The History of
glow

generative linguistics in the old world

1978-2002

editors:
Hans Bennis
Marc van Oostendorp
1. Introduction

Hans Bennis & Marc van Oostendorp

Le voilà: the twenty-fifth edition of the GLOW Conference, back in Amsterdam, the town where it all started. We thought it appropriate to celebrate this special occasion not just by organising a special evening programme, but also by presenting this booklet as a souvenir to all participants of the present conference.

There are various ways of counting GLOWs. There were at least two precursors to the programme. In 1976 there was the Amsterdam conference *Green ideas blown up* and an unofficial GLOW was held in Amsterdam in 1977. At any rate, the first 'real' GLOW Conference took place in 1978, and was organized mainly by members of the General Linguistics department of the University of Amsterdam.

The GLOW Conferences have always been the most important activity of the GLOW Association. This is reflected in the Newsletter (one issue every year is devoted to the programme and abstracts of that year's conference) and also in this booklet. We have compiled a list of all talks which were given during (the Main Sessions of) all conferences. This list can be used as an index to the abstracts which were published in the newsletter; it also provides an overview of the wealth of topics that have been investigated and discussed over the years, and the range of linguists that have spoken here. It seems safe to say that there hasn't been a leading generative linguist who has not presented at least one lecture at GLOW in the course of his or her career.

We have also included various pieces of historical interest to the generative linguistic community. From the first volume of the Newsletter, we copied several founding documents of the GLOW organisation, such as the first Editorial, the so-called GLOW Manifesto, a reaction to this manifesto by Jean-Claude Milner, and the very first version of the GLOW Guidelines. From later documents we added some more worked-out versions of the official 'constitution' and 'guidelines'. Over the years, editors of the GLOW Newsletters have sometimes published articles which presented the state-of-the-art in certain subfields. Of these, we republish here articles by Joseph Aoun and Dominique Sportiche, by Jonathan Kaye and by John McCarthy. Finally, a note that Noam Chomsky wrote on the occasion of the 10th Anniversary of GLOW is included here as well.

The editors of the first Newsletters defined the goals of GLOW in the following way: "We aim at creating a platform for the intellectual and social wellbeing of transformationalists in and around Europe, as well as all other transformationalists eager to participate." Opinions seem to vary whether or not the 'intellectual and social wellbeing of transformationalists' has indeed improved in Europe over the past 25 years. The editors of this booklet, at least, tend to be on the optimistic side. In any case, it seems clear that the position of generative grammar in Europe would have been much weaker without GLOW the association or GLOW the conference.
2. Conference Venues / Topics

  Workshop on Generative Phonology.
  Workshop on Scandinavian Syntax.
  Workshops on (1) Comparative Syntax: the Case of Verb Second, and
  (2) Phonological Features.
  Workshop on Automatic Language Processing: Parsing, Translating, Learning.
  Workshop on Dialect Variation and the Theory of Grammar.
  Workshops on (1) The Relation of the Lexicon to Other Modules of Grammar,
  and (2) The Convergence of Phonological Theories.
  Workshops on the Linguistic Description of Exotic Languages and its Relevance
  for Generative Theorizing; I. Phonology & II. Syntax.
  Workshops on the Syntax and Phonology of Oriental and African Languages.
  Workshops on (1) The Development of Movement and Inflection,
  (2) Wh-Movement, ECP and Bound Variable Development, (3) The Acquisition
  of Phonology.
  Workshops on (1) Interfaces, and (2) African & Creole Languages.
  Workshops on (1) The Internal Structure of Non-Verbal Projections,
  (2) Language Change, (3) Constituent Structure in Phonology.
  Workshops on (1) Language Acquisition and the Theory of Grammar and
  (2) Phonology between Words and Phrases.
  Workshops on (1) Constraints in Phonology and (2) Inflection and Word Order in
  Finno-Ugrian Languages.
   Workshops on (1) Weight Effects, (2) The Syntax of Balkan Languages,
   (3) Current Trends in Modern Greek Syntax: From Minimality to Optimality.

   Workshops on (1) Morpho-syntax and Phonology of African and Afro-Asiatic
   Languages, (2) Computational Models and Implementation of Natural Language.

   Workshops on (1) Phonological Opacity, (2) Agreement Systems.

   Workshops on (1) Sources of Universals, (2) Technical Aspects of Movement,
   (3) Phonetics in Phonology.

   Workshops on (1) Focus, (2) Null/Overt Morphology.

   Workshops on (1) Language Change and Variation, (2) Nominal and Temporal
   Anaphora.

   Workshops on (1) The Syntax-Discourse Interface, (2) Phonological Language
   Acquisition, (3) Tools in Linguistic Theory
3. Papers Presented at GLOW
1978 – 2002
(including alternates and invited speakers; excluding workshops)

Steven Abney. 1986. Functional Elements and Licensing. MIT.
Marianne Adams. 1986. From Old French to the Theory of Prodrop. UCLA.

Artemis Alexiadou, Elena Anagnostopoulou & Melita Stavrou. 2000. Deriving Words and Categories. ZAS/AUTH, Crete & AUTH.
Antonia Androutsopoulou. 1997. Split DPs, Focus and Scrambling. UCLA/CUNY.
Maya Arad. 1996. The Asymmetric Nature of Theta-Relations. UC London.
Maya Arad. 1999. 'Transitivity' as a Universal. The Status of v. MIT.
Carlos Arregi. 2001. On the Non-Existence of the Preverbal Focus Position in Basque. MIT.
Joseph Aoun. 1979. Parts of Speech: a Case of Redistribution. MIT.
Rajesh Bhatt & Roumanya Pancheva. 2001. LF Licensing of Degree Complements. Texas & USC.
Hagit Borer. 1981. Proper Government by Clitics as a Parameter of Core Grammar. MIT.
Zeljko Boskovic. 1999. What is Special about Multiple Wh-Fronting? UConn.
Phil Branigan. 1996. The Difference Between Root and Embedded Wh-Questions in Germanic. MUN.
Luigi Burzio. 1981. Restructuring and the Pro-Drop Parameter. MIT.
Anna Cardinaletti & Ian Roberts. 1990. Levels of Representation of Agreement. Venice & Geneva.
Vicki Carstens. 1985. Parametrization of the Head of S' and the ECP. UCLA.
Vicki Carstens. 1986. Extraction Asymmetries and Antecedent Government. UCLA.
Carlo Cecchetto. 1996. Clitic Right Dislocation is not Right Dislocation. DIPSCO.


Harald Clahsen & Pieter Muysken. 1984. The Accessibility of 'Move α' and the Acquisition of German Word Order by Children and Adults. Düsseldorf & Amsterdam.


Sonia Cyrino & Gabriela Matos. 2002. Syntactic Microvariation in VP Ellipsis in European and Brazilian Portuguese. Londrina, Brasil & Lisbon.

Henry Davis & Hamida Demirdache. 1995. Agents and Events. UBC.


Marcel den Dikken & Rint Sybesma. 1998. Take Serials Light Up the Middle. HIL.


Carmen Dobrovie-Sorin. 1992. LF Representations, Weak Islands and the ECP. Paris VII.
Carmen Dobrovie-Sorin. 1993. On Certain Contrasts between Copula Passives and Middle/Passive SE. Paris VII.
Carmen Dobrovie-Sorin. 1999. Spec, DP and (In)definiteness Spread. CNRS.
Gorka Elordieta. 1998. The Phonological Import of Syntactic Features. UCLA.
Joe Emonds. 1978. Local Solutions to Global (Big) Problems: Grammatical Formative Insertion at the End of the S-Cycle. UCLA.
Ricardo Etxepare. 1998. Paratactic Dependencies and Covert Merge. LEIA.
Dan Everett. 1985. The Parametrization of Nominal Clitics in Universal Grammar. Campinas / MIT.
Kai von Fintel & Sabine Iatridou. 2001. On the Interaction of Modals, Quantifiers and If-Clauses. MIT.
Robert Freidin. 1978. Filters vs Conditions on Derivations: the Case of the Strict Cycle. MIT.
Robert Freidin. 1979. Disjoint Reference and Core Grammar. MIT.
Heather Goad. 1991. Dependency. USC.
Alicja Gorecka. 1995. Explaining Harmonies. USC.
Yosef Grodzinsky. 1985. Neurological Constraints on Linguistic Theories. MIT.


Isabelle Haïk. 1982. Indirect Binding. MIT.
Isabelle Haïk. 1984. Adjectives and Logical Form. MIT.
Isabelle Haïk. 1985. Something Missing. MIT.
Isabelle Haïk. 1990. Telling tell. UQAM.
Ken Hale. 1997. Invited talk. MIT.


James W. Harris. 1986. Headed Constituents and Principles of Stress Assignment in Spanish Verb Paradigms. MIT.

Phil Harrison. 1996. Asymmetry in the Acquisition of Phonological Primes. UC London.


Daniela Isac. 2002. Surrogate Imperative Forms: Negation as a Licensor of Force. UQAM
Ruth Kempson. 1984. On Weak Crossover, the Extended Name Constraint, Logical Form and Pragmatics. London.
Ruth Kempson. 1986. From Principles to General Cognitive Constraints. SOAS.
Hilda Koopman. 1982. Verb Movement. UQAM.
Hilda Koopman. 1985. θ-Theory and Extraction. UQAM.
Murat Kural. 1994. Postverbal Constituents in Turkish. UCLA.
Mariana Lambova. 2000. The Relevance of Economy to Phonological Derivations and Representations. UConn.
Paul Law. 1991. Verb Movement, Expletive Replacement and Head-Government. MIT.
Claire Lefèvre & Colette Dubuisson. 1978. Les règles d'accord dans la théorie transformationnelle. UQAM.
Juliette Levin. 1983. Dependent Levels of Representation: the Skeletal Tier and Syllabic Projections. MIT.
Anoop Mahajan. 2000. Eliminating Head Movement. UCLA.
Maria Rita Manzini. 1995. Bare Dependencies. UC London.
Maria Rita Manzini. 1996. From Merge and Move to Form Dependency. UC London.
Alec Marantz. 1981. The Ergative Parameter. MIT.
Ora Matushansky. 2001. The More the Merrier. The Syntax of Synthetic and Analytic Comparatives. MIT.
Ora Matushansky. 2002. DP-internal degree QR in non-adjectival modification. MIT.
Mario Montalbetti. 1984. Pronouns and Binding Theory. MIT.
Emmanuel Nikiema. 1989. Governing Segments, Constituency and Syllabification. UQAM.
Emmanuel Nikiema. 1990. In Defense of the Skeleton. UQAM.
Marc van Oostendorp. 1998. Phonological Feature Domains and the Content of
Epenthetic Vowels. Leiden.
Francisca Ordóñez Lao. 1994. Postverbal Asymmetries in Spanish. CUNY.
Javier Ormazabal & Myriam Uribe-Etxebarria. 1994. Word Order and Wh-Movement:
Towards a Parametric Account. UConn & UConn/MIT
Yukio Otsu. 1981. Subjacency Condition and Syntactic Development in Children. MIT.
UC London.
Quebec & UQAM.
Matt Pearson. 1999. X(P)-Movement and Word Order Typology. 'Direct' vs. 'Inverse'
Languages. UCLA.
Amherst.
David Pesetsky. 1986. Semantic and Syntactic Selection: TRY = PREFER + CONCEDE.
Amherst.
Théorie de Liage et de Gouvernement. CNRS Paris.
Christer Platzack. 1994. Syntactic Differences in the Comp-Domain: Mainland
Scandinavian Evidence for Split Comp. Lund.
Christer Platzack. 2001. The Computational System as a Minimal Feature-Driven Device
and the Tripartite TP/VP Hypothesis of the Universal Clause. Lund.
Christer Platzack & Anders Holmberg. 1989. The Role of AGR and Finiteness in
Germanic VO-Languages. Lund & Stockholm.
Cecilia Poletto. 1995. Split Agr and Subject Clitics in the Northern Italian Dialects.
Padova.
   Paris XII/VII.
   Paris XII/VII.
Geoffrey Pullum. 1978. Local Processes Associated with the Infinitival Complementizer to. UC London.
Tova Rapoport. 1986. Small Clauses in Hebrew. MIT.
Tanya Reinhart. 1979. WH-islands in Hebrew and Parameters for Markedness. Tel Aviv.
Groningen.
Henk van Riemsdijk. 1980. The NP-Filter, RES(ECP), and the Organization of Core
Grammar. Amsterdam.
Eric Sven Ristad. 1988. Locality in Computation and Language. MIT.
Elizabeth Ritter. 1991. Evidence for Number as a Nominal Head. UQAM.
Analysis of Person and Number. UPenn.
Nancy Ritter. 1996. The Role of Asymmetrical Headedness in the Reduction Theory of
Elements. NYU.
Instituto Ortega y Gasset, Madrid.
Maria-Luisa Rivero. 1993. Long Head Movement, Dependencies and the Economy
Instituto Ortega y Gasset.
Maria-Luisa Rivero & Arhonto Terzi. 1994. Directionality Effects in the Syntax of
Imperatives. Ottawa.
Ian Roberts. 1985. Absorption Parameters and the Passive in UG. USC.
Geneva.
Ian Roberts & Anna Roussou. 1999. Language Change and Universals. Stuttgart &
Cyprus.
Wales & Geneva.
McGill.
Juan Romero. 1999. Are Agreement Features Universal? MIT.
Anna Roussou. 1996. Specifiers, Head-Dependencies, and Asymmetric Relations. Wales.
Ken Safir. 1982. On Predicting the Distribution of the Definiteness Restriction. MIT.
Barry Schein. 1981. The S'-Deletion Parameter and Small Clauses. MIT.
Carson Schütze. 2001. What Adjacency Does Not Do. UCLA.
Anna-Maria di Sciullo. 1996. Configurational X0/XP Asymmetries. UQAM.
Anna-Maria Di Sciullo. 1998. Features and Asymmetrical Relations in Morphological Objects. UQAM.
Ur Shlonsky. 1986. Overlapping Distribution of Pro and Trace: Evidence from Hebrew. MIT.
Ur Shlonsky. 1987. Romance ‘Free’ Inversion, VSO Word Order and the ‘Pro-Drop’ Parameter. MIT.
Ur Shlonsky. 1991. C0 and Resumptive Pronouns. Haifa & UQAM.
Jane Simpson. 1983. The Lexical Integrity Hypothesis, Semantic Case and Verb-Particle Constructions. MIT.
Dominique Sportiche. 1989. Syntactic Movement: Constraints and Parameters. UCLA.
Dominique Sportiche. 1994. Adjuncts and Adjunction. UCLA.
Dominique Sportiche. 1999. Reconstruction, Constituency and Morphology. UCLA.
Vassilios Spyropoulos. 2002. Null-Subject Languages and Subject-Clitics. Reading.
Tim Stowell & Filippo Beghelli. 1994. The Direction of Quantifier Movement. UCLA.
Peter Svenonius. 1993. Selection as Feature-Checking. Tromsø / UCSC.
Anna Szabolcsi. 1991. Islands, Monotonicity, Composition, and Heads. UCLA.
Lisa Travis & Edwin Williams. 1982. Argument Externalization in Malayo-Polynesian Languages. MIT.
Laurice Tuller. 1986. Case as a Bijective Relation. UCLA.
         UQAM.
         Uconn.
         Meaning. UPenn.
         UCLA.
         MIT.
         Paris / Maryland.
         Amherst & MIT.
Irene Vogel and Istvan Kennessei. 1990. Where Focus Intersects with Phonology.
         Delaware & Szeged.
Akira Watanabe. 1993. Generalized Case Absorption. MIT.
         Aspects of the Lexical-Interpretive Theory. MIT.
         of Subject-AUX Inversion and its Acquisition. Maryland.
Kenneth Wexler & Yu-Chin Chien. 1988. The Acquisition of Locality Principles in
         Binding Theory. Irvine.
Meg Whitgot & Per-Kristian Halvorsen. 1984. Scandinavian Tone Accent, Phonological
         and Morphological Theory. Stanford.
Edwin Williams. 1999. A Characterization of the Outer Bounds of Head to Head
         Movement. Princeton.
Andi Wu. 1993. The S-Parameter. UCLA.
Dong-Whee Yang. 1984. Ordering among Rules involving Structural, Grammatical,
         and Thematic Relations. Seoul.
Maria Luisa Zubizarreta. 1982. Restructuring and the Projection Principle. MIT.
Maria Luisa Zubizarreta & Jean-Roger Vergnaud. 1992. Generics and Existentials in English and in French. USC.
4. Members of the GLOW board*

Artemis Alexiadou 1999 – 2002
Maya Arad 1999 – 2002
Anna Bartra 1991 – 1993
(pres Amsterdam/Utrecht 2002)
Nathalie van Bockstaele 1981 – 1984
Eulália Bonet 1996 – 2000
Norbert Corver 1989 – 2001
João Costa 1997 – 1999
Gorka Elordieta 2000 – 2002
Eric Fuss 2001 – 2002
Guliana Giusti 1991 – 1993
Anneke Groos 1978 – 1982
Lars Hellan 1984 – 1991
Harry van der Hulst 1988 – 1990
István Kenesei 1994 – 1996
Iliyana Krapova 1996 – 2000
Gereon Müller 1994 – 2000
Marc van Oostendorp 1999 – 2002
Jon Ortiz de Urbina (pres Vitoria / Bilbao 2000) 1999 – 2000
Sharon Peperkamp 1993 – 1997
Jean–Yves Pollock 1990 – 1994
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<td>Alessandra Tomaselli</td>
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<td>Sten Vikner</td>
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* This is not a complete list. Not all information on the membership of the GLOW board could be retrieved.
5. GLOW Statistics

The figures for accepted abstracts below are broken down into those from the host country (if any), those from the rest of Europe, and those from the rest of the world (cf. http://glow.kub.nl)

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Everything you always wanted to know about GLOW

Willy Jongenburger

Number of GLOW venues
1. Netherlands (Amsterdam, Nijmegen, Utrecht, Leiden, Tilburg, Amsterdam)
2. Italy (Pisa, Venice)
   Germany (Göttingen, Berlin&Potsdam)
   England (York, Cambridge/London)
   Spain (Girona/Barcelona, Vittoria/Bilbao)
   Portugal (Lisboa, Braga&Oporto)
7. Hungary (Budapest)
   Sweden (Lund)
   Austria (Vienna)
   Norway (Tromsø)
   Greece (Athens)
   France (Paris)
   Denmark (Copenhagen)
   Belgium (Brussels)
   Morocco (Rabat)

Shortest titles:
1. Peter Svenonius. 2002. P.

Longest titles:

Most intriguing titles (in no particular order):
6. GLOW Newsletter 1, September 1978

On the following pages you'll find a copy of the first eleven pages of the first issue of the GLOW Newsletter. This Newsletter was edited by Hans Bennis, Anneke Groos, Henk van Riemsdijk and Jean-Yves Pollock. It was distributed by the Linguistics Department of the University of Amsterdam.

The contents of this issue were:

- editorial 1
- what GLOW stands for 2
- GLOW Manifesto 2
- Milner's reply 5
- GLOW guidelines 10
- GLOW-Colloquium 1979 Call for papers 12 (not included)
- we hear that ... 13 (not included)
EDITORIAL

Le voilà: the first issue of the GLOW Newsletter. While GLOW is firmly under way now, a channel for disseminating information and a forum for discussion was still lacking. One of GLOW's main purposes is to ensure the communication among transformationalists in Europe and other Old Worlds; we hope that the Newsletter will help attain this goal.

To those of you who don't know about GLOW yet we will briefly introduce ourselves: GLOW stands for Generative Linguistics in the Old World(s). We aim at creating a platform for the intellectual and social wellbeing of transformationalists in and around Europe, as well as all other transformationalists eager to participate. More information about GLOW you will find below in the sections entitled "What GLOW stands for" and "GLOW guidelines".

The history of this Newsletter may be known to many of you. Efforts to get it going before the last colloquium failed due to insufficient support and facilities in Paris. Therefore we will try to get and keep it going in Amsterdam. Your support will be absolutely essential if we are to succeed. First, we are avidly awaiting suggestions, contributions, information, gossip, etc. Second, we are able to finance this issue and maybe one or two more, but sooner or later we will have to start asking you for a financial contribution too. Until then we distribute the Newsletter to everyone who is on our GLOW membership list and to a small number of institutions. Anyone else who wishes to receive the Newsletter can simply write to us.

Coming attractions in the pages of the next Newsletter will include the Pisa colloquium program, a list of addresses. The next issue will probably appear around February 1979 and we will continue to appear at least twice a year, and, hopefully, multiply and be productive.

The editors.
From the outset, GLOW has aimed for internal intellectual cohesion rather than wide coverage. In order to provide a platform for our identity a text was circulated which attempted to make explicit some of the beliefs characterizing an "idealized" member of GLOW. As such, the text, which has come to be called "manifesto" by now, does not represent a dogma, does not define a catechism that members of GLOW must adhere to. Rather, it represents a nucleus of beliefs around which, in our opinion, the personal intellectual positions of the members of GLOW gravitate. As is to be expected under such an interpretation, some members share very few of the tenets of the manifesto and yet remain actively interested in GLOW, while others find themselves very much in agreement but do not partake in the activities of GLOW.

Understandably, the manifesto has aroused a certain amount of reaction. We therefore reprint the theoretical part of the original text and the most elaborate of the reactions: that of Jean-Claude Milner. However, we do not intend to continue the publication of such statements, since we feel that no goal whatsoever is served by the proliferation of personal statements of belief about which a serious debate is impossible from the outset.

The editors.

GLOW MANIFESTO

Concerning the object of inquiry

Linguistics is that part of human psychology that is concerned with the cognitive structures employed in speaking and understanding. Such cognitive structures can be viewed as steady states of the corresponding "mental organs". As natural scientists, linguists are primarily concerned with the basic, genetically determined structure of these organs and their interaction, a structure common to the species in the most interesting case.

The theory of language is that part of linguistics that is concerned with one specific mental organ, human language. The growth of the latter organ, language learning, falls strictly within biologically determined cognitive capacities. It appears quite likely that the system of mechanisms and principles put to work in the acquisition of the knowledge of language will turn out to be a highly specific "language faculty". Stimulated by appropriate and continuing experience, the language faculty creates a grammar that determines the formal and semantic properties of sentences. The grammar is put to use, interacting with other mechanisms of mind, in speaking and understanding language.

The faculty of language, which is common to the species, provides a sensory system for the preliminary analysis of linguistic data, and a schematism, "Universal Grammar", that determines, quite narrowly, a certain class of grammars. Thus, Universal Grammar (UG) is the system of principles, conditions, and rules that are elements or properties of all human languages not merely by accident but by necessity. "Thus UG can be taken as expressing 'the essence of human language'. UG will be invariant among humans. UG will specify what language learning must achieve, if it takes place successfully. ... What is learned, the cognitive structure attained, must have the properties of UG, though it will have other properties as well, accidental
properties."

In principle, we should be able to account for the language faculty, and hence for linguistic theory (the theory of UG), in terms of human biology. With the progress of science, we may come to know something of the physical representation of the grammar and the language faculty — correspondingly, the cognitive state attained in language learning and the initial state in which there is a representation of UG but of no specific grammar conforming to UG. For the present, we can only characterize the properties of grammars and of the language faculty in abstract terms. At this point some comments are in order.

The term "grammar" is used with a systematic ambiguity, i.e. it not only refers to the rules and principles, the theory constructed by the linguist, but also to the corresponding structure internalized by the speaker-hearer. Grammar in the first sense may be interpreted as a theory of grammar in the second sense. The internalized structure represents the tacit knowledge or competence of the speaker-hearer. This postulated correspondence between linguistic theory and competence is a major source of controversy and misunderstandings. Critics often fail to see the methodological decision that is involved. The point is that any grammar can be interpreted as a theory of human linguistic competence. It is only under such a "realistic" interpretation that certain questions of empirical adequacy can be raised at all. Suppose, for example, that we decide to interpret a given traditional grammar as a theory of competence. Only then does it make sense to say that it is wrong in many respects, for instance in that it fails to account for the infinity of the set of possible sentences, as well as for many less obvious facts. The question: "how do you know that the linguist's theories represent the real psychological structures" is easily translatable into similar questions in other domains of science. How do you know, for instance, that the principles of quantum mechanics model the real principles of nature? The only answer is — just as in the case of linguistics — that it is the best theory scientists can devise, given the available evidence. Of course our theories will change as soon as a broader class of relevant evidence becomes available. If a grammar is interpreted realistically, the only matter that counts is whether it is true or not. Only the validity of a specific grammar (conceived as a psychological theory) can be challenged by evidence, not the decision to interpret it realistically, which is a matter of goals and interests.

Another source of continuing debate is the competence-performance distinction. As such the distinction — between what a person knows and what he does — seems hardly obscure. What usually is at stake is the legitimacy and use of the distinction. In our opinion much criticism appears incoherent when it is recognized that human cognitive behavior involves the interaction of diverse cognitive structures. Actual linguistic behavior involves cognitive structures like grammar, various kinds of knowledge of the world, and so on. A direct route to performance, use, process, and the like, seems ill-conceived, because it would involve the result of interacting factors that are themselves unknown. It is therefore hardly surprising that research that takes the direct route to language processing (much AI research for instance) usually tacitly assumes competence theories of a rather arbitrary and primitive sort. In our opinion, the analysis of cognitive structures has to precede the study of the enormously intricate synthesis which we call behavior. This priority is not simply a matter of taste or interest, but a point of logic: if behavior is a consequence of interaction, it can only be understood by finding out of what interacting factors it consists. The kind of cognitive psychology we advocate therefore
rejects the holistic study of behavior as hopelessly premature. A primary task should be the detailed description of the many cognitive structures (competences) that ultimately interact in behavior (performance). Grammar is one such cognitive structure that can be mapped out with some success. From this fact—if it is a fact—nothing follows with respect to our interest in other cognitive structures or our interest in their interaction, not to mention the totally unmotivated suggestion that for us "performance is everything that falls outside grammar".

Some methodological considerations

From the beginning, generative linguists have implicitly or explicitly assumed the thesis of autonomy of formal grammar—the thesis that the language faculty constructs an abstract formal skeleton invested with meaning by interpretive rules—and have taken for granted the necessity of limiting the scope of inquiry to aspects of formal grammar. While it is quite clear that such fields as botanics, the study of the artificial languages of logicians, astrophysics, the theory of truth are not part of linguistics, there is no real logical connection between the practical exclusion of certain domains of inquiry by the generative linguists and the definition of their object. However, the limited scope of early transformational grammar was widely interpreted as a matter of principle, and not a matter of research strategy. In Europe, as elsewhere, much critical discussion was concentrated on the alleged "neglect" of meaning and language use, and not on the new goals, such as the narrowing of the class of possible human grammars. Questions of restrictiveness (ultimately questions of explanatory adequacy) can only be raised where there are sufficiently explicit theories that have at least some content. Scope of description is an entirely irrelevant issue as long as the considered theories are without content, i.e. when the rules are unconstrained and do not forbid anything whatsoever. The descriptive means of early transformational grammar were so rich in expressive power that it was all too easy to go beyond the original limits. The expansion of the scope of linguistic theory in the hands of generative semanticists was simply an expression of a lack of content of the proposed hypotheses. Far from being a revolutionary Kuhnian paradigm, Generative Semantics was an essentially regressive development, which met the call for wider scope by relaxing the explicitness and explanatory goals of Chomskyan linguistics.

In our opinion there are no a priori grounds on which to decide what the domain of a theory should be. The fundamental problem of linguistics in its present state is not how to incorporate meaning, pragmatics, or whatever, but rather how to develop a theory of a certain scope that is explanatory at all. As Chomsky puts it:

"Our glimmerings of understanding can only be expected to illuminate some narrow range. If we hope to proceed beyond taxonomy, it is necessary to select and discard, to concentrate on facts that seem to have some bearing on such explanatory principles as we can devise, ignoring much else in the hope that it will ultimately be explained by deeper theories or perhaps on quite different grounds." 3

These remarks are at the heart of the problem. As long as any attempt at idealization, "to select and discard", is interpreted as the "neglect" of any aspect of language, linguistics shows its lack of a tradition comparable to the natural sciences. For example, the fact that certain aspects of formal grammar give rise to some explicit hypotheses and explanatory principles makes it only natural that attention focusses on these areas. In a mature linguistics, the hierarchy of interests is determined by the explanatory goals and possibilities, by the course of
the theory itself, and not by pre-theoretic judgments about intrinsic interest of the diverse aspects of language.

The Chomskyan revolution has been a revolution of goals and interests as much as a revolution in method or content (formal description of strings of morphemes or phonemes, subject to the empirical test of acceptability judgments). In our opinion, generative linguistics acquired a new momentum in Europe after Chomsky's *Conditions on Transformations* (1973). This epoch-making paper shifted the interest of linguists from rather arbitrary rules to simple well-constrained rules operating under general conditions. A significant number of members of GLOW have found their common ground in the research program that grew out of Conditions.

Jan Koster
Henk van Riemsdijk
Jean Roger Vergnaud

Notes
1) Chomsky (1975) *Knowledge of language*; Chomsky (1975) *Reflections on language*
2) *Reflections on language*, p.29
3) Chomsky (1977, 21)

MILNER'S REPLY

La lettre présentant l'organisation GLOW contient dans sa section B.1 (Concerning the object of inquiry), des propositions de portée générale. Je suis en désaccord avec un certain nombre d'entre elles.

La doctrine de la lettre peut être resumée en trois propositions liées:
(A) La théorie linguistique doit être interprétée en termes "réalistes"; autrement dit, il existe une réalité du langage et des langues, que la théorie linguistique a pour but de représenter adéquatement.
(B) La réalité du langage et des langues est de substance essentiellement psychologique.
(C) Une réalité psychologique est un état spécifiable d'un organe mental.1)

L'auteur de la lettre ne formule explicitement et ne justifie que (A); en revanche, (B) et (C) sont implicites: il faut les restituer cependant si les définitions initiales de B.1 doivent avoir un sens. Vraisemblablement, (B) et (C) sont, aux yeux de l'auteur de la lettre, une extension naturelle de (A) et ont pour seule fonction de clarifier l'interprétation de (A). C'est pourquoi sans doute justifier (A) suffit censément à justifier (B) et (C).

Ma position générale est tout autre: aucune des trois propositions (A), (B), (C) n'est triviale; d'autre part, même si (C) dépend de (B) et (B) de (A), l'inverse n'est pas vrai. A supposer qu'on admette (A), il faut encore démontrer (B), et à supposer qu'on admette (B), il faut encore démontrer (C). La lettre de GLOW ne dit rien sur ces points et ne renvoie à aucune référence où les démonstrations requises pourraient être trouvées.2) C'est là tout le moins une grave lacune, mais elle a des conséquences plus dommageables encore.

Pour les faire apparaître, considérons séparément (A), (B) et (C).
La proposition (A) est correctement traitée dans la lettre: (A) est effectivement cruciale pour l'interprétation de la théorie linguistique. Il est également exact que la décision d'accepter (A) ne peut tirer sa justification des données empiriques; il s'agit d'un choix épistémologique, antérieur
à tout traitement des données puisque il détermine comment un tel traite-
ment doit être interprété. J'ajoute enfin que pour ma part, je fais le
même choix que l'auteur de la lettre: j'accepte (A).

Admettre (A) ne préjuge pas des réponses qu'il sera donné à la question
de la substance. En revanche, c'est le propre de (B) et de (C) que
d'émettre des hypothèses touchant la substance où se définissent les va-
leurs de R. On voit donc en quel sens (B) et (C) ne sont nullement impli-
quées par (A). De plus, il n'est même pas évident qu'il soit nécessaire,
pour qui admet (A), que la question de la substance ait un sens. De ce
point de vue, (B) se laisse analyser en deux sous-propositions:
(Ba) on peut et doit attribuer une substance spécifique aux valeurs
de R
(Bb) dans le cas du langage, cette substance est de type psychologique
Seuls ceux qui admettent (Ba) peuvent accorder un intérêt aux propositions
du type (Bb). Or (Ba) est non-trivial: on peut parfaitement imaginer que
la théorie linguistique soit comparable à l'astronomie newtonienne, et
par conséquent suppose une réalité de son objet, sans émettre d'hypothèse
sur la substance de ce dernier. Cela permettrait en tout cas d'expli-
quen pourquoi deux linguistes peuvent discuter de manière précise et
"réaliste" sans être d'accord ni sur (Bb) ni sur (C).

L'auteur de la lettre admet implicitement (Ba), soit. Mais on souhaiterait
plus de conscience que (Ba) ne va pas de soi et surtout que rien du caractè-
tre réaliste de la linguistique n'est engagé ici. Plus précisément, une
différence d'opinion quant à (A) entraîne des différences sensibles entre
les linguistes: c'est la notion même de théorie qui est concernée, ainsi
que les notions d'argumentation valide, de réfutation, de confirmation
etc. Cela du rest est aisément constaté dans l'histoire récente de la
discipline. Au contraire, on voit mal quelles conséquences pourrait avoir
une différence quant à (Ba), à partir du moment où deux linguistes
adoptent la même théorie et acceptent (A).

Considérons à présent (Bb). Il doit être encore plus clair qu'il s'agit
d'une proposition non-triviale. Car il existe bien d'autres types de
substance que la substance psychologique. Il serait peut-être utile de se
souvenir ici que la linguistique saussurienne avait eu pour singularité
de proposer des conceptions un peu sophistiquées de la substance. Certaines
questions qu'elle posait gardent à cet égard une pertinence: quelle
est la substance d'un train quotidien (mettons le train de 8h47 Paris-
Amsterdam), étant admis que chaque voiture de ce train peut changer chaque
jour? Quelle est la substance du dollar? Et s'il faut prendre un exemple
d'universel: quelle est la substance de la prohibition de l'inceste?
Chacune de ces questions admet une réponse différente -ce qui à tout le
moins prouve que la notion de substance du langage soit semblable à l'une
de celles qui viennent d'être évoquées; mais le contraire n'est pas
davantage évident. En tout cas, dans l'état actuel de nos raisonnements,
aucun privilège ne s'attache à (Bb): cette proposition n'est ni plus claire,
ni plus "réaliste", ni plus féconde, ni plus raisonnable, ni plus fondée
qu'aucune proposition rivale, du type: "le langage a la même substance
que la prohibition de l'inceste". 5

Si l'on rejette (Bb), (C) est évidemment dépourvu de toute pertinence.
J'ajouterai simplement ceci: en elle-même, la proposition (C) n'est rien
de plus qu'une définition nominale, c'est-à-dire une décision terminolo-
gique. De ce point de vue, (C) n'est ni réfutable ni confirmable. Toute la
question est de savoir si la décision de baptiser "organe mental" un
ensemble de réalités psychologiques est une décision judicieuse.
Du point de vue de la clarté, rien n'est moins évident. Si l'on donne à "organe" son sens usuel, il va de soi qu'un organe mental est une contradiction dans les termes. Il faut donc que le mot "organe" soit doté d'un sens nouveau: lequel? Le texte de la lettre est muet sur ce point: autre lacune regrettable. Si, par bonne volonté, l'on s'attache à combler ce silence, on s'oriente vers une nouvelle définition du terme "organe" qui ne paraît pas devoir être sensiblement différente de celle qu'on donnerait de termes tels que "structure", "processus" ou "appareil".

Je n'aurai certainement pas la simplicité de souligner les différences majeures qui séparent le langage d'un organe au sens usuel, par exemple, le coeur. On peut supposer que l'auteur de la lettre ne les ignore pas, et ce sans doute elles qui l'ont conduit à qualifier le terme "organe" d'un prédicat différentiel: "mental". Que dans l'adjonction de ce prédicat, il y ait autre chose qu'un tour de passe-passe verbal, c'est ce dont je ne suis pas convaincu. Mais surtout, l'usage des termes "organe mental" ne se justifie, en tant qu'innovation terminologique que si les ressemblances entre le langage et le coeur sont plus grandes que les différences: une fois encore, il s'agit là d'une hypothèse non triviale. Tant qu'elle n'est pas démontrée —pour le moment, elle n'est même pas, à mes yeux, raisonnablement plausible—, la terminologie de la lettre est dépourvue du moindre avantage de clarté ou d'exactitude.

Evidemment, adopter (C) permet de définir la linguistique comme une branche des sciences de la nature, et plus spécialement de la biologie. Mais ce résultat n'est intéressant que s'il permet de mieux définir les méthodes effectivement en usage dans la construction d'une théorie linguistique. Or, jusqu'à présent, les modes d'argumentation, de falsification, d'invention, utilisés dans la linguistique issue de Chomsky paraissent n'avoir aucune ressemblance particulière avec ce qui est en usage du côté des sciences de la nature. La seule ressemblance qui se constate est celle qui existerait de toute manière entre des sciences qui se veulent empiriques et falsifiables —qu'elles soient sciences de la nature ou non.6)

Quant à croire que la valeur de (C) tiendrait à ceci qu'elle permet de construire pour la linguistique un vocabulaire homogène à celui des sciences de la nature, c'est une opinion fétilchiste que je me refuse d'attribuer à l'auteur de la lettre. Une science se définit par ses principes et sa méthode, non par son vocabulaire.

En guise de conclusion, je commenterai une phrase de la lettre de GLOW: "the generative linguist regards the principles that determine the class of possible human grammars as a genetically based property of the human species (p.1 -omitted). On peut considérer que toute la section B.1 n'est que le développement de cette phrase. La proposition (A) est une manière de définir la notion "generative linguist": les propositions (B) et (C) justifient la conception des principes grammaticaux qui est ici resumée.

La phrase citée —désignons-la (D)— n'admet que deux interprétations: ou bien, elle énonce une relation logiquement nécessaire, du type "un linguiste génératif ne peut sans contradiction nier (D)"; ou bien, elle décrit une situation historique: "tous les linguistes génératifs admettent (D)." Pour la première interprétation, il ressort de ce qui précède qu'elle n'est vraie que si (B) et (C) sont des conséquences logiques de (A). Mais il n'en est rien: en termes de pure logique, un linguiste peut donc être génératif et ne pas admettre (D). En particulier, il peut parfaitement considérer que les principes universels qui contraignent les grammaires possibles ne sont pas d'essence différente de la prohibition de l'inceste,
qui contraint la classe des sociétés humaines possibles, et ne parait pas pouvoir être interprétée de manière raisonnable comme une information inscrite dans le code génétique de l'espèce.

Pour la seconde interprétation de (D), elle est directement fausse: il existe au moins un linguiste génératif, à savoir moi-même, qui rejette (D).

On ne pouvait certes pas attendre d'une lettre de présentation qu'elle développe des démonstrations et des justifications. Néanmoins, il aurait été normal que son auteur fût suffisamment conscient du caractère non-trivial de certaines propositions pour laisser apercevoir que des démonstrations ou des justifications étaient nécessaires.

D'autre part, il est vrai, toute proposition ne réclame pas une démonstration ou une justification empirique. Ainsi (A) tire sa justification, non du fait qu'on l'aurait empiriquement prouvée, mais du fait que deux linguistes qui sont en désaccord sur (A) sont en désaccord sur tout. Mais ce qui est vrai de (A) ne l'est ni de (B), ni de (C), ni de (D).

Enfin, il est peut-être acceptable que la majorité des linguistes génératifs partagent un certain nombre d'opinions philosophiques, mais ils devraient être conscients de ce qu'elles sont. Or, en l'absence de justification, (B), (C), (D) ne sont que cela: des opinions. Il n'est pas convenable alors que celles-ci soient présentées comme des conditions d'appartenance à un groupement -si du moins ce dernier doit conserver un caractère scientifique.

Bref, il n'est jamais bon pour personne que ce soit tienne un raisonnement dont la logique, si peu que ce soit, évoque celle de Lyssenko.

Jean-Claude Milner

Notes
1) Je n'ignore pas, évidemment, que dans la plupart des cas, l'auteur de la lettre paraphrase ou cite directement Chomsky. Il arrivera donc fréquemment que mes critiques à l'encontre de la lettre soient en fait des critiques à l'encontre de Chomsky.

2) Souvent, la raison en est simple: ces références n'existent pas. Les textes de Chomsky auxquelles la lettre renvoie ne contiennent généralement pas autre chose que la lettre elle-même. Dans ces conditions, on ne peut reprocher à l'auteur de la lettre de n'avoir pas, dans un cadre aussi restreint, donné les démonstrations qui s'imposaient. Mais on peut lui reprocher d'avoir cru, et en tout fait croire, qu'elles étaient superflues.

3) Cela ressort du texte de la lettre et de la justification qui y est donnée (p.3) du point de vue "réaliste".

4) Je fais allusion ici à l'usage que fait Newton de la gravitation, on notera qu'il y a plusieurs manières de rejeter (Ba): on peut soutenir que la science considérée n'est pas obligée de donner une substance à R, même si elle le peut; on peut soutenir qu'elle y est toujours obligée, mais n'en est jamais capable; on peut soutenir qu'elle ne le peut ni ne le doit.

L'Histoire montre que toutes ces opinions ont pu être soutenues, non sans arguments: ce qui confirme une fois encore que (Ba) n'est pas évident. J'ajoute que ces opinions pourraient être soutenues par des représentants de la même science, ce qui ne doit pas nécessairement empêcher ceux-ci, le cas échéant, d'y travailler avec succès. Ce qui confirme que (Ba) et
a fortiori (Bb) n'a pas nécessairement de grandes conséquences pour la science considérée.

5) Ma position personnelle, qui n'est pas ici en cause, qui n'intéresse personne et que je ne mentionne que par honnêteté, est la suivante: j'admets (A), mais ni (Ba) ni (Bb). Il suit de là que les propositions de la linguistique sont falsifiables, mais ne le sont que sur la base d'une évidence tirée des langues elles-mêmes. Aucune falsification tirée de l'évidence psychologique (ou biologique, ou de quelque ordre non linguistique que ce soit) n'est donc pour moi admissible. Ce qui me frappe, c'est que cette position est celle de tous (ou presque tous) les linguistes génératifs, y compris ceux qui admettent (B) et (C). J'en conclus que (B) et (C) ne jouent aucun rôle réel dans la construction de la théorie linguistique.

D'autre part, je suis tenté de soutenir qu'effectivement, le langage est de la même substance que la prohibition de l'inceste. Mais cette thèse n'est nullement à mes yeux une réponse à (Ba), et elle n'a pas le même rôle que (Bb). C'est au contraire le propre de la théorie linguistique que de pouvoir se développer en toute indépendance à l'égard de cette thèse: de faire, en résumé, comme si elle n'existait pas.

6) Peut-être faudrait-il ajouter à la lettre de GLOW la thèse implicite suivante: "seules les sciences de la nature sont empiriques et émettent des propositions falsifiables". Evidemment, la conséquence serait qu'une science de l'économie devrait être radicalement impossible, en tant que science empirique. Je n'ai pas d'opinion à cet égard, mais la conséquence paraît osée, et peut-être n'est-elle pas du goût de tous ceux qui admettent (C).
GLOW - GUIDELINES

The appearance of the present first Newsletter marks an important event in the life of GLOW. What had started out as an informal initiative of a number of individuals has now turned into a modest organization. Until now we had felt that the creation of activities such as the colloquia had to be our principal goal and that the pursuit of this goal should be as unencumbered as possible by beaurocratic rule. However, it appears now that the time is ripe to fortify the structure of GLOW by putting down some explicit guidelines. In working out these guidelines we have benefited greatly from the commendable initiative taken by three members: Youssef Aoun, Joe Emonds, and Anneke Groos. We feel that the most salient features of their proposals are reflected in the guidelines we propose below. These guidelines concern the two main aspects of GLOW as it functions now: the colloquia and the board. With regard to the colloquia, we feel that not much more need to be done than to write up what the current practice is, but with regard to the board some remarks are in order. The present provisional board was instituted essentially to gain the interest of a number of prominent European linguists. Unfortunately the board has hardly functioned as such. The question then arises what the function of the board is to be in the future. The main problem being still and in the foreseeable future that of finding people willing and able to undertake the active organizational work, the function of the board has to be one of control. How this control is to be put into effect remains up to the members of the board.

Jean Roger Vergnaud
Henk van Riemsdijk

BOARD

1. The board is to be elected every 2 years at the plenary GLOW-meeting which is held during the annual GLOW colloquium.
2. The board consists of 8 members, at least 3 of which are women, and at least 2 of which are students.
3. Place, time, and frequency of board meetings are decided on by the board itself.
4. The function of the board is to supervise the activities of the executive members of GLOW (such as the secretariat, the local organization committees of the colloquia, and the editors of the Newsletters). Control is exercised through advice and, as a last resort, through designating new executive organs for a period not extending beyond the first plenary GLOW-meeting to follow.

COLLOQUIUM

1. GLOW organizes one colloquium annually around Easter.
2. The length of the colloquium will be between 2 and 4 days.
3. Every colloquium has a topic.
4. There will be no parallel sessions and talks will not be shorter than one hour, including discussion.
5. At the annual plenary GLOW-meeting a topic, an organizer, and a city are chosen for the next colloquium.
6. The organizer, after consulting with the secretariat, appoints an organization/selection committee composed of local members of GLOW and, if deemed necessary, a few board- or executive members of GLOW.
7. Abstracts will have a maximum length of 3 pages, and will be judged anonymously by the selection committee. However, the selection committee has the right to depart from the program which is arrived at on the basis of the anonymous selection on technical and/or political grounds. If it does so it is held to present its motivations during the relevant plenary GLOW-meeting.

8. If an abstract has been rejected, its author has the right to demand a written motivation of the selection committee.

PLENARY GLOW-MEETING

1. Every year, during the annual colloquium, a plenary GLOW-meeting will be held.

MEMBERSHIP

1. Anyone who wishes to be member of GLOW can become a member by writing to the membership administrator.

CHANGE OF THE GUIDELINES

1. The above rules can only be changed by a majority of 2/3 of the members present at a plenary GLOW-meeting.
7. Constitution

GLOW Newsletter 6, February 1981

At the Nijmegen meeting there was discussion about the organization of GLOW. Some people felt that, if we are to maintain a coherent rationale for GLOW, the organization should be sensitive to the fact that our meetings may from now on be held at institutions other than those where the present GLOW boardmembers work; there should be some way of ensuring continuity. Also there may be a need to secure funding independently of host institutions, and this means that we must have properly constituted delegates who can approach agencies in some responsible and representative function. In that case, some provision needs to be made to elect people to certain functions for fixed periods. This kind of institutionalization will also enable other people to percolate through the GLOW 'directorate'.

These needs can be met without making GLOW into another committee-heavy bureaucracy, which we all want to avoid...as was stressed at Nijmegen. We can have a small board with specified functions and elected members. The specific functions of the Board will help to avoid the kind of chaotic and unfocussed business meeting that we had in Nijmegen.

Jan Koster, David Lightfoot, Henk van Riemsdijk and Jean-Roger Vergnaud have discussed this at some length and, in accordance with the suggestion of the Nijmegen business meeting, submitted a formal proposal to the boardmembers. This proposal has now been approved by the present boardmembers and is included in this Newsletter so that people have a chance to consider it before the Göttingen meeting. Hopefully the general meeting will ratify something along these lines in Göttingen; at their meeting there the Board will try to formulate some transitional procedure to get from the present set-up to the new one.

This constitution meets the requirements of UNESCO for registration as an 'International Non-Governmental Organization'; the point of that is that we shall then be recognized by UNESCO-affiliated grant-giving agencies (presumably the Council of Europe would also be satisfied with this kind of thing). That explains the talk of membership lists, cues, etc.; there is no plan to impose cues, but we must be seen to have an identifiable membership.

DRAFT CONSTITUTION

Article 1. Name and purpose
1.1 This society will be known as the society for Generative Linguistics in the Old Worlds (GLOW).
1.2 Its purpose shall be the advancement of the study of generative grammar in all its aspects, and to enhance communication and co-operation amongst generative linguists primarily in European countries but also elsewhere in the world.
Article 2. Members
2.1 Any individual may become a member by notifying the secretary of his/her name, address and affiliation, and paying the appropriate cues.
2.2 The cues and dates for payment shall be fixed by a vote of the Board.
2.3 All members may participate in the conferences arranged by GLOW.
2.4 Members may offer to the Program Committee papers to be considered for presentation at the conferences of the society. They may participate and vote in the business meetings of the society, and they may hold offices in the society.
2.5 If a member does not pay his/her cues within the time prescribed, he/she shall forfeit his/her rights of membership while his/her default continues.

Article 3. Officers and committees
3.1 The Officers of the society shall be a Chairman, a Secretary, and an Editor.
3.2 The Chairman shall serve for one year and shall take office at the conclusion of the annual conference. He/she shall preside at meetings of the Board. He/she shall act as director of the conference held during his/her term of office. He/she shall be chairman of the Program Committee appointed for that conference.
3.3 The Secretary shall keep the fiscal and other records of the Society and shall carry out other functions as directed by the Board and shall serve for two years.
3.4 The Editor shall be responsible for the production and circulation of the GLOW Newsletter and shall serve for two years.
3.5 There shall be a Board composed of the above Officers and three more members, one of the three being elected at each conference to serve for three years. All members of the Board shall be elected at a business meeting which shall take place towards the end of the annual conference. A new Secretary shall be elected in odd-numbered years, a new Editor in even-numbered years. The Board shall co-opt a member of the host institution for the followings year's meeting, who shall be responsible for the local organization of that conference and have full voting rights on the Board.
3.6 The Board shall appoint the Program Committee, which shall consist normally of the Chairman, the local organizer and five other members. The Program Committee shall meet, select the papers for the annual meeting and establish the program.
3.7 The Board shall hold regular meetings at the time and place of the annual conference. Between regular meetings any two members of the Board can ask the Board to vote on specific questions by mail. The Chairman, acting jointly with the Secretary, shall determine the order of business, but any other member of the Board has the right to bring up further matters for consideration and action by the Board. All decisions of the Board shall be by simple majority vote. In the case of a tie, the vote cast by the Chairman shall be decisive. If any member of the Board does not attend a meeting of the Board, he/she may, by written proxy, appoint a regular member of the society to attend and vote in his/her stead. But no one person shall by virtue of holding proxies or for any other reason have the right to cast more than one vote. The Board shall enter into discussions for the funding and venue of the annual conference, making a detailed report to the business meeting of the society. The Board shall decide the conference venues up to three years in advance. The Board shall propose a topic to
the business meeting for the following year’s conference; the decision about the topic will rest with the business meeting.

Article 4. Fiscal Policy
4.1 The funds of the society shall be used exclusively to cover expenditures related to the conferences of the society and the preparation and circulation of the Newsletter.

Article 5. Meetings
5.1 There shall be a conference on generative grammar arranged by the society each spring at a time and place determined by the Board.
5.2 There shall be a regular business meeting of the Society at the time and place of the annual conference. The agenda shall be announced at the beginning of the conference and the business meeting shall take place towards the end of the conference.
5.3 Abstracts of papers to be presented at a conference of the society must be submitted to the Program Committee before a deadline to be fixed by the Board. Abstracts shall be no longer than three pages and shall not specify the author’s name. The disposition of such papers, including time allotted for their presentation, by the Program Committee shall be final. At least thirty minutes shall be allocated for each paper and, in addition, there shall be a discussion period. There shall be no concurrent sections.

Article 6. Dissolution
6.1 The society may be dissolved by a vote in favour of dissolution cast at the annual business meeting by nine tenths of the voting members present.
6.2 Upon dissolution of the society, its assets shall be disposed of as determined by a simple majority of the voting members.

Article 7. Amendments
7.1 Proposals to amend the Constitution shall be made in writing and not later then three months before a regular business meeting and addressed to the Secretary, who shall submit them to the next business meeting of the society. If such a proposal receives two thirds of the votes cast, it shall be considered adopted.
8. Statutes of the Society for Generative Linguistics in the Old World (GLOW)

GLOW Newsletter 11, September 1983

Name and seat
Art. 1 The name of the Society is 'Society for Generative Linguistics in the Old World'(GLOW). Its seat is the municipality of Tilburg.

Goal
Art.2 1. The goal of the Society is to further the study of generative grammar in all its facets and the communication and co-operation between generative grammarians particularly in European countries, but also elsewhere in the world.
2. The Society endeavours to achieve this goal by organizing an annual conference as laid down in art. 15, by distributing a Newsletter among members and by developing other activities aimed at the furtherance of this goal.

Duration
Art.3 1. The lifetime of the Society is unspecified.
2. The financial year of the Society corresponds with the calendar year, except that the first financial year ends at the end of December of the year in which the Society was founded.

Membership
Art.4 1. The Society recognizes ordinary members and associated members.
2. Ordinary members are those persons who have been admitted in accordance with article 5.1.
3. Associated members are corporal bodies which have been admitted in accordance with article 5.2.
4. Where the statutes refer to a member or members this applies to an ordinary member or members, unless the context shows this to be otherwise.

Art.5 1. Any individual who is interested in generative linguistics can be admitted as an ordinary member.
2. Any corporate body can be admitted as an associated member provided it pays the annual dues. Associated members have no voting rights.
3. Admission as ordinary or associated member is decided on by the Board after submission to the Board of a written request for membership. In the case of non-admission by the Board admission can still be granted by the General Assembly.
4. Membership is personal and consequently not transferable or inheritable.
Art. 6 1. Membership ceases (a) on death, (b) on resignation by the member or associated member, (c) on cancellation by the Society, (d) in the case of associated membership of a corporate body, when this ceases to exist.

2. The Board may effect cancellation of membership towards the end of the current financial year of the Society after the member has been given notice of at least four weeks, if the member or associated member, after repeated warnings, has failed to meet to the full its financial obligations to the Society, or if the member or associated member has ceased to meet the requirements which are at any time laid down for membership by the statutes.

Art. 7 1. Members are entitled to participate and vote in the General Assembly and are eligible for Board functions within the Society.

2. Associated members have access to the General Assembly but they do not have the right to vote.

Finances

Art. 8 1. The financial resources of the Society consists of cues of ordinary and associated members, entry fees, monies obtained from inheritance, legacies, gifts and subsidies, and from other chance benefits.

2. Every ordinary or associated member pays cues the amount of which is determined by the General Assembly in its annual meeting.

3. Under special circumstances the Board can decide to exempt a member from the obligation of paying cues.

4. The monies of the Society are used exclusively to cover expenses related to conferences, the Newsletter, and other activities of the Society.

Board and committees

Art. 9 1. The Board consists of at least eight members: a Chairman, a Congress President, a Secretary, a Treasurer, the Editor of the Newsletter and three ordinary members.

2. The members of the Board are elected to their separate functions by the General Assembly from among the members of the Society.

3. The General Assembly can suspend or discharge a member of the Board if it considers that there is reason for this. A majority of at least two-thirds of the valid votes cast is necessary for such a decision. Members of the Board can at all times resign, provided that this is done in writing and notice of at least three months is given.

4. The Board members are at all times entitled to resign from their Board position, if they hand in their resignation in writing and give at least three month's notice.

5. In addition the Board can, under special circumstances and for a limited period of time, coopt other members into specific functions.
The Board administers the affaire of the Society. All members of the Board together, as well as the President and the Secretary together, are authorized to represent the Society.

2. The Board as well as the Chairman and the Secretary can delegate in writing their competency to represent the Society as stated in 1, with the provision that if the Treasurer is authorized to have access to bank and post office accounts, he or she may only operate within limits expressly laid down in the letter of authorization.

3. The consent of the General Assembly is necessary for the contracting of loans, as well as for buying, selling, mortgaging, hiring or renting of property and for entering into agreements in which the Society acts as security or accepts joint liability or guarantees the debt of a third party.

4. The Chairman is appointed for a period of two years. He pre-sides over meetings of the Board as well as of the General Assembly. In his capacity as President he also functions as Chairman of the Programme Committee.

5. The Congress President is appointed for a period of one year dating from the end of the preceding Congress to the end of the succeeding Congress over which he presides.

6. The Secretary is appointed for a period of two years and is responsible for the non-financial administration of the Society, especially taking minutes of meetings of the Board and of the General Assembly.

7. The Treasurer is appointed for a period of two years and is responsible for the financial administration and for maintaining the membership role.

8. The editor of the Newsletter is appointed for a period of two years and is responsible for the content, the production and the distribution of the GLOW Newsletter.

9. The ordinary members of the Board are appointed according to a rotation schedule (see art. 9.5.) for a period of three years.

10. The Board annually appoints a Programme Committee which is responsible for drawing up the programme of the annual Congress. The Programme Committee consists of at least seven members. The Chairman of the Society is a member of the Programme Committee and acts as its chairman. The remaining members are recruited in principle from the members of the Board of the Society and the local congress organization committee.

11. The Board is authorized to carry on negotiations regarding the organization and financing of the annual Congress, and to take decisions regarding future congresses which will take place within a period not exceeding three years. The Board lays the theme for the coming congress before the General Assembly which decides on the theme.

12. The Board meets at least once per annum at the same time and place as the annual Congress, and preceding the meeting of the General Assembly to be held on this occasion. Between these annual meetings of the Board, at the request of at least two members of the Board, a written vote can be taken by the whole Board on specific questions. The agenda is drawn up by the
President with the aid of the Secretary, and all members of the Board have the right to add other items to the agenda. All decisions of the Board are taken by a simple majority of votes. In the case of a tied vote, the Chairman's vote is decisive. If a member of the Board cannot attend a Board meeting, he or she can authorize another member of the Society in writing to attend the meeting of the Council and to vote in his or her stead. However, no-one has the right to more than one vote, neither as a consequence of multiple authorization or by any other means.

Meetings of the General Assembly

Art.11 1. A meeting of the General Assembly must be held within six months of the close of every financial year. In this meeting the Board presents its annual report and, supported by the necessary documents, accounts for its actions in the preceding financial year. In principle this meeting takes place during or immediately after the conclusion of the annual Congress.

2. Annually, in principle during the previous General Assembly meeting, the General Assembly appoints a committee of at least two members who are not members of the Board, to examine and ratify the accounts of the preceding financial year. During the annual meeting, the committee presents its findings. If the examination calls for special knowledge of accounting the committee may be assisted by an expert.

3. The Board is under the obligation to supply this committee with all information it may require, where necessary to show cash and holdings of the Society, and to give free access to books and documents of the Society.

4. With the approval by the General Assembly of the annual report and the accounts, the Board is acquitted of its duties.

5. If approval of the accounts is withheld, the General Assembly appoints a new committee consisting of at least three members, which anew examines the accounts. This committee has the same competence as the committee appointed earlier. Within six months of its appointment it acquaints members of the Society with its findings by means of the August/September issue of the GLOW Newsletter. If the findings make it necessary, the General Assembly can be convened by means of the procedure laid down in article 12.2. to take such measures as it considers necessary in the interest of the Society.

Art.12 1. Meetings of the General Assembly are convened by the Board. Convening takes place by means of written notice to all members. The notice must reach members no less than 30 days before the date of the meeting.

2. Apart from the annual meeting as referred to in article 11, meetings of the General Assembly are convened as often as the Council considers necessary, or as often as written requests, stating the subjects to be discussed, are submitted by at least as many members as are authorized to constitute one-tenth of the members entitled to vote.
3. After receipt of a request as stated in clause 2, the Board is under the obligation to convene a meeting of the General Assembly within a period not exceeding three months. If no action has been taken one month after receipt by the Board of the request to convene a meeting, the persons who have made the request may themselves proceed to convene a meeting in the manner in which the Board convenes the General Assembly.

Art. 13 1. All members - see art. 4 clause 1 - have access to meetings of the General Assembly and are entitled to one vote. Every member is empowered to authorize another member in writing to vote in his stead.

2. Decisions on all matters are reached by an absolute majority of the valid votes cast, in as far as the statutes do not state otherwise. If there is a tied vote, a proposal is considered as being rejected.

Art. 14 1. The Chairman of the Board chairs all meetings of the General Assembly. In his absence another member of the Board functions as chairman.

2. Minutes of the meeting of the General Assembly are taken by the Secretary or by another Society member indicated by the Chairman. A summary of these minutes is published in the first issue of the Newsletter to appear after the meeting.

The Congress

Art. 15 1. A Congress organized by the Society takes place every Spring, at a place and time to be decided on by the Board.

2. Summaries of addresses to be delivered at the Congress must be submitted to the Programme Committee before a date to be fixed by the Board. Summaries must not be longer than three pages and may not mention the name of the author. The programming of addresses by the Programme Committee is final. Each speaker is permitted a minimum of one hour, inclusive of the time needed for discussion. No parallel addresses or parallel meetings are organized.

3. Only members of GLOW are entitled to the usual reimbursements for the presentation of a talk at the annual Congress.

Amendment of the Statutes

Art. 16 1. Amendment of the statutes can only take place after such a decision has been reached by the General Assembly which has been convened with the specific notification that in this meeting amendments to the statutes will be proposed. At least a fortnight must elapse between notification of such a meeting and the date of the meeting.

2. Proposals for amendment of the statutes can be submitted in writing to the Secretary by members of the Society. Such proposals should reach the Secretary not less than three months before the next annual meeting of the General Assembly. The Secretary is responsible for dissemination of the
proposals among the members together with the summons to this meeting of the General Assembly.

3. A proposal to amend the statutes is considered as adopted if at least two-thirds of the votes cast are in favour of the amendment.

Art.17 1. The amendment of the statutes does not become effective before a deed to this effect has been executed before a Notary Public.

2. The Board is under the obligation to place an authentic copy of the amendments and of the amended statutes in the office of the Chamber of Commerce in the area in which the Society has its seat.

Dissolution and liquidation

Art.18 1. The Society may be dissolved if in a meeting of the General Assembly nine-tenths of the valid votes cast are in favour of dissolution.

2. In the case of dissolution of the Society, the use to which any financial surplus will be put is decided upon by an absolute majority of the votes cast.

3. After dissolution the Society continues to exist in as far as this is necessary for the liquidation of its assets. During the liquidation the clauses of the statutes and Bye-laws continue to be effective in as far as possible. In all papers and announcements issued by the Society, the words 'in liquidation' must be added to the name of the Society.

Bye-laws

Art.19 1. By means of Bye-laws the General Assembly can lay down further rules respecting the functioning of the Society in cases where such rules appear to be desirable.

2. Amendment of the Bye-laws can take place by decision of the General Assembly if requested in writing by at least one-third of the members of the Society or by the Board.

3. The Bye-laws may contain no clauses which deviate from or are at odds with clauses in the law or in the statutes, unless the deviation is approved by the law or the statutes.
9. Transformational Generative Grammar and the Study of Language

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June 1980

GLOW Newsletter 5, September 1980

The fundamental question defining the research program of Transformational Generative Grammar (TGG) is the following: What insights into the formal properties of the mind/brain can the study of natural languages provide?

The behaviour that individuals exhibit when they speak or understand a natural language clearly involves an interaction of various systems such as grammatical knowledge, beliefs, expectations, etc. and the type of answers one will get to this question will very much depend on how the expression study of natural languages is understood.

The first methodological assumption that TGG makes is that one particular factor determining this complex behaviour, namely grammatical knowledge, can be studied independently from the others: TGG focuses on this factor, also termed grammatical competence (e.g. the knowledge that certain forms have certain meanings, etc.), and more precisely on the mentally representated system (ultimately physically represented system) that characterizes this knowledge, termed grammar.

In other words, the above question should be more adequately reformulated as: What insights into the formal properties of the mind/brain can the study of grammars provide? Grammars, as defined above, therefore constitute the basic objects of inquiry within this framework, and the study of grammars reduces in part to the construction of explicit models of such grammars.

One of the main empirical problems that the study of grammars faces, as soon as some explicit model of a grammar tries to account for very elementary properties of grammatical processes, is the fact that it appears that basic principles governing its organization cannot be inductively inferred from the kind of (even relevant) experience a language learner might have, nor do they appear to be taught in any way since they are for the most part unconscious, for the mature speaker (as is the case e.g. with the structure dependency of transformational rules).

How, then, does this knowledge develop? Since the principles governing the organization of grammars do not seem to mirror external structures in any obvious way either, it is reasonable to suppose that the language learner is equipped a priori with some analytic structure in the domain of language development which might be termed Universal Grammar (UG), and whose function is both to select relevant data from the environment and to map them into grammars, thus determining their basic character.

Given this body assumptions, it becomes clear how TGG tries to answer the above questions. Since, we assume, UG is a system available to each individual (by a
straightforward assumption of uniformity of the species) prior to experience and therefore reflects some properties of the brain, some insights about mental structures can be gained through the explicit construction of models of UG.

This enterprise is guided by the following two boundary conditions: On the one hand, such models must be compatible with the range of existing (in fact, possible) grammars. On the other hand, they must be sufficiently rich and structured to account for the fact that these grammars develop on the basis of limited and fragmentary evidence.

While the first condition simply states that a linguistic theory (i.e. a model of UG) must be empirically adequate, the second stems from the qualitative observation that the transition from UG to a particular grammar is vastly underdetermined by the evidence available and from the requirement that a linguistic theory must be in principle amenable to providing an answer to what has been called the Projection Problem3, i.e. how grammar is selected on the basis of linguistically relevant input.

Although much remains to be done in this last domain, the views recently put forth in Chomsky (1980) and elsewhere suggest a plausible and promising line of research; as Chomsky (op. cit.) puts it:

"... Universal Grammar provides a highly restricted system of 'Core Grammar' which represents in effect the 'unmarked case'. Fixing the parameters of core grammar and adding more marked constructions that make use of richer descriptive resources, the language learner develops a full grammar representing grammatical competence..."

Indeed, if UG consists of a system of principles with a sufficient degree of intricacy and deductive structure with parameters that can be fixed one way or another, given a relatively small amount of evidence, small charges in their values will lead to what appears to be radically different grammars. Adopting this picture, part of the projection problem reduces to the question of how available evidence determines the values of these parameters. Of course, in order not to undermine the content of the 'core principles', a theory of parameters must be developed, which would specify for example the types of principles that are parametrizable, the range of values and the accessibility (in terms of acquisition) of such and such a value for a given parameter... in effect a theory of markedness in the now traditional sense.

Illustrations of this conception of UG can be found in recent articles dealing with various principles that have been proposed to characterize the core system. For example:

a. The Empty Category Principle and Proper Governors (Chomsky (forth. a), Kayne (1979), Rizzi (1980), etc.).

b. The Subjacency Condition and Bounding Nodes (Rizzi (1978), etc.)
c. Case theory (Chomsky (1980), Vergnaud (1980), etc.)
d. Metrical phonology (Halle & Vergnaud (1979), etc.)
e. Markedness theory (Chomsky & Halle (1968), Kean (1975), van Riemsdijk (1978), etc.)

To be more specific, and also more technical, let us consider the following examples:
As a first example, let us consider a class of systematic differences between Italian on the one hand, and English and French on the other. We shall merely outline the logic of the approach, and we refer to Chomsky (forth a) and Rizzi (1980) for further details. Italian, in contrast with French and English, permits the following surface configurations:

a. Subjectless tensed clauses, e.g. *è partito (compare with English *Has left).
b. Free subject-verb inversion, e.g. *è partito Giovanni (compare with English *Has left John).
c. Apparent violations of the (that-) filter (cf. Chomsky & Lasnik, 1977) e.g. *chi crede che è partito (compare with English *Who do you think that left).

In all the above Italian examples, grammatical theory requires that the 'absent' subject be abstractly represented at some level of syntax by an empty noun phrase ( [NP e ]).

Furthermore, the distribution of these empty elements is governed (at some syntactic level) by the so-called Empty Category Principle, which requires that they be 'locally controlled' (properly governed, in the technical sense).

It can be shown that, within a model in which the Empty Category Principle, the Binding Theory (cf. Chomsky, forth a), and Abstract Case theory interact properly, the differences in a-c above are on a par and reduce to a single difference in the structure of the inflectional element. This difference determines whether the inflectional element can act as a 'local controller' (proper governor) and/or as a Case assigner. The choice between the latter two possibilities defines one of the parameters of core grammar.

Similar examples can be found in other components of the grammar as well, e.g. phonology. As a second example, consider the stress patterns of natural languages. They can be characterized, within an overall theory of the stress component, in terms of a small number of binary parameters.

Omitting details, we may describe the stress component of natural languages as constituted by a class of trees in the following manner:

a. Each tree in this class is a three layered structure, where each layer is a sequence of unidirectional trees (i.e. right or left branching); the bottom layer is the rhyme layer, where the rhyme is a subconstituent of the syllable, the intermediate layer is the foot layer and the top layer is the word tree.

b. A set of universal conventions determine the positions of primary, secondary, etc... stresses. For example: Primary stress falls on the rhyme which is only dominated by Strong nodes (cf. below P1).

c. A given stress component is specified by fixing the values of the following parameters:

P1. The labelling convention: a right (resp. left) node is labelled Strong if and only if it branches. A sister node to a strong node is labelled Weak.

P2. The word tree is right or left branching.

P3. The feet are right or left branching.

P4. The feet are bounded or unbounded.

This minimal model characterizes in a perspicuous way the similarities and the differences between the various stress systems of natural languages. Each of these two cases constitute paradigmatic examples of how a linguistic theory abides by the boundary conditions.
mentioned earlier: fixing parameters one way or another implies a variety of consequences that lead to what appears to be formally unrelated phenomena. We should emphasize at this point that the investigation of the project problem suggested by this view of UG, and in particular the approach illustrated above are logically distinct from the study of acquisition, although there obviously exist connections between the two areas. It does not seem illegitimate to compare the distinction just made with the now traditional dichotomy Competence/Performance (cf. Chomsky, 1965). For example, a realistic model of language acquisition would take into account the order in which primary linguistic data are used by the child and the effects of preliminary grammars developed in the earlier stages of 'learning' on the interpretation of new, often more complex data. Thus, the projection mapping can be viewed as an idealized model of 'learning' that abstracts away from the specific circumstances just hinted at. However, one might conjecture that the kind of analyses illustrated here could provide plausible acquisition scenarios.

In conclusion, the particular research program that we have presented here for the domain of language will have to be judged by its long term effectiveness as compared with alternatives that might be imagined. We are certainly not claiming that our views are superior to other approaches to the study of language, but we may point out that, in spite of the fact that this program has been initiated only a short while ago, it has already significantly deepened our understanding of the language faculty.

Footnotes

* The authors wish to thank Henk van Riemsdijk and Jean-Roger Vergnaud for helpful discussion.

1. Fuller discussion of all the issues and assumptions that are presented here can be found in Chomsky (1965, 1975, 1980, 1980a, forth a, forth c,b).

2. The issue implicitly raised here is that of the relation between a field like TGG and 'say, neurophysiology. The following quote from Marr & Nishihara (1978) will clarify this issue: "Modern neurophysiology has learned much about the operation of the individual nerve cell, but unpleasantly little about the meaning of the circuits they compose in the brain. The reason for this can be attributed, at least in part, to a failure to recognize what it means to under- stand a complex information-processing system (such as speech production and understanding- YA & DS); for a complex system cannot be understood as a simple extrapolation from the properties of its elementary components. One does not, for example, formulate a description of thermo-dynamical effects using a large set of equations, one for each of the particles involved. One describes such effects at their own level, that of an enormous collection of particles, and tries to show that in principle, the microscopic and macroscopic descriptions are consistent with one another. The core of the problem is that a system as complex as a nervous system or a developing embryo must be analyzed and understood at several different levels. Indeed, in a system that solves an information processing problem, we may distinguish four important levers of description. At the lowest, there is basic component and circuit analysis - how do transistors (or neurons), diodes (or synapses) work? The second level is the study of particular mechanisms: adders, multipliers, and memories, these being assemblies made from basic components. The third level is that of
the algorithm, the scheme for a computation, and the top level contains the theory of the computation. Now each of the four levers will have its place in the eventual understanding of perceptual information processing, and of course, there are logical and causal relationships between them. The categorization above applies in particular to the description of languages: Linguistic Theory would correspond to the top level and neurophysiology to the first one.


References

(presented in part at the fourth GLOW colloquium at Nijmegen).
10. GLOW Tenth Anniversary

Noam Chomsky
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Glow Newsletter 19, August 1987

The founding of GLOW ten years ago came at a period of significant reevaluation and changes of perspective in the study of language, changes to which GLOW and those associated with it have made decisive contributions and which, in my judgment at least, represent a notable and perhaps dramatic turning point in the recent history of linguistics.

The new directions of the past decade were not, of course, initiated at one moment of time. Rather, a number of developments of earlier years began to crystallize and come together, in a mutually reinforcing manner, to yield a conception of the nature of language that is markedly different from anything that came before. In my personal experience at least, there is nothing comparable to the progress in understanding that has been achieved in the past decade and the intellectual excitement it has engendered within the discipline, and I suspect that history may record a similar judgment, and one less restricted in temporal scope, when this period is placed in proper perspective.

During these years, there has been a real explosion in the range of materials from a wide variety of typologically different languages that have come to be understood to some significant degree in a systematic way, and that must ultimately be taken into account by any conception of the nature of language. Furthermore, the range of topics that have come under intensive investigation has considerably broadened, and more important, this broadening of scope has been accompanied by a qualitative increase in the depth of explanation realistically sought and sometimes approached or attained. The field has become far more difficult, in just the right way. There is more to know, but more significant, there is more to understand, both within the domains of general linguistic theory -- to keep abreast of the literature on crossover or ECP or a dozen other topics is no small task -- and in its application to a variety of languages.

We might, I think, perceive the essential core of the change in perspective that has taken place in the following terms. Traditional work in grammar dealt primarily with properties of language that are language-particular and construction-particular: the passive construction in English, the relative clause construction in French, and so on. Generative grammar followed the same mode of thought, attempting to formulate explicit rules for particular constructions in particular languages. The same grammatical construction -- passives, relatives, etc. -- might appear in different languages, in different forms. It was always understood that some of the properties of such rules and the constructions they sought to clarify are not language-particular, but rather belong to the language faculty itself, constituting the domain of universal grammar, and that some general properties could also be
abstracted from a variety of constructions: binary opposition, hierarchic structure, and so on. But the general focus of attention was language-particular and construction-particular rules.

Recognition of the flaws in this conception and efforts to overcome them date from the early 1960s, setting much of the research agenda for the years that followed. Much current work approaches these questions in quite a different way. Human language consists of systems of universal principles, and what is language-particular, in large measure, is not a specific choice of rules but rather a specific choice of options that the general principles of the language faculty leave undetermined, within a narrow range: the parameters of variation. The constructions of traditional grammar and early generative grammar dissolve and disappear; they are artifacts, with no real status in the structure of language, on a par with such categories as terrestrial animal or large organism. The collection of phenomena grouped under some construction are determined and explained by the interaction of fixed and universal principles, with a language-particular choice of parameters; there are few, if any, language-particular rules, at least for a properly idealized concept of human language to which the complex systems attained in the course of individual experience approximate. The concept of "grammatical construction" effectively disappears, and the nature of what is language-particular and language-universal is quite differently conceived as languages are taken to be "rule-free systems," constituted of invariant principles of the language faculty with language-specific choices of values for parameters.

The principles of language determine the kinds of representations formed by the language faculty of the mind and the ways they are interrelated, once the options left undetermined by universal grammar are set by experience. In principle, we should be able literally to deduce the properties of particular (idealized) languages from a specific choice of these options. These possibilities are, of course, far from being realized, but the problem can now be formulated and realistically addressed, in some domains at least, for the first time. The partial successes have sometimes been impressive and highly encouraging, and the many failures are often illuminating in that the current level of understanding allows them to be useful guides for productive inquiry. The break with the tradition is in some respects more sharp than was true of the rise of early generative grammar, which often recast traditional insights in novel terms, though within a rather different general framework, guided by different goals. In contrast, the underlying conception of the nature of language that has developed in recent work is itself quite novel. Its implications for the study of language typology and language change, acquisition and use of language, pathology and other questions of psychology of language and perhaps -- some day -- the physical basis for knowledge of language and its growth and use, are only beginning to be explored in very suggestive recent work.

The annual GLOW meetings have served as a central intellectual impetus for research during this period, a source of rich stimulation and exciting progress. The publications that have resulted from these presentations and interchanges constitute a record of rare distinction. Thanks in large measure to the record of accomplishment associated with GLOW and its organizers and participants, there are good grounds to look forward to the coming years with a real sense of anticipation and confidence in continuing and solid progress. Those who founded the organization and have kept it flourishing through these years merit sincere congratulations for this achievement.
11. Nonlinear Phonology: An Overview
John J. McCarthy
University of Texas at Austin and University of Massachusetts, Amherst

GLOW Newsletter 8, February 1982

0. Introduction
The last five or six years have seen a substantial change in the nature of research into phonological theory. This change has been marked by the development of several new theoretical frameworks, for which we can use the somewhat awkward and misleading term "nonlinear phonology". In this short essay, I hope to give an introduction to the various ideas underlying nonlinear phonology, as well as to provide an outline of the mechanics of formal analysis under this rubric. Because of rigid constraints of space, I cannot do justice to every viewpoint, nor can I present full-fledged arguments. But I do try to provide something of a retrospective on what has already been achieved and the reasons behind it, and I offer a lengthy bibliography to those whose interest is stimulated by this survey.

The structure of this presentation is as follows. In the first section I describe the basic notions of the theory in Chomsky and Halle (1968), particularly those less well-known features that are essential to understanding the subsequent development of non-linear phonology. In the following sections I characterize the two most important and extensive such nonlinear theories, the metrical and the autosegmental, including the topic of syllable structure in the former. The concluding section deals with a recent area of research, the unification of the autosegmental and metrical theories.

1. Linear Phonology
Since 1968 (and even earlier), generative phonology has been largely dominated by the basic assumptions made in Chomsky and Halle's monumental The Sound Pattern of English. (SPE). Although relatively minor adjustments of the SPE theory were proposed from time to time in the first half of the 1970's, no interesting and comprehensive alternative to it ever received broad acceptance. This is in clear contradistinction to what in retrospect appear to be truly massive changes in syntactic theory during the same period.

A fundamental property of the SPE theory, as well as of subsequent research in the same mold, is the assumption that the deepest and most interesting principles of universal grammar will be found in the form and function of phonological rules. An example of this in SPE is the claim that disjunctive ordering relations between two adjacent rules — like the subparts of the Latin stress rule, where the penultimate subrule applies only if the antepenultimate one fails — are limited to cases where the structural description of the first rule properly contains that of the second. This condition is expressed formally by the requirement that the subrules be collapsible by the parenthesis notation. In later discussion of SPE, much attention was focused on the problem of multiple application sites of a single rule, as in alternating stress phenomena.

Against this very rich and innovative conception of rule form and function, the SPE model did not present significant changes in conceptions of phonological representation.
Chomsky and Halle adopted, with interesting but relatively minor changes, the theory of distinctive features in Jakobson, Fant, and Halle (1951). The claim in SPE — a claim whose significance will become clear shortly — is that an utterance and the representations underlying that utterance are made up of a matrix of distinctive features, with each column corresponding to a single segment. Segments, then, are bundles of unordered features, and utterances are strictly ordered lists of segments. All properties of an utterance, including such obviously prosodic ones as tone, stress, and syllabification, must inhere in its segments, mediated by the distinctive features and rules for interpreting them phonetically. With the addition of a simple theory of boundaries or junctures, this essentially exhausts the SPE conception of phonological representation. The only major comment on representational issues to be found in subsequent discussion of SPE is the abstractness question, an issue involving the whole grammar as much as this area alone.

The SPE model remains the most comprehensive theory of phonology devised to date. One can, however, identify the development of a significant alternative in what might be called nonlinear phonology. The common element of the diverse trends falling under this single term is a rejection of the SPE model of phonological representation I have just outlined. Properly speaking, the features still have a place, but the segments do not. Utterances are made up of several kinds of simultaneous levels, with each level related to but ordered independently of (whence the designation nonlinear) any other level. In no level can segments of the SPE sort be identified. Methodologically, the focus on phonological structure in nonlinear phonology has reduced the attention paid to and the formal role of phonological rules and their interaction.

Within this somewhat ill-defined realm of nonlinear phonology, we can identify two major theoretical movements, metrical and autosegmental. Except in very recent work which I will discuss in the concluding section of this essay, metrical and autosegmental phonology have been concerned with largely complementary phenomena to which they bring to bear conceptually and formally quite different sorts of mechanisms. Metrical phonology, applied to phenomena of stress and syllabification, exploits the notion of relations of constituency and relative strength or prominence between contiguous prosodic units (like syllables, stress groups, and so on). Relations are notated by a complex, binary-branching tree with labeled nonroot nodes. Autosegmental phonology, which figures most often in the analysis of tone, accent, and vowel harmony, is characterized by abstracting out shared properties (indicated by distinctive features) of possibly noncontiguous elements in an utterance. This abstraction is mediated by a notation of simplex, n-ary branching trees, with the prosodic features of harmony or tone appearing on separate levels called tiers.

I will now turn to a more rigorous characterization of these two theoretical viewpoints, including extensive exemplification. Considerations of the boundaries of autosegmental and metrical theory, as well as conflation of the two, await the concluding section.

2. Metrical Phonology
As is clear from (1), compounds may have main stress on the left member (1a, b) or on the left member of a complex (that is, branching) right member. If we consider stress to be a relational notion, then a straightforward account of (1) is possible: in any given level of a compound, the right member is the more prominent if it is complex, and otherwise the left member is more prominent.

Liberman (1974) and Liberman and Prince (1977) implement this relative prominence relation by means of complementary strong (s) and weak (w) labels on the sister nodes of a binary-branching tree. Under this account, the stressing of English compounds is accomplished by (2):

(2) Lexical Category Prominence Rule (LCPR) of two sister nodes [N1 N2], N2 is strong if and only if it branches. Since labels on sister nodes take complementary values, the biconditional (2) is sufficient to label any binary-branching tree unambiguously.

Rule (2), applied to a compound like labor union finance committee, yields the result in (3):

(3)  
```
  w   s
 / \
 s  w
```
labor union finance committee

The most prominent element in the tree, called the designated terminal, is that node dominated only by s labels and the root. It corresponds to primary stress. Degrees of secondary stress are also indicated by the labeling, since any s node is relatively more prominent than its sister.

The result encoded in (2) is typical of metrical phonology. It represents a considerable theoretical improvement over the cumbersome SPE apparatus for compound stress, and it has some subtle empirical advantages as well. The analysis generalizes easily to English nuclear stress, the unmarked (neutral or nonemphatic) stress in phrasal categories, Nuclear stress is always right prominent — that is, the right node is labeled s. A number of other analyses have applied this model to phrasal or compound stress in other languages: Afghani Persian (Bing 1980), Italian (Nespor and Vogel 1979), and Biblical Hebrew (Dresher 1980-1981, 1981; McCarthy 1979a).

Formally, the inherent properties of metrical theory are as follows: Complementary labels s and w on sister nodes define a relation of relative prominence, where prominence can be instantiated as one or more of a number of phonetic correlates (characteristic duration,
amplitude, or fundamental frequency, or full versus reduced vowel or consonant systems). The labeling relation demands binary-branching tree structures (properly, rooted, directed graphs with binary-branching nonterminal nodes) to achieve a coherent representation. The terminal nodes of the trees are contiguous elements — a string of words or compounds in the case of the compound and nuclear stress rules.

For English word stress, the terminal nodes are also a string of contiguous elements, the syllables (about which more later). But, unlike compounds and phrases, in which tree structure is already provided by rules of morphology or syntax, within words trees must first be built by some procedure. In Liberman and Prince (1977), one version of this procedure is given in considerable detail. A right-to-left iterative rule assigns [+stress] to some vowels, and concomitantly a left-branching tree, called a foot, is erected with a [+stress] vowel as head. Since trees must be inherently nonoverlapping structures, in words with several stresses a foot extends rightward only as far as the next foot. Finally, all feet and stray or unfooted syllables are gathered up as the terminal nodes of a rightbranching word-level structure. The entire result is labeled by rule (2), which therefore suffices for all lexical category members, both simplex words and compounds.

The formulation of the rule assigning [+stress] need not concern us here; it is sufficient to note that the Liberman and Prince analysis retains considerable segmental character, with a segmental stress rule assigning a stress feature to vowels. In Liberman and Prince (1977), the metrical structure serves only to determine degrees of stress, not its presence or absence. A fortiori, formal constraints on metrical theory can have no role in governing the distribution of word stress, although they can determine the relative strength of several stresses in a word. This result places a severe limit on the extent to which metrical structure can illuminate typological considerations of stress placement.

Fortunately, this limitation has been circumvented. The first work to propose a fully nonsegmental metrical theory of stress is Prince (1976). (See also Vergnaud (1977).) Prince proposed that stressing is essentially reducible to rules directly assigning metrical foot structure to words. In his conception, the terminal nodes of feet may be syllables or moras, a unit of prosodic weight. Rules of stress assignment will, in general, stipulate particular foot structures, including conditions on their terminal nodes, and the directionality of foot assignment. A general condition provides that forms receive the maximal compatible foot structure, a property corresponding roughly in its effect to the principle of disjunctive interpretation of parentheses in SPE rule schemata.

Two illustrations present paradigm cases of this theory in operation. Classical Latin stress is assigned by the foot in (4), mapped onto a word from right to left:

(4) Latin Stress Rule

```
    s
   / \  
  s   w    w  μ=mora
   |  |  
   μ | μ | σ  σ=syllable
```

Some representative forms will be footed as in (5):

61
In (5a, b, c) the maximal foot assigns stress to the antepenultimate syllable or to a bimoraic penult. A nonmaximal foot is applicable to the disyllable in (5d). A quite different stress pattern arises in a language like Warao (Hayes 1980) with alternating stress. In this case, stress falls on every even-numbered syllable, counting from the right. The Warao foot under this theory appears in (6):

(6) Warao Stress Rule

This foot is assigned from right to left, as in (7)

(7) a. yiwa ra na e

b. na ho ro a ha ku ta i

The last stress is the most prominent, a fact that can be captured by a right-branching word-level tree labeled according to (2).

The theory in Prince (1976) offers a number of important insights that have been further refined in later work. First, much of the need for stipulated disjunctive ordering is vitiated by the requirement of foot maximality. The maximal foot is inherently disjunctive with respect to any smaller feet because tree structures cannot overlap on the same string of syllables. (If they overlapped, they would not be trees.) Since disjunction by parentheses in SPE figured only in stress-like rules, probably all cases of disjunction can be explained in this way. Moreover, foot maximality allows for the case of stress located a possibly unbounded distance from word-edge, as in the cases of Eastern Cheremis and Komi (Kiparsky 1973) and Classical Arabic (McCarty 1979b). These rules require an elaborate variable mechanism in SPE-derived work.

Second, the prevalence of alternating patterns of stress also follows as a direct consequence of the formal system. A binary alternating pattern is generated by the least complex, and therefore most highly valued, metrical foot structure. Moreover, the formalism captures an intuition, due originally to Halle, that there is a deep connection between
disjunctive ordering and alternating patterns in stress rules (see Vergnaud (1977) for an interpretation leading to this result).

Third, the most fundamental insight about word stress in this work, as well as in Liberman and Prince (1977), is the realization that the foot plays a fundamental role in determining properties of prosodic systems. Constraints on foot form and the association of feet with syllabic strings, augmented by labeling rules, should largely determine the universal characteristics of word stress.

Finally, Prince's use of syllables and moras as the terminal nodes of feet constitutes a preliminary theory of the role of syllabic quantity in stress assignment, a problem treated unsatisfactorily in SPE (cf. pg. 241, n. 3).

These last three issues in particular have occupied substantial attention in more recent work. I will outline the chief results of this discussion and then turn to a related topic, the theory of syllable structure.

Alternating patterns of considerably greater complexity than that in Warao have been studied in some detail. Hale and White Eagle (1980) have argued on the basis of stress shift phenomena induced by vowel epenthesis that Winnebago alternating stress must be represented by metrical feet. Mora-counting alternating stress systems in Tübatulabal (Vergnaud 1977), Capanahua (Safi 1979), and Creek and Cairene Arabic (McCarthy 1979b) have also been analyzed metrically. Stowell (1979) describes cases in Seneca and Passamaquoddy in which the alternating stress feet function as a kind of intermediate stage in the computation, subject to a further rule of superfoot assignment.

A number of stress patterns are analyzed metrically in Halle and Vergnaud (1978), but the most comprehensive metrical survey of alternating stress appears in Hayes (1980), including particularly detailed analyses of Akan and Yidin? (on the latter, see also Nash 1980-81).

On the next point, Kiparsky (1979) and Selkirk (1980) have proposed that the foot be recognized as a separate, labeled prosodic category, like the syllable, rather than as simply a derivative of some foot assignment rule. Arguments for this move are numerous. First, English stress can be brought into conformity with other systems by eliminating the feature [stress]. Since English contrasts w-labeled syllables that are stressed with those that are unstressed, foot structure distinctions are needed to determine vowel reduction. This is illustrated by the contrasting disyllables in (8) (Selkirk 1980):

(8)

\[ \begin{array}{cccc}
& w & s \\
\varphi & \varphi & \varphi & \varphi \\
police & pontoon & system & gymnast
\end{array} \]

Only syllables that do not head a foot \( \varphi \) are unstressed and therefore reduced.

Second, some phonological rules take the foot as their domain. Prince (1980) has argued compellingly that the complexities of Estonian quantity are readily explicable under a foot-based account. Kiparsky (1979) and Selkirk (1980) have argued, referring to earlier work by Kahn (1976), that t-flapping in English is a foot-internal process. Other rules of English have the same property or, like expletive infixation (McCarthy in press), take the foot as their
antidomain. In the complex accentual system of Tiberian Hebrew, several stress shift rules (McCarthy 1979a, Hayes 1980) and the melodic determination of word length (Dresher 1980-81, 1981) must also refer to feet.

Third, cross-linguistic considerations show that a rigidly circumscribed typology of foot types is possible. This typology is developed most carefully in Hayes (1980). He argues that only two primitive foot types are needed, binary (like Warao) and unbounded (like Eastern Cheremis and Komi). Cases of apparently ternary feet, Latin, are treated by Hayes with extrametricality, the stipulation of the final syllable as exempt from the erection of metrical structure. Extrametricality plays a virtually indispensable role in the analysis of many prosodic systems. Two detailed analyses heavily exploiting extrametricality are those of English in Hayes (1980) and of Spanish in Harris (1980b).

A final point on which recent research has concentrated is the phenomenon of quantity sensitivity, the property in many rules of counting moras. In Halle and Vergnaud (1978) and McCarthy (1979b) quantity sensitivity is given a geometric interpretation. In the internal structure of syllables (to be discussed immediately below), a constituent called the rhyme is recognized, including the nucleus and postvocalic consonantism. A syllable containing only a short nucleus vowel will have a nonbranching rhyme, whereas a heavy syllable — one with a long vowel or closed by a final consonant — will have a branching rhyme. The mechanism of projection (Vergnaud 1977) abstracts out of a word a simultaneous representation containing only the rhyme constituents. The basic intuition captured in the theory is that the branching of feet and of rhymes is homogeneous, as illustrated in (9):

(9) foot level

CVCVCCVCVCV VCVCVCV

The attraction of stress to heavy syllables follows from having branching rhymes participate in the uniformly left (or right) branching foot structure. In Hayes (1980), this notion is developed as a parameter of universal grammar, left (or right) dominance in feet. Quantity sensitive stress rules are not the only area where syllable structure has been studied. Metrical analyses of syllable structure do not necessarily invoke the notion of prominence labeling (though some do, like Kiparsky 1979, McCarthy 1979b, and Ingrina 1980). But, unlike autosegmental theory, they share with the metrical theory of stress a concern with the constituency relations of contiguous elements, either at the level of the syllable or that of one of its subconstituents. Kahn's (1976) original proposal for an internally simplex syllable constituent has been mostly supplanted by claims for a number of subconstituents of the syllable, as illustrated in (10):
One sort of argument that has been proposed for this constituency has already been outlined: reference to, say, the rhyme in phonological rules. A similar argument from Indo-European reduplication for onset constituency has been made by Kiparsky (1979). Other arguments, like those for English syllable structure in Selkirk (forthcoming) and Halle and Vergnaud (1978), are distributional in character. Cooccurrence restrictions within the syllable are often local in a strict sense: they are limited in scope to a particular constituent. So, for example, many languages limit coda position to sonorant consonants, a property that can be expressed by labeling the coda node with [+son]. A final, important source of evidence about syllable structure are phenomena of epenthesis, elision, compensatory lengthening, and sonorant syllabification and desyllabification. Although there are many different views in the literature, the common insight seems to be that, with independently necessary rules assigning syllable structure, no rules at all are needed to account for such phenomena. Rather, they emerge as automatic consequences of the principles governing syllable well-formedness. Languages that have been treated in this way include Yiddish (Lowenstamm 1979, 1981), French (Anderson 1981), Spanish (Harris 1981, Kaye 1981), and Klamath (Feinstein and Lapointe 1981, Clements and Keyser 1980), as well as others.

3. Autosegmental Phonology

No tonal data are discussed anywhere in SPE, and the theory of tone suggested there (the complex features of Wang (1967)) is entirely inadequate. Subsequent research set out to remedy that inadequacy, and the result ultimately was autosegmental phonology, a theory with quite unexpected consequences extending far beyond tonal analysis.

Woo (1969) originally rejected the complex tonal features of Wang (1967) in favor of level-tone segmental features. Under this theory, contour tones like rising and falling are to be analyzed as sequences of high and low level tones on adjacent vowels. It was noted, however, that this analysis incorrectly excludes contour tones on syllables containing only a short vowel, an observation that led to the melody-mapping theories of Williams ((1971)=(1976)) and Leben (1973). In this case, distinct segmental and tonal representations are recognized at the beginning of the derivation, and then later a universal mapping procedure — a kind of segmentalization — inserts the tonal features into the segments. The mapping algorithm provides that tonal features may "pile up" in linear order at the right edge of a word, permitting contour tones in that position. The output of the mapping rule is a conventional segmental representation.

Problems with this theory centered on a complex technical issue: the lack of a well-defined stage in the derivation when mapping takes place. The alternative, adopted in Goldsmith (1976a, b) and Haraguchi (1976), is to say that there is no mapping procedure, that tonal and nontonal levers always remain distinct, and that therefore there are no segments in the strict sense. The theory is autosegmental, then, in that it recognizes that different classes of features
can appear on different levels, called tiers, with each level unspecified with respect to the features on other levers. Since the tones must be coordinated with other articulatory gestures, a mechanism of association between different autosegmental tiers is provided, quite distinct from the earlier mapping algorithm.

We can now formalize these notions. Consider the hypothetical tonal representation in (11):

(11) segmental tier \[ \text{bababababa} \]

tonal tier \[ \text{H} \quad \text{L} \quad \text{H} \]

Units on the segmental tier (not segments in the SPE sense) are archisegments unspecified for tone, units on the tonal tier are unspecified for all nonprosodic features. Tonal or melodic elements are associated with stipulated tone-bearing elements (here, the vowels) by lines. These association lines orchestrate the gestures, rendering the first syllable high-toned, the second low, and so on. In Goldsmith (1976a, b) the association between segmental and tonal tiers is governed by the following constraint:

(12) Well-formedness Condition (WFC)

a. Every tonal element is associated with at least one tone-bearing element; and every tone-bearing element is associated with at least one tonal element.

b. Association lines do not cross.

Clause a of the WFC provides that a tonal element will spread out association lines to take in tone-bearing elements when the number of the latter exceeds that of the former, as in (11). When the opposite condition holds, several tonal elements will be associated with a single tone-bearing element, as in (13), yielding a surface rising contour tone:

(13) ba ba

\[ \text{H} \quad \text{L} \quad \text{H} \]

One area of research in autosegmental theory concerns revisions in the WFC. In particular, it has been proposed that the second consequence of clause a be eliminated, so that contour tones do not arise automatically, but rather appear by the operation of language-specific rules (Clemente and Ford 1979).

By far the bulk of autosegmental research concentrates on extending the empirical coverage of this theory. In Goldsmith (1976a) it is applied chiefly to Igbo, a tonal system, but with discussion of other languages as well. In Haraguchi (1976), pitch accent systems in a number of Japanese dialects are treated autosegmentally. The analysis of pitch accent requires a small enrichment of the theory, the provision of a diacritic element star (*) that appears on a lexically-specified tone-bearing element and melodically-specified tonal element. Principles of association then provide that tonal and segmental starred elements must be matched in association, giving the starred syllable or mora a distinctive pitch. Typologically quite distinct tonal systems in Kikuyu (Clemente and Ford 1979) and Chinese languages (Yip 1980) and the
accentual systems of Indo-European (Halle and Kiparsky 1981 and Tonga (Goldsmith 1981) have all been analyzed autosegmentally.

Another extension of autosegmental theory is the area of melodic analysis of nontonal features (partly anticipated in work on complex segments like Anderson 1976). In Goldsmith (1976a, b) there is an autosegmental treatment of Guarani nasal harmony. Clements (1976, 1977, 1981) and, in a somewhat different mode, Vergnaud (1977, 1980) have developed excellent results in the autosegmental analysis of vowel harmony systems. The basic insight behind this work is that the harmonizing feature appears on a separate melodic tier from the segmental string. Vowels are then unspecified for the harmonizing feature, as illustrated in (14) with the Turkish form kizimiz 'our girl' :

(14) \[ \begin{array}{c} klzlmlz \\ [+\text{back}] \\ [-\text{round}] \end{array} \]

Arguments for this approach are numerous. The obligatory nature of vowel harmony follows from the well-formedness condition, since the vowel archisegments must be spelled out. The apparent action-at-a-distance in vowel harmony — its nonlocal effect — becomes strictly local when viewed as an autosegmental phenomenon. The existence of neutral and opaque segments, vowels that are exempt from harmony or that trigger it but do not undergo it, can also be derived from this theory. There exist cases of grammatically-controlled harmony, in which the melodic level functions as a kind of morpheme.

The most extreme version of autosegmental theory is that espoused in McCarthy (1979a, 1981) and in work by Halle and Vergnaud (1980), Harris (1980a), Marantz (1981), and Clements and Keyser (1980, 1981). This view holds that the segmental tier contains only information about the canonical pattern of a form, encoded as a string of C's and V's. All features for point and manner of articulation appear on a separate tier or tiers, as in the representation of Arabic kattab 'caused to write' in (15):

(15) \[ \begin{array}{c} a \\ \text{[CVCCVC]} \\ \downarrow \\ \text{kb} \end{array} \]

In particular, the representation of geminates in this system (such as ĭ in (15)) is not unlike that proposed by Ingria (1979) and Leben (1980).

4. The Fusion of Metrical and Autosegmental Phonology
A somewhat controversial but interesting area of recent research is the delimitation of the boundaries between autosegmental and metrical analysis. In Halle and Vergnaud (1981, forthcoming) and many other works the position is taken that some version of the metrical formalism is appropriate for many phenomena that have been treated autosegmentally.

In the case of harmony processes, where the discussion has been most extensive, several sorts of arguments for metrical structure have emerged. Zubizarreta (1979) has argued that the
dependance of Andalusian Spanish vowel harmony on stress requires that the harmony
domain be indentified with the metrical stress foot; thus, harmony takes place within a
Sportiche (1977) argues from a cline effect, a reduction in degree of nasality with greater
distance from a nasal harmony trigger, that Guaraní nasal harmony is represented by a
metrical structure incorporating relative degrees of strength. In McCarthy (1979a) it is
claimed that quantity-sensitive harmony in Tigre and Maltese requires metrical structure in
parallelism to quantity-sensitive stress rules. And Steriade (1979) argues from a particular
type of harmony-blocking segment in Khalkha Mongolian for a kind of amalgam of
autosegmental and metrical theory.

Halle and Vergnaud (1981, forthcoming) develop these notions in considerable detail,
reserving binary-branching metrical structure for directional harmony processes while
retaining autosegmental n-ary trees for nondirectional or dominance systems. In a directional
system like Turkish, the trigger is the most deeply-embedded peripheral element. Its value for
the harmonizing features percolates through the tree, as illustrated in (16): (cf. (14)):

\[
\begin{align*}
\text{(16)} & \\
\text{[+back]} & & \text{[-round]} \\
\text{kızlmlz} & \Rightarrow & \text{kızlmlz} & \Rightarrow & \text{kızımlız} \\
\text{percolation} & \\
\end{align*}
\]

This theory, thee, establishes a major role for the directional/ dominant typological
distinction.

Much has obviously been left unsaid here; in particular, the treatment of theories of
syllabification and of tone is grossly incomplete. I have also neglected the interesting results
obtained by Paul Kiparsky in unpublished work on lexical phonology, and I have scarcely
touched on the issue of segmental quantity. Nonlinear phonology is already too large and
changing too quickly for a fully adequate survey of this sort.

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12. A Letter from London
The Phonologist's Dilemma: A Game-theoretic Approach to Phonological Debate

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In this letter I would like to consider a question of phonological analysis from the point of view of game theory. My conclusion is that for a certain class of questions, cross-theoretic discussion is useless. I will begin by defining two phonological theories: Theory A is characterized as strictly privative, all objects in its theoretical space are present or absent; the absence of an object cannot be interpreted theoretically. Theory B is not privative in this sense. Objects may occur in varying degrees on a scale (typically two degrees) and nothingness may receive (eventually) an interpretation; that is nothingness may be transformed into a theoretical object. Let us now flesh out these theories by furnishing some objects. Theory A has the primitives, a, b and g Theory B has +a, -a, +b, -b, +d, -d where +end - represent two (extreme) scalar values for some object in the theory. Theory B is symmetric in the sense that +a and -a have the same theoretical status; either may be manipulated by the mechanism of the theory. Theory A is asymmetric; Objects are not twinned—there is no corresponding -g, for each g. Although not essential for this discussion, it should be noted that nothing prevents Theory B from mixing symmetry with asymmetry. That is, starting from simply e, one could apply interpretative conventions to translate e into, say, +e and nothingness into -e. Both +e and -e are of course real objects in Theory B and may be manipulated by the mechanism of that theory. In Theory A, only some e is real. Nothingness is not interpretable and consequently may not be manipulated.

Now consider some phenomenon in a given language. In Theory A this phenomenon is interpretable as combining one primitive, a, with one or a series of other primitives. In Theory B, there is a choice. One scalar value, say, +a may be the agent of this phenomenon, or alternatively its "opposite" -a may be the designated agent. Thus, two possible analyses are available to Theory B, one employing +a and another employing -a. Theory A may only use a. In order to proceed I must assume a translation table that provides a partial list of correspondences between the objects of Theory A and those of Theory B.

<table>
<thead>
<tr>
<th>Theory A</th>
<th>Theory B</th>
</tr>
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<tbody>
<tr>
<td>α</td>
<td>-α</td>
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<tr>
<td>-</td>
<td>+α</td>
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</tbody>
</table>

Notice that certain objects of Theory B are uninterpretable in Theory A. Put another way, Theory A denies their existence. There should be no necessary correlation between a scalar
value in Theory B and its existence or non-existence in Theory A. B objects with the value +
need not always correspond to objects in A. I have tried to reflect this fact in (1).

Let us now apply this situation to a concrete case: Hungarian vowel harmony. The
facts are irrelevant here. I wish to discuss only the formal properties of Theories A and B and
how each approaches this phenomenon. The discussion of Hungarian vowel harmony
involves the correspondence table shown in (2).

<table>
<thead>
<tr>
<th></th>
<th>Theory A</th>
<th>Theory B</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRONT</td>
<td>-BACK</td>
<td>-BACK</td>
</tr>
<tr>
<td>-</td>
<td>+BACK</td>
<td>+ROUND</td>
</tr>
<tr>
<td>ROUND</td>
<td>+ROUND</td>
<td>-ROUND</td>
</tr>
<tr>
<td>-</td>
<td>HIGH</td>
<td>+HIGH</td>
</tr>
<tr>
<td>NOHIGH</td>
<td>-HIGH</td>
<td>+HIGH</td>
</tr>
</tbody>
</table>

Theory A has three objects that may be manipulated; Theory B has six. Now consider the
following question: What is the agent of Hungarian vowel harmony (i.e. the front-back kind)?
Theory A says it must be FRONT; Theory B offers two possibilities: -BACK or +BACK. Now to
the point of this letter: is the question worth discussing? I assume two individuals in the
discussion which allows for the following combinations (A = an adherent of Theory A and B
= an adherent of Theory B):

(3) i. A⇔A ii. A⇔B iii. B⇔B

Now I set up a two dimensional "payoff board" with the columns representing the truth or
falsity of the claims and the rows corresponding to the theories in question. The values of
each cell are the outcome of a particular situation, viz. the impact of the veracity of the
analysis on the theory in question. I begin with A⇔B interactions.

(4) Payoff board for the claim, '+BACK is the agent of Hungarian vowel harmony.'

<table>
<thead>
<tr>
<th></th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Player A</strong></td>
<td><img src="image" alt="Diagram" /></td>
<td>SURVIVES</td>
</tr>
<tr>
<td><strong>Player B</strong></td>
<td>WINS</td>
<td>SURVIVES</td>
</tr>
</tbody>
</table>

The interpretation of (4) is as follows: suppose that the claim turns out to be true. This is
inexpressible in theory A and it explodes. Theory B wins in such a case. Now suppose that
the claim is false. Theory A is still in business; it has survived. But then so has Theory B.
The correct strategy for Theory B is now to claim that -BACK is the agent of Hungarian vowel harmony. This gives us a new payoff board.

(5) Payoff board for the claim, 'BACK is the agent of Hungarian vowel harmony.'

<table>
<thead>
<tr>
<th></th>
<th>False</th>
<th>True</th>
</tr>
</thead>
<tbody>
<tr>
<td>Player A</td>
<td>SURVIVES</td>
<td>t</td>
</tr>
<tr>
<td>Player B</td>
<td>SURVIVES</td>
<td>WINS</td>
</tr>
</tbody>
</table>

I call the combination of (4) and (5) a Phonologist's Dilemma situation. It is clear that Theory B now has an optimal strategy: create a succession of situations with payoff boards of the form (4) all the while retaining boards like (5) as a fall-back strategy. The idea is to find "holes" in the translation table—places where Theory A has no corresponding object—and then posit a phenomenon that assumes the existence of the Theory B object. Let us call this the Iterated Phonologist's Dilemma Strategy.

Player A now continues with a situation that is formally identical to the Hungarian vowel harmony case. Consider, say, ATR-ness. We have the following correspondance table:

(6)

<table>
<thead>
<tr>
<th>Theory A</th>
<th>Theory B</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATR</td>
<td>+ATR</td>
</tr>
<tr>
<td>-ATR</td>
<td>-ATR</td>
</tr>
</tbody>
</table>

Player B now proposes, 'ATR is the agent of Yoruba harmony.'

(7) Payoff board for the claim, 'ATR is the agent of Yoruba harmony.'

<table>
<thead>
<tr>
<th></th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>Player A</td>
<td>t</td>
<td>SURVIVES</td>
</tr>
<tr>
<td>Player B</td>
<td>WINS</td>
<td>SURVIVES</td>
</tr>
</tbody>
</table>

Now what about Player A? Clearly the only rational strategy is to refuse to play. It is not in Player A's interest to discuss such questions with Player B since the results of such a debate
could have no conceivable consequence for the status of Theory B. Player A is in a classic no-win situation. At best Player A survives the current test but since Player B will follow the optimal strategy the A player will only have to face the same situation at the next encounter. Player B has nothing to lose in such debates and could benefit if eventually one of the claims s/he advances turns out to be true. This results in the destruction of Theory A which could be construed as beneficial to Theory B. In sum, Player A should avoid discussion with Player B in the domain of the kinds of claims referred to above. Player B may have some marginal interest in such discussions to the extent that s/he cares about the continued existence of Theory A.

So much for the interactions of the type A⇔B. What about A⇔A interactions. Clearly, they must come out equal in any discussion of such claims; they sink or swim together. Now suppose we had an additional factor, something called TRUF. I am using TRUF as some external evaluatory factor agreed upon by both players. TRUF means succeeding in a game where the rules have been agreed upon by the players. We can think of it as putting together the pieces of a jigsaw puzzle and winding up with an interpretable picture. Now, in A⇔A interactions is it worth discussing claims of the sort presented above? On the positive side there is the TRUF payoff: knowing when something is wrong. On the negative side there is the abandoning of a theory; going back to square one as it were. Obviously if TRUF is given a sufficiently high payoff, then such discussion is worthwhile. Players gain more by learning that their current theory is wrong than by persisting in maintaining theories that fail the TRUF criterion.

Finally, this brings us to B⇔B interactions. Are such claims worth discussing among the B players? The payoff table is identical for all such players. Notions of TRUF are inapplicable here because the discussion of these individual claims could never have a bearing on this issue. Temporarily placing the piece of a jigsaw puzzle in an incorrect position has no bearing on the existence of the final picture. The question is then, why should B Players even be interested in discussing the sorts of claims outlined above?