish, i.e., they are assimilated; but English alveolar stops are generally brought into Irish intact as alveolars, creating a surprising new contrast since the language otherwise does not evince alveolar stops, except perhaps due to spreading effects in certain clusters. Stenson identifies several other kinds of borrowing, including cases of 'overdifferentiation', or the imposition onto loanwords of phonological distinctions which do not exist in the language that the words are borrowed from—though typically there is an allophonic basis in the lender language for the distinctions imposed, e.g., the borrowing of a plain consonant as palatalized in Irish is favored when it is before a front vowel in English. In view of the widespread bilingualism among present-day speakers of Irish, predominance of the adoption strategy vis-à-vis English is perhaps to be expected. Still, the result of adoption commonly is complication of the grammar, which, Stenson wryly notes, is indeed "curious behavior for a dying language".

Gunter Schaarschmidt presents a historically-based study of "Dialect Variation in Sorbian Reflexes of the Common Slavic jers". Sorbian, spoken today in the east central region of Germany known as Lusatia, is a Northwest Slavic language which has been subject to extensive influence from German, including, Schaarschmidt argues, the borrowing from Low German of a rule lowering the vowel e to a, especially before r. This mode of borrowing, of a rule rather than a form (or even a sound), is perhaps not unprecedented, but it is certainly uncommon, and serves to account for otherwise unexpected reflexes in Sorbian dialects of the Common Slavic jer vowels.

Jerry's colleagues and students, present and past, join the two of us in offering this volume in recognition of a superb scholar—and our finest teacher—in the year of his retirement from the Department of Linguistics, University of Minnesota.

Mushira Eid, Salt Lake City Gregory Iverson, Milwaukee