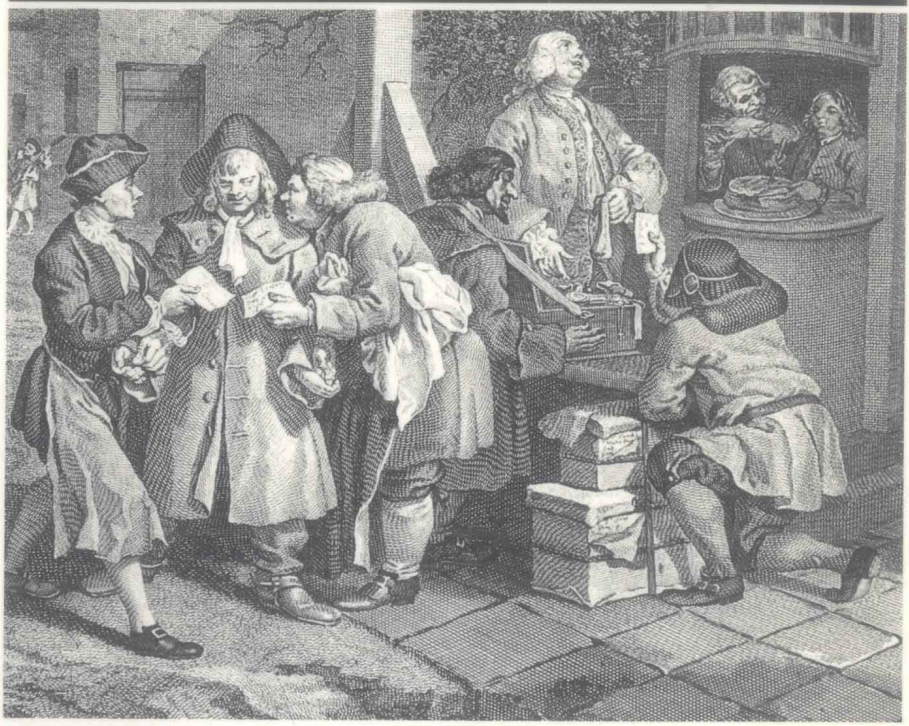
WILLIAM LABOV



PRINCIPLES OF LINGUISTIC CHANGE

INTERNAL FACTORS

Principles of Linguistic Change

Volume 1: Internal Factors

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Language in Society 20

Principles of Linguistic Change

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Nikolas Coupland, Justine Coupland and Howard Giles

19 Linguistic Variation and Change
James Milroy

20 Principles of Linguistic Change
Volume 1: Internal Factors
William Labov

For Uriel Weinreich

Editor's Preface

The *Language in Society* series has produced a number of volumes over the years which we immodestly feel have represented very important milestones in the development of linguistic knowledge, theory, and practice. It is certain, however, that most of the authors who have already contributed to the series, recalling their own personal scholarly debts to William Labov, would gladly acknowledge that the current eagerly awaited volume is the most important of them all. The truth of the matter is that without William Labov there would be no *Language and Society* series. Nor would the (other) editors of the series – or any other practitioners of secular linguistics – be doing what they are doing today. William Labov has not only had an enormous influence on the development of secular linguistics; he actually started it. Without him, there would have been no tradition of empirical linguistic research in the speech community which, even if many linguists insist on referring to it as "sociolinguistics," has been one of the most important of all developments in 20th century descriptive and theoretical linguistics. Having been the originator of this way of doing linguistics, moreover, Labov has for thirty years remained at its very forefront and has continued to be not only its senior and most influential practitioner but also its best. The series is therefore enormously pleased to be able to publish this book, especially since by bringing Labov's latest research and thinking before an even wider audience, future generations of linguists will be inspired and encouraged to realize that, while studying the language of real people as they speak it in the course of their everyday lives may not be the only and is certainly not the easiest way of doing linguistics, it is the most essential and the most rewarding.

Peter Trudgill
University of Lausanne

Notational Conventions

The following notational conventions will be used throughout the three volumes of this work.

Phonetics and phonology

Italics indicate words in their orthographic form.

Bold type indicates the abstract phonological elements that define historical word classes: short **a**, long **ē**, **ai**. A word class is the complete set of words that contain the phonological unit that the class is named for, and that share a common historical development. Word classes as intact unities are relevant to a particular period of time, as chapters 15–18 of volume 1 will show. For these words, length is indicated by a macron: **ī**, **ē**, etc.

Brackets [ ] indicate IPA phonetic notation. The superscript notation for glides [a$^{\text{I}}$] is generally not used. Almost all the diphthongs discussed are falling diphthongs, so that the first element is the nucleus and the second element the glide: [aɪ], [ɛə], etc. The English upgliding diphthongs are usually shown as [aɪ], [aʊ], [eɪ], [oʊ], [ɪi], [ʊu], as these are the conventional forms most easily recognized. Where sources have used [ɩ] and [ɷ] I have retained those forms for the lower high vowels.

Slashes / / are used to indicate phonemes.

Parentheses ( ) indicate linguistic variables, which frequently cover the range of several phonemes: for example, (æh), (oh). The parenthesis notation indicates that attention will be given to the systematic dimensions of variation and the constraints upon it.

Angled brackets < > are used for the output of a variable rule, and within the environment of that rule, to indicate constraints that favor the output. In categorical rules, angled brackets indicate strict cooccurrence.

Acoustic plots used in this work show F2 on the horizontal dimension, with high values on the left and low values on the right, and F1 on the vertical dimension, with high values at the top and low values at the bottom. Both scales are linear. Though diagrams with logarithmic second formant displays correspond more closely to even perceptual spacing, the

more expanded view of the second formant is helpful in exploring the dimension of peripherality, which plays an important role in many chapters of volume 1.

Research projects

Throughout this work, references are frequently made to the results of research projects conducted at the Linguistic Laboratory of the University of Pennsylvania under grants from the National Science Foundation. In many cases, the references are to publications in which those results were reported. In other cases, however, unpublished data and analyses are cited, and here it is often more appropriate to refer directly to the research projects themselves. The following abbreviations are used:

LES The study of the Lower East Side of New York City, the major component of the study of social stratification and change in the New York City dialect, as reported in Labov 1966.

LYS A Quantitative Study of Sound Change in Progress, 1968–1972. The spectrographic study of patterns of chain shifting in a range of British and American dialects, together with a review of the historical record for such patterns, as reported in Labov, Yaeger, and Steiner 1972.

LCV Project on Linguistic Change and Variation, 1973–1977. The investigation of sound changes in progress in Philadelphia, based on the long-term study of 11 neighborhoods and a random survey of telephone users, as reported in Labov 1980, 1989a, 1990, Hindle 1980, Payne 1976, 1980, Guy 1980.

CDC A Study of Cross-Dialectal Comprehension, 1987–1991. An experimental study of the cognitive consequences of the patterns of linguistic change and diversity described in LYS and LCV, as reported in Labov 1989c, Labov and Ash, to appear, Karan and Labov 1990.

Data from dialect geography

In general, the various projects of American dialect geography will be referred to as the *Linguistic Atlas records*. More specifically, the publications arising from these projects include *Kurath 1939* (a report on the methods of LANE, the Linguistic Atlas of New England), *Kurath et al. 1941* (detailed maps of LANE results, with full phonetic transcription of each item), *Kurath 1949* (establishing the basic divisions of the dialects of the Eastern United States, on the basis of regional lexical items from LANE and LAMSAS, the Linguistic Atlas of the Middle and Southern Atlantic

States), and *Kurath and McDavid 1961* (the phonetic and phonemic patterns of the same area based on LANE and LAMSAS records).

Several chapters utilize data from Orton and Dieth's *Survey of English Dialects* (1962–67), cited as *SED*.

Acknowledgments

This work is dedicated to Uriel Weinreich. He was, in the eyes of all who knew him, the perfect academic figure, and as my teacher and advisor, he protected me from all the evils of academic life. During the years that he supervised my dissertation, he was the chair of the Department of Linguistics at Columbia, the editor of *Word*, head of a major research project on semantics, creator and director of the *Language and Culture Atlas of Ashkenazic Jewry*, a major contributor to general linguistic theory, and a teacher supremely devoted to the education of his students. He died at the age of 41, in 1967. I thought that I already knew what I intended to do on entering graduate school, and Uriel never directly imposed his ideas upon me. Yet I found afterwards, in reading his unpublished papers, that he had anticipated many of the plans and ideas that I thought were my own. To appreciate his impact on the work published here, one should read the first part of Weinreich, Labov, and Herzog 1968, which is almost entirely his handwork. The last six months that he knew remained to him were devoted to the work that he thought was most important: the statement of a program for building linguistics upon empirical foundations.

The work reported in these pages rests largely on a series of research projects funded by the National Science Foundation from 1965 to 1992, and it could not have been done without that support. I am particularly grateful for the patient advice and oversight of Paul Chapin, the director of the Linguistics Program, as well as the many colleagues unknown to me who refereed the proposals and reviewed their merits and shortcomings.

In those research projects, I have had the pleasure of working with a remarkable series of associates and colleagues, and it is to them that I am most heavily indebted. They were as a rule graduate students in linguistics. Some have gone into other fields, but most have emerged as major contributors to linguistics, and I have drawn from the research and writing that they have done in the years that followed as much as from the work that we did together. The many citations and extracts from their work that appear in this volume will bear witness to the fruitfulness of their research and the independence of their insights. At more than one point in the exposition, it will be evident that my own thinking has been turned in new directions as a result of their contributions.

One of my earliest associates in the study of sound change at Columbia University was Benji Wald, who took time out from his work on Swahili to do interviews in Chicago and Boston that played a major part in the first formulation of the principles of chain shifting, which Wald and I presented to the LSA in 1968. At the same time, Paul Cohen did the first detailed study of the distribution of short **a** in New York City and northern New Jersey (Cohen 1970), which has been a major reference point for work on lexical diffusion in that complex area of English phonology.

The first half of this volume is largely a development of the quantitative study of sound change in progress by Malcah Yaeger, Richard Steiner, and myself at the University of Pennsylvania, reported in Labov, Yaeger, and Steiner 1972 and referred to here as LYS. Most of the spectrographic analysees displayed in chapter 6 are Yaeger's work, and if the general principles of chain shifting derived from them have value, it is the direct result of her energy and insight. Her fieldwork in Buffalo, Detroit, and Rochester is still an important part of our view of the Northern Cities Shift. Richard Steiner, who has gone on to be a leading figure in Semitic studies, explored the literature on sound change in Indo–European for LYS. More than anyone else, he introduced me to the tradition of careful and accurate scholarship in historical studies, though he did not relieve me of my personal tendency toward error.

The work of the Project on Linguistic Change and Variation (LCV) in Philadelphia and Eastern Pennsylvania, carried out from 1973 to 1979, is reported throughout volume 1 and will be the central data source for volume 2. The research group consisted of Anne Bower, Elizabeth Dayton, Gregory Guy, Don Hindle, Matt Lennig, Arvilla Payne, Shana Poplack, Deborah Schiffrin, and myself. Lennig set up the first computational and mathematical configuration for our vowel analyses, and Hindle maintained and developed it. Hindle's dissertation (1980) was based on the analysis of the extraordinary recording made by Payne of Carol Meyers in the course of an entire day, combined with his telephone survey of Philadelphia. The insights gained from his treatment of the social and stylistic variation in vowel systems play a crucial role at many points in this volume. Payne, Bower, and Schiffrin developed the art of sociolinguistic fieldwork to the highest point that I have had the opportunity to observe, and jointly analyzed the demographic and social patterns of the data. They also carried out the analysis of sociolinguistic variables and short **a** in Philadelphia that forms the basis of a number of chapters in this volume. Dayton did the instrumental analyses of the vast bulk of the Philadelphia vowel systems; the fact that this is now the best-known vowel system in the world is largely due to her energy, persistence, and skill. Payne combined her fieldwork in King of Prussia with middle-class speakers with her study of the acquisition of the Philadelphia dialect by out-of-state children (Payne 1976, 1980), which plays a major role in many chapters of this volume.

Other work on the acquisition of Philadelphia phonology has been important in the arguments. Gregory Guy and Sally Boyd contributed studies on the acquisition of *-t,d* deletion, which has become increasingly significant for our understanding of variation (Guy and Boyd 1990). Most recently, Julia Roberts has pursued this question with studies of children 3 to 5 years old; the results of her dissertation are an important resource at several points here and in volume 2.

LCV research on sound change and merger in Eastern Pennsylvania provided a background for the work of Ruth Herold on the merger of /o/ and /oh/ in that area (Herold 1990). Her intrepid and exciting work developed new concepts of the mechanism of merger that I have drawn upon extensively in part C of this volume.

Poplack's research in the Puerto Rican community of Philadelphia began in the LCV context (Poplack 1979, 1980, 1981). This research grew into the major study of variation in Spanish inflections that has been the basis of many further studies over the past years, and appears as the centerpiece of the study of the functionalist hypothesis in chapter 19. Poplack was the first to apply quantitative methods to the intricate problem of simultaneously measuring structural, semantic, and cultural influences on linguistic behavior. Guy plunged into the study of consonant cluster simplification with results that are now located at the solid center of variation theory (Guy 1980), and has continued to develop new theoretical insights that have advanced the field immeasurably. His work on variation in Portuguese inflections provides the crucial arguments on which our understanding of the functional hypothesis is finally based.

In the early 1980s, the Linguistics Laboratory at Penn turned to the study of the interface between the black, Hispanic, and white communities in Philadelphia. Results of the Project on the Influence of Urban Minorities on Linguistic Change [UMLC] will appear in volume 2, and there the contributions of John Myhill, Wendell Harris, Sherry Ash, and Dave Graff will play a prominent role.

The Linguistics Laboratory then turned to the Study of Cross-Dialectal Comprehension [CDC], an examination of the cognitive consequences of the linguistic changes in progress during the 1970s. As codirector of the laboratory, Sherry Ash has been the central figure in the organization of this and other research projects. Her own study of the vocalization of /l/ in Pennsylvania (1982) is an important complement to our studies of vowel systems, since it interacts with them at many points. The work of the CDC project is cited at many points in this volume, but will be an even more important element in volume 3. Ash carried out fieldwork in Chicago and Birmingham that provideds an accurate view of the most advanced stages of the Northern Cities Shift in the late 1980s.

The CDC research group included Sherry Ash, Gayla Iwata, Mark Karan, Ken Matsuda, Corey Miller, Julie Roberts, Robin Sabino, and

myself. Iwata and Matsuda contributed vowel analyses of Chicago and Birmingham speakers of a much more detailed character than any that had been done before. Roberts and Sabino carried out more naturalistic studies of decoding that will be reported in volume 3. Karan and Miller worked with me on the experimental analysis of categorization and discrimination of near-mergers in Philadelphia, the main material of chapter 14. I am particularly indebted to them for the ingenuity and energy with which they carried out these crucial experiments.

At an early stage of this investigation of near-mergers, we were struck by the apparent paradox that people were able to produce distinctions that they could not hear. Leigh Lisker reminded us of the important distinction between *perception* and *labeling*, which motivated us to develop experiments that distinguished both types of behavior as reported in chapter 14.

Among my colleagues at Penn, I am especially indebted to Donald Ringe, who has given new significance to the concept of an alliance between historical linguistics and dialectology. He has guarded me against the most egregious errors that an outsider to historical and comparative linguistics can make, and in my efforts to appreciate the many grand theories of sound change to be found in the archives of Indo–European studies, instructed me in the difference between sound argument and idle exposition. I am indebted in particular for his directing my attention to the intricate developments in the vowel systems of North Frisian that are cited in chapter 5.

The general theme sounded in these pages is that the intelligence of linguists is to be respected; the resolution of the puzzles and paradoxes that are attempted here is also based on the principle that one should pay attention to the evidence that has led our predecessors to take the positions they did. This point of view applies equally well to the present. Many of the inquiries, investigations, and assessments in this volume are in response to the innovative and insightful work of William S.-Y. Wang on competing sound change, lexical diffusion, and dialect mixture. I have tried to follow his lead in developing more adequate computational means to deal with the massive data of dialect geography, in search of more adequate empirical grounds for the linguistic principles that we are testing. The contributions of Wang's students C.-C. Cheng, Matthew Chen, Chinfa Lien, Zhongwei Shen, and Mieko Ogura are prominent throughout the second half of this volume. Though my own alignment on all issues is not identical with theirs, I have never failed to be impressed by the force of their arguments and the relevance of their data.

At several points in the chapters to follow, I have reviewed the history of extended controversies that were never resolved. Many of these represented an opposition between the philological and the linguistic point of view, and unfortunately, the failure to agree often corresponded to the gap between those who had the clearest command of the facts and those who

had the best grasp of the principles that those facts could illustrate. I find that I am increasingly indebted to an array of linguists who have consciously devoted their energies to closing that gap. I would like to acknowledge my indebtedness to Robert Stockwell, whose penetrating investigations of the history of English both anticipated and illuminated my own at many points. His most recent work, in collaboration with Donka Minkova, has opened up avenues for the connection between the past and the present that I have only begun to follow, and unfortunately only briefly touched on in these pages. In a somewhat different fashion, I have tried to absorb into my own work the original and creative contributions of David Stampe and Patricia Donegan, who bring a broad typological perspective to bear on the same set of problems, centering about that most remarkable of phenomena, the English Great Vowel Shift. In my treatment of that topic, I have tried to signal the overlap between my work and that of Stockwell, Stampe, and Donegan, and I find that it has become increasingly difficult to separate my own conclusions from what I have learned from them.

One would expect any sociolinguistic work to recognize the contributions of Charles Ferguson. For this volume, I have had occasion to return again and again to a short paper that he gave in 1945 on short *a* in Philadelphia. It was not published until 30 years later, in a volume in honor of another great contributor to the short **a** matter, George Trager. At each rereading, I found that I had failed to appreciate the full weight of Ferguson's observations, though I hope that in the final outcome (chapter 18), the circle has been closed.

As the narrative of this volume develops, it will be increasingly obvious (and perhaps irritating to some) that the protagonists are Osthoff, Brugmann, Leskien, and Delbrück. It would be redundant for me to express any further appreciation of their contribution, especially since I have only an imperfect grasp of it. But curiously enough, the current linguist I am most indebted to is one whose published opinion is that the same Neogrammarians are simply and empirically wrong. Paul Kiparsky's (1989) review of phonological change is the most recent of several papers that aim to integrate sociolinguistic studies of variation into current phonological theory. It is not a new experience for me to modify my own views in the light of Kiparsky's assessments. Yet I had no expectation of doing so as I read his letter reviewing my final statement of the Middle Atlantic short **a** situation in chapter 18 of this volume. To my surprise, a few calculations showed me that he was right in arguing that Payne's data were consistent with the formulation of a lexical rule rather than a split of underlying forms. Chapter 18 has therefore been restated within the framework of Kiparsky's lexical phonology, with grateful appreciation of his interest.

Throughout my sociolinguistic career, I have had many occasions to recognize the contributions that Anthony Kroch has made to my thinking

about the fundamental issues of change and variation. Volume 1 ends with a statement of the evolutionary perspective on functional effects that is based on his formulation, and the succeeding volumes will respond in many ways to the questions that he has raised on the social motivation of sound change as well as his own findings on the patterns of syntactic change.

To another colleague, Gillian Sankoff, it is a great pleasure to express my thanks for an unending flow of support, insight, and inspiration. Though her work will appear more explicitly in volume 2 than volume 1, her less visible contributions are found throughout.

Finally, and without benefit of any further editing, I would like to express my appreciation of and admiration for the work of the copy editor of this book, Anne Mark. It is now a very different text than the one that she first took in hand. From her red pencil there has come a steady stream of corrections, emendations, and reorganizations that restored clarity to a muddied text and grace to a tortured style. Only in the deepest confidence would I reveal to an intimate associate how many mistakes, contradictions, and reversals of meaning have been detected by her vigilant eye. You the reader are even more in her debt than I, for you have been saved from the thankless task of unraveling riddles that I had never intended to set.

The author and publishers wish to thank the following: Academic Press Ltd for permission to publish Figure 8.3, adapted from Hashimoto, K. and K. Sasaki, 1982, On the relationship between the shape and position of the tongue for vowels, *Journal of Phonetics* 10: 291–299. Cambridge University Press for: Figure 8.1 from Ladefoged, Peter, 1964, A phonetic study of West African languages, *West African Language Monographs* 1; Figures 14.1, 14.2, 14.3 and Tables 14.1, 14.2, from Janson, Tore and Richard Schulman, 1983, Non-distinctive features and their use, *Journal of Linguistics* 19: 321–336. Indiana University Press for: the extract on p. 18 from Osthoff ansd Brugmann 1876, trans. Lehmann, Winfred P., ed., 1967, *A Reader in Nineteenth-century Historical Indo-European Linguistics*. Kenkyusha Ltd, Tokyo, for: Figure 17.1 and Table 17.1, from Appendix E and Figure 3.2 in Oguro, Mieko, *Historical English Phonology: A Lexical Perspective*. Paul Jen-Kuei Li for: Linguistic variations of different age groups in the Atayalic dialects, 1982, *Tsing Hua Journal of Chinese Studies*, new series, 14: 167–191. Monica Lindau for: Figures 8.4 a, b, c, from Vowel Features, 1978, *Language* 54: 541–563. Terence Nearey for: Figure 8.2 from Nearey, Phonetic feature system for vowels, 1977, University of Connecticut Dissertation. David Sankoff for: Figure 20.6 from Terrell, Tracy, Diachronic reconstruction by dialect comparison of variable constraints: s-aspiration and deletions in Spanish, 1981, in Sankoff, D. and H. Cedergren, eds., *Variation Omnibus*, Alberta: Lingustic Research, pp. 115–124. William S. Y. Wang for: Table 15.1 from Cheng, Chin-chuan and William S. Y.

Wang, 1972, Tone change in Chaozhou Chinese: a study of lexical diffusion. *Papers in Linguistics in Honor of Henry and Renee Kahane*, pp. 99–113, also in Wang, William S. Y., 1977, *The Lexicon in Phonological Change*, The Hague, Mouton, pp. 86–100; Table 16.4 from Wang, William S. Y., 1989, Theoretical issues in studying Chinese dialects, *Journal of the Chinese Language Teachers' Association* 25: 1–34. Every effort has been made to identify materials requiring permissions and to clear these with the parties concerned. Information regarding any possible omissions will be gratefully received by the publisher for acknowledgement in subsequent reprintings.