aminig the descriptive differences between English and American fiction. Whatever the cause, the four compared English novels are given, though in various degrees, concrete rendition of detailed portraiture of thick, social lives, that can be distinguished from the typified, visionary or ideational contours of lives in any of the compared American counterparts. This weakens what Mills discusses in " Conclusion " on " form," " concern " and " history," which is rather a review of the general theory somewhat irrelevant to the comparisons. Two appended essays, " The Gateway of Language," and " Revising the Trilling Thesis " are supplementary to the new approach, of which the first is worth reading in that it pays unique attention to the question of style in literary criticism.

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Reviewed by Masatomo Ukaji, Toshio Nakao,
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Tomoko Ura, and Norio Yamada.

o. These are the *Proceedings* of the *First International Conference on Historical Linguistics* held at the Univ. of Edinburgh between 2nd and 7th, Sept., 1973. The aim of the *FICHL* was " to bring together scholars interested in language change in an atmosphere in which no single theoretical framework was being assessed or elaborated." Here are included 34 papers on language change, descriptive, theoretical, or both.

Each of them has an intrinsic value of its own, and is extremely challenging to those interested in historical linguistics.

1. Syntax

The article " The origin and development of Modern English periphrastic *do* " (I. 159–89), by R. B. Hausmann, is an attempt to describe the origin and devlopment of periphrastic *do* within the framework of transformational grammar. He assumes that the transformational rules

(1) Identical Verb Phrase Deletion
 Negative Placement
 Incorporation of Negative (optional)
 Question Formation
 Tense Attachment (conditioned)
 do-Insertion

applied in this order account for Modern English sentences like

(2) The kids like candy and I *do*, too.
(3) I *do* like to take baths.
(4) *Did* he go later than usual?
(5) He *did* not / *didn't* think there was a solution.
(6) *Did* he not / *Didn't* he think there was a solution?

For the corresponding Old English constructions, the following transformations are needed.

(7) Identical Verb Phrase Deletion
 Negative Placement
 Negative Incorporation (conditioned)
 Tense Attachment
 Question Formation
 do-Insertion

Comparing the two sets of transformational rules, H concludes that the development of Modern English periphrastic *do* is syntactic rather than semantic in that it consists in the reordering of Tense Attachment and Question Formation (' TA and then QF ' for OE, but ' QF and then TA ' for ModE) and in some slight differences in conditions on transformations (e.g. the negative in OE is so placed as not to block Tense Attachment from applying). As for the origin of periphrastic *do*, he

says that his analysis implies that it is most probably a development out of a substitute verb *do* that already existed in Old English. He finds corroborative evidence for his analysis in German periphrastic auxiliary.

To account for Old English sentences like

(8) Hu gegehst þu fixas? 'How catch you fish?' (Ælfric's *Coll.* 32)

H adopts, as is pointed out above, the analysis in which Tense Attachment precedes Question Formation. An alternative explanation would be to devise the Structural Description (SD) of Question Formation, or equivalently Subject-Aux Inversion in this case, in the following way (tentative formulation).

(9) Subject-Aux Inversion (I):

$$
\text{SD:} \quad \text{Pre-S} \quad \text{NP,} \quad \text{Tense} \begin{Bmatrix} M \\ have \\ be \\ V \end{Bmatrix}, \quad X
$$

$$
\begin{array}{ccccc}
\text{SC:} & 1, & 2, & 3, & 4 \\
& 1, & 3+2, & 0, & 4
\end{array}
$$

For Modern English sentences such as

(10) How do you catch fish?

we need a modified version:

(11) Subject-Aux Inversion (II):

$$
\text{SD:} \quad \text{Pre-S,} \quad \text{NP,} \begin{Bmatrix} \text{Tense,} & & VX \\ \text{Tense} \begin{Bmatrix} M \\ have \\ be \end{Bmatrix}, & X \end{Bmatrix}
$$

$$
\begin{array}{ccccc}
\text{SC:} & 1, & 2, & 3, & 4 \\
& 1, & 3+2, & 0, & 4
\end{array}
$$

For a newer form such as

(12) Did you have a good holiday?

further modification is necessary (only the relevant part of SD is given):

(13) Subject-Aux Inversion (III):

$$\left\{\begin{array}{ll} \text{Tense,} & \text{VX} \\ \text{Tense} \left\{\begin{array}{l} \text{M} \\ be \end{array}\right\}, & \text{X} \end{array}\right\}$$

It is significant that essentially the same rule is required for Negative Placement and VP Deletion. To explain sentences like the following which appeared first in Shakespeare's time

(14) Good Hermia, do not be so bitter with me.   MND. III. ii. 306
(15) Which do not be entreated to, but weigh   Ant. II. vi. 32

we require further innovation in the SD:

(16) Subject-Aux Inversion (IV):
$$\left\{\begin{array}{ll} \text{Tense,} & \text{VX} \\ \text{Tense M,} & \text{X} \end{array}\right\}$$

The proposed analyses (9)–(16) are intriguing especially as they reflect straightforwardly the gradual detachment of Tense from the following verbal elements to be carried by *do* which took place in the history of English interrogative and negative sentences.

If this alternative explanation is correct, we may say that the history of English with respect to periphrastic *do* consists in the changes in the SD of the rules involved rather than in reordering of transformations and some differences in conditions on them as H asserts.

It is well known that there are two kinds of analyses of Modern English modals. One is Ross': auxiliaries and verbs are really both members of the same lexical category, VERB. He claims that auxiliaries, and more particularly modals, need to be derived from higher predicate. The other is Jackendoff's: modals should be derived from the same S as the one they end up in. The first section of " The diachronic analysis of English modals " (I. 219–49), by D. W. Lightfoot, shows that all of Ross' arguments are faulty and that there are good reasons for adopting Jackendoff's position. However, we find a different state of affairs in Old English: there is no justification for setting up a category " modal " for OE. The antecedents of the modern modals (*sculan, willan, maȝan, cunnan, motan*, etc.; he calls these pre-modals) had the same characteristics as ordinary complement-taking verbs. Therefore, it is entirely reasonable to argue that a radical restructuring (a radical change in deep structure) took place in the development of Modern English. Thus,

the above antecedents were re-analyzed as forming a new category
" modal," being derived as part of an S containing the verb they govern.
In the final section L suggests that Kiparsky's opacity principle be at
work in this syntactic change. Thus " the category membership of
pre-modals became opaque and the grammar moved to avoid such
opacity " (244), resulting in a radical re-analysis of pre-modals of the
kind proposed in this paper.

" The subjunctive mood as a changing category in Romance " (II.
169–88), by M. Harris, first shows that we need to distinguish between
two separate uses of the subjunctive in Latin: those cases where the
subjunctive was meaningless and functioned as an empty marker of
subordination, and those cases where it was meaningful and was con-
trasted normally with the indicative. The first type of subjunctive al-
ways occurred in dependent clauses, and the second type occurred only
in main clauses. H then outlines the subsequent development of the
subjunctive in French, Spanish, and Italian. According to him, the
history of the subjunctive in dependent clauses has been extremely
stable: in the western Romance languages many of the same meaning-
classes as in Latin, such as verbs of volition and command, require the
verbs of the governed clauses to be in the subjunctive. The subjunc-
tive in independent clauses, on the other hand, was anomalous; it was
" rivalled from the Vulgar Latin period onwards by the new conditional
forms, which came to be fully accepted in this role in French, but which
in Spanish have never fully ousted the subjunctive " (175). Finally H
attempts to suggest causes of the main changes described above.

The article " Explorations in linguistic elaboration; language change,
language acquisition, and the genesis of spatio-temporal terms " (I. 263–
314), by Elizabeth Closs Traugott, is concerned with the relationship
between language change and language acquisition, with particular at-
tention to the ways in which languages may become more elaborate.
' Elaboration ' not merely is innovation but can include restructuring.

T asserts that pidginization and creolization have some similarities to
child language acquisition. In both cases languages show elaboration
from general, unmarked principles to more elaborate schemes. The
evidence comes from the locative and temporal systems of languages.
Locatives develop from broad to specific. Asymmetric specific loca-
tives develop earlier than symmetric ones. The locative forms in a
language are extended metaphorically to temporal relations. The

cognitively least complex locative terms are extended earlier and more regularly to temporals than the more complex ones.

Two papers, T. Vennemann's " Topics, subjects, and word order: from SXV to SVX via TVX " (I. 339–76), and C. N. Li and S. A. Thompson's " Historical change of word order: a case study in Chinese and its implications " (I. 199–217), deal with the problem of word order and the theory of word order change, which have unduly been neglected by transformational grammar.

Assuming that syntactic structures are function-argument structures (operator-operand), V proposes the " principle of natural serialization " such as the following, which defines the basic word order and governs the word order change of languages:

$$\{Operator\ (\{Operand\})\ \Rightarrow\ \begin{cases} [Operator\ [Operand]]\ in\ XV\ languages \\ [[Operand]\ Operator]\ in\ VX\ languages \end{cases}$$
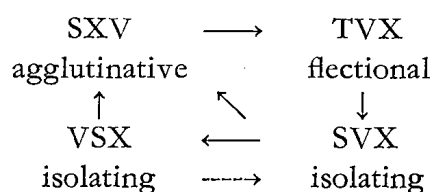
Not all languages are consistent in respect to the principle. The reason is, he argues, that in a proposition F_V (t_S, t_O) a neutral order is realized as $NP_S\ NP_O\ V$, $NP_S\ V\ NP_O$ in SXV, SVX languages respectively, and that when NP_O is topical or focused, it shifts to the sentence-initial position:

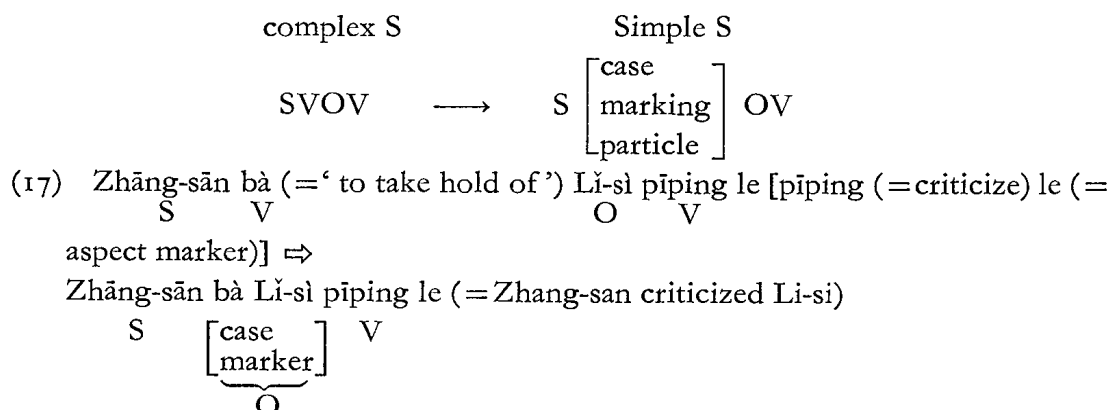| Language	XV	VX
Type	SXV	SVX
" Unmarked " order	NP NP V	NP V NP
" Marked " oder	NP NP V	NP NP V
	Same	Different

XV languages, where the resulting structure is identical with the basic type, develop some S-O marking morphology (e.g. a case system). When such morphology is reduced, there evolve VX languages in which word order is a major grammatical marker. In the latter the finite verb first shifts to a position following the topic(s) (T) [subject, or other topical elements] (e.g. Romance) and may subsequently be specialized in the second clause position (e.g. English).

The following diagram shows central aspects of language developments in connection with morphologically-based types and word order

types.

$$\begin{array}{ccc}
\text{SXV} & \longrightarrow & \text{TVX} \\
\text{agglutinative} & & \text{flectional} \\
\uparrow & \searrow & \downarrow \\
\text{VSX} & \longleftarrow & \text{SVX} \\
\text{isolating} & \dashrightarrow & \text{isolating}
\end{array}$$

On the other hand, L and T discuss word order change in Chinese from SVO to SOV and argue that the change is not caused by the direct reordering of sentence constituents but rather by change of complex S into simple S with a new word order as a result of morphological or lexical change; that is, the verb in SVO languages develops into a case marker, collapsing SVO complex sentences into simple SOV sentences:

$$\begin{array}{ccc}
\text{complex S} & & \text{Simple S} \\
& & \begin{bmatrix} \text{case} \\ \text{marking} \\ \text{particle} \end{bmatrix} \\
\text{SVOV} & \longrightarrow & \text{S} \quad\quad\quad \text{OV}
\end{array}$$

(17) Zhāng-sān bà (='to take hold of') Lǐ-sì pīping le [pīping (=criticize) le (=
       S   V   O   V

aspect marker)] ⇨
Zhāng-sān bà Lǐ-sì pīping le (=Zhang-san criticized Li-si)
  S $\begin{bmatrix}\text{case} \\ \text{marker}\end{bmatrix}$ V
          O

2. Theory and description in phonology

A language seems to have certain stable patterns, which cause its changes and according to which it changes.   In " Phonological change: some causes and constraints " (II. 1–15) J. Aitchison considers as possible candidates for such patterns the following two: surface phonetic constraints and phonological symmetry.

Based on the analyses of the data of pre-classical Greek, A points out that surface phonetic constraints are a relatively stable element and that " the maintenance of this stability causes a considerable number of changes as productive suffixes and loanwords come into the lexicon " (4) On the basis of the above considerations, he suggests the necessity of setting up some type of surface phonetic constraints analogous to, e.g., Kisseberth's ' conspiracies ' and Kiparsky's ' negative targets.'

Next, A argues that there is a tendency for languages to retain phonological symmetry, which can be conceived of as one of the factors causing and constraining phonological change. Greek [s] is unstable and probably is the only fricative, which caused Indo-European *[s] regularly to become [h] in Greek.

He infers that the principle of retaining phonological symmetry plays an important role in this fricative weakening. This symmetry, which cannot be explicitly characterized by Chomsky-Halle's 1968 model of phonology, must be explicated in the theory.

In " On conditions on sound change " (II. 89–97), by L. Campbell, two conditions on sound change are discussed. The author first proposes that morphological conditioning of sound change should be considered as an aspect of a functional constraint: " Morphological conditioning of sound change happens only in cases where an unrestricted sound change would eliminate important morphological distinctions " (89). He adduces a few familiar instances, showing that the morphological distinction has a functional tendency to be retained when the relevant information cannot be otherwise expressed in the surface structure. Next he challenges the traditional view that semantic factor is not involved in sound change (see, for example, Bloomfield 1933: 364). One of his examples shows that in an American Indian language only animal terms (fox, owl, bob-cat, badger, and coyote) undergo a certain sound change and not others.

The article " On the notion ' Explanation ' in historical linguistics " (II. 231–55), by R. J. Jeffers, is concerned with re-establishing the notion of *explanation* of facts associated with language history, which has been misinterpreted in the recent literature. In particular, J emphasizes the importance of establishing specific grammatical contexts as an explanatory device in discussing non-phonetic (morphophonemic, morphological, or syntactic) linguistic changes. He points out the previous scholars' failure to delimit the context in which relevant processes of change have operated. For example, traditional notions of *analogy* cannot have any significant explanatory value without explicit statements of the grammatical context in which non-phonetic changes occur. Without any limiting contexts, arbitrariness in appeals to analogy cannot be eliminated. Similarly, according to J, *generative explanations* for linguistic changes are inadequate in that they have disregard for specific explanatory contexts in discussions of non-phonetic

changes and, therefore, do not offer any motivation for the change in-
volved.   Thus, generative notions such as rule loss, rule addition and
rule reordering may be quite adequate for the description of situation
wherein two historically related grammars are formally distinguished,
but such a description never explains any motivation for the change—
how the rule got lost, how the rule got added and how the rules were
reordered.

The article " On formal and functional explanation: some notes on
Kiparsky's ' Explanation in phonology ' " (II. 277–93), by G. Koefoed,
deals with the relation between the simplicity measure, on the one hand,
and paradigm regularity and rule transparency, on the other.   The
author makes here a distinction between formal and extra-formal con-
straints, which virtually correspond to Kiparsky (1972)'s dichotomy,
formal and functional constraints, respectively.

Kiparasky thinks that paradigm regularity is an extra-formal con-
straint, and that it is independent of the simplicity measure.   On the
contrary, the author proposes the alternative that " paradigm regu-
larity is not an independent factor that conflicts with simplicity of the
rule system; rather, both are aspects of one notion ' learnability of the
abstract system ' " (284).   He adduces several kinds of evidence to con-
firm this alternative.   Among these the strongest evidence is the fol-
lowing: in some cases levelling (paradigm regularity) leads to the com-
plexity of the system, but the simplification in the rule system never
forms a new alternation type.

Finally K comments on the relation between rule transparency and
paradigm regularity which is proposed in Kiparsky (1971).   Accord-
ing to Kiparsky, the principle of paradigm reularity works only when
that of rule transparaency cannot be applied.   King (1972), however,
assumes that quite the contrary is true.   He proposes here that these
two are not in conflict, because paradigm regularity has nothing to do
with rule reordering (rule transparency).   He assumes that alternations
(paradigm regularity) tend to be eliminated by rule loss (290).

In " Phonological restructuring vs. rule addition " (II. 99–121), by
changes R. C. DeArmond, the author states that diachronic phonological
changes can be divided into rule insertion and phonological restructuring.
Restructuring implies the systematic change in the phonological base,
and this change is of the two types: merger and phonological shift.
Several examples are discussed where merger, rather than usually-sup-

posed rule addition to the grammar, economically explains a complicated diachronic phonological change (see, for example, the change of Indo-European reconstructed vowels */ă/ and */ŏ/ into Proto-Slavic */ŏ/, 99–102). Needless to say, not all cases of phonological change can be accounted for by the notion ' merger ', and there are instances where ordinary rule insertion and phonological shift are applicable.

Finally he comments on the current controversy between concrete phonology and abstract phonology, and offers evidence in favor of concrete phonology, using instances of phonological restructuring in Old Czech and other languages.

P. Kiparsky's " Remarks on analogical change," (II. 257–75) and N. Vincent's "Analogy reconsidered " (II. 427–45) both discuss analogy problems.

A. Approaches to analogy. K denies any proportional theory of analogy for three reasons. First, it is too weak in that " it allows many kinds of analogical change which we do not find in the actual history of languages " (259). Second, it is too strong in that " cases of *bona fide* analogical change exist for which no proportional representation can be given " (*ibid.*). Lastly, the proportional model fails to characterize across-the-board analogical changes.

Besides, K points out that the formal characteristics of the grammar alone cannot distinguish correctly between possible and impossible changes and therefore, linguistic changes should be defined in terms of both grammar and surface representation.

V also criticizes generative approaches to analogy, saying that analogical changes " cannot necessarily be predicted in advance " (437) and that, therefore, it is wrong " to formalize all aspects of analogical change " (*ibid.*).

B. The direction of analogical change. In his doctoral dissertation (1965), K made the claim that analogical changes proceed in the direction of optimalization in terms of the evaluation measure provided by the theory of generative grammar. But, in his present paper, he modifies this claim to the effect that it should be supplemented by a certain proviso, because there are two types of analogical change which produce irregularity in the grammar as a whole. One is *lexical split*, in which " words are regularized in certain meanings or uses, while remaining irregular in others " (265). (For example, *brother* is pluralized into *brothers* and *brethren*.) The other is *morphologization*, i.e., " analog-

ical regularization in specific morphological categories " (*ibid.*). At least in these cases, linguistic change based upon language acquisition may not proceed in the direction of optimalization.

C. Lexical split. K claims that Kuryłowicz's Fourth Law of Analogy —when a new analogical formation is accepted in the language, it takes on the primary function of the word and if the older form remains it is restricted to secondary functions—is unnecessary as an independent principle. He cites a considerable number of counter-examples such as *oxen / oxes, worse / badder,* and provides a coherent explanation for them. Furthermore, he succeeds in overcoming the inherent inadequacy of the law that it cannot explain why the older form fails to change in such examples as *stretched / straight,* by assuming that the older form *straight* was reanalyzed as an independent regular lexical item before the analogy took place.

D. Causes of analogical change. K seeks a cause of analogical change in language acquisition by children. That is, he views the actual process of change as " one of *imperfect learning,* in which residues of the intermediate grammars created by children during the acquisition of language are carried over into the adult system " (262).

On the other hand, V suggests, following Bever and Langendoen (" The interaction of speech perception and grammatical structure in the evolution of language ", 1972), that analogical changes would proceed in the direction of maximizing ease of perception.

In the paper " The representation of non-productive alternation " (II. 203–29), G. Hudson argues against the use of exception features (diacritic or α rule features) in phonology, and proposes an alternative manner of description: ' lexical representation.'

Basing his argument on the fact that the development of alternations in Ethiopian Semitic provides no evidence for confirming the existence of the exception features, he proposes that non-productive alternations must be entered in the lexicon as part of the phonological representations of alternating items. That is, instead of lexical items as in (18a) and a minor rule as in (18b), which use the diacritic feature [+E]; or the lexical item (19a) and rule (19b), which use the feature +rule n; he suggests lexical items as in (20a) and the rule (20b).

(18)	a.	[abc]	+E	b.	C $\longrightarrow$ D / X, +E
(19)	a.	[abc]	+rule n	b.	n. C $\longrightarrow$ D / X

(20) a. [ab $\begin{bmatrix} c \\ d \end{bmatrix}$]   b. $\begin{bmatrix} C \\ D \end{bmatrix}$ $\longrightarrow$ $\begin{bmatrix} D \ / \ X \\ C \quad \text{Otherwise} \end{bmatrix}$

Thus the alternation of /n/ and ø in the indefinite article is explained as follows:

(21) $a\langle n \rangle$ $\begin{bmatrix} an \ / \ \underline{\quad} \ V \\ a \quad \text{Otherwise} \end{bmatrix}$

Lexical representation is furthermore necessary for describing suppletive alternations, which can be explained by rule such as (22):

(22) $\begin{bmatrix} go \\ went \end{bmatrix}$ $\longrightarrow$ $\begin{bmatrix} went \ / \ \text{Past} \\ go \quad \text{Otherwise} \end{bmatrix}$

He stresses several advantages of lexical representation from the point of evaluation measure, speakers' intuition, change in the shape of the rule and so on.

In his paper, " Some remarks on the historical development of English seen from the functionalist perspective," (I. 315–37), J. Vachek emphasizes from the point of view of the Prague functionalism that in dealing with phonological changes consideration should be taken not only into phonological factors, or, gammatical or lexical levels, but into non-linguistic factors. He takes for example the Great Vowel Shift: the system balance had to be restored when ME /ā/ fronted to /æ/, with four front items as against three back items. This was fulfilled by the merger of /ę̄/ and /ē/ (lower class dialect) rather than by the merger of /ā/ and /ę̄/ (and / ai/ and / ei /) (upper class dialect) because the former merger is functionally the more advantageous of the two; a tremendous number of new homonymous pairs would otherwise have been produced. In this connection V criticizes the generativist phonological approach in that 1) historical long vowels /ī/, /ū/, etc., are interpreted as biphonemic (/ij/, /uw/, etc.), 2) the mutual relations of long and short vowels on the historical stages are not conceived of in terms of bimoric vs. monomoric opposition, and 3) the transformational approach is concerned with the processes rather than with an explanation of the causes or motives, of language development.

In " Functional motivations for age grading in linguistic innovation " (I. 33–63), N. S. Baron argues that a *functional* approach to diachrony is useful for identifying sources of syntactic innovation. His underlying

conjecture throughout this article is that "language changes when some people find that their language no longer adequately fills the needs for which it is intended" (35). Hence the assertion that in order to determine the sources of diachronic innovation, not only a theory of grammar alone (*completence*) but a theory of language function or of age gradation, which is, in effect, a theory of language use (*performance*) or of language acquisition, must be incorporated within the theoretical framework of linguistic change. By asking the functional question of why language changes, he demonstrates that "functional needs of speakers rather than grammatical complexity alone may sometimes help us to identify the innovating sources of syntactic changes" (35). Such a functional argument descends partly from *functionalism* of the past (e.g. of the Prague School, Martinet's, Firth-Halliday's, etc.), although each of them has a theoretically and methodologically unique characteristic.

Setting up a theoretical framework for understanding the relative positions of children and adults as users of language within a social system, he examines some innovations which arise in children and adult usage. For example, three types of changes of lexical categorization in American English are given: 1) Verb → Noun (e.g. take a *listen*); 2) Locative Particle → Verb (e.g. *upping* the ante); 3) Noun → Verb (e.g. already *sugared* and *lemoned*). He shows that there are functional reasons why these innovations are generally more productive among adults than among children. These lexical innovations are better explained and predicted by *functional consideration* than by *grammatical arguments* alone.

R. Lass's "Linguistic orthogenesis? Scots vowel quantity and the English length conspiracy," (II. 311–52), and M. V. Taylor's "The great southern Scots conspiracy: pattern in the development of Northern English" (II. 403–26) are both concerned with conspiracy matters.

L argues for the existence of 'conspiracy' behind a series of seemingly 'unrelated' sound changes. First he explains the synchronic distribution of lengthenable and non-lengthenable vowels in modern Scots by 'Aitken's Law' that took place in the late 16th-early 17th century: (a) all long vowels and diphthongs shortened everywhere except before /r, v, z, ð, #/, (b) the nonhigh short vowels /e, a, o/ lengthened in the same environments. Then he tries to argue that Aitken's Law is the

last step in a series of directed changes stretching back to Proto-West Germanic. To prove this, he adduces the following rules: West Germanic Final Lengthening, Old English Quantity Adjustment, Pre-Cluster Lengthening, Early ME Quantity Adjustment, Open Syllable Lengthening. Each rule turns out a quantity-neutralizing rule, that is, the range of environments where free choice of quantity is allowed is progressively narrowed. Therefore he claims that the above set of rules represents a conspiracy or orthogenesis aimed at the elimination of lexically dichotomous vowel systems or the maximization of the predictability of vowel length.

In this light he concludes that the historical function of Aitken's Law is a " step beyond the point in the English Length Conspiracy at which Open Syllabe Lengthening occurs, and brings the language closer to the ' goal ' of dephonologization—a ' goal ' of making all length predictable " (335).

T also discusses length conspiracy in terms of analysis of the historical development of Northern English. She claims that the common goal of the phonological rules operative here is the establishment of surface phonetic constraints governing vowel length, and concludes that " the Scots data give additional support to the hypothesis that the concept of some higher order phonological pattern from which individual rules are derived should be part of a linguistic model " (419).

In " Variable rules in historical linguistics," (I. 251–62) J. Reighard shows that three distinct historical rules of Latin (i.e., one vowel syncope and two vowel insertion rules of Samprasarana and Anaptyxis) lost their independent synchronic justifications in Late Latin, and were collapsed into a single variable rule (in Labov's sense).

Of particular interest here are 1) the new collapsed rule " necessarily carries a much higher probability of application than any of its predecessors since it alone produces all of the phonological alternations formerly produced by the three rules " (256), 2) the more certain the specification of the phonological environment of the rule is, the more rapid its lexical diffusion (in the sense of Cheng and Wang) becomes.

The aim of B. H. Bichakjian's paper " The evolution of French [y]: an integrated change " (II. 71–88) is to demonstrate that the emergence of the French [y] is an integrated part of the broader change undergone by all the rounded vowels. He argues that French [y] evolves from VL /u/ just parallel to other front rounded vowels which come from

VL /ǫ/, /o̜/ :

(23)	VL	/u/	/ǫ/	/o̜/
	Glide Insertion:	uw	wɔ	ow
	Dissimilation:	iw	wɛ	ew
	Monophthongization (Rounding & Glide Deletion):	y	œ	ø

He assumes that the [y], which developed in the open stressed syllable, spread to other positions.

J. J. Ohala's paper " Experimental historical phonology " (II. 353–89) is an attempt to verify hypotheses of historical phonology by experiments. The sound patterns O investigated in this test are velar softening, vowel laxing and tensing, stress assignment, and some others.

The test was conducted as follows. The subjects were given a suffix and the words to which the suffix was to be added. Then they were asked to pronounce the newly invented words, which would be likely to yield some phonetic change in the stem.

O presents the following evidence for analogy. A " leading " example of the use of a suffix was first given to the subjects. Most subjects altered the pronunciation of the stem in accordance with that example.

There is no doubt that experimental historical phonology is a promising new field, but the technique of experiment of this kind seems to leave much to be desired.

In " Formalization as degeneration in historical linguistics " (I. 1–32) R. Antilla criticizes severely generative historical linguistics, which, according to him, has done nothing but rule taxonomy, eliminating history altogether. Many facts facing transformationalists defy formalization, which causes among them a noticeable shift to traditional ways of doing or looking at things (cf. Kiparsky's paradigm conditions, distinctness conditions). He argues that a formalized grammar cannot explain or predict changes of natural languages, and that linguistic changes should be explicated within a more general, more mental framework such as Peircean semiotic reasoning.

3. Typology

In " Towards a typology of change: bifurcating changes and binary relations " (II. 17–60), H. Andersen is concerned with the problem of

formulating an overall typology of linguistic change, or more particularly, with the classification of abductive innovations in phonology. When a learner of a language infers a grammar from the utterances he hears from his model, if he " defines any of the structural relations that hold among the elements of his grammar differently from his models, he may be said to have made an *abductive innovation* " (23). Now when an innovation occurs, it can be contrasted with its logical alternative. Such pairs of logically alternative innovations are called bifurcating changes or simply bifurcations. Bifurcations are often realized in different parts of a language area when dialects diverge. For example, Old Serbocroatian had a three way distinction in front vowels consisting of /i/:/ĕ/:/e/. In the course of the development of the language, the distinction has been reduced in the greater part of the language area to two way distinction of /i/:/e/; in the West /ĕ/ has merged with /i/, whereas in the East it has merged with /e/. These two developments form a bifurcation with respect to the distinctive feature of diffuseness. Since the realizations of /ĕ/ were acoustically and perceptually intermediate between those of the diffuse /i/ and those of the non-diffuse /e/, they could be evaluated either as variants of /i/—which was the western solution, or as variants of /e/—which happened in the East. By examining in this way what types of bifurcation may arise when a learner infers a phoneme inventory, Andersen attempts to show " how closely the criteria of a typology based on bifurcations correspond to the essential characteristics of phonological structure, and hence how much we can hope to learn about phonology by studying phonological change " (41).

E. P. Hamp's paper " The major focus in reconstruction and change " (II. 141–67) deals with a typology of linguistic change. H views " the possibilities of linguistic change in a spectrum of descending order of expectancy or regularity: *output-phonetic, systematic phonological, syntactic,* and *semantic* " (156). That is, " change should be more frequent and greater towards the left end of the above hierarchical listing " (166).

In his opinion, much of what has been traditionally called syntactic is really semantic. Semantic change, properly speaking, is change in the constitution or range of the semantic entities which have been introduced in the base component. " Much of what has been called semantic change in the past (lexical replacement, change in the value of constructions, etc.) is really syntactic change; that is, it is change in the

range, distribution or incidence of particular phonetic shapes or constructional features whose appearance is governed by rules " (155).

4. Lack of space forbids us commenting on the following pepars, which have all much to bear on historical change of language: W. M. Christie, "A stratificational view of linguistic change," E-D. Cook, " Internal evidence for the evolution of number categories in Sarcee," D. E. Gustad, " Reconstruction in syntax," J. Hewson, " Comparative reconstruction on the computer," P. N. Werth, "Accounting for semantic change in current linguistic theory," P. Beade, " Diffusion, generalization, and the High German shift," I. Dyen, " Genetic classification and affix reconstruction: the PIE ending of the genitive singular of *o*- stem nouns," H. M. Hoenigswald, " Internal reconstruction and context," F. Kortlandt, " On the history of Baltic accentuation," and S. Shukla, " Phonological change and dialectal variation in Middle-Indo-Aryan."