EDITED BY

HEIKO
NARROG

BERND
HEINE

The Oxford Handbook *of*
GRAMMATICALIZATION

THE OXFORD HANDBOOK OF

GRAMMATICALIZATION

OXFORD HANDBOOKS IN
LINGUISTICS

THE OXFORD HANDBOOK OF

GRAMMATICALIZATION

Edited by

HEIKO NARROG

and

BERND HEINE

OXFORD
UNIVERSITY PRESS

To our friends in Japan and Korea

This page intentionally left blank

Contents

....

PART I GRAMMATICALIZATION AND LINGUISTIC THEORY

PART II METHODOLOGICAL ISSUES

PART III DOMAINS OF GRAMMATICALIZATION

PART IV GRAMMATICALIZATION OF FORM CLASSES AND CATEGORIES

PART V THE DIFFERENT FACES OF GRAMMATICALIZATION ACROSS LANGUAGES

Acknowledgements

The contributors

Alexandra Y. Aikhenvald is Professor and Research Leader, People and Societies of the Tropics, in the Cairns Institute of James Cook University. She has worked on descriptive and historical aspects of Berber languages and has published, in Russian, a grammar of Modern Hebrew (1990; 2nd edn 2009). She is a major authority on languages of the Arawak family from northern Amazonia, and has written grammars of Bare (1995, based on work with the last speaker, who has since died) and Warekena (1998), plus *A Grammar of Tariana, from Northwest Amazonia* (Cambridge University Press, 2003; paperback 2007), in addition to essays on various typological and areal features of South American languages. Her lengthy grammar, *The Manambu Language from East Sepik, Papua New Guinea*, was published by Oxford University Press in 2008. Other monographs with OUP are *Classifiers: Devices* (2000; paperback 2003), *Language Contact in Amazonia* (2002), *Evidentiality* (2004; paperback with revisions 2006) and *Imperatives and Commands* (2010).

Walter Bisang studied General Linguistics, Chinese, and Georgian at the University of Zurich. He has been Professor of General and Comparative Linguistics (Typology) in Mainz (Germany) since 1992, and director of the Collaborative Research Center on 'Cultural and Linguistic Contact' from 1999 to 2008. His research interests include linguistic typology/language universals, formal vs. functional linguistics, grammaticalization, language contact/areal typology. His languages of interest are: East and mainland Southeast Asian languages, Caucasian languages (Georgian and others), Austronesian languages (Bahasa Indonesia, Tagalog, Yabêm, Paiwan), and Yoruba (together with Remi Sonaiya).

Kersti Börjars is Professor of Linguistics at the University of Manchester. She has published on linguistic change in general and also more detailed studies of Germanic languages, in particular the Scandinavian languages and Pennsylvania German. She is the author of *Feature Distribution in Swedish Noun Phrases*, and with Bob Borsley she has edited *Non-transformational Syntax: Formal and Explicit Models of Grammar*. She has led funded projects on 'Modelling syntactic change in Pennsylvania German' (ESRC) and 'Germanic possessive *s*: an empirical, historical and theoretical study' (AHRC).

Kasper Boye is postdoctorate member of the Department of Nordic Languages and Linguistics at the University of Copenhagen. His PhD dissertation (2006) was a

cross-linguistic study of epistemic meaning. His research interests include grammar and semantics in a functional and cognitive perspective, with modality and grounding as focal areas. He has also published articles about semantic mapping and complementation constructions.

Laurel Brinton is Professor of English Language at the University of British Columbia. Her areas of research include tense/aspect, diachronic discourse analysis, pragmatic markers, grammaticalization, lexicalization, and linguistic stylistics. She is the author of *The Development of English Aspectual Systems* (Cambridge University Press, 1988; reissued 2009), *Pragmatic Markers in English* (Mouton, 1996), and *The Comment Clause in English* (CUP, 2008). With Elizabeth Closs Traugott, she has co-written *Lexicalization in Language Change* (CUP, 2005), and with Alexander Bergs she is co-editing the two-volume *Handbook of Historical English Linguistics* (Mouton).

Joan L. Bybee was on the faculty at the State University of New York at Buffalo from 1973 to 1989 and is now Distinguished Professor Emerita of the Department of Linguistics at the University of New Mexico. Her work utilizing large cross-linguistic databases, e.g. *Morphology* (1985), and *The Evolution of Grammar* (with Revere Perkins and William Pagliuca, 1994), provide diachronic explanations for typological phenomena. In addition, her books presenting a usage-based perspective on synchrony and diachrony include *Phonology and Language Use* (2001), *Frequency of Use and the Organization of Language* (2007), and *Language, Usage and Cognition* (2010).

Rena Torres Cacoullos is Associate Professor of Spanish and Linguistics at Penn State University. Her research addresses how to establish grammatical change diachronically and grammatical difference synchronically, including in language contact situations, by comparing patterns of linguistic variation.

Anne Carlier is Professor of Linguistics at the University of Lille 3 (France). Her research interests include grammaticalization, typological perspectives on Romance languages, and word class formation. Her current research topics are the early stages of development of the articles and their integration into a paradigm, nominal and verbal quantification, and the interaction between aspect and argument structure, mainly in the different language stages from Latin to French. She is involved in the development of an electronic corpus for the study of the transition between Late Latin and early Old French.

Maria Maura Cezario is Professor at the Universidade Federal do Rio de Janeiro (UFRJ). She holds a Master's Degree and a PhD in Linguistics from that university, and is coordinator of the Discourse and Grammar Research Group at UFRJ with Professor Mário Martelotta. Her publications include the books *Manual de linguística* (Contexto, 2008), *Linguística funcional* (DP&A, 2003), with other

Brazilian professors, and articles on linguistic change, grammaticalization, word order, and Portuguese adverbs and verbs.

Hilary Chappell is currently Chair Professor in Linguistic Typology of East Asian Languages at the École des Hautes Études en Sciences Sociales (EHESS) in Paris, an appointment she took up in 2005. Since the 1990s, she has been engaged in opening up the new domain in Chinese linguistics of typology and the comparative grammatical description of Sinitic languages (or 'Chinese dialects'), with the aim of gauging the extent of their diversity. More recently, she has also begun research on the diachronic syntax of Southern Min (Hokkien) with Professor Alain Peyraube, using a corpus of late 16th- and early 17th-century materials compiled by Spanish missionaries.

Elizabeth Couper-Kuhlen has held professorships at the University of Konstanz and the University of Potsdam in Germany, and is currently Finland Distinguished Professor for Interactional Linguistics at the Department of Finnish, Finno-Ugrian, and Scandanavian Studies at the University of Helsinki. She has published widely on prosody and syntax in conversation. (Among her best-known publications are *An Introduction to English Prosody* (1986), *English Speech Rhythm* (1993), and the co-edited volumes *Prosody in Conversation* (1996) and *Sound Patterns in Interaction* (2004).)

Östen Dahl has been Professor in General Linguistics at Stockholm University, Stockholm, since 1980. Among his research interests are language typology, in particular tense and aspect, semantics, grammaticalization, and language complexity. He is the author of *Tense and Aspect Systems* (1985) and *The Growth and Maintenance of Linguistic Complexity* (2004) and co-author of *Logic in Linguistics* (1977), in addition to publishing a large number of articles in journal and collective volumes. He holds an honorary doctorate from the University of Helsinki.

Scott DeLancey is a Professor of Linguistics at the University of Oregon, where he has taught since 1982. His primary research area is the descriptive and comparative study of Tibeto-Burman and Southeast Asian languages and languages of western North America. He has also contributed to the study of grammaticalization theory, case theory, and several areas of typology, including ergativity, evidentiality, and inverse systems, and works with community language documentation and development projects in the northwestern US and northeast India.

Walter De Mulder is Professor of General and French Linguistics at the University of Antwerp. His research interests include usage-based approaches to grammaticalization and cognitive approaches to meaning and reference. He has worked intensively on the semantics and pragmatics of tense, aspect, and mood markers, referential expressions, and prepositions, mainly in French, but occasionally also in other languages.

Guy Deutscher received his PhD in Linguistics from Cambridge University. He was Research Fellow in Historical Linguistics at St John's College, Cambridge, later at the Department of Languages of the Ancient Near East in Leiden University. He is now Honorary Research Fellow in the Department of Linguistics at the University of Manchester. He has published three books, *Syntactic Change in Akkadian* (2000), *The Unfolding of Language* (2005), and *Through The Language Glass* (2010).

Holger Diessel is Professor of English linguistics at the University of Jena. His research interests include linguistic typology, grammaticalization, language acquisition, and the usage-based model of grammar. He has conducted cross-linguistic research on demonstratives and subordinate clauses and has worked intensively on the acquisition of relative clauses and other complex sentence constructions.

Gabriele Diewald has been full Professor of German Linguistics at the German Department of Leibniz Universität Hannover since 2001. Previously she was Professor of German Linguistics at the German Department of the University of Hamburg (2000–2001), and Assistant Professor at the German Department of the Friedrich-Alexander Universität Erlangen-Nürnberg (1998–2000). Her Habilitation thesis was published as *Die Modalverben im Deutschen* (Niemeyer, 1999). Other book publications include *Deixis und Textsorten im Deutschen* (Niemeyer, 1991) and *Grammatikalisierung* (Niemeyer, 1991). She works in the fields of grammaticalization, language change, modality, evidentiality, verbal categories, pragmatics, discourse, and semiotics.

Regine Eckardt holds a doctorate from Stuttgart, and is now Professor of Linguistics in the Department of English Language and Literature at Göttingen University. Building on her early research topics in synchronic semantics, and pragmatics, she has been working on meaning change and grammaticalization since 2000. Specifically, she pursues the hypothesis that the paradigm of truth-conditional, compositional semantics and pragmatics is particularly suited to analyse the shifts and changes of semantic composition in grammaticalization.

Olga Fischer is Professor of Germanic Linguistics at the University of Amsterdam, where her PhD thesis, 'Syntactic change and causation: developments in infinitival constructions in English', was accepted in 1990. She is a contributor to the Cambridge History of the English Language (1992), co-author of *The Syntax of Early English* (Cambridge University Press, 2000), author of *Morphosyntactic Change* (Oxford University Press, 2007), and has edited a number of books on iconicity in language and literature and on grammaticalization.

Zygmunt Frajzyngier is Professor of Linguistics at the University of Colorado in Boulder. His research interests include: discovery and proofs of meaning; cross-linguistic study of syntax; grammaticalization; discoveries of forms and functions of hitherto undescribed languages; and typological and comparative Afroasiatic

and Chadic linguistics. His recent books include: *Grammar of Wandala* (in press); *Grammar of Gidar* (2008); *Grammar of Mina* (with Eric Johnston and Adrian Edwards, 2005); *Grammatical and Semantic Relations in Hausa* (with Mohammed Munkaila, 2004); *Explaining Language Structure through Systems Interaction* (with Erin Shay, 2003).

Elly van Gelderen is a syntactician interested in language change. Her current work shows how regular syntactic change (grammaticalization) can be accounted for by (Minimalist) Economy Principles that help a child acquire a language and analyse it in a different way from previous generations. She has taught at Arizona State University since 1995. Related interests are the evolution of language, biolinguistics, prescriptivism, authorship debates, and code switching.

Anna Giacalone Ramat is Professor of Linguistics at the University of Pavia. Her areas of research include theoretical issues of grammaticalization, linguistic change in typological perspective, language obsolescence, and second language acquisition of tense/aspect relations. She is the author of *Lingua, dialetto e comportamento linguistico: la situazione di Gressoney, Aosta* (Musumeci, 1979). She has also published articles on diachronic developments of Indo-European languages and on semantic change of interclausal connectives. She is the editor of *Typology and Second Language Acquisition* (de Gruyter, 2003) and (with Paul J. Hopper) of *The Limits of Grammaticalization* (Benjamins, 1998). She has served as President of the 'International Society for Historical Linguistics' (1983–85), as President of the Società Italiana di Glottologia (1991–2), and as President of the Societas Linguistica Europaea (1999–2000).

Nikolas Gisborne teaches Linguistics and English Language at the University of Edinburgh. He is the author of *The Event Structure of Perception Verbs* (Oxford University Press, 2010) and is currently writing a book on constructional change and predicative constructions called *English Predicative Constructions* for Cambridge University Press.

John Haiman has done fieldwork on Romansch, Hua, and Khmer. He is the author of *Natural Syntax* (Cambridge University Press, 1985), *Talk is Cheap* (Oxford University Press, 1998), and other books.

Peter Harder is professor in the Department of English, Germanic, and Romance Studies at the University of Copenhagen. His research interests focus on the relations between functional (including cognitive) and structural properties of language, and he has published on areas such as tense, determiners, and subordinators. His main work is *Functional Semantics* (1996); *Meaning in Mind and Society* appeared in 2010.

Martin Haspelmath is a researcher at the Max-Planck-Institut für evolutionäre Anthropologie, Leipzig. He received degrees from the Universität zu Köln, University at Buffalo, and the Freie Universität Berlin. He taught at the FU

Berlin, the Universität Bamberg, the Università di Pavia, the Universität Leipzig, and at summer schools in Albuquerque, Mainz, Düsseldorf, Cagliari, Campobasso, MIT, and Berkeley. His research interests are primarily in the areas of broadly comparative morphosyntax and general and diachronic linguistic theory. He is one of the editors of *The World Atlas of Language Structures* (2005), and of the forthcoming *Atlas of Pidgin and Creole Language Structures*.

Bernd Heine is Emeritus Professor at the Institute of African Studies (Institut für Afrikanistik), University of Cologne. His 33 books include *Possession* (Cambridge University Press, 1997); *Auxiliaries* (Oxford University Press, 1993); *Cognitive Foundations of Grammar* (OUP, 1997); with Derek Nurse, *African Languages* (CUP, 2000); *A Linguistic Geography of Africa* (CUP, 2008); with Tania Kuteva, *World Lexicon of Grammaticalization* (CUP, 2002); *Language Contact and Grammatical Change* (CUP, 2005); *The Changing Languages of Europe* (OUP, 2006).

Kees Hengeveld has been Professor of Theoretical Linguistics at the University of Amsterdam since 1996. Before that, he taught Spanish linguistics at that same university. His research focuses on Functional Discourse Grammar and linguistic typology, and often on the combination of the two. With J. Lachlan Mackenzie he published *Functional Discourse Grammar* (Oxford University Press, 2008). Before that, he edited Simon C. Dik's posthumous *The Theory of Functional Grammar* (Mouton de Gruyter, 1997) and many collections of articles, and authored *Non-verbal Predication* (Mouton de Gruyter, 1992), as well as numerous articles.

Martin Hilpert is a junior research fellow at the Freiburg Institute for Advanced Studies (FRIAS). His interests include the corpus-based study of grammaticalization, construction grammar, and cognitive linguistics. He has worked on the grammaticalization of future constructions in the Germanic languages, and is currently exploring the interrelations between construction grammar and grammaticalization theory.

Brian D. Joseph is Distinguished University Professor of Linguistics and Kenneth E. Naylor Professor of South Slavic Linguistics at The Ohio State University, where he has taught since 1979. He received his PhD from Harvard University in 1978, writing his dissertation on syntactic change between Medieval and Modern Greek. He specializes in historical linguistics, Greek linguistics, and Balkan linguistics, and has published extensively in these areas. He served as editor of *Diachronica* from 1999 to 2001 and as editor of *Language* from 2002 to 2008.

Lars Johanson is Professor of Turcology at the Oriental Institute of the University of Mainz. He has published extensively on synchronic and diachronic linguistics, especially in the domains of aspect–mood–tense, language contact, and language typology. Most of his publications focus on the Turkic language family. He is the Editor-in-Chief of the journal *Turkic Languages* and the book series Turcologica.

Christa König is a Lecturer in African Cultures and Languages at the Centre for African Studies, University of Frankfurt. She has taught at the Universities of Cologne, Zurich, Graz, Gwangju, and at the Tokyo University of Foreign Studies, and has carried out field research in East Africa and Namibia. She is presently working on the Khoisan language !Xun. Her main book publications are *Aspekt im Maa* (AMO, 1994), *Kasus im Ik* (Köppe, 2002), and *Case in Africa* (Oxford University Press, 2008).

Bernd Kortmann is Full Professor of English Language and Linguistics at the University of Freiburg, Germany. His publications include four monographs, six edited volumes (with four more volumes currently in preparation), a two-volume handbook-cum-CD-ROM on the phonology and morphosyntax of the varieties of English around the world (2004), and about 80 articles and reviews in journals and collective volumes. His main research interest over the last decade has been the grammar of non-standard varieties of English around the world, especially from a typological perspective. Currently he is editing a 'World Atlas of Variation in English' which will be published in 2011/12 both electronically (interactive maps) and in print (by Mouton de Gruyter).

Manfred Krug is Chair of English and Historical Linguistics at the University of Bamberg. In his research, he focuses on frequency-driven approaches to language variation and change, typically from a grammaticalization perspective. He holds an MA in Applied Linguistics from Exeter University and studied Latin, English, and German at Freiburg University, where he completed his PhD and postdoctoral research project (Habilitation). He was a visiting professor at Portland State University (Oregon), and held the Chair of English Historical Linguistics at the University of Mannheim.

Tania Kuteva is a Full Professor of English Linguistics at the Heinrich-Heine-University of Düsseldorf, Germany. Apart from a number of articles in international journals, she has also published two books with Cambridge University Press and three with Oxford University Press on grammaticalization, language contact, grammatical typology, and language evolution, of four of which she is co-author with Bernd Heine. She is on the Editorial Board of *Studies in Language.*

Béatrice Lamiroy is Professor of General and French Linguistics at the University of Leuven. Her research interests include comparative linguistics, syntax of Romance languages, grammaticalization, and lexicalization. She has worked intensively on Romance auxiliaries, case and grammatical relations, and French idiomatic expressions.

Ronald W. Langacker is Professor Emeritus and Research Professor at the University of California, San Diego. Early in his career, major areas of research included generative syntax and the comparative-historical grammar of the

Uto-Aztecan family of Native American languages. Over the last three decades, his main concern has been to develop and progressively articulate the theory of Cognitive Grammar, a radical alternative to generative theory. He has published numerous books and articles dealing with a broad array of issues in cognitive linguistics.

Adam Ledgeway. Since completing his PhD at the University of Manchester in 1996 and a Research Fellowship at Downing College, Cambridge (1996–97), Adam Ledgeway has been Lecturer in Romance Philology at the University of Cambridge, where he is currently the Head of the Department of Italian. His research interests include Italian dialectology, the comparative history and morphosyntax of the Romance languages, syntactic theory, and linguistic change, and he has worked on such topics as complementation, auxiliary selection and split intransitivity, word order, cliticization, clause structure, verb movement, finiteness, and the development of demonstrative systems. Recent books include *A Comparative Syntax of the Dialects of Southern Italy* (Blackwell, 2000), *Sui dialetti italoromanzi* (Biddles, 2007 co-edited with D. Bentley; *Didattica della lingua italiana* (Guerra, 2008, co-edited with A. L. Lepschy); *Syntactic Variation* (Cambridge University Press, 2009, co-edited with R. D'Alessandro and I. Roberts); *Grammatica diacronica del napoletano* (Niemeyer, 2009). Currently, he is writing a book for OUP entitled *From Latin to Romance*, and is co-editing the two volumes of *The Cambridge History of the Romance Languages* (CUP, with M. Maiden and J. C. Smith).

Douglas Lightfoot is Associate Professor of German Linguistics at the University of Alabama. His interests include the lexicalization and grammaticalization interface, synonymous compounding in German, German derivational suffixation, affixoids, and gestalt linguistics. He is also a language programme director and further interested in the teaching and learning of foreign languages. A recent publication on incorporating language history into the instruction of German won the Article of the Year prize from the American Association of Teachers of German.

Christian Mair was Assistant and, subsequently, Associate Professor in the English Department of the University of Innsbruck, before being appointed to a Chair in English Linguistics at the University of Freiburg in Germany in 1990. He has been involved in the compilation of several linguistic corpora (among them F-LOB and Frown, updates of the classic LOB and Brown corpora designed to make possible real-time studies of change in progress). His research over the past two decades has focused on the corpus-based description of modern English grammar and regional variation and ongoing change in standard Englishes world-wide, and has resulted in the publication of several monographs (most recently *Twentieth-Century English* (2006) and more than 60 contributions to scholarly journals and edited works. In addition he has produced several popular introductions to the field of English.

Mário Eduardo T. Martelotta* was Professor at the Universidade Federal do Rio de Janeiro (UFRJ) until his untimely death in April, 2011. He had a Master's Degree and a PhD in Linguistics from that university, and was coordinator of the Discourse and Grammar Research Group at UFRJ with Professor Maria Maura Cezario. His publications include editing the Manual de linguística (Contexto, 2008) and Linguística funcional (DP&A, 2003), as well as numerous articles in linguistic change, grammaticalization, word order, and Portuguese adverbs.

Yaron Matras is Professor of Linguistics at the University of Manchester, where he has been working since 1995. His areas of interest include linguistic typology, dialectology, language documentation, sociolinguistics, and discourse pragmatics, and he has written descriptive investigations of Romani dialects, Kurdish, Domari, Arabic, Turkish, and German dialects. He is best known for his work on Romani, including *Romani* (Cambridge University Press, 2002), *Markedness and Language Change* (with Viktor Elšík, Mouton, 2006), and an online database of Romani dialects (http://romani.humanities.manchester.ac.uk/rms), and for his theoretical work on language contact, including the edited volumes *The Mixed Language Debate* (with Peter Bakker, Mouton, 2003), *Grammatical Borrowing in Cross-Linguistic Perspective* (with Jeanette Sakel, Mouton, 2007), and the monograph *Language Contact* (CUP, 2009).

Caterina Mauri has a post-doc fellowship at the University of Pavia, and is involved in both historical and typological research projects, concerning the cross-linguistic coding and the grammaticalization of coordinating constructions, directives, and reality status. In her PhD (2003–7, University of Pavia), she carried out a typological research on coordination, which was published in 2008 by Mouton de Gruyter with the title *Coordination Relations in the Languages of Europe and Beyond*, and for which she received the ALT Greenberg Award 2009.

Marianne Mithun is Professor of Linguistics at the University of California, Santa Barbara. Her interests include morphology, syntax, discourse, prosody, and their interactions, language change, language contact, and language documentation and description. She has worked with a variety of languages, particularly those of the Iroquoian, Pomoan, Eskimo-Aleut, Siouan, Athabaskan, and Austronesian families.

Maj-Britt Mosegaard Hansen obtained her PhD from the University of Copenhagen in 1996. She has been Professor of French Language and Linguistics at the University of Manchester since 2007. She is the author of two monographs and numerous journal articles and book chapters. Her principal research interests are language change, semantics, pragmatics, and functional-cognitive linguistics.

Heiko Narrog is Associate Professor at the Graduate School of International Cultural Studies of Tohoku University. He holds two PhDs in linguistics in Germany and Japan, and his publications include *Modality in Japanese*

(Benjamins, 2009) and *The Oxford Handbook of Linguistic Analysis* (Oxford University Press, 2010), coedited with Bernd Heine.

Terttu Nevalainen is Professor and Chair of English Philology at the University of Helsinki and the Director of the Research Unit for Variation, Contacts and Change in English (VARIENG). Her research interests include historical sociolinguistics, language change, and corpus linguistics. She is the author of 'Early Modern English lexis and semantics' in *The Cambridge History of the English Language* (vol. 3, Cambridge University Press, 1999), *Historical Sociolinguistics* (with H. Raumolin-Brunberg, Pearson Education, 2003) and of *An Introduction to Early Modern English* (Edinburgh University Press, 2006) and a co-editor of e.g. *Types of Variation* (Benjamins, 2006) and *The Dynamics of Linguistic Variation* (Benjamins, 2008). She is one of the compilers of the Helsinki Corpus of English Texts and the director of the research project 'Sociolinguistics and Language History', which has produced the Corpus of Early English Correspondence, and over 100 publications on English historical sociolinguistics.

Steve Nicolle has lived in Kenya since 1999, during which time he has published on grammaticalization, pragmatics, translation, Bantu languages, and ethnobotany. He currently coordinates SIL's linguistic work in Africa, teaches linguistics and translation at Africa International University (Nairobi), and works as an SIL linguistics and translation consultant in Kenya and the Democratic Republic of Congo.

Muriel Norde is Professor of Scandinavian Languages and Literature at the University of Groningen. She was previously a research fellow at the University of Amsterdam. Her 1997 University of Amsterdam PhD was awarded for a study of the history of the Swedish genitive. She has published extensively on grammaticalization and related phenomena, including articles in *Nordic Journal of Linguistics* and *Language Sciences*. She is also the author of *Degrammaticalization* (Oxford University Press, 2009), and the co-editor, with Olga Fischer and Harry Perridon, of *Up and Down the Cline* (Benjamins, 2004).

Arja Nurmi is an Academy of Finland Research Fellow and a Domain Co-ordinator for the Research Unit for Variation, Contacts and Change in English at the University of Helsinki. She works in the field of historical sociolinguistics, currently studying the history of English modal auxiliaries. She is also carrying out research on the multilingual practices found during the history of English. Her doctoral dissertation was 'A social history of periphrastic *do*', and she has edited several volumes, most recently *The Language of Daily Life in England (1400–1800)* with Minna Nevala and Minna Palander-Collin and *Annotating Variation and Change* with Anneli Meurman-Solin. She is one of the compilers of the Corpus of Early English Correspondence.

Toshio Ohori graduated from the University of California at Berkeley in 1992, and is currently an Associate Professor at the University of Tokyo. His main areas of interest are semantics, linguistic typology (with special focus on complex sentences), grammaticalization, and discourse analysis. His publications include *Studies in Japanese Grammaticalization* (1998, editor), *Cognitive Linguistics* (2002, in Japanese), 'Coordination in Mentalese' (2004), and 'Pragmatic factors in the development of a switch-adjective language' (2008, with Julia Koloskova). More information can be obtained at: http://gamp.c.u-tokyo.ac.jp/~tohori/ohori.html

Noriko O. Onodera (PhD, Georgetown University, 1993) is Professor of Linguistics in the Department of English at Aoyama Gakuin University, where she teaches pragmatics, sociolinguistics, and discourse studies. She is the author of *Japanese Discourse Markers* (Benjamins, 2004) and co-editor of *Journal of Historical Pragmatics* 8.2 (2007), *Historical Changes in Japanese* (with Ryoko Suzuki). Her research interests centre on pragmatics and historical pragmatics, more specifically, discourse markers, modality, subjectification, and intersubjectification, especially in English and Japanese.

Minna Palander-Collin is currently Professor of English Philology at the Department of Modern Languages and Senior Researcher at the Research Unit for Variation, Contacts and Change in English (VARIENG), University of Helsinki. Her main research interests include historical sociolinguistics, historical pragmatics and corpus linguistics, and her latest project focuses on 'language and identity: variation and change in patterns of interaction in the history of English'. She has published several articles on these topics and co-edited *The Language of Daily Life in England (1400–1800)* (Benjamins, 2009) and *Social Roles and Language Practices in Late Modern English* (Benjamins, 2010). She is also one of the compilers of the Corpus of Early English Correspondence.

Amanda Patten is a Lecturer in Language and Linguistics at Northumbria University. She has recently completed a PhD at the University of Edinburgh, 'Cleft sentences, construction grammar and grammaticalization', in which she undertakes a synchronic and diachronic study of the structure and function of the English *it*-cleft. She has published on the development of the Early Modern English *it*-cleft as an example of constructional change.

Alain Peyraube is currently Directeur de Recherche at the Centre National de la Recherche Scientifique (CNRS, Paris, France) and Chair Professor of Chinese Linguistics at the École des Hautes Études en Sciences Sociales (EHESS). He has been a corresponding member of the Academia Sinica of Taiwan since 2002, Adjunct Professor at the University of Science and Technology of Hong Kong since 2005, Honorary Professor at the University of Beijing since 2007, and member of the Academia Europaea (European Academy of Arts and Sciences) since 2006. His main research interests concern Chinese diachronic syntax and

semantics, typology of East Asian languages, cognitive approaches to the diversity of languages, and the origin and evolution of languages. His most recent research has treated the mechanisms of syntactic and semantic change in Chinese from the period of the first recorded inscriptions (14th century BC) to the modern period (18th century): this includes problems of analogy, of reanalysis (grammaticalization), and of external borrowing through language contact.

Roland Pfau is Assistant Professor at the Department of General Linguistics at the University of Amsterdam, where he teaches in the sign linguistics programme. His main research interests are the morphological and syntactic structure of sign languages and language typology. One of the questions that guides his research, therefore, is whether typological patterns that have been described for spoken languages also hold for signed languages. Also, he is interested in typological variation across sign languages. Besides that he is fascinated by morphosyntactic properties of spontaneous speech errors. He is editor of the journal *Sign Language and Linguistics*.

Shana Poplack is Distinguished University Professor of Linguistics, Canada Research Chair and Director of the Sociolinguistics Laboratory at the University of Ottawa. An expert in variation theory and its application to diverse areas of language inquiry, she has published widely on language variation and change, linguistic consequences of language contact, and morphosyntactic variability in Spanish, French, Portuguese, and African American English.

Paolo Ramat was Professor of Linguistics at the University of Pavia and is now responsible for the Humanities Class of the Istituto Universitario di Studi Superiori (IUSS) in Pavia. His research interests include historical (especially Indo-European) linguistics, typology, and history of linguistics. He was one of the four initial proposers of the large European Science Foundation research project 'Typology of Languages in Europe' (EUROTYP). Among his books there are *Grammatica dell'antico sassone* (Mursia, 1968); *Das Friesische* (Innsbruck, 1976); *Introduzione alla linguistica germanica* (Il Mulino, 1986); *Linguistic Typology* (Mouton de Gruyter, 1987); (with Giuliano Bernini) *Negative Sentences in the Languages of Europe* (Mouton de Gruyter, 1996); *Pagine linguistiche* (Laterza, 2005). He is the editor (with A. Giacalone Ramat) of *The Indo-European Languages* (Routledge, 1997); (with Th. Stolz) of *Mediterranean Languages* (Brockmeyer, 2002); (with E. Roma) of *Europe and the Mediterranean as Linguistic Areas* (Benjamins 2007).

Helena Raumolin-Brunberg is a senior scholar in the Research Unit for Variation, Contacts, and Change in English at the University of Helsinki. Her research interests include historical sociolinguistics, language change, and corpus linguistics, on which she has published over 50 articles. Her books include *Sociolinguistics and Language History* (1996) and *Historical Sociolinguistics* (2003)

(both with Terttu Nevalainen). She was one of the compilers of the Early Modern English section of the Helsinki Corpus of English Texts and the Corpus of Early English Correspondence.

Seongha Rhee obtained his PhD in linguistics from the University of Texas at Austin in 1996. He has been Professor of Linguistics at Hankuk University of Foreign Studies in Seoul since 1997. He taught at Stanford University in 2003–4 as a Fulbright scholar. His major interests are grammaticalization, typology, cognitive semantics, language and culture, and language education.

Agnes Schneider studied modern languages and literatures (English, Romance, and German) at the University of Freiburg, and completed her MA in 2007. She is a part-time Assistant Professor at the English Department at the University of Freiburg, and is currently working on her PhD, exploring morphosyntactic variation in West African varieties of English.

Andrew D. M. Smith is Lecturer in Language Studies at the University of Stirling, having previously worked as a postdoc in the Language Evolution and Computational Research Unit at the University of Edinburgh. He studies the cognitive and cultural foundations of human language, to investigate how language evolved and became complex. His current research interests include cross-situational learning, the ostensive-inferential nature of human communication, grammaticalization, and the cultural evolution of systematicity.

Markus Steinbach is Professor of German Linguistics at the University of Göttingen. His research focuses on the influence of modality (spoken vs. sign languages) on language structure, the interfaces between syntax, semantics, and pragmatics, theoretical and experimental linguistics, and linguistics in schools. In 2007 and 2008, he was Visiting Professor at the University of Frankfurt am Main for two semesters. From 2004 to 2007, he was the Vice-President of the German Linguistic Society (Deutsche Gesellschaft für Sprachwissenschaft). He is a member of the editorial boards of the journals *Sign Language and Linguistics* and *Zeitschrift für Sprachwissenschaft*.

Chaofen Sun is Professor of East Asian Languages and Cultures at Stanford University. He did his undergraduate work at East China Normal University, and received his MA from the University of Oregon and PhD from Cornell University (1988), both in linguistics. Among his books are *Word-Order Change and Grammaticalization in the History of Chinese* (1996), and *Chinese* (2006). He specializes in grammaticalization in the history of Chinese, discourse/pragmatics, and the history of Chinese.

Ryoko Suzuki is Associate Professor at Keio University, Japan, and was a Visiting Scholar at UC Santa Barbara (2008–10). Her major research area is grammaticization patterns in Japanese, using diachronic and contemporary

conversational data, especially of quotative forms and abstract nouns becoming pragmatic particles.

Sandra A. Thompson is Professor of Linguistics at the University of California at Santa Barbara. She specializes in usage-based linguistics, considering the role of patterns of conversational discourse in shaping morphosyntactic and prosodic regularities, her published work drawing on interactional data from English, Chinese, and Japanese.

Elizabeth Closs Traugott is Professor of Linguistics and English Emerita at Stanford University. She did her undergraduate work at Oxford University, and received her PhD from the University of California at Berkeley (1964). Among her books are *Grammaticalization* (with Paul Hopper, 2003, 2nd edn), *Regularity in Semantic Change* (with Richard Dasher, 2002), and *Lexicalization and Language Change* (with Laurel Brinton, 2005). Her current research is on accounting for grammaticalization and lexicalization in a constructionalist framework. She specializes in discourse/pragmatics and grammaticalization in the history of English.

Johan van der Auwera is Professor of General and English Linguistics at the University of Antwerp in Belgium. He holds undergraduate degrees in Germanic philology and in philosophy (1975). His PhD was on the philosophy of language (1980), and his Habilitation on the structure of the noun phrase (1990). His student days were spent in Antwerp, Berkeley, and Stockholm, and longer research appointments took him to Hannover, Nijmegen, Paris, and Princeton. Current research focuses on grammatical semantics and typology (including areal typology and dialectology), with special reference to mood, modality, and negation. He is the editor-in-chief of *Linguistics*.

Nigel Vincent is Mont Follick Professor of Comparative Philology at the University of Manchester. He is the author of numerous articles on the categories and mechanisms of linguistic change, and has published on aspects of the structure and evolution of Italian and on the historical syntax of Latin. With Martin Harris he co-edited *Studies in the Romance Verb* and *The Romance Languages*. He has held British Academy-funded projects on 'Archaism and innovation in the linguistic history of Europe' and 'Morphosyntactic change: from Latin to Romance'.

James A. Walker is Associate Professor of Linguistics at York University (Toronto). He specializes in sociolinguistic variation and change, with interests in multilingualism, ethnicity, language contact, phonology, and morphosyntax. He has worked on variation in English (including African American English, Canadian English, and Caribbean English) and Sango (the national language of the Central African Republic).

Richard Waltereit is Reader in French and Romance Linguistics at Newcastle University. He earned his PhD at the Free University of Berlin in 1997.

Subsequently he moved to Tübingen and in 2006 to Newcastle. He has published on reanalysis, grammaticalization, and the diachronic rise of discourse markers in French and other Romance languages.

Anne Wichmann is Emeritus Professor of Speech and Language at the University of Central Lancashire, Preston. Her research focuses on speech prosody, particularly intonation, and is concerned chiefly with the way in which speech melody constructs, negotiates, and maintains spoken discourse. Her monograph *Intonation in Text and Discourse* (Longman, 2000), represents a detailed study of the use of speech melody in reading aloud. She has a long-standing interest in how emotions and attitudes are expressed by tone of voice, claiming that so-called 'attitudinal intonation' is not inherent in the intonation itself but the result of pragmatic inference in a given context. Her work at the interface between prosody and pragmatics is reflected most recently in *Where Prosody Meets Pragmatics* (Emerald, 2009) co-edited with Dagmar Barth-Weingarten and Nicole Dehé. She has recently investigated the relationship between contemporary speech patterns and historical change in relation to discourse markers. Professor Wichmann bases her work on speech corpora, and she is active in the corpus linguistics community.

Björn Wiemer studied Slavic and general linguistics in Hamburg and Leningrad (MA 1992, Hamburg). Before his PhD (1996, Hamburg) he was a postgraduate student for two years in Warsaw. From 1996 to 2007, he was Chair of Slavic Languages at the University of Constance (Germany), where he finished his post-doctoral thesis in 2002. Since 2007, he has been Professor at the Institute of Slavic Languages and Literatures at the Johannes-Gutenberg University Mainz. His particular interest in grammaticalization developed during his work in Constance. Further research fields include aspectology, evidentiality, modality, language contact, areal linguistics, diachronic semantics, and discourse pragmatics.

Ilse Wischer is Professor of English Linguistics at Potsdam University. She studied English and Russian at the former Pedagogical College of Potsdam (since 1991 University of Potsdam), where she received her PhD in 1986 and her Habilitation in 1996. She held teaching positions at the universities of Potsdam, Düsseldorf, Oldenburg, and Berlin. Her research interests lie mainly in the domain of English historical linguistics and grammaticalization studies. She has published on various topics of language change with a focus on the history of English. Together with Gabriele Diewald she edited the conference volume *New Reflections on Grammaticalization* (2002).

Debra Ziegeler has been working on modality, on the topic of hypothetical and counterfactual modality, since before attaining her PhD in 1997. Her publications include a range of papers on modal verbs and counterfactual adverbs in English, in journals such as *Studies in Language*, *Language Sciences*, *Journal of Historical Pragmatics*, and *Journal of Pragmatics*, and two books published by Benjamins: *Hypothetical Modality* (2000) and *Interfaces with English Aspect* (2006), which looked at the crossover between aspect and modality. She is now attached to the University of Montpellier, France, as a Visiting Scholar.

Abbreviations

....

=	cliticized to
*	unattested form or usage; reconstructed form
**	ungrammatical form or usage
Ø	empty element or position; zero
1	1st person
2	2nd person
3	3rd person
A	adjective; subject of a transitive clause
ABL	ablative
ABS	absolutive
ABSL	Al-Sayyid Bedouin Sign Language
ACC	accusative case
AD	After Death
ADJ	adjective
ADN	adnominal
ADP	adposition
ADV	adverb
ADVR	adverbializer
AFF	affix
AGR	agreement
AN	animate
ANAPH	anaphor
AND	andative
ANT	anterior
Ant.	anticipatory agreement marker
AOR	aorist
APPL	applicative
ARCHER	A Representative Corpus of Historical English Registers
ASL	American Sign Language
ASP	aspect
ASSC	associative
ASSOC	associative
AUX	auxiliary

AVS	adversative
Bal.	Balearic Catalan
BC, BCE	Before Christ, before Common Era
BEN	benefactive; beneficiary
BNC	British National Corpus
BP	backgrounding passive
C	complementizer, complementizer position
C1, C2, etc.	noun class 1, 2, etc.
Cal.	Calabrian
Cat.	Catalan
CAUS/PASS	causative-passive
CERT	certainty
C. FOC	contrastive focus
CG	Cognitive Grammar
CI	Conceptual Intentional
CL	classifier
CLF	classifier
CLFR	classifier
CLMET	Corpus of Late Modern English Texts
COCA	Corpus of Contemporary American (English)
COMP	complementizer
COMPAR	comparative
ComPred	complex predicate
CON	conditional
CONJ	conjunction
CONN	connective
CONT	continuative; contemporative
COP	copula
CP	complementizer phrase; complex predicate
CS	Common Slavic
CUS	colloquial Upper Sorbian
D	determiner; determiner position
DAT	dative
DECL	declarative
DED	deduced reference
DEF	definite (marker)
DEM	demonstrative
DET	determiner
DGS	Deutsche Gebärdensprache
DIMIN	diminutive
DISP	disposal form

DIST	distal
DISTR	distributive
DOEC	Dictionary of Old English Web Corpus
DP	determiner phrase
DS	different subject
DU	dual
E	event time; event; English
EE	end of event
EEPF	Early English Prose Fiction
EMPH	emphatic marker
END	sentential ending
ERG	ergative
EX	existential
EXCL	exclusive
F	feminine; feature
F.	Fula
FE	Feature Economy
FEM	feminine
FIN	finite element
Fin	finiteness
FOC	focus (marker); focus position
FP	sentence-final particle; foregrounding passive
Fr.	French
Frl.	Friulian
FUT, fut	future
GEN	genitive
Gen.	Genoese
GER	gerund
GIIN	generalized invited inference
GND	gerund
GO	goal
GRAM	grammatical
Gsc.	Gascon
GSL	Greek Sign Language
GT	grammaticalization theory
HAB	habitual
HON	honorific
HORT	hortative
HP	*haver*-periphrasis
hs	headshake
HYP	hypothetical

IbR.	Ibero-Romance
ICE-GB	International Corpus of English–Great Britain
i-F	interpretable feature
IIN	invited inference
ILL	illocutionary modification
IMP	imperative
IMPERS	impersonal
IMPF	imperfective
INCL	inclusive
IND	indicative
INDEF	indefinite
INF	infinitive
Infl	(verbal) inflection
INGR	ingressive
INJ	interjection
INSTR	instrumental
INT	interrogative
INTERJ	interjection
IO	indirect object
IP	inflectional phrase; intonational phrase
IPFV	imperfective
IR	internal reconstruction
IRR	irrealis
It.	Italian
ItR.	Italo-Romance
ITR	iterative
JUNC	juncture
Lec.	Leccese
LEX	lexical; lexical verb
LF	Logical Form
LIG	ligature
LIS	Italian Sign Language
lit.	literally
LK	linking article
LOC	locative
M	masculine; male
Maj.	Majorcan Catalan
MASC	masculine
ME	Middle English
MED	*Middle English Dictionary*
Med.	medial agreement marker

MHG	Middle High German
MODE	mode connective
ModHG	Modern High German
MP	modal particle
MSL	Molise Slavic
MW	measure word
N	noun; neuter gender
N3	noun class 3
NAR	narrative
NEG, Neg	negation
NegP	negative phrase
NEUT	neutral
NF	non-final; non-finite; non-future
NGT	Sign Language of the Netherlands
NMZ	nominalizer
NOM	nominative (case); nominal
NOMIN	nominalizer
NONVIS	nonvisual
NP	noun phrase
NPI	negative polarity item
NPS	non-past
NR	nominalizer
NSL	Nicaraguan Sign Language
O	object of transitive clauses; Old
OBJ	object
OBL	oblique
Occ.	Occitan
OChS	Old Church Slavonic
OE	Old English
OED	*Oxford English Dictionary*
OFr.	Old French
OHG	Old High German
OM	direct object marker
OT	Optimality Theory
OV	object-verb order
P	plural (in gloss); particle; futurate present
PAM	person agreement marker
PART	particle; participle
PASS	passive
PAST.PART	past participle
PB	phrasal boundary

P/C	pidgins and creoles
PEE	possessee
PERF	perfect; perfective
PF	Phonological Form; perfect; periphrastic future
PFV	perfective
phi-	person and number features
PII	privileged interactional interpretation
PL	plural
PLUR	plural
PM	predicate marker; previous mention
PN	proper name
POL	polite; politeness
POSS	possessive
POST	postposition; posterior
PP	prepositional phrase; postposition
PPART	past participle
PRED	predicator
PREP	preposition
PRES	present tense
PRES.PART	present participle
PREV	preverb
PRF	perfective
PRO	pronoun
PROS	prospective
PRS	present
PRT	particle
PS	past simple
PST	past
Pt.	Portuguese
PT	past
PTCP	participle
Q	question; interrogative (pronoun)
QM	quotative marker
QUE	interrogative
QUOT	quotation particle; quotative
R	reference time
REC	reciprocal
RECIP	recipient
REF	reflexive
REFL	reflexive
REL	relative (clause marker)

REM	remote
REP	reported speech
REV	revisionary
RM	reflexive marker
RN	relator noun
Ro.	Romanian
S	subject of intransitive clauses; singular; Southern; speech time
Sal.	Salentino
SBJ	subject
SBJV	subjunctive
SEC	sequential
SEQ	sequential
SF	sentence-final; synthetic future
SG	singular
SIC	speech introducing clause
Sic.	Sicilian
SL	sign language
SM	sensory motor
SMI	semeliterative
SOV	subject-object-verb order
Sp.	Spanish
SPEC	specific
Srd	Sardinian
Srs.	Surselvan
SS	same subject
STA	stative
STAT	stative
SU	subject
SUBJ	subjunctive; subject
SUPL	superlative
SVO	subject–verb–object order
T	Tense
t	trace (of moved element)
T&A	tense and aspect
TAM	tense–aspect–modality
THM	thematic
TM	tense/mood
TMA	tense–modality–aspect
TOP	topic (position)
TP	Tense Phrase
TR	transitive

TSL	Taiwan Sign Language
u-F	uninterpretable feature
UG	Universal Grammar
V	verb
V2	Verb second
V/v	Verb/light verb
V(P)	verb (phrase)
VBZ	verbalization
VENT	ventive
VIR/NONVIR	virile/non-virile (gender)
VIS	visual
VN	verbal (action) noun
Vnz.	Venetian
VP/vP	Verb Phrase/(light) verb phrase
VSO	verb–subject–object order
VT	variation theory
WAVE	World Atlas of Variation in English
WL	Watkins' Law
WFR	word formation rule

CHAPTER 1

....

INTRODUCTION

....

HEIKO NARROG

BERND HEINE

GRAMMATICALIZATION is believed to be a young sub-field of linguistics. As a matter of fact, however, it is almost as old as linguistics, even if the term was presumably coined only in 1912 by Meillet.[1] Many of the issues figuring in contemporary discussions on grammatical evolution were already discussed by German 19th-century linguists such as Bopp (1816; 1833), Wüllner (1831), or von der Gabelentz (1961[1891]).

Modern studies in grammaticalization began in the early 1970s with the work of Givón, who argued that in order to understand language structure one must know how it has evolved. With his slogan 'Today's morphology is yesterday's syntax', he opened a new perspective for understanding grammar (Givón 1971: 12; 1979; see below). The first monographic treatments of grammaticalization were Lehmann (1995a[1982]) and Heine and Reh (1982). But perhaps a milestone in the history of modern grammaticalization studies can be seen in the symposium that Givón organized at the University of Oregon in 1988, resulting in two volumes on the topic (Traugott and Heine 1991a; 1991b). The two textbooks by Heine, Claudi, and Hünnemeyer (1991) and Hopper and Traugott (1993) then cemented the status of grammaticalization as an independent field of study within linguistics. Of similar importance to the Oregon symposium is the series of bi-annual conferences that Wischer initiated in Potsdam in 1999 and the publications resulting from this

---

[1] For accounts on the history of grammaticalization studies, see Lehmann (1995a[1982]); Heine, Claudi, and Hünnemeyer (1991); Hopper and Traugott (2003).

meeting (Wischer and Diewald 2002), as well as from subsequent meetings (Fischer, Norde, and Perridon 2004; López-Couso and Seoane 2008).

Since roughly the beginning of this century, grammaticalization studies have entered a new phase of development. On the one hand, they were subject to serious criticism (especially Newmeyer 1998; Campbell 2001a; Joseph, Chapter 16 below); on the other hand, they experienced an enormous expansion. Having been restricted primarily to core grammatical, semantic, and pragmatic analysis in the 20th century, they now attract interest in a wide array of related fields of linguistics, such as corpus linguistics, phonology, language acquisition, and sociolinguistics. Furthermore, while grammaticalization was initially practically exclusively the domain of functionally oriented scholars, it has increasingly been recognized as an important research topic by formal linguists as well. Moreover, grammaticalization research has spread beyond the traditional centres of linguistics to regions such as East Asia and South America. Facing this increasing expansion and diversification, we as editors believed that now would be a good point in time to take stock of the current state of grammaticalization studies, and simultaneously uncover possible directions for future research in this field.

1. DEFINITIONS

Currently a wide range of approaches and theoretical orientations are in some way or other based on a grammaticalization perspective. This diversity is associated with a variety of different views on how this phenomenon should be defined. Going through the chapters of this volume, the reader will notice that grammaticalization is far from being a uniform concept, and various definitions have been proposed.

One kind of definition relies on pragmatic functions of linguistic material. Harder and Boye, for example, invoke the notion of competition for discourse prominence, and propose to define grammaticalization as 'diachronic change which gives rise to linguistic expressions which are coded as discursively secondary' (Chapter 5). And Nicolle concludes that what defines grammaticalization is the addition of procedural information to the semantics of an expression. In his approach, lexical items encode conceptual information, while discourse markers, pronouns, and tense, aspect, and modality markers encode procedural information (Chapter 32). Another aspect of grammaticalization concerns the frequency of use of linguistic material. In some of the definitions provided, frequency is portrayed as

one of the driving forces, or *the* driving force of grammaticalization (see especially Chapter 6 by Bybee). We will return to this issue below.

On the other hand, there is also the view that grammaticalization concerns anything that relates to grammar. For Frajzyngier, for example, the term stands simply for any coding of a function within the grammatical system of a language (Chapter 51). Depending on which definition is employed, there are great differences with respect to the phenomena to be considered. In extremely general definitions, such as that proposed by Frajzyngier, for example, diachrony is not a major issue, and the 'sources' of grammaticalization are not restricted to lexical and other form–meaning units but also include tone, intonation, phonological changes affecting segments, linear order, and position. Still, when controversies arise many scholars agree in draw attention to the classic definition by Kuryłowicz to help settle the issue of what should be subsumed under the rubric of grammaticalization:

Grammaticalisation consists in the increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status, e.g. from a derivative formant to an inflectional one. (Kuryłowicz 1975[1965]: 52)

For most students of the field, grammaticalization is understood to be a diachronic process and, hence, findings can be verified or falsified by means of historical evidence. But it is also possible to analyse grammaticalization phenomena within a synchronic framework. This is demonstrated in particular by Langacker in his Cognitive Grammar account of a range of instances of grammaticalization (Chapter 7). As this volume suggests, there is no single approach or model that is predestined more than others to deal with grammaticalization phenomena, or that would account for all phenomena better than any other approach. To be sure, the questions asked differ from one approach to another and the answers given to central questions are not the same across the different approaches; but these answers are in most cases compatible with one another.

2. DELIMITING THE FIELD

Each approach or 'school' of linguistics has its preferences as to the kind of linguistic phenomena that it is concerned with, and with respect to the way that it demonstrates its strengths and the advantages it offers over alternative approaches. Studies in grammaticalization also have their preferences. One noteworthy preference appears to be working on English and employing the English *be-going-to* future as a paradigm case of grammatical change. In a number of

chapters, especially that by Bisang (Chapter 9), it is argued, implicitly or explicitly, that there is a need to take account of the typological diversity of the world's languages, more so than has been done in the past. This call for more diversity in the object of research is partially reflected in the design of this handbook, especially in Part V, which contains articles on a wide variety of languages, also outside the Indo-European area.

The flip side of the question of how to define the phenomenon is of course: what counts as an instance of grammaticalization and what does not? One of the areas where this question has been hotly debated is that of discourse markers or particles (see e.g. Onodera in Chapter 50). Can they, or at least part of them, be described exhaustively within the framework of grammaticalization theory? Or, is a separate framework of 'pragmaticalization' required, as has been argued ever since Erman and Kotsinas (1993; Aijmer 1997: 2) proposed this term? Is it desirable to draw a boundary between 'sentence-grammatical phenomena', to be treated under the rubric of grammaticalization, and 'discourse-pragmatic phenomena', which are the subject matter of pragmaticalization studies (Günthner and Mutz 2004)? Diewald (Chapter 36) argues that it is possible to treat pragmaticalization as a sub-process of grammaticalization. Note that already in 2000, Wischer (2000: 359) had proposed to treat the two as subtypes, referring to pragmaticalization as 'grammaticalization on the text or discourse level' and to orthodox grammaticalization as 'grammaticalization on the propositional level'. Both processes have in common that language material undergoes recategorialization by changing from a more open to a closer categorial system. It is therefore obvious that grammaticalization theory provides a principled tool to bridge the boundary between two domains of linguistic analysis that tend to be treated as distinct, namely grammar and pragmatics. This is a point also brought home in much detail in a recent book publication by Ariel on the topic (2008).

More general, and this is an issue that comes up in a number of chapters, is the question of where the limits of grammaticalization lie. For example, is grammaticalization restricted to oral and written languages, or does it show up in other modalities of human communication as well? As Pfau and Steinbach show in Chapter 56, the behaviour of grammaticalization in sign languages is largely similar to that in oral languages. To be sure, there are modality-specific differences. For example, in both kinds of modalities there are auxiliaries. However, whereas in spoken and written languages there is a major pathway from lexical verbs to the functional categories of tense, aspect, and modality (Bybee, Pagliuca, and Perkins 1994), in sign languages it is not only verbs but also nouns and pronouns that may give rise to auxiliaries.

There is reason to assume that grammaticalization most commonly arises in spoken, rather than in written language use. However, as Narrog and Ohori show Chapter 64, Japanese provides a number of examples where grammaticalization was triggered by the written rather than the spoken language, especially via translation.

Strikingly similar developments have also been reported from European languages (see Heine and Miyashita 2008b).

On a more fundamental perspective, there are general human strategies, or mechanisms, that have been invoked for describing, delimiting, and understanding grammaticalization, such as analogy, reanalysis, generalization, or creativity; see especially Traugott (Chapter 2) and Fischer (Chapter 3). Among these conceptual mechanisms, reanalysis is one of the most frequently cited. But the significance of this notion has been challenged. Fischer, for example, argues that reanalysis is not something that speakers or hearers do. Rather, it is a concept of the analyst that is, at least with reference to language processing, being based on our ability to analogize (Chapter 3). Humans are analogical animals, as Anttila (2003: 438) puts it, but they also reanalyse the material they dispose of. They generalize, and they use linguistic forms and constructions creatively for novel purposes. The question then is: to what extent are these notions helpful for understanding or for defining grammaticalization, and, is any of these more relevant than others? Many different answers are volunteered in the following chapters, reflecting the conceptual diversity that characterizes the field of grammaticalization.

3. CENTRAL ISSUES

Since the late 1990s, studies in grammaticalization have been the subject of critical discussions. Perhaps the most serious claim, first made by Newmeyer (1998) and taken up in this volume by Joseph in Chapter 16, is that grammaticalization is not a distinct process but merely represents a combination of independent linguistic processes (see also Campbell and Janda 2001, as well as the other contributions to *Language Sciences* 23.2–3). Another problem concerns what is most commonly referred to as 'degrammaticalization'. Central to the problems of defining and delimiting grammaticalization is the question of what to do with what Hilpert calls 'developmental U-turns' and other cases of degrammaticalization (Chapter 58); for some examples, see Narrog and Ohori's analysis of Japanese (Chapter 64). On the basis of detailed analysis, Norde concludes that while changes classified as degrammaticalization challenge the unidirectionality hypothesis, they also lend support to it in affirming it as a strong directional tendency in grammatical change as quantitatively limited exceptions (Chapter 38; see Norde 2009a for more details). That there is need for much further analysis of cases of suspected degrammaticalization, and more generally of degrammaticalization as such, is shown convincingly in Chapter 14 by Börjars and Vincent.

It may be useful to distinguish between two kinds of approaches to grammatical evolution. On the one hand there are approaches that focus on the initial phase leading from non-grammatical, lexical structures to grammatical, non-lexical structures. On the other hand there are also approaches that concentrate on a more advanced phase of the process relating to bound, typically inflectional structures, and the development of further advanced and abstract grammatical functions. An overview of the findings presented in this volume suggests that the kind of generalizations proposed are not the same, depending on which of the phases is highlighted by a given author (see e.g. the discussion in Chapter 5). Another issue that comes up in many chapters concerns the motivation(s) of grammatical change, and here a wide spectrum of views are voiced. At one end are adherents of schools of functional linguistics invoking discourse pragmatic and/or semantic principles. At the other end are students of generative models who tend to hold innate principles in children responsible for grammaticalization (see especially Chapter 4 by van Gelderen). What the two have in common is that both assume that, across languages, grammatical change is directional, leading, for example, from lexical to functional categories or structures, Hence there must be universal principles underlying them. Grammaticalization and generative grammar have had, as van Gelderen observes, 'an uneasy relationship', but due to the introduction of functional categories in the late 1980s and features in the 1990s, it has become possible to account for gradual unidirectional change in a generative framework.

Another central topic of linguistic theory concerns the nature of linguistic categories, and this is an area where the contribution of grammaticalization studies may have been of particular importance. When Ramat observes in Chapter 40 that it is not always easy to distinguish morphologically between adverbs and nouns or adjectives, or between adverbs, prepositions, and conjunctions, this points to an area where work on grammaticalization has come up with a range of new findings: clines (Hopper and Traugott 2003) or chains of grammaticalization (Heine 1992) are some of the constructs that have been proposed to describe and account for the overlapping nature of syntactic or morphological categories. That grammatical forms and constructions are best analysed as gradient categories is suggested in a number of chapters; Brinton, for example, presents evidence for a gradience view of lexicality and grammaticality in her discussion of English complex predicates (Chapter 45), and Krug concludes in his analysis of auxiliation and categorization in the domain of tense, aspect, and modality that ambiguous cases are the norm rather than the exception and that the borderline between lexical and grammatical items will always remain arbitrary to some extent (Chapter 44).

Syntax and morphology are in many theoretical frameworks of linguistics treated as phenomena belonging to distinct domains of analysis; still, it is well known to students of grammaticalization that it is hard to trace a clear boundary between the two. But the problem is even more serious than has previously been thought.

Haspelmath argues in Chapter 27 that, 'the non-coincidence of the various criteria for syntactic vs. morphological status makes the very idea of a syntax/morphology distinction highly doubtful. Combinations of signs have different degrees of tightness, and it is not at all clear that this continuum can usefully be divided into two parts (syntax vs. morphology) or three parts (free words vs. clitics vs. affixes).' One of the issues raised by Haspelmath, the categorial status of case marking in Hungarian, is also highlighted in König's discussion (Chapter 41): is Hungarian a language without case system or with an extremely rich case system?

This raises the question of whether students of linguistic analysis should decide on models that aim at accounting for the gradual nature of grammatical categories rather than insisting on classical models of discrete categorization in terms of necessary and sufficient criteria. Even if one were to decide on answering this question in the negative, Krug maintains in Chapter 44 that grammaticalization studies are helpful in improving the basis for decisions on where to draw relevant lines between categories.

Two other issues have figured prominently in earlier studies. One concerns the role of iconic coding, which is discussed by Haiman in Chapter 37, leading to the question: does iconicity influence grammaticalization processes? The second issue, one that has now attracted renewed attention, concerns what is commonly known as 'the linguistic cycle'. That certain linguistic developments are cyclical has been claimed by scholars almost as long as linguistics exists as an independent discipline. In the history of grammaticalization studies, this claim has been put forward in various formats, perhaps the best-known being Givón's cycle (1971; 1979: 209), reproduced in (1).

(1)   Discourse > Syntax > Morphology > Morphophonemics > Zero

To what extent is grammatical evolution cyclical? This question is addressed in several of the chapters. A much-debated case of cyclicity relates to negation and concerns what is widely known as Jespersen's Cycle; an analysis of this phenomenon, as well as that of a negative-existential cycle, is discussed by Mosegaard Hansen in Chapter 46. Another kind of cycle concerns the rise and fall of grammatical subject and object agreement, which is van Gelderen's topic in Chapter 39. The same author has recently edited a whole volume on the topic of cyclicity (van Gelderen 2009).

Another feature that has received some attention concerns the behaviour of scope. Does grammaticalization entail a decrease in the scope that the entities concerned experience—hence, can scope be taken to be adopted as a definitional property (cf. Lehmann 1995a[1982])? This issue is addressed in some of the chapters; Hengeveld in particular maintains that the diachronic development of expressions for tense, aspect, and mood leads from lower to higher scope (Chapter 47). The same stance is basically taken in generative grammar, which conceives of grammaticalization as 'category climbing', or in terms of Late Merge

(cf. Roberts and Roussou 2003; van Gelderen 2004; Chapter 4 below). As has been pointed out however by some authors, for example by Norde in Chapter 38, scope is a problematic parameter. After all, the directionality of change with respect to scope largely depends on the particular notion of scope, and on the domain of grammar that it refers to.

Among the general questions that have so far not received the kind of attention they deserve is the following: how long does a grammaticalization process need to take its course? That such a process does not happen overnight is beyond any reasonable doubt. But what is the minimum and the maximum time required? Studies of pidgins and creole languages suggest that new grammatical categories can arise within less than a century. At the other end, however, there are also examples to show that the evolution of a category can extend over more than a thousand years. As Deutscher shows in Chapter 53, it took nearly two millennia for a fully independent speech-introducing clause ('this is what X said') to grammaticalize into an obligatory quotative marker in Accadian. Furthermore, there is the question of how human languages evolved. Once an issue that was ignored or avoided by linguists for over a century, language evolution has recently become a hotly contested subject matter in some schools of linguistics. Smith in Chapter 12 argues that studies in grammaticalization can make a significant contribution to reconstructing the genesis and development of human language (see also Heine and Kuteva 2007). This is also a central issue in Dahl's discussion of how grammatical change relates to linguistic complexity. Approaching grammaticalization from the vantage point of complexity studies and distinguishing between system complexity and structural complexity, he is able to establish a number of correlations, for example between non-linearity and high degree of grammaticalization (Chapter 13).

Finally, the volume is also concerned with a question that some might consider central in understanding grammatical change, but one that has also been discussed controversially: how does grammaticalization relate to first language acquisition? Does language acquisition recapitulate the diachronic evolution of grammar, as some have argued, or does grammaticalization originate in changes in child language? As Diessel argues on the basis of solid evidence from both domains, both questions have to be answered in the negative (Chapter 11). The two developments are in principle independent of each other. There is no causal link between them. Children seek to uncover the meanings of existing expressions. Grammaticalization, by contrast, involves the creation of novel meanings. Nevertheless, Diessel concludes that, while morphosyntactic and phonological changes in particular are different in language acquisition and in grammaticalization, the semantic and pragmatic developments of grammatical markers are based on the same mechanisms of categorization. In both cases, they are grounded in general perceptual and cognitive principles of the human mind.

4. Domains and structures

What is the primary target of grammaticalization processes: meaning, form, or structure? Are the units to which grammaticalization applies lexical or non-lexical items, constructions, or more generally, collocations of meaningful elements? These questions cannot be decided a priori but are necessarily linked to the particular theoretical framework within which they are raised. The issue of form vs. function is perhaps most relevant when grammatical change is viewed from the perspective of construction grammar. As Gisborne and Patten argue convincingly, the 'constructional change' of two constructions looked at in their Chapter 8 shares a number of properties with canonical processes of grammaticalization involving lexical items. Note that, like many (though not all) versions of grammaticalization theory, constructional models assume that lexicon and grammar form a continuum, and that grammatical change is gradual and incremental and leads to an increase in productivity and schematicity. It would seem that one either follows Noël (2006) in maintaining that schematization in constructions and grammaticalization are two different types of change, or one searches for an overarching theoretical framework that encompasses both. The case of the grammaticalization of quotative markers, as presented by Deutscher (Chapter 53) seems to provide support for the second approach. Deutscher suggests that speech-introducing clauses rather than verbs such as 'say' or particles such as 'like' are the source material on which the path to the development of quotative markers is constructed. The lexical sources are only relevant in as far as they are used inside such a clause.

The nature of the process from lexical or less grammaticalized to more grammaticalized structures is a topic in many of the following chapters. One salient direction in grammaticalization leads from more concrete to more abstract meanings, as shown, for example, by Eckardt with reference to the emergence of scalar degree modifiers (Chapter 31). That such semantic processes need not be confined to one particular morphological category, such as the verb, is demonstrated by Ziegeler in her analysis of modality, where she argues in favour of what she calls a "more holistic semantic approach" to the study of modality (Chapter 48).

There are certain grammatical categories that time and again can be traced back mainly to one particular conceptual source only, while others derive from multiple conceptual sources. Both kinds of process are represented in this volume. The evolution of definite articles is of the former type, as De Mulder and Carlier show in Chapter 42. Many contributions to this volume observe that for most functional categories there is not just one source but an entire pool of different sources of grammatical development. Evidentials, for example, may not only come from grammaticalized verbs but may also go back to locative and deictic markers or members of other word classes (Chapter 51). The genesis of passive markers and

constructions can be due to an even larger range of pathways (see Chapter 43 by Wiemer; see also Haspelmath 1990).

Grammaticalization takes place in discourse, and its most obvious outcome is to be found in morphology. Syntax, by contrast, is a domain that some do not centrally associate with grammaticalization theory. That such a view is in need of revision is demonstrated in a number of chapters. One of them is DeLancey's Chapter 29, where it is shown that grammaticalization theory is one of the two essential components of the functional-typological approach to syntax. Grammaticalization, DeLancey states, 'is not simply a mechanism by which morphological structure develops, it is the constant, universal tendency of language out of which all structure arises'. And in fact, for quite a number of students of grammaticalization, syntax is a central field of research. Therefore it is hardly surprising that there is a range of chapters in this volume analysing syntactic phenomena, like word order in Chapter 30 by Sun and Traugott.

A large part of research on grammaticalization relates to the interface area between semantics and pragmatics, and even approaches that focus on semantic issues tend to include a pragmatic component in addition, as can be seen for instance in Chapter 31 by Eckhardt. Of central importance for this issue is the following question, raised especially by Nicolle (Chapter 32): What is the contribution of context as opposed to inferential mechanisms in the rise of new grammatical meanings and constructions?

Another issue raised in a number of chapters concerns the question of whether a given phenomenon really qualifies as an instance of grammaticalization. Otherwise it may be more appropriately treated within some alternative field of analysis, or it may be best analysed as being located at the interface of two or more different fields of study. A paradigm example of an interface area concerns the relationship between grammaticalization and lexicalization. Having long been neglected as a distinct research field, lexicalization attracted considerable research between 2002 and 2005, where the central question was one of delimitation: where does grammaticalization end and lexicalization begin? We now know much more about the different manifestations of lexicalization processes, but, as Lightfoot observes in Chapter 35, the challenge remains for examining lexicalization in relation to grammaticalization.

Another interface area relates to the structure of predication. One of the test cases analysed in this volume concerns complex predicates in English, such as *have a drink*, *make a call*, *give advice*, which have been discussed in terms of lexicalization and idiomaticization. As Brinton shows convincingly, one type of complex predicates that involves the English light verbs *make*, *take*, *give*, *have*, and *do* exhibits changes that are characteristic of grammaticalization, being instances of grammaticalized phrasal constructions (Chapter 45).

Clause combining has attracted considerable attention in studies of grammatical change, and most aspects of combining are treated in the present volume.

Clause subordination is discussed most of all by Ohori (Chapter 52), but coordination of clauses is also well represented, being in particular the subject of Giacalone Ramat and Mauri's Chapter 54. While there is the issue of how conjunctions and other elements of clause combining may arise, there is also the issue of what can happen further to such elements. Some new lines of research have shown that complementizers and other clause connectives can become final particles, for example, of utterances. Thompson and Suzuki demonstrate in Chapter 55 that this is potentially a cross-linguistically regular process.

One domain that has, conversely, been somewhat neglected in past work is that of personal deixis. Personal pronouns, and more generally person markers, belong to the most conservative parts of grammar. Most of them are etymologically opaque. That speakers may create more than one new category of personal deixis is shown by Martelotta and Cezario in Chapter 60 on Brazilian Portuguese. Another domain that so far has perhaps not received the kind of attention it deserves is parenthetical constructions. This fairly new research topic appears to have many implications for the study of grammaticalization phenomena. Processes such as the rise of new discourse markers or particles are considered by some to be a test case for defining the limits of grammaticalization. Among the phenomena discussed by Hilpert (Chapter 58) are conjunctions in Germanic languages that come to be used outside their typical syntactic context, and undergo decategorialization. This is manifested in the development of independent intonation, strong restrictions on the initial or final position, and a replacement of earlier grammatical meanings with discourse-pragmatic functions.

There are many different ways of explaining linguistic phenomena. Yet, when it comes to finding answers to the question of why languages are structured the way they are, grammaticalization studies provide insights that are indispensible for providing a satisfactory explanation. Mithun (Chapter 15) demonstrates how they help in understanding the morphosyntactic structure of extremely complex languages such as Navajo and other Athapaskan languages. Showing that the ordering structure of the Navajo verb structure was built up in stages over time via principles of grammaticalization, she is able to account for a number of morphosyntactic issues that have plagued preceding analyses of this language for decades. She rightly emphasizes that work on grammaticalization cannot replace synchronic language description. At the same time, she also points out that this work may, for example, lead to the conclusion that it is no longer necessary to decide whether a given morpheme is actually 'lexical' or 'grammatical', or whether subject and objects prefixes are 'really agreement' or 'really pronouns'.

Grammaticalization theory can also shed light on the distinction between polysemy and homonymy. For example, there are languages where one and the same item serves on the one hand as both a passive and a causative marker and on the other hand as a lexical verb for 'to give'. As Chappell and Peyraube show in Chapter 65, this situation is in no way odd or peculiar. Rather, it can be accounted

for with reference to the grammaticalization processes that gave rise to it. Whether such situations should be treated as instances of polysemy or homonymy is a question that is notoriously controversial in linguistics. It is obvious, however, that from the perspective of grammaticalization theory they qualify as instances of *heterosemy* (Lichtenberk 1991), being the result of polygrammaticalization (Craig 1991), where there was one lexical structure that has given rise to different lines of development. Polysemy, or heterosemy, is in fact an area where grammaticalization studies provide both an important tool of analysis and some explanatory potential, and polysemy is also the focus of research on semantic maps. The question of how grammaticalization paths relate to (synchronic) polysemy as represented in semantic maps is a main topic of Chapter 25 by Narrog and van der Auwera.

In addition to the question of how grammaticalization can contribute to understanding the nature of language structure, there is also the question of what explains grammaticalization itself. While a range of different stances is voiced in this volume, two of them appear to be particularly prominent. On the one hand, there are explanatory approaches associated with what may be called the construction grammar paradigm that invoke frequency of use as one of the main forces, or the main force, driving grammaticalization, if not linguistic change in general. In the tradition of Bybee and Hopper (2001; see also Chapter 6), Torres Cacoullos and Walker, for example, define grammaticalization as the set of gradual semantic and structural processes by which constructions involving particular lexical items are used with increasing frequency and become new grammatical constructions, following cross-linguistic evolutionary paths (Chapter 18). On the other hand, there are also approaches that highlight the speaker's communicative motivations and the way in which linguistic material is manipulated for finding optimal rhetorical solutions (see Chapter 33 by Waltereit).

One of the main challenges facing students of grammaticalization is the question why grammatical development is, at least to a large extent, unidirectional. Various ways have been proposed to explain unidirectionality. In generative linguistics, unidirectionality has been explained with reference to universal principles such as Late Merge, ultimately relating to the principle of Economy (van Gelderen 2004; Chapter 4). On the other hand, it is argued by Fischer (Chapter 3) that unidirectionality is not something necessarily intrinsic to grammaticalization on the speaker–listener level. In the usage-based model of Bybee (Chapter 6), it is frequency of use that plays a central role. It is only when increases in frequency spur all the mechanisms to work together, she maintains, that we recognize an instance of grammaticalization: 'Changes related to increases in frequency all move in one direction and even decreases in frequency do not condition reversals: there is no process of de-automatization or de-habituation, subtraction of pragmatic inferences, etc. Once phonetic form and semantic properties are lost, there is no way to retrieve them. Thus grammaticization is unidirectional.'

Rather than simply frequency of use, some students of discourse analysis see conversational routines as being central for the development of unidirectionality. Such routines have the effect that, for example, two or more independent units of language structure or meaning grow together into a single grammatical construction with interdependent, integrated components (see Couper-Kuhlen in Chapter 34).

5. STUDIES ACROSS THE WORLD

Principles of grammaticalization have been claimed to apply to languages across the world irrespective of genetic or areal affiliation, and the question is whether this is appropriately reflected in the present volume. Unfortunately, the answer is not an unequivocal 'yes'. As in grammaticalization studies in general, there is clearly a bias towards the major languages of the world. English in particular enjoys a privileged status, both in the discussions and in the exemplifications to be found in the chapters. While a number of chapters are devoted primarily to languages of European origin, the linguistically most complex regions of the world are clearly under-represented. There is only one chapter devoted to the 2,000-odd African languages (Chapter 57 by Heine), but other regions also showing a remarkable linguistic diversity, such as New Guinea, South America, or Australia, have not found the kind of attention they deserve. The reasons for this are obvious. Grammaticalization studies have traditionally focused on European languages, and to a lesser extent also on languages of Eastern Asia, i.e. Chinese (Chapter 65 by Chappell and Peyraube), Korean (Chapter 63 by Rhee), and Japanese (Chapter 64 by Narrog and Ohori). With respect to research on grammaticalization, languages in these areas are naturally at an advantage in the sense that they are historically relatively well documented. In contrast, relatively little information is available on grammaticalization processes, for example, in Papua New Guinea or Australia.

Work on grammaticalization thus shows a strong bias in favour of a few languages, while in most regions of the world this is a recent and yet underexplored field of study. On the other hand, there are also earlier academic traditions dealing with issues of grammatical development under a different heading, or under different theoretical premises. This is especially, but not only, the case in countries having a long tradition of written language use. In Korea, for example, such studies can be traced back to the 1960s (see Chapter 63). But even on a continent like Africa, studies in grammaticalization meanwhile have a history of roughly thirty years (Chapter 57). A large number of scholars around the globe now devote their work to issues of grammaticalization, thereby contributing to our knowledge of the

typological diversity of grammatical change. This is reflected in particular in chapters such as that of Johanson on Turkic languages (Chapter 62), Wiemer on Slavic languages (Chapter 61), or Martelotta and Maura Cezario on Brazilian Portuguese (Chapter 60).

Note that grammaticalization processes usually concern individual categories or constructions of a language rather than languages as a whole. That it is nevertheless possible to determine the profile of grammaticalization for entire languages is claimed by De Mulder and Lamiroy in their comparative study of Romance languages (Chapter 24).

6. New topics and fields

As observed above, grammaticalization has more recently become the target of new fields of analysis. One of those new and promising fields can be seen in prosody. As Wichmann points out in Chapter 26, segmental attrition tends to be seen as a typical feature of grammaticalization, but she finds that it is a partial and secondary phenomenon, while the primary phenomenon is prosodic. The primary effect of frequency and habituation, she suggests, is not segmental attrition, but prosodic erosion or loss of prominence.

Grammatical change begins with individual speakers and affects specific social groups before it spreads to other individuals and social categories of speakers. While this is intuitively clear to students working in this field, work on the individual and the social dimension of grammaticalization has so far not received the attention it deserves. We are therefore glad that both dimensions are being considered in the present volume. That individuals provide the very first occurrences of phenomena that eventually develop into changes in language is pointed out above all in Chapter 20 by Raumolin-Brunberg and Nurmi. At the same time, these authors observe that processes of grammaticalization tend to be slow, making it difficult to observe them in an individual's linguistic practices over her or his lifetime.

Much of the information on grammaticalization that is available is based on the analysis of standard languages or linguistic systems that are portrayed as being fairly uniform, while there is little information on how grammatical evolution relates to dialectal and demographic variation. Impressive insights into this issue can be found in recent sociolinguistic work, as discussed by Nevalainen and Palander-Collin in Chapter 10, or in the treatment of English non-standard varieties by Kortmann and Schneider (Chapter 21).

A question that is of interest in any academic discipline but that appears to be particularly relevant to grammaticalization studies is the following. What counts as evidence to support one's hypotheses and generalizations? Since grammaticalization is a diachronic process, evidence should first and foremost consist of historical 'facts'. In this respect, students working on languages for which substantial written records on their earlier stages of development exist are in an ideal position. This becomes especially clear in the contributions on languages such as Chinese, as Chappell and Peyraube show in Chapter 65, or Ledgeway in his contribution on Latin and the Romance languages (Chapter 59). Languages without any written documents offer a less enviable prospect for finding appropriate empirical evidence.

Larger text samples and quantitative approaches are increasingly valued in the search for appropriate evidence. This development is reflected in many of the chapters. Clearly, research in grammaticalization increasingly relies on methods of analysis that allow for quantitative generalizations, most of all on corpus linguistics. Here the motto is: the larger the corpus is, the more likely that it will allow for a comprehensive analysis of the dynamics of linguistic change. Mair observes, for example, that small corpora may be sufficient to study grammaticalization of high-frequency core-grammatical categories, but they are insufficient when it comes to rarer phenomena, such as certain types of clausal subordination (Chapter 19).

Use of quantitative data, though, already has a distinguished tradition outside grammaticalization studies, concerning topics that are nevertheless relevant to grammaticalization. This is the case, for example, in work carried out by students of variation theory that seek to explain why one form is chosen over another to signal the same meaning or function in a given context. As Poplack shows in Chapter 17, variation theory can shed light on ongoing processes that are not within the scope of orthodox grammaticalization theory. Language change is commonly classified into whether it takes place entirely within a given language (i.e. internal change) or is influenced or caused by contact with other languages (external change). Grammaticalization, then, tends to be viewed as a paradigm case of internal language change. As more recent research has demonstrated, however, this view is in need of reconsideration. A large body of data shows that grammaticalization can be induced by language contact. A striking example is provided by the domain of evidentiality. For example, Aikhenvald observes that language contact and areal diffusion provide a major motivation for developing an evidentiality system and, consequently, grammaticalized evidentials are a feature of many linguistic areas (Chapter 49).

As is argued by Heine and Kuteva (2005; see also Chapter 23), cases of contact-induced grammatical change are shaped essentially by the same mechanism as grammaticalization processes not affected by language contact. While grammaticalization exhibits the same kind of unidirectional behaviour irrespective of

whether or not language contact is involved, Matras rightly insists that there is need for an overriding framework of language convergence, where grammatical change is viewed as internal to the individual speaker's language processing. In such a framework, he argues, contact-induced grammaticalization is merely a sub-category, even if an indispensable one (Chapter 22).

GRAMMATICALIZATION AND LINGUISTIC THEORY

This page intentionally left blank

CHAPTER 2

....

GRAMMATICALIZATION AND MECHANISMS OF CHANGE

....

ELIZABETH CLOSS TRAUGOTT

DEBATES concerning the relationship between grammaticalization and three mechanisms of change that are often associated with it are discussed: reanalysis, analogy, and repetition. It is argued that although reanalysis requires discreteness, it does not necessarily involve a 'saltation', and that a distinction should be made between mechanisms and motivations, hence analogical thinking should be distinguished from analogical change.

1. INTRODUCTION[1]

....

Research on 'mechanisms' of change seeks to answer the question how one gets from one mental representation of a given expression to a different one.[2]

---

[2] While the hypothesis that mechanisms, especially reanalysis, operate on abstract mental representations is the most widely held one, it has also been proposed that reanalysis can operate on surface ambiguity (Garrett forthcoming) and analogy on surface similarity (Fischer 2007).

'Mechanisms of change are processes that occur while language is being used, and these are the processes that create language' (Bybee 2001: 190). The search has been for a small set of such mechanisms:

By postulating a finite set of mechanisms attributable to human neuromotor, perceptual, and cognitive abilities, which interact with linguistic substance in acquisition and in language use, a range of possible language structures and units will emerge. (Ibid.)

Among proposed taxonomies, the best known is probably Harris and Campbell's (1995: 50) claim that there are 'only three basic mechanisms: reanalysis, extension, and borrowing'. These are mechanisms of (morpho)syntactic change, but reanalysis has been extended to semantic change as well (Eckardt 2006). Among other mechanisms discussed in the literature are sound change and metaphoric extension (Joseph 2004: 51), and repetition leading to frequency (Bybee 2003).

The agenda for work on mechanisms of morphosyntactic change, later thought of as grammaticalization, was largely set in Li (1977). Two articles in the volume in particular have proved seminal for concepts of reanalysis: Langacker (1977) and Timberlake (1977). Reanalysis was the mechanism most frequently associated with grammaticalization for the following three decades. However, as 'analogy' and extension have come to be better understood, interest in usage-based grammars has increased, and large electronic corpora have become major sources of evidence for change, the role of analogy vis-à-vis reanalysis is being rethought. So is a distinction between 'mechanism' as the 'how' of change, and 'motivation' as the 'why' of change. Croft (2000: 63) refers to 'casual mechanisms', which include analogy but also conversational maxims and discursive practices, and, arguing for the importance of analogy, Fischer (2007: 324) refers to analogy as 'one of the main mechanisms or motivating factors' in change.

Here I limit discussion to issues in reanalysis (section 2), analogy (section 3), and repetition (section 4). Debates about whether there are mechanisms specific to grammaticalization are briefly mentioned (section 5).

Views about mechanisms presuppose certain stances and developments elsewhere in linguistic theorizing. These have to do with directionality, abruptness, and the status of grammaticalization in theories of language change. Briefly, unidirectionality (e.g. from contentful lexical structure > schematic, abstract grammatical structure, from complex > simple clauses) has been central to much thinking on grammaticalization. It is a strong hypothesis that has been extensively debated and refined (see Börjars and Vincent, Fischer, Joseph, and Norde, Chapters 14, 3, 16, and 38 below).

Regarding abruptness, all change is discontinuous ('discrete') to the extent that change depends on acquisition: each individual has to learn a language so there is discontinuity from generation to generation. Acquisition during lifetime is also discrete, whether it involves restructuring of what the speaker knows, or borrowing. There is nothing in the concept of abruptness that inherently requires it to be

understood as a large jump or 'saltation'. It can be thought of terms of tiny micro-steps. However, in the 1980s, especially in generative circles, macro-changes that affect the system as a whole were privileged over the micro-steps that may lead to such changes. What Lightfoot (1979 and later) termed 'catastrophic' or 'cataclysmic' changes were identified with abrupt reanalysis. Later, reanalysis was construed in terms of parameters, which were themselves initially conceived in large-scale terms. However, with the development of micro-parameters and feature analysis within Minimalism (see Roberts and Roussou 2003; van Gelderen 2004), reanalysis has been rethought in terms of small (though abrupt) steps. This is in keeping with thinking among constructionalists, who focus on small differences between constructions rather than on major ones (e.g. Trousdale 2010). The issue of the 'size' of an abrupt change, then, is ultimately a question of the linguist's search for 'diachronic correspondences'; for the individual innovation is usually only a very minor adjustment (Andersen 2008: 31–2).

With regard to the status of grammaticalization, two related proposals are relevant here. One is that grammaticalization is itself a mechanism (see e.g. 'the main mechanism of syntactic change is grammaticalization', Haspelmath 1998: 344). This proposal has been sharply criticized (see e.g. Joseph 2004; Fischer 2007; Chapter 3 below), although it has barely been addressed in practice by researchers in grammaticalization, and it is hard to see how it could be, considering that grammaticalization interacts with different types of processes. The proposal does, however, resonate with another idea: that grammaticalization is a uniquely distinct type of language change. While some of Haspelmath's and Heine's earlier writing suggest this position, the more widely held view is that grammaticalization is a subset of types of language change in which form and meaning pairings change, i.e. of morphosyntax and morphophonology. It is distinct from semantic and phonological change, as well as from some types of syntactic change, e.g. word order, but is closely interdependent with them.

2. REANALYSIS

Langacker identified reanalysis as 'change in the structure of an expression or class of expressions that does not involve any immediate or intrinsic modification of its surface structure' (Langacker 1977: 58). He went on to specify two subtypes of reanalysis: (a) 'resegmentation', i.e. boundary loss, boundary creation, and boundary shift, and (b) 'syntactic/semantic reformulation' (p. 64). A standard kind of example which involves both types of reanalysis is from Hungarian (Anttila 1989 [1972]: 149, 256):

(1)   Old Hungarian *vila béle* 'world core/guts:directional' > *vilagbele* 'world into' >
        Modern Hungarian *világba* 'into the world'

Here a phrase with two originally independent words that could occur in a different order has been restructured as a single word with an affix, and *béle* has been reduced to the case marker *ba*. There has been semantic reanalysis (of *béle*), and change in boundaries (from phrasal to morphological).

Drawing on Langacker (1977) and Timberlake (1977), and assuming a version of Government and Binding syntax, Harris and Campbell similarly defined (morpho) syntactic reanalysis as involving change in constituency, hierarchical structure, category labels and grammatical relations in underlying structure (1995: 50) without change in surface structure. Some researchers have taken the assumption of absence of change in surface structure as criterial for reanalysis, and as evidence that it takes place in child language acquisition (see e.g. Faarlund 2000 on changes involving word order in Northern Scandinavian languages). A striking example of the potential stability of ambiguity is provided by the development of *wh*-pseudo-clefts with *do*; they have allowed ambiguities such as are illustrated by (2) for over 250 years (Traugott 2008a). (2) is potentially ambiguous between the original purposive meaning (i) and what was to crystallize as a new pseudo-cleft structure a couple of generations later (ii):

(2)   What I did was to deceive the pagans (1612)
        (i) 'What I did was in order to deceive the pagans': what was done may refer
            to an act separate from and temporally prior to the deception; *to* is
            purposive
        (ii) 'I deceived the pagans': *do* is a proverb for *deceive*, and therefore the
            temporality of *do* and *deceive* is the same; *to* is an infinitive marker

When the *wh*-pseudo-cleft arose, *c.*1660, there was semantic reanalysis and syntactic restructuring of constructions like (2i). Pragmatically an originally unmarked Focus became a marked Focus (2ii).

Harris and Campbell (1995) and Andersen (2001), among others, rightly caution that one can only 're-analyse' something that pre-exists. If an adult knew the structure (2i) and reinterpreted it as (2ii), either in production or perception, this would be reanalysis, but if a child learning the language parsed (2i) as (2ii), no 're-analysis' would have occurred from the point of view of the learner. Like many metalinguistic terms, including 'language change', the term 'reanalysis' is therefore not accurate in a compositional semantic sense, except in the case of language users who reanalyse their own structures.

The following four main positions have been taken regarding the relationship between grammaticalization and reanalysis (discussed in far more detail in Campbell 2001a; Fischer 2007):

(i) Grammaticalization and reanalysis intersect but are independent. Arguments put forward for their independence include the fact that: (a) grammaticalization is unidirectional but reanalysis is not, (b) reanalysis does not imply loss of autonomy or of information, (c) reanalysis consists of two stages, whereas grammaticalization is a sequence S1, S2 . . . Sn, and (d) reanalysis is not gradual (C. Lehmann 2004). As mentioned above, the last argument assumes a definition of reanalysis as saltation, which is not necessary since reanalysis can, and typically does, occur by micro-steps.

(ii) Grammaticalization is a subtype of reanalysis (i.e. an epiphenomenon of it), and reanalysis itself is an epiphenomenon of child language acquisition: 'the notion of Diachronic Reanalysis is derivative of aspects of the process of language acquisition. Since grammaticalization is derivative of Diachronic Reanalysis, we see that this is a doubly derivative notion' (Roberts 1993a: 254). However, while Roberts (p: 252) conceptualizes parametric change as 'a random "walk" through the space defined by the set of possible parameter values', Roberts and Roussou (2003: 201) suggest grammaticalization can be 'reduced . . . to an instance of parameter change', upward 'along the functional hierarchy' (p. 202). This upward reanalysis accounts for unidirectionality, in their view, and can give rise to new functional material (p. 209); in this sense, grammaticalization is identifiable with a subset of types of reanalysis.

(iii) Reanalysis is largely irrelevant to grammaticalization because it has properties inconsistent with it (Haspelmath 1998: 315). Haspelmath makes essentially the same arguments as Christian Lehmann (2004) cited above in (i), but in addition argues that reanalysis is distinct from grammaticalization because reanalysis requires ambiguity in the input structure. For example, Harris and Campbell (1995: 51) considered reanalysis to depend on 'a pattern characterized by surface ambiguity or the possibility of more than one analysis'. Despite Haspelmath's remark, researchers often associate ambiguity with the onset of grammaticalization (see (2) above). Indeed, Heine (2002) hypothesized that 'bridging contexts', i.e. contexts in which there is unresolved pragmatic ambiguity, are a necessary 'stage' in grammaticalization. Diewald (2002) also hypothesized that there is a necessary stage of ambiguity as 'critical contexts' develop. Critical contexts are not only ambiguous but display morphosyntactic and constructional restrictions that eventually lead to grammaticalization. Corpus data show that in many cases of lexical to grammatical change examples in which the new structure is only potentially inferrable clearly do precede unambiguous ones (e.g. *be going to*), but whether a 'stage' is always necessary is questionable on the assumption that 'stage' implies a period of time when a community of speakers can use the structure ambiguously (Traugott forthcoming).

(iv)   Reanalysis is actually largely irrelevant to language change, and therefore to grammaticalization, as it has 'no reality from the point of view of speaker-listener processing' (Fischer, Chapter 3 below). However, since speakers parse their output and hearers parse input, reanalysis does appear to have reality for language users. Reanalysis does not require, as Fischer supposes, that speakers see the connections between variants in a historical light (though they might have some access to recent changes owing to age grading).

Among types of reanalysis that interact with grammaticalization and that have received considerable attention is semantic reanalysis associated with the semanticization of pragmatic implicatures or invited inferences (see Eckardt 2006; Traugott and König 1991). Heine, Claudi, and Hünnemeyer (1991) conceptualize these as 'context-induced reinterpretations'. The implicatures are metonymic within the flow of speech, and may result in subjectification, understood as the development of meanings that encode speaker attitude or viewpoint.

3. ANALOGY, EXTENSION

Following Timberlake (1977), it has become standard in much of the grammaticalization literature to think of reanalysis followed by actualization, in other words of 'the formulation of a novel set of underlying relationships and rules', followed by 'the gradual mapping out of the consequences of the reanalysis' (Timberlake 1977: 141; developed further in e.g. Lichtenberk 1991a; Harris and Campbell 1995; Andersen 2001; 2008). In the functionalist literature, a distinction is made between actualization and extension that occurs within the linguistic system and actualization across speakers, spaces, and time (often called 'social gradualness': see Trask 1996: 295). Only the former is addressed here.

Meillet explicitly distinguished grammaticalization from analogy when he proposed that grammaticalization introduces new categories, and 'transforms the system as whole', while analogy 'can renew details of forms' (1958[1912]: 133). However, most changes involve extant (sub)systems, and what we most often see is an intertwining of reanalysis and analogy (Hopper and Traugott 2003: ch 3). Christian Lehmann (2004: 161) comments that the grammaticalization of forms of Latin *habere* 'have' to Romance conjugation suffixes, as in Italian *canterò* 'I will sing', presupposes fixing of the verb-final order *cantare habeo*. This was not the dominant word order, so by hypothesis the co-presence of a productive conjugation system, including imperfect and the subjunctive, both expressed by partly agglutinative verb suffixes, served as an analogical model for *canterò*. He called this kind of

change 'analogically-oriented grammaticalization' (p. 162) and distinguished 'pure grammaticalization without analogy' (p. 161), which he considered the norm. However, as Kiparsky (forthcoming) argues, interactions between analogy and reanalysis are actually the norm.

In morphology two kinds of analogy are often mentioned (McMahon 1994; Croft 2000). These illustrate the kinds of general principles that underlie much current thinking on analogy. One is analogy as levelling, specifically reduction of stem allomorphs (e.g. the levelling of the singular/plural distinction in the past tense of strong verbs in English except for *be*, where *was/were* retain the distinction). The other type of analogy is extension or generalization, e.g. the spread of the plural -*s* marker to most nominals. With advances in work on analogy, its role in change in general and in grammaticalization in particular began to be reassessed. But until recently most researchers probably agreed with Givón's (1991) conclusion that analogy was too weak a concept to be useful in thinking about directionality.

A distinction can be made between exemplar-based analogy and constraints-based analogy (Kiparsky forthcoming). Work on exemplar-based analogy focuses on pattern match. Viewed this way, the question arises whether analogy should be thought of as following on from reanalysis or as also preceding it. The actualization model suggests that analogy follows on from reanalysis, and indeed it has often been noted that reanalysis can normally be detected only via evidence from analogical extension—for example, we know that *be going to* has been grammaticalized only when we find it occurring with a verb that is semantically incoherent with 'motion-for-a purpose', e.g. a stative verb like *know*. But analogy also appears to drive change. It seems plausible that the development of binominal quantifiers like *a lot of* 'much', *a shred of* 'little' from partitives of the same form was enabled by the prior existence of e.g. *a heap of*.

This brings us to the question whether analogy is a mechanism and/or a motivation. Anttila proposed that 'Humans are simply analogical animals' (2003: 438), and that analogies operate on a 'grid' that functions as 'warp and woof', i.e. on the two dimensions of similarity (paradigmatic) and indexicality (syntagmatic) (see also Itkonen 2005). Insofar as humans engage in analogical thinking, one can think of analogy as a motivation for change. Insofar as particular changes are exemplar-based, one can think of analogy as a mechanism of change. If so, the same term is being used for two different processes. The distinction is necessary because much analogical thinking never results in change, understood as innovation that is taken up within a community. Furthermore, not all that can be conceptually analogized becomes grammaticalized in language; for example Talmy (1983) suggested *corner in time* is not grammaticalized in any language because only topological relations grammaticalize. It is therefore useful to distinguish 'analogy' (analogical thinking) from 'analogization' (the mechanism).

Drawing on Anttila's and Itkonen's primarily linguistic views of analogy and on converging views that are primarily psychological (Tomasello 2003) and neurological (Pulvermüller 2002), and regarding analogy as both motivation and mechanism, Fischer (2007; Chapter 3 below) proposes that analogy should be given far more theoretical prominence in work on morphosyntax than it has been in the past. While much work on grammaticalization has been focused on structural differences between earlier and later stages, Fischer's focus is on processing. She proposes that analogy can operate on form alone, but no criteria are given as to how strong or weak the formal match needs to be. Discussing the development of *be going to* (Fischer 2007: 145), she points out that the category Aux already existed, including several periphrastic auxiliaries. It may be noted that the periphrastic auxiliaries available at the time (mid-17th century), *have to*, *be to*, *ought to*, had no *-ing*, and therefore the formal match is weak. The view that *be going to* changed by analogy to form alone takes no account of future orientation of *be going to* that is by hypothesis derived from the original meaning of the purposive motion construction, or of the 150 years of examples in corpora in which two readings are pragmatically possible in contexts such as passive (e.g. 1477 *was goyng to be hanged*) or with verbs that do not necessarily require intentional motion (e.g. 1630 *going to bid* ('summon') *gossips*) (see Traugott forthcoming). While analogical thinking may well have played a part and contributed to the development of *be going to* (and many other examples of grammaticalization), it would appear to have been a motivation for, not the chief mechanism of, this particular change.[3]

The broader concept of extension draws attention to ways in which the range of a newly grammaticalizing item is expanded. Himmelmann (2004) has suggested that grammaticalization involves three kinds of extension. His examples are taken from the development of articles in German. Here I use the example of *be going to*.

(i)   Semantic-pragmatic extension: pragmatic meanings become conventionalized in specific contexts and may eventually be semanticized as polysemies—cf. the two meanings of *be going to* at the time of grammaticalization (such polysemies may persist, cf. partitive and quantifier meanings of *a bit of*, or may become homonymies as in the case of *be going to*).

(ii) Syntactic expansion; although grammaticalization occurs in restricted syntagmatic contexts, the coexistence of both main and auxiliary verb uses of *be going to* permits a wider range of syntactic uses than was available before the development of the auxiliary, cf. use in raising constructions (*It's going to rain tonight*).

---

[3] Garrett (forthcoming) proposes that the inceptive *go to V(ing)* as in *I goe to writing* (1577), as *he was going to make a nooze* ('noose') (1611) is a more plausible source than motion with a purpose. Garrett's focus is on pivotal contexts (akin to Diewald's critical contexts) and again points to reasons for rather than mechanisms of change.

(iii)   Host-class expansion; the range of collocations is expanded, e.g. *be going to* as an auxiliary can occur with stative verbs, but the motion construction cannot.

According to Himmelmann (2004), host-class expansion is criterial for grammaticalization as opposed to lexicalization (this observation applies to early and sustained grammaticalization; if a competing grammatical expression is in decline, retraction and possibly loss is expected). Hilpert (2008) demonstrates how detailed 'collostructional' work on historical corpora can reveal the path of host-class expansion in detail, as well as significant differences in trajectories between languages. Collostructional analysis is a data-driven statistical analysis of collocations practiced within the Construction Grammar framework (e.g. Goldberg 1995). Hilpert shows how, for instance, in English the verbs with which *be going to* collocates are typically, though by no means always, transitive and agentive (*fight, tell*) and/or punctual (*happen*). However, the cognate *gaan* in Dutch typically collocates with non-punctual intransitives (*lopen* 'walk', *spreken* 'speak'). The micro-shifts in distribution over time can be considered to be reanalyses of the constructional sets in which form–meaning paired expressions may be used, as well as analogizations in the sense of extensions and in some cases matches with other expressions undergoing similar shifts.

Unlike exemplar-based approaches to analogy, the constraints-based approach relies on concepts of UG and general principles of language optimization, 'the elimination of unmotivated grammatical complexity or idiosyncrasy' (Kiparsky forthcoming). Reconceptualizing his (1968) proposal that sound change involves rule-generalization in terms of OT constraints, Kiparsky develops an account of unidirectionality in grammaticalization that appeals to structural economy and embraces both pattern match and pattern extension. From this perspective, 'grammaticalization is analogy, albeit a special kind'. At the same time, it is reanalysis: '[g]rammaticalization is unified with ordinary analogy—not just in the trivial sense of classifying them both as instances of reanalysis, but within a restrictive theory of analogical change.' Kiparsky argues, contrary to Meillet, that new categories can be derived by analogy/optimization. His example is from Finnish (see Table 2.1). Here the case paradigm involved triplets of locative cases and a partly corresponding pair of predicational cases:

Table 2.1.

	Place/State	End point	Source
External Location	Adessive	Allative	Ablative
Internal Location	Inessive	Illative	Elative
Predication	Essive	Translative	—

The gap in the paradigm would mean 'cease to be'. Kiparsky argues that in some southern dialects this gap has been filled by an Exessive (Source) case derived from the Partitive ('from X'), which otherwise has no locative functions. In traditional terms, this optimization of the system has involved reanalysis of the Partitive in specific contexts on analogy with other Locative cases.

Meaning changes of analogical nature that interact with grammaticalization are metaphorizations. Metaphor has often be thought to be the major semantic factor in grammaticalization, but close inspection of corpora suggests that in many cases the metaphorical interpretation is the outcome of non-analogical metonymic, contextually derived changes (e.g. *be going to*; see also Heine et al. 1991).

4. Repetition resulting in frequency

As a mechanism, repetition, which leads to frequency, is different from reanalysis and analogy, as it is derived primarily from online speaker production rather than from hearer interpretation. Frequency often appears in the context of recent discussion of mechanisms (Bybee 2001; 2003; Smith 2001). Bybee proposed a definition of grammaticalization that privileges frequency: 'the process by which a frequently used sequence of words or morphemes becomes automated as a single processing unit' (2003: 603). She distinguishes token frequency (the number of times an expression appears in text) and type frequency (the number of expressions of a particular category available). She hypothesizes that token repetition leads to a number of characteristics of grammaticalization that Haiman (1994) associates with grammaticalization: habituation and depletion of speech act or contentful force, automatization as a chunk, and use with a schematic function. Effects of high token frequency lead to (a) phonological reduction, e.g. *be going to > be gonna, isn't it > innit*; (b) entrenchment that allows for retention of old properties, e.g. core auxiliaries in English maintain earlier English patterns of interrogative inversion, and have not been generalized to patterns requiring *do*-support; and (c) storage in memory (see also Smith 2001 on the development of anterior or perfects in English). While some cases of grammaticalization do not show evidence of having arisen through high frequency (see Hundt 2001 on the rise of the *get* passive), or even of resulting in it (Hoffmann 2005), the majority of examples of grammaticalization investigated so far do show increased frequency at inception.

5. ARE THERE MECHANISMS SPECIFIC TO GRAMMATICALIZATION?

Reanalysis, analogy, and repetition are common not only to language change but to cognition and human behaviour in general. Recently there has been an effort to identify mechanisms that are specific to grammaticalization. For example, Heine (2003: 579) identifies four mechanisms. Of these, three are associated with the view of grammaticalization as loss of features and as increased dependency (see Lehmann 1995a[1982] Haspelmath 1998): (a) desemanticization or bleaching, (b) decategorialization or loss of morphosyntactic properties, (c) erosion/phonetic reduction, and (d) extension or context generalization. Heine points out that none of these is confined to grammaticalization, but 'to the extent that jointly they are responsible for grammaticalization taking place, they can be said to constitute different components of one and the same general process' (Heine 2003: 579). He regards the set of mechanisms identified by Harris and Campbell: reanalysis, extension, and borrowing, as an 'entirely different catalog of mechanisms' (p. 600, fn. 6), but in fact his (a–c) are particular subtypes of reanalysis resulting from increased token frequency (i.e. analogical extensions), and (d) is a subtype of extension/analogy (host-class expansion).

6. CONCLUSION

Kiparsky (forthcoming) suggests that all analogy is reanalysis (though not all reanalysis is analogy), because local (micro-)restructuring results from optimization. Christian Lehmann (2004: 162) defined 'reanalysis of a construction' generally as 'the assignment of a different grammatical structure to it'. It may be objected that generalizations of this type are too broad, since it would follow that all change is the result of reanalysis. However, one way of thinking of this is that the formulation of language change A > B/A (> B) is a shorthand for the development of B in variation with A as a result of reanalysis, and for the possible subsequent loss of A (another reanalysis). What is of interest to the researcher on grammaticalization is whether the change A > B/A (> B) is a subpart of a sequence of changes S1, S2 . . . Sn of the type Lehmann (2004) associates with grammaticalization. More importantly, precisely what kind of mechanism does the '>' in any particular case of change represent: an instance of resegmentation, of recategorization or of extension?

'Perceptual and neuromotor systems make language possible' (Bybee 2001: 206). They are the language-internal sources for changes as speakers and hearers acquire language and engage in language use. Advances in neuro-imaging and in articulatory and acoustic phonetics should eventually lead to a better understanding of mechanisms and of their role in language change. They should help clarify the extent to which early acquisition by children and later throughout life play a role in reanalysis, and also help distinguish mechanisms from the motivations that speakers and hearers have in activating these mechanisms, consciously or not.

GRAMMATICALIZATION AS ANALOGICALLY DRIVEN CHANGE?

OLGA FISCHER

One of the ubiquitous principles of the psycholinguistic system is its sensitivity to similarity. It can be found in the domains of perception and production (as well as learning).

The more similar any two sets are, the more likely the wrong rule is applied.

(Berg 1998: 185; 236)

1. INTRODUCTION

Since the 1980s, grammaticalization has been a popular research topic in diachronic linguistics, with its field of application widening considerably over time so that the phenomenon of grammaticalization came to be elevated to theoretical status: a model to understand how language is used and structured, and develops through time. Gradually, grammaticalization also began to include the development of grammatical constructions in general, without the kernel of substantive elements, so that word-order restrictions, clause combining, or the creation of new syntactic

patterns also became part of it (cf. Givón 1979; Hopper and Traugott 2003; Bybee 2003). Its spreading popularity has led to increasing concern about quite a number of aspects related to the model. In this chapter I will address a number of questions that are related to the nature of grammaticalization in order to find out what its status is in change. In this context I will be especially interested in the role played by analogy.

(i)   What is the relation between the synchronic speaker-listener and the essentially diachronic nature of grammaticalization? What role is played by the synchronic system that the grammaticalizing structure is part of?

(ii)   What empirical evidence do we have for grammaticalization, and, perhaps more importantly, where should we look for evidence?

(iii) What causes grammaticalization and language change in general? Should the mechanisms that apply in language learning also apply in language change? And more particularly, what is the role of analogy, reanalysis, frequency, unidirectionality, to mention some of the more important factors/mechanisms?

These questions will be addressed in section 2, where I will also highlight the position of analogy. In section 3, I will explore the nature of analogy further in order to find out how far grammaticalization can be understood as an instance of analogically driven change.

2. THE NATURE OF GRAMMATICALIZATION: SYNCHRONIC AND DIACHRONIC CONSIDERATIONS

The widening of the field involved in the phenomenon called grammaticalization has led to a weakening of the power of grammaticalization as a clearly circumscribed process of change. This can easily be seen from the fact that the parameters originally set up by Lehmann (1982: 306) to characterize the canonical type no longer all neatly apply in each case. Lehmann's parameters give the process a unity in that they all involve reduction or loss on both the paradigmatic and the syntagmatic plane, i.e. loss of weight (phonetic attrition, semantic bleaching, and scope decrease), loss of choice (paradigms of possibilities become reduced and elements become bonded together), and loss of freedom (elements become obligatory in the clause and fixed in position). Obviously, the development of fixed word order or new syntactic patterns doesn't involve phonetic attrition (unless one thinks of this as whole elements being elided—but note that this would disrupt the widely accepted notion of grammaticalization being gradual) or bleaching.

Furthermore, it has been suggested that in many cases, especially those involving subjectification, there is scope *in*crease rather than *de*crease. Similarly, in the case of clause fusion or syntacticization discussed by Givón (1979: 214)—he suggests that complement clauses with non-finite verb forms and PRO subjects, may have developed from paratactic clauses with finite verbs and lexical subjects—there is no question of Lehmann's parameter 'increase in paradigmaticity' applying, since such constructions usually remain in use side by side.

For many grammaticalizationists, grammaticalization is a unified, unidirectional development that guides, and hence explains, change. On the other hand, linguists with formal, functional, as well as more philological backgrounds (who combined their voices in the critical volume of *Language Sciences* 23, and cf. also Janda and Joseph 2003; Joseph 2004) stress the fact that all the changes occurring in grammaticalization may also occur independently, thereby querying the nature of the unity of Lehmann's parameters. These linguists generally stress that more attention should be paid to the speaker-listener, and the synchronic language system used to produce or interpret language utterances. This is not to say that in grammaticalization theory no attention is paid to the speaker-listener level, but this is mainly confined to the immediate pragmatic-semantic context, while the shape of the (formal) system also guiding the speaker-listener is ignored (cf. Mithun 1991; Fischer 2007). In general, supporters of grammaticalization see the process as being driven by pragmatic-semantic forces only, a 'product of conceptual manipulation' with changes in form *resulting* from this (Heine, Claudi, and Hünnemeyer 1991: 150; 174; and cf. Hopper 1991: 19; Rubba 1994; Hopper and Traugott 2003: 75–6). In other words, they would not admit the possibility of form also driving a change.

Looking at grammaticalization from a purely synchronic, speaker-listener point of view rather than a diachronic one may shed a different light on the process or mechanism called 'grammaticalization'. Even though diachrony is present in synchrony in the form of variation, it is not the case that a 'pure' synchronic system does not exist, as Lehmann (2004: 153) maintains. For the speaker-listener, there *is* only the synchronic system at any moment of speech. The point is that the speaker-listener has no panchronic sense: he doesn't necessarily see the connections between the grammaticalization variants in a *historical* light. In other words, in order to prove the existence of grammaticalization as an *actual* mechanism of change linked to human processing, one cannot fall back on the historical process itself. However, this is what is typically done in grammaticalization studies. These attempt to empirically prove the 'reality' of grammaticalization as a mechanism by showing its universal pathway (cf. Haspelmath 1989; 1998; Heine 1994; Bybee 2003): the 'diachronic identity' or 'continuity of two forms or constructions F_1 and F_2, at $T(ime)_1$ and T_2' (Lehmann 2004: 156ff.).

Now this may constitute empirical evidence if one looks at change on the *language output* level: the diachronic stages may be seen as connected, with the constructions at each stage changing gradually, almost imperceptibly, by pragmatic

inferencing, analogical extension, and reanalysis. However, this scenario need not have any reality at the *processing* level, where the same constructions need not be connected at all. The following question should be raised: is there an actual reanalysis in psycho/neurolinguistic terms? This point is important considering the fact that it is ultimately the speaker-listener who causes the change.

The 'grammaticalization' of constructions, or the way (diachronically connected) forms are stored in our brains, could be said to resemble the process of conversion and storage. What is involved here is analogy. When a noun like *table* is used as a verb, the two items are stored in different paradigms or categories, both formally and semantically, and, once there, they may drift further apart. There is no question of reanalysis here for the speaker-listener; he is simply making use of the (abstract) grammar system of English that allows such an option (and with increasingly greater ease after most inflections were lost in the Middle English period). Since there are many such hybrid items in the language, he analogizes, on the basis of an existing pattern, that *table* belongs to this pattern too. How is he to know that *table* had not been used as a verb before, when the verb=noun scheme is such a common pattern in his language?

In a similar way, with the construction *going to*+infinitive (an often-quoted example of grammaticalization), a present-day speaker-listener identifies it in any actual speech situation as either a full lexical verb followed by a purposive *to*-infinitive or an auxiliary (with *to* incorporated) followed by a bare infinitive, according to the patterns of the full verb and the auxiliary paradigms that he has mastered in the course of language acquisition. As with conversion, the speaker-listener doesn't reanalyse, he categorizes holistically, whereby he may apply the 'wrong rule'. How he categorizes in each case depends on the present state of his grammar as well as the context, just as he can recognize whether *table* is a noun or a verb from the (syntagmatic) context and the paradigmatic inventory of patterns present in his grammar. The context is characterized by formal (i.e. position, word order, the presence of a determiner, inflections, etc.) as well as semantic-pragmatic information. The very first time a historical speaker-listener identified *going to* as auxiliary, therefore, did not constitute an actual reanalysis of *going*(full verb)+*to*-infinitive but a category mistake—a mistake that he could make because the *going to* form fitted both the V-*to*-V as well as the Aux-V pattern. (For a different interpretation of the role of reanalysis, see Traugott, Chapter 2 above.)

Analogical 'extension' is similar, too, in terms of speaker-listener processing: like grammaticalization and conversion it is also based on pattern recognition and categorization. When a speaker uses *brung* rather than *brought*, or *shaked* rather than *shook*, there is no question of reanalysis. He uses past tense *brung* because it fits another past tense pattern: *rung*, *stung*, etc., which happens to be far more frequent than the pattern of *brought*. The important point about analogical extension is that it occurs proportionally. It doesn't simply involve the 'expansion of contexts in which a construction can occur', 'adding new peripheral members

[e.g. new infinitives, inanimate subjects] to a category [e.g. *going-to*]' (Bybee 2003: 158); it happens because, once *going to* is taken for the Aux-category, it will follow the behaviour of other members of this new category.

In all three cases, we can thus provide a *historical* explanation for the new forms. However, although a certain overall continuity or development (unidirectionality) may be ascertained—especially with surface forms connected by 'grammaticalization', and, on a more abstract level, with strong verbs becoming weak (rather than vice versa)—such unidirectionality need not be the case, as we can see in the case of *brung*. In terms of *synchronic processing*, the choice is not guided by any historical development but by the strength of the patterns that the form can be seen to belong to, and this strength depends in turn on the frequency of the patterns themselves. If one of the variant forms is more of a grammatical function word (as with *going to*) or a more basic vocabulary item, then that variant will be more frequent, and may become the norm, often followed by the loss of the older form if there is not enough distinction in meaning to preserve both. It could also be said that this type of processing is in fact no different from our ability to fill a sentence pattern like SVO with different lexical elements chosen from the NP and VP categories. That too is a choice, not a reanalysis each time of the SVO pattern.

If we follow this line of argument and try to understand what grammaticalization entails from the synchronic speaker-listener aspect, then it is not necessarily the case that the 'cline' (which has reality only on the level of the historical development of language-output data) has to continue inexorably in the same unidirectional way. Quite possibly, it may, and it often does (due to the fact that the more grammatical variants also happen to become more frequent over time), but it does not always, as shown by attested cases of degrammaticalization, or in cases where weak verbs become strong. Sometimes also processes stop halfway, and similar processes with the same starting point may develop differently in different languages, as has happened, for instance, with the modals and the infinitival marker in Germanic languages.

What may stop a process or what may cause degrammaticalization? It could be a drop in frequency, for whatever reason. But in cases of degrammaticalization, it may be a change elsewhere in the system which affects the pattern that the grammatical element belongs to (cf. Norde, Chapter 38 below). If indeed an important driving force in the grammaticalization of a particular construction is the availability of a grammatical category or pattern that it could fit into, then in a similar way, but with the opposite effect, the non-availability of a pattern may drive *de*grammaticalization. Plank (1995) has shown, in the case of the English genitive inflection becoming a clitic, that this follows from the fact that the inflectional system of nouns had been eroded so that the genitive ending had become isolated, no longer fitting the new, inflectionless noun pattern. A similar situation existed in the case of the Irish 1st plural verb ending -*mid*, which had become the only inflected pro-form. The fact that -*mid* was upgraded to an independent pronoun,

muid, is not surprising considering that the pronoun pattern was available in the rest of the verbal paradigm (cf. Kiparsky forthcoming: 28). In such cases, as Plank makes clear, there is a *Systemstörung*, which asks for drastic methods on the part of the speaker-listener to keep the language system manageable.

The hypothesis, then, is that in both grammaticalization and degrammaticaliza-tion (and in conversion too) the driving force, next to (syntagmatic) context and frequency, is the availability of a (paradigmatic) category or construction pattern that shows formal and/or semantic similarities so that the new variant may fit the synchronic system of the speaker-listener. If this is correct, analogical thinking plays a role in all the above cases. Analogy only happens on the basis of an exemplar, which may be a concrete lexical form or a more abstract morphosyntac-tic pattern.

Kiparsky (forthcoming: 6) agrees that both degrammaticalization and gramma-ticalization are forms of analogical change, which he calls 'grammar optimization'. At the same time, however, he makes a distinction between the two: degrammati-calization is based on exemplar-based analogy, while grammaticalization is not. The analogy in the latter case follows 'constraints, patterns and categories . . . provided by UG' (p. 6), and only arises 'under a reduced input' (p. 11). In this way, Kiparsky can preserve Meillet's idea that only grammaticalization can create *new* categories, and he can also save the principle of unidirectionality because degrammaticalization is now seen as different in nature and is therefore no longer the opposite of grammaticalization.

There are, however, a number of problems connected with Kiparsky's proposal. First of all, it is almost too clever: grammaticalization and degrammaticalization are said to be the same because they are based on analogy, but are different as far as unidirectionality is concerned. Secondly, it relies on the idea of an innate grammar—of which we do not know the contours—so that the notion of non-exemplar-based analogy is not falsifiable, and indeed not explanatory outside its own linguistic model (cf. Fischer 2007: 67–74, and references there). Thirdly, the idea of non-exemplar-based analogy creating new categories is difficult to distin-guish from reanalysis, which is seen by many as primary in grammaticalization (cf. Harris and Campbell 1995; Hopper and Traugott 2003: 39, 63–9; Roberts and Roussou 2003). Since Kiparsky's facilitator for grammaticalization is not based on an existing pattern but on an innate one, it would have to be called 'reanalysis' by anyone whose model doesn't include UG. Thus, Kiparsky is only able to downgrade or 'go beyond' (forthcoming: 19) reanalysis by proposing empirically invisible UG patterns to base his analogy on. He rejects reanalysis because it doesn't provide an explanation: 'labeling a change as a reanalysis, innovative or otherwise, doesn't get at its nature or motivation. For now the claim that grammaticalization is reanalysis remains virtually a tautology' (p. 19). In other words, he does not reject reanalysis because it has no reality from the point of view of speaker-listener processing, as I have done above. Fourthly, we end up with two types of analogy,

even though ultimately they are both said to fall under grammar optimization (p. 6). This, however, is also a problem because it is well known that exemplar-based analogy is often very local (cf. McMahon 1994: 70–76); such local cases cannot be said to lead to the same form of grammar optimization as that driven by the much more global rules and constraints of UG. It would therefore be simpler if it could be shown that analogy works in the same way in all cases.

The positive aspect of Kiparsky's proposal is that it rejects the process of grammaticalization *itself* as a cause or mechanism for change. He emphasizes that the definitions of grammaticalization given in the literature do not work because the different aspects of grammaticalization 'do not have to march in lockstep', and because one aspect is not 'a necessary consequence' of another; rather, grammaticalization as described 'pick[s] out separate and more or less loosely parallel trajectories of change' (p. 4).

It is time to look at analogy in more detail. In section 3, attention will be paid to analogy as a deep-seated cognitive principle that is relevant not only to language processing and language change but also to learning processes outside language. I will stress that analogy is used to categorize, and that categorization involves both concrete and abstract linguistic signs. In addition, the ability to analogize is evolutionarily old and present in other mammals too. Finally, it is an important mechanism in language acquisition (cf. Slobin 1985; Tomasello 2003) and in the processing of language in general (cf. Berg 1998). If we accept that the system of grammar that each of us acquires in life should be an empirical psychological/biological model, and not some abstract linguistic model that has no relation to our psychobiological make-up, then this system should reflect human processing, and the key to this should be found with the help of advances in neuro- and psycholinguistics. Berg (1998: 278) writes: 'The structure of the language is shaped by the properties of the mechanism which puts it to use.' The more the same mechanisms are seen to operate elsewhere, the more persuasive they become.

3. ANALOGY: ITS NATURE AND THE ROLE IT PLAYS IN LINGUISTIC MODELLING AND CHANGE

Analogies can be very concrete or quite abstract; that is, an analogy may be based on concrete lexical items as well as more abstract schemas. Analogy is also a highly fluid concept, and therefore works quite differently from the type of global rules favored by generative linguists. Hofstadter (1995: 198ff.) discusses the fluidity of analogical thinking at the very concrete level of language use. He shows how an

individual can mistake one word for another (so-called substitution errors) because the words in question are associated in that individual's experience (either indexically or iconically), or the words are used elsewhere in similar constructions. He describes analogy as 'conceptual slippage', and argues that this slippage is important in order to keep language workable and flexible. It is to be preferred to a rigid system. As will be seen below, this 'conceptual mismatch' may also take place on a more abstract level, that of the system, once patterns have been formed.

Analogical rules are typically not across the board but work in local areas. Analogical learning starts with concrete situations and is based on experience, both linguistic and situational. In learning, the analogies may become more and more abstract by means of what Slobin (1985) has called 'bootstrapping'. That means that abstract patterns deduced from concrete tokens begin to form a system provided these tokens occur frequently enough. The most frequent concrete and abstract patterns (i.e. idiomatic phrases, such as *He kicked the bucket*, and grammatical schemas, such as the English NP consisting of [(Det) (Adj) Noun]) become automatized and will become part of our lexical and grammatical knowledge.

The advantage of a usage-based grammar (i.e. a grammar that is the result of actual learning), such as the one indicated here, is that no distinction is made between lexical items/phrases and grammatical words/schemas (as in Construction Grammar). Lexical items are learned first; patterns, both concrete and abstract, follow from that. The learning itself takes place by what Slobin (1985) and Peters (1985) have called 'operating principles'. These are general strategies, based on analogy, on recognizing what is same and what is not-same, and drawing conclusions from that. These same/different operations are performed on linguistic utterances in context, on the form as well as the situated meaning of the utterance, in which frequency plays an important role. The same analogical procedures also provide us with the ability to build up categories (like Noun, Verb) and syntactic structures (cf. Itkonen 2005; Wanner 2006).

In analogy, both iconic and indexical forces are important. The strong interconnections between the indexical and the iconic are clearly indicated in Anttila's (2003) 'analogical grid', whose paradigmatic and syntagmatic axes represent the 'woof and warp of cognition'. Anttila emphasizes that all linguistic signs (which include both concrete lexical items and structural patterns) are double-edged: they are combinations of form and meaning. Even more importantly, in view of the force of analogy, he stresses that similarity relations exist in both form and meaning. Meaning is related to the function an object/sign has. It is clear that signs may end up in the same paradigmatic set because their referents are seen to be similar in function. For instance, items like *apple*, *pear*, *banana* do not form the set (sign) *fruit* so much on the basis of similarity of form/colour, but on the basis of similarity of function, i.e. they are all plucked, eaten, peeled, enjoyed in similar ways. The analogical grid implies a close bond between the form and the function of a sign; it applies to all meaningful units, from the smallest morphemes to

complex words, but also to larger and more abstract (morpho)syntactic structures. Because form and meaning constitute a whole, a meaning change may affect the form, but change may also be driven by lexical items similar in form or by the more abstract formal requirements of the system. That form may drive meaning is nicely illustrated on a lexical level by Coates (1987), who shows how folk-etymological changes are often shaped by similarities in form.

Analogy is a basic force not only ontogenetically but also phylogenetically. Deacon (1997) shows that the grammatical, symbolic (i.e. abstract/arbitrary) system that became part of human language in the course of evolution was built up incrementally on the basis of iconic and indexical modes of thinking, guided by evolutionary old cognitive principles (i.e. the ability to see similarities and differences, the ability to categorize), which are also at work in other (non-linguistic) domains.

Iconic relationships are the most basic means by which things can be represented, and are the foundation on which all other forms of representation are built. What is important here is that iconicity depends on recognition, and recognition depends on the interpreter. When we interpret the world around us in terms of similarities and differences, we learn to see only differences which are functional or relevant, gradually ignoring non-functional ones. In other words, we don't learn and remember more than is absolutely necessary. This is what Hawkins has called the principle of 'Minimize Forms':

Minimizations in unique form-property pairings are accomplished by expanding the compatibility of certain forms with a wider range of properties [meanings]. Ambiguity, vagueness, and zero specification are efficient, inasmuch as they reduce the total number of forms that are needed in a language. (Hawkins: 2004: 40)

Hawkins goes on to say that this minimization is connected with the frequency of the form and/or the processing ease of assigning a particular property to a reduced form. The ambiguity that arises is no problem, since '[t]he multiple properties that are assignable to a given form can generally be reduced to a specific P[roperty] in actual language use by exploiting "context" in various ways' (p. 41). For example, we learn to recognize phonemic and ignore phonetic distinctions in the course of language acquisition because the latter are not functional. In other words, it is more economical to ignore these differences.

What I am suggesting is that in the course of both language evolution and language learning, and hence also in language change, the same analogical reasoning keeps playing a role, whereby abstract items/structures gradually evolve from concrete (lexical) items constituting what Holyoak and Thagard (1995) have called 'system mapping'. System mapping led to the evolution of grammar; it is still basically followed by children when they build up their grammar; and it guides language processing all through our lives. The exact path is not the same in all three fields because the input is different and keeps changing, but the same analogical

principles are at work each time. An additional advantage of the analogical learning system is that there is only one system to begin with, i.e. a lexical one. It is therefore more parsimonious from an evolutionary point of view, and it better fits present neurological findings and the ideas developed about neural networks by, for instance, Pulvermüller (2002).

In a framework like the above, analogy is both a mechanism and a cause. By means of analogy we may arrange linguistic signs (both concrete and abstract) into (other) paradigmatic sets, but it is also analogy that causes the learner to build up more abstract schemas, and to keep the number of these to a minimum (so a form of 'grammar optimization', but more local than suggested by Kiparsky forthcoming, and always exemplar-based). In this learning model, analogy is the primary force, and not reanalysis. 'Reanalysis' is what a linguist may see from the point of view of what changes in the system between generations or in the language output in the course of time, but it is not something that speakers actually do. Speakers do not reanalyse, they substitute one pattern holistically for another.

Analogy is often seen as too loose, and therefore impractical or unworkable as a principle within a linguistic model. But, indeed, it is not a principle of the system or a principle of language (change), it is a faculty of language users. As Hofstadter emphasized, the conceptual mismatch represented by analogy is in fact its strength: its flexibility keeps the system oiled. This is not to say that our analogizing capacities are not controlled. They are. The 'looseness' of analogy will be much constrained if one thinks of analogizing as taking place on different levels, and in relation to concrete as well as abstract categories, all connected in tight networks. The possibilities are also constrained by the fact that the patterns and the paradigms are organized both semantically and structurally, since each linguistic sign or token, be it single or complex, is, because of its binary nature, part of formal (sound-shape, structure, position) as well as semantic categories.

This means that, in order to discover how exactly analogy plays a role in grammaticalization processes or in change in general, one cannot concentrate only on the development of one particular structure or (combination of) lexical item(s). One has to consider the change in terms of the network that the construction/item operates in. To get an idea of how this works, it is useful to consider what happens in actual processing. Berg (1998) has looked at processing errors (and what causes them) as a way of determining the structure of the grammatical system.

Berg makes a distinction between contextual and non-contextual errors. He shows how errors depend on 'similarity constraints "elsewhere"' (1998: 173). Thus, an error like *cuff of coffee* is much more likely to occur than *hit the roop*. In both cases there is a [p]/[f] interchange, but in the first case the error is caused syntagmatically (by *coffee*), and in the second paradigmatically (i.e. [p] and [f] belong to the feature set of voiceless labials). Interestingly enough, with higher-level errors involving meaningful elements, *non*-contextual errors are much more

likely to occur. Berg (p. 165) gives the following German example: *Muß sie es noch mal ticken—tippen?* ('does she have to retype it?'), which he describes as an error that is 'neutral with respect to the similarity scale, as there is nothing to compare [it] with' (p. 166), i.e. there is no [k] around in this case to cause the [p] in *tippen* to change to [k]. The interesting thing, however, is that both *ticken* and *tippen* are possible words in German. Moreover, semantically and formally they are very similar: both are verbs, they look alike phonetically, and both refer to a light, repetitive ticking sound. Quite clearly, here, the error is of a paradigmatic kind, showing similarity on a deeper level of mental organization.

I would suggest that processing errors of the paradigmatic, non-contextual kind are more likely than are contextual ones to be innovations that could result in actual change, because the influence of paradigms in the grammar system is likely to be stronger than the influence of context. The latter is bound to be variable, being part of the actual discourse, while the former is much more stable, paradigms having become part of the system through learning and repeated use. It has been shown in Analogical Modelling that changes in the morphological system are heavily constrained by the different paradigmatic sets that an item is part of (cf. Chapman and Skousen 2005).

Although such constraints are much more difficult to establish in the area of syntax (because the paradigmatic choices are so much wider), promising work has been done here too, showing that the development of constructions is not a linear affair (affecting only the particular construction under discussion) but 'starlike', influenced by other constructions that resemble them formally and/or semantically. De Smet (2009; forthcoming) argues convincingly that certain cases which traditionally were seen as instances of reanalysis are better explained (in terms of the available data) as being driven by the presence of analogical forms elsewhere. Looking at the spread of the 'new' *for*-NP-*to*-V construction (with *for* functioning as complementizer and NP as subject) in English, he shows that this new construction became available because it was cast into the mould of an older but formally identical *for*-NP-*to*-V construction, where *for* was part of the infinitival marker *for...to* and the NP the *object* of the infinitive. The latter disappeared because the OV pattern itself was cast into the mould of the (by then) more regular Middle English clause pattern, SVO, so that any NP before a verb came to be interpreted as subject rather than object. This explains better than the reanalysis story why the new construction doesn't first appear as extraposed subject (as one would expect with reanalysis), and why there is an early predominance of passive infinitives. Another paradigmatic factor that facilitated the spread of the 'new' construction to more and more verbs was the analogy i.e. (the close *formal* similarity) between the *for*-NP (in the subject construction) and the *for*-NP found as a prepositional object with the same verbs, causing the spread of the new subject-construction to other verbs taking a *for*-PP.

Other cases investigated show that grammaticalization doesn't necessarily follow a gradual linear path but constitutes an abrupt process by analogy (Bisang 1997;

Noel 2005). Fischer (2007: 274ff.) shows that in the cline from adverbial adjuncts to pragmatic markers in English, some of the pragmatic markers were attracted to the pattern directly via analogy, or via another pattern—that of reduced modal clauses. Similarly, she argues that in the development of English epistemic modals, there was no direct path from deontic to epistemic use. Epistemic meaning arose through functional and formal analogy with pairs of constructions like *he seems to be . . . /it seems that he . . .*, which enabled the *it must be that he . . .* to be replaced by *he must be . . .* These solutions are more commensurate with the philological facts and, as a further bonus, obliterate the problem that they do not neatly follow Lehmann's parameters in terms of scope.

4. CONCLUDING REMARKS

Grammaticalization as a process only 'exists' on the language-output level. It may involve universal paths and look unidirectional, but this is not something intrinsic to the process on the speaker-listener level. As a process, it is an analyst's generalization, a convenient summary but not something that has actually 'happened' (cf. McMahon 2006: 173). Its apparent universality and directionality is caused by the fact that the lexical source items which are involved in it are (i) part of the basic vocabulary, (ii) as such are relatively frequent, (iii) are therefore likely to be phonetically and semantically reduced, which in turn (iv) makes them more eligible than other linguistic signs to function in abstract structural patterns. There is, however, no necessity about the development.

Language change can therefore not be *explained* in terms of grammaticalization. Grammaticalization occurs, and often as a homogeneous 'type' especially when a form/construction through frequency has eroded so much that it becomes part of a drift; but what ultimately decides whether a linguistic sign becomes part of a user's grammatical system is whether it resembles in some way (semantically, formally or both) an already existing category. Grammaticalization does not lead to new grammatical structures in any general sense (*pace* Meillet 1912; Bybee 2003; Kiparsky forthcoming; Traugott 2008a: 154), except perhaps in cases of substratum or long-term contact, where new structures may enter through bilingualism or imperfect learning. This may introduce genuinely new structures (although they would still be based on the analogy of contact/substrate structures), which may then be used as a pattern. I have tried to show that reanalysis is an analyst's concept; in terms of language *processing* it is based on our ability to analogize. This ability is steered by frequency, and includes analogical expansion, thus covering all the important factors mentioned under (iv) in section 1.

GRAMMATICALIZATION AND GENERATIVE GRAMMAR: A DIFFICULT LIAISON

ELLY VAN GELDEREN

GRAMMATICALIZATION is relevant in all areas of grammar. For instance, how does one label the prepositions *like* and *after* when, as a result of grammaticalization, they function as complementizers, and how does a grammar deal with pronouns that have been reanalysed as agreement markers? Different grammatical approaches look at these issues differently. For some, gradient and fuzzy categories are typical of language; for others, there are a small number of categories and the boundaries are absolute. For some approaches, the more distinctions made, the better the grammar, while others allow fairly abstract representations. This outlook affects views on grammaticalization as well.

Generative grammar had its beginnings in the late 1950s with the work of Noam Chomsky emphasizing the innate linguistic knowledge. It focused then and now on the generative capacity of native speakers to form grammatical sentences. As a result of the emphasis on native speaker intuitions, mainstream generative grammar has been very negative towards historical linguistics, notwithstanding important work by Elizabeth Traugott,[1] Paul Kiparsky, and David Lightfoot. If language

---

[1] I include the early work by Traugott, e.g. Closs (1965) and Traugott (1972), since that was generative in nature unlike her later work.

change is where one encounters grammaticalization the most, the uneasy relationship between generative grammar and grammaticalization is not surprising. However, even among the relatively few generative historical linguists, grammaticalization has been ignored.

One reason for this lack of interest is that grammaticalization is about small-scale changes in the E-language (i.e. the language we see and hear in the world) whereas the focus of generative grammar is on I-language (i.e. the linguistic knowledge in the mind of a native speaker). Native speakers of extinct languages are unavailable, and that makes it hard for generativists to study their I-language. A second reason is, of course, that grammaticalization involves phonological and syntactic as well as semantic and pragmatic changes. This emphasis on pragmatics-semantics was another reason for the early tension, since generative grammar, in common with other formal approaches, assumes the independence (autonomy) of syntax. All this makes Newmeyer (1998: 226) exclaim that 'there is no such thing as grammaticalization' (italics omitted) and that grammaticalization is an epiphenomenon. A major argument used by Newmeyer against positing a grammaticalization theory is the unidirectionality assumed by most linguists working on grammaticalization. If a learner just reacts to a certain input, there should not be unidirectional changes, according to Newmeyer (1998), Lightfoot (2006), and others. This is a serious objection, one I discuss below as a third major generative argument against taking grammaticalization seriously. A fourth reason is that grammaticalization is seen by some as belonging to typology. Currently, typology and generative grammar are also coming together more, especially in the work of Mark Baker.

In section 1, I first sketch the generative attitude towards historical linguistics in general and then to grammaticalization in particular, focusing on the four problematic areas just mentioned. I also discuss what the locus of change is in a generative model. There are a number of generative models; here I focus on two: the Principles and Parameters model of the 1970s and 1980s and the Minimalist Program of the 1990s to the present. Then, in section 2, I briefly review some early work on historical linguistics within generative grammar, e.g. Traugott (1965; 1972), Kiparsky (1965), Allen (1977), and Lightfoot (1979). This early work does not mention grammaticalization although Traugott (1972) mentions (de)segmentalization, gradualness, and subjectivization.

Since the 1990s, there has been a considerable switch in generative attitudes towards grammaticalization and in the recognition that it is an area to be dealt with. Werner Abraham was crucial to this endeavour (and later Ian Roberts and others). I discuss that change in attitude in section 3. At this stage, the 1990s, grammaticalization is seen as a change in the input learners are presented with rather than as an issue on its own. Currently, many generative, formal linguists working in historical linguistics are taking the insights from grammaticalization more seriously. I think this shift became possible with the introduction of

functional categories such as D(eterminer), T(ense), and C(omplementizer) in the mid-1980s and the emphasis on features in the 1990s. Especially since the beginning of the 21st century, there has appeared a large quantity of work, the most relevant of which I will discuss in section 4 (although such a review cannot cover everyone working on grammaticalization as a generative linguist). I will end by arguing that the child's innate principles are in fact responsible for grammaticalization, and that generative grammar can therefore gain much insight from grammaticalization processes.

1. Generative grammar, historical linguistics, and grammaticalization

In this section, I first discuss the generative attitude towards historical linguistics and grammaticalization. Then, I outline the aspects of generative grammar that will be relevant for an account of grammaticalization and language change: principles, parameters, and features.

There are of course many ways in which language change can provide insights into the language faculty. For instance, if certain changes never occur, this could be due to restrictions imposed by Universal Grammar. However, possibly because of the early emphasis on introspection and grammaticality judgements by a native speaker, work in historical generative syntax was not encouraged. In his own writings, Chomsky certainly has never been interested in language change—except in Chomsky and Halle (1968), and that was most likely due to Halle's interests (as evidenced in Halle 1962). Since Chomsky has set the agenda for generative linguists for at least 50 years, it has been 'less popular' to pursue historical linguistics using that framework. Historical linguistics was one of the first subfields to enthusiastically use corpora, and that too might have kept generative grammar from going into historical linguistics. Even now, there are leading historical formal linguists who do not themselves use corpora. Here I will just return in more detail to the four reasons I mentioned above as to why grammaticalization was not popular among generative linguists.

First, generative grammar is interested in how a child acquires a grammar on the basis of the available language the child is exposed to. If the language the child hears has changed or is changing from that which the parents grew up with, the child will have a different input and will come up with a grammar (I-language) different from that of its parents/caregivers. Generative grammar studies the cognitive processes that allow a child to construct a grammar. It isn't interested in grammaticalization if grammaticalization is seen as something that 'happens'

away from the learning process. Grammaticalization changes the linguistic input, the E-language, available to the child, but the real interest is in how the child deals with this, for example in terms of parameter resetting or, in later Minimalism, in terms of the features posited for certain lexical items.

Secondly, if grammaticalization is formulated as 'that part of the study of language change that is concerned with such questions as how lexical items and constructions come in certain linguistic contexts to serve grammatical functions or how grammatical items develop new grammatical functions' (Hopper and Traugott 2003: 1), a prominent place is given to semantics and pragmatics: pragmatically marked items and constructions lead the way in grammaticalization. Generative grammar always emphasized the centrality of syntax, and thus there was a problem. Allowing (formal) features into the picture, as in current Minimalism, makes it possible to overcome that obstacle.

A third reason has to do with unidirectionality. Newmeyer (1998: 263–75) and Lightfoot (2006: 38, 177) are adamant about change not being unidirectional. They rely on the well-known instances of degrammaticalization. I will not go into that in much detail, but take the approach by Traugott and Dasher (2002: 87), who claim that the number of counterexamples to unidirectionality is small and not systematic.

A fourth reason is that generative grammar did not always have a good relationship with typology, the study of structural features such as causatives and word order across languages initially pioneered by Joseph Greenberg. Grammaticalization was seen as part of that focus. In Lightfoot's words, '[c]ommitment to the gradualness of change has a long pedigree . . . It was a crucial element in the "typological" view of language change, which dominated discussion of diachronic syntax in the 1970s' (1991: 158). Lightfoot avoids grammaticalization in the above quotation, and uses 'gradualness' instead. Lightfoot's (2006: 37–8; 177–8) book has a short section entitled 'Drift, typologists, and grammaticalization' in which he criticizes the view of language as an external object in these three related concepts. He acknowledges that grammaticalization exists as a phenomenon, 'not an explanatory force'. I come back to Lightfoot's views in the next section.

I'll now turn to the areas in the generative framework that are perhaps most relevant to historical linguistics and grammaticalization: principles and parameters. These have been used in generative grammar since the so-called 'Principles and Parameters' approach of the 1970s. Principles are valid for all languages and have mostly been attributed to Universal Grammar. At the moment, however, the emphasis in the Minimalist Program is on principles not specific to the language faculty, but to 'general properties of organic systems' (Chomsky 2004: 105), 'third factor principles' in Chomsky (2005; 2007). As I will briefly mention in section 4, one can argue that principles are responsible for similar changes across languages.

Parameters are seen as responsible for variation among languages and are therefore also the locus of change. Since (the early) parameters have +/– settings,

they are unlikely to account for gradual unidirectional change. Early examples of parameters include determining if a language is pro-drop (Rizzi 1982), its headedness, and whether it moves its *wh*-elements. 'Pro-drop' is the cover term for a set of related phenomena, but mainly indicates the possibility of not expressing the subject through a separate (pro)noun. Pro-drop languages include Italian, Spanish, Japanese, and Korean. Headedness is a way to characterize a language, with Arabic being head-initial and Japanese head-final. Following work by Kayne (1994), headedness has been abandoned as a formal parameter. In Kayne's framework, the basic word order is SVO and other word orders come about through movement (e.g. the object preposes in an SOV language). This movement is possibly due to feature strength attracting the object to a higher functional category. The +/– setting of the *wh*-movement parameter determines whether or not *wh*-movement occurs (as in English) or does not occur (as in Chinese). This parameter is now also seen as dependent on strength of the features in a higher functional category. For historical syntax, the changing view of parameters means that what was originally seen as a parameter switch, for example from head-first to head-last, is now a change in whether or not a feature on a functional head triggers movement.

Within the Minimalist Program, there is currently a movement to eliminate parameters. For instance, Chomsky (e.g. 2004; 2007), Lohndal (2009), and Richards (2008) attribute as little as possible to the role of parameters and to Universal Grammar in general. Minimalist parameters consist of choices of feature specifications as the child acquires a lexicon, dubbed the Borer–Chomsky Conjecture by Baker (2008). All parameters are lexical; therefore, they account for the variety of languages. As Pintzuk, Tsoulas, and Warner (2000: 7) put it, 'the lexicon . . . must be the locus of syntactic change'. Seeing language change in terms of small changes in the features makes it easier to account for grammaticalization.

Both developments just sketched—the move towards general principles and that towards parametric features—make it easier to account for grammaticalization. I return to this in the last section.

2. EARLY HISTORICAL GENERATIVE WORK

In this section, I discuss some early generative approaches to language change. These involved both phonological change and syntactic change. King (1969) provides a good overview.

Closs (1965), Klima (1965), Kiparsky (1965), and Chomsky and Halle (1968) emphasize learning as the cause of change. The latter authors state that 'speakers
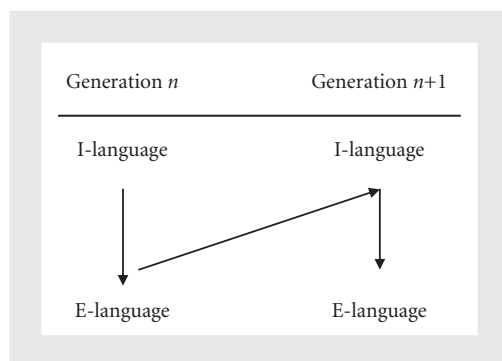
	Generation *n*	Generation *n+1*
I-language		
E-language		

Fig. 4.1. Model of language acquisition (based on Andersen 1973)

are by and large unaware of the changes that their language is undergoing' (1968: 250), but that adults can only add or delete minor rules; children can reorganize the system. This view goes back to Halle (1962: 64, 66–7). Closs (1965: 415) concludes: 'language changes by means of the addition of single innovations to an adult's grammar, by transmission of these innovations to new generations, and by the reinterpretation of grammars such that mutations occur'.

Klima (1965: 83) formulates a model of generative language change emphasizing the discontinuous nature of change and reanalysis by the learner.[2] I reproduce it as Figure 4.1 based on Andersen (1973), since that is slightly simpler than Klima's.

Closs (1965), Kiparsky (1965), Lakoff (1969), Traugott (1972), and Lightfoot (1974; 1979) in various forms use this model. Their explanations depend on the then current model of phonology and syntax. The phonology is fairly abstract, with lots of rules in a particular order (e.g. devoicing, palatalization, spirantization), and the syntax has a phrase structure component and a set of ordered transformations. Most change is seen as change in the phonological and transformational rules, either by rule loss, addition, or restructuring/simplification. Early work on syntactic change examines modals, complementizers, and subjunctives. Closs (1965) presents a groundbreaking study of the changes from verbs to auxiliaries in English. Lakoff (1969) focuses on complementation in Latin. The changes are phrased in terms of the then current model and are termed innovations; change comes about through additions of single rules to the grammar of the adult speaker and then reanalysis by the learner in the next generation. Intelligibility has to be preserved.

Closs (1965) is of course the basis of much later work on auxiliaries, in terms both of data and of analysis. She is concerned with the phrase structure rules and how the shape of AUX is different in Old English, and suggests ways to account for

---

[2] Since generative grammar takes a purely synchronic approach, there is no reanalysis in the strict sense. A child acquires a language based on the available data and does not reanalyse. It is just a convenient term.

the difference. Lightfoot (1974), also focusing on modals, formulates the phrase structure rules for the modals in fairly similar ways to Closs (1965), namely as in (1), which sets apart the modals as a separate category.

(1) S   →   NP   AUX   VP
     AUX   →   T   (M)
     VP   →   (have-en) (be-ing) V   . . .

One of the main concerns for Lightfoot is whether modals are main verbs or auxiliaries, and this remained a huge debate. He argues they are not full verbs in Modern English, and that this is due to a 'radical restructuring' (1974: 234). Around the same time, Canale (1978) suggests a (radical) reanalysis of OV to VO in the English of around 1200.

Thus, the motivation in much of this early work on historical syntax lies in testing certain aspects of the generative model, in particular the phrase structure rules. For instance, Closs (1965) examines the levels/boundaries between which the changes take place. Allen (1977: 1) justifies her study on the history of *wh*-questions and relative clauses as follows: 'The complementizer has become a focal point of the so-called Extended Standard Theory, as developed by Chomsky in his works from around 1970 to the present . . . Because of this, the history of the system of complementation in English is of great potential interest . . . ' In this period, i.e. the 1960s and 1970s, there is no mention of grammaticalization, even though of course Closs Traugott's data present prototypical examples of grammaticalization. Since acquisition is crucial, historical change is seen as reanalysis by the child acquiring the language.

3. THE 1990S: ACKNOWLEDGING GRAMMATICALIZATION

In the 1980s, functionalist approaches rediscover grammaticalization (e.g. Lehmann 1982; Heine and Reh 1984) after many years of neglect of the topic in linguistics as a whole. (See Hopper and Traugott 2003 for a short history of the varying interest in grammaticalization in the last few centuries.) In this section, I first look at how grammaticalization was initially regarded and accounted for by generativists and then at which phenomena were studied.

An early effort to confront generative grammar with grammaticalization was a workshop, the Groningen Grammar Talks, organized by Werner Abraham in November 1990. Its title, 'Explanation in Historical Linguistics: Grammaticalization

vs. Reanalysis', seems to suggest conflict rather than compatibility. Other early treatments of grammaticalization are Abraham (1991; 1993), van Gelderen (1993), and Roberts (1993a). Although Abraham and van Gelderen acknowledge the existence of grammaticalization, they see it as something happening externally, so to speak, which speakers have to react to by means of reanalyses: 'As a reaction to grammaticalization, a reanalysis must take place in the grammar internalized by the speaker' (van Gelderen 1993: 193). Roberts (1993a) is the first to give a formal account of the grammaticalization of the future in Romance. He argues that grammaticalization involves 'the loss of thematic structure [of the V] and a related shift in category from V to I' (1993a: 227). This is due to a parametric shift, but the motivating factor is a strategy of least effort that eliminates movement.

The year 1990 sees the first Diachronic Generative Syntax conference (DIGS) in York. Selected papers from this conference were published in Battye and Roberts (1995). Other DIGS volumes appeared in van Kemenade and Vincent (1997) and in Pintzuk et al. (2000), including some work on grammaticalization. The tone in Battye and Roberts (1995) is still quite negative: 'This approach can explain many cases of what has been referred to in the typological literature in diachronic syntax as "grammaticalization"' (1995: 9)—the only reference in the book, it seems, to grammaticalization.

Typical topics addressed in the 1990s are the modals and the auxiliary *do*, the infinitival marker *to*, demonstratives, and articles. These topics are all prime instances of grammaticalization. With the shift towards an emphasis on functional categories in the late 1980s, these changes could be discussed in structural terms, as Roberts (1993b) and van Gelderen (1993) do. This will lead to the insight that grammaticalization is a reanalysis from lexical category to grammatical category. Roberts (1993b) doesn't mention grammaticalization, and no account is provided for the regularities seen in the grammaticalization processes, i.e. volition verbs grammaticalize as future markers and spatial prepositions turn into temporal and causal markers. Van Gelderen also discusses grammaticalization, as mentioned, but as something to be responded to by the learner, not accounted for by the model of syntax used.

4. FEATURES AND PRINCIPLES: EMBRACING GRAMMATICALIZATION

From about the year 2000 on, there has been much generative interest in grammaticalization (see e.g. the special issue of *Linguistics* edited by Ans van Kemenade in 1999). Simpson and Wu (2002), Wu (2004), Roberts and Roussou
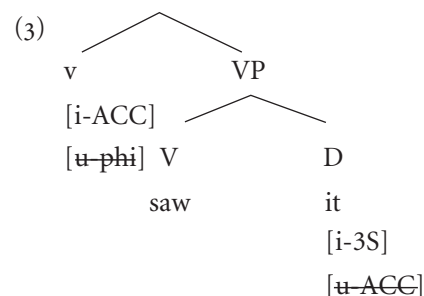
(2003), and van Gelderen (2004) all use a mechanism that the latter calls Late Merge, and that results in what has been expressed as 'grammaticalization is up the tree'. Before going into the explanations, I'll first discuss the current syntactical model very briefly.

As mentioned in section 1, in the Minimalist Program all parameters are encoded in the lexicon, with the consequence that linguistic variation falls out from the morphological properties of the lexical items. Lexical items have features that vary across languages, but can be divided into phi-features (number, person, and gender), case features (dependent marking of DPs by the T and the (light) v), and EPP features. The latter features are responsible for movement (for example) of the subject from a VP-internal position, where it gets its semantic role, to a higher position to become the grammatical subject. In this model, language change is due to the reanalysis by the learner of the features of the lexical items.

In Chomsky (e.g. 1995; 2004), phrase structure rules, as in (1), are abandoned in favour of a general rule Merge. Merge combines two bundles of features taken from the lexicon. Chomsky (2004: 4) suggests the lexicon has 'atomic elements, lexical items LI, each a structured array of properties'. Merging the lexical items could look like (2).

(2)
```
              VP
             /  \
            /    \
           V      D
          saw     it
```
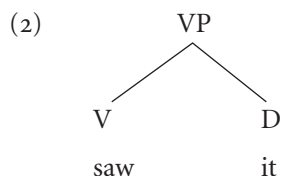
To this, a (small) v is added, as in (3), which is responsible for case assignment (checking) to the object. The v comes with uninterpretable person and number features that look down the tree for something to agree with. The object *it* has interpretable phi-features that can value those of v, and in turn gets accusative case from v. The features that are not relevant to the interpretation (at LF) are deleted, i.e. struck through.

(3)
```
        /  \
       /    \
      v      VP
   [i-ACC]  / \
   [u̶-p̶h̶i̶] V    D
          saw   it
               [i-3S]
               [u̶-A̶C̶C̶]
```

After adding a finite T(ense), responsible for licensing the subject, the structure looks like (4). The subject *sparrows* moves to Spec TP.

(4)

```
                    TP
            ┌────────┴────────┐
        sparrows            T'
        [u-case]      ┌──────┴──────┐
        [i-3P]  T                  vP
                PST         ┌────────┴────────┐
                [u-phi] sparrows             v'
                [iNOM][3P]          ┌─────────┴─────────┐
                                    v                  VP
                                [i-ACC]        ┌────────┴────────┐
                                [u-phi]  V                      D
                                        saw                    it
                                                              [i-3S]
                                                              [u-ACC]
```
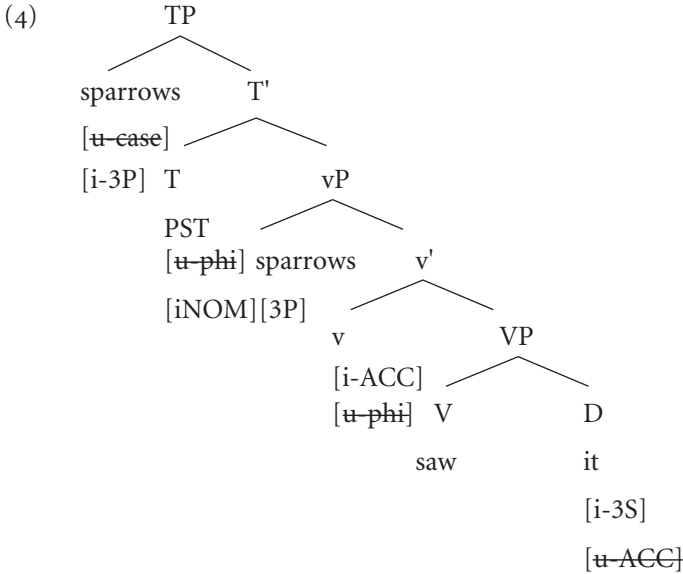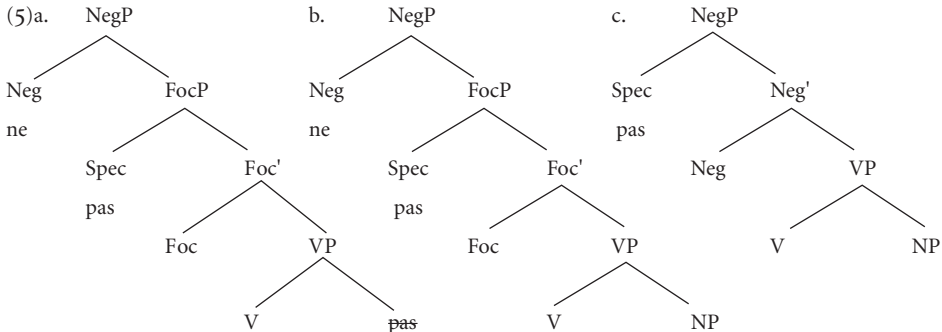
In (4), both v and T find an appropriate noun with interpretable phi-features. Clearly, there is much interaction, and only if the features match will the uninter-pretable features be valued.

At some point, the derivation has to be handed over to the Sensorimotor (SM) and Conceptual-Interpretative (CI) systems external to the syntax. This is done through the interfaces PHON and SEM, corresponding to PF and LF in older frameworks. Thus, crucial to Minimalism are merge, move, and feature checking. Let's see how these concepts are relevant to change.

Simpson and Wu (2002) analyse the changes in negation in the history of French. As is well known, the original negative *ne* weakens and is reinforced by objects, e.g. the minimizer *pas* 'step'. Simpson and Wu analyse the negative *ne* as selecting a Focus projection below NegP but above the VP to which the negative

(5)a.

```
        NegP
   ┌─────┴─────┐
  Neg         FocP
  ne      ┌────┴────┐
        Spec       Foc'
        pas    ┌────┴────┐
              Foc        VP
                    ┌─────┴─────┐
                    V          pas
```

b.

```
        NegP
   ┌─────┴─────┐
  Neg         FocP
  ne      ┌────┴────┐
        Spec       Foc'
        pas    ┌────┴────┐
              Foc        VP
                    ┌─────┴─────┐
                    V          NP
```

c.

```
        NegP
   ┌─────┴─────┐
  Spec        Neg'
  pas     ┌────┴────┐
        Neg         VP
              ┌──────┴──────┐
              V            NP
```

object *pas* moves, as in (5a). This object is then reanalysed in the Spec(ifier) of FocP, as in (5b), and subsequently in the Spec of NegP, as in (5c), which represents colloquial French.

Simpson and Wu argue that a FocP may be selected by certain functional categories, and that over time the focus interpretation may be lost, in which case the FocP is reanalysed as an AGR(eement) Phrase. They analyse Chinese relatives, Chinese aspect, and Thai modals in the same way. Wu (2004) works on the development of functional elements in Chinese, such as classifiers, aspect markers, and complementizers, and argues they were reanalysed in higher position after first moving there.

Roberts and Roussou (2003: 2) state that 'grammaticalization is a regular case of parameter change . . . [and] epiphenomenal'. The authors' 'main theoretical goal . . . is to provide an understanding of the nature of functional categories, using grammaticalization as our tool, since it creates new functional material'. This creation of new functional material happens through structural simplification. The deeper question they ask is how to reconcile 'the clear evidence for pathways of change at the descriptive level with the fact that an explanatory account of change must involve parameter change' (2003: 4). They attempt this by creating basins of attraction within the parameter space.

The mechanisms, i.e. possible parameter settings, that Roberts and Roussou suggest are not so different from those used by other historical generativists; especially 'merge over move' (choosing a feature $F^{\star}_{merge}$ is preferable over a feature $F^{\star}_{move}$[3]) resembles Simpson and Wu, van Gelderen, and others. For instance, for the changes involving negatives, Roberts and Roussou (2003: 195) invoke the parametric change of $T^{\star}_{merge}$ over $T^{\star}_{move}$ and argue that this is due to the loss of the infinitive marker. The changes in negatives, described in (5), involve loss of movement, loss of features, and structural simplification, according to Roberts and Roussou (2003: 157).

Van Gelderen (2004) proposes two principles that the child uses to acquire its language. If the linguistic input is ambiguous between postulating a head or a phrase, the child will select a head, i.e. the head preference principle (and this is the reason why full negative objects reanalyse as negative heads), and if a lexical item is checking a number of features in several positions, it can be reanalysed in a higher position (e.g. the modals). The emphasis in this account is on the inevitability of grammaticalization (and renewal). It is not something that happens in the E-language that the learner responds to but it is 'caused' by the innate principles.

Van Gelderen (e.g. 2008; 2011) reformulates her earlier principles and argues that it is economical for an item to be reanalysed with uninterpretable features, since these features keep the derivation going. Feature Economy might look like (6). Roberts and Roussou also have feature loss as part of the simplification.

---

[3] The F* stands for 'a feature requiring phonological spell out'.

(6)   Feature Economy
       Adjunct/Argument   Specifier (of NegP)   Head (of NegP)   affix
       semantic   >   [iF]   >   [uF]   >   —

Let's take the example of negatives again. An object that is semantically negative, for example a small step (e.g. *pas* in French), is reanalysed in a higher position with grammatically negative features. It can then be reanalysed as having uninterpretable features, i.e. as a probe looking for an element to value its features. Some elements are straightforward renewers: negative indefinites renew negatives, demonstratives have phi-features and can renew agreement, and adverbs have temporal or spatial features and renew prepositions and complementizers.

5. Conclusion

Grammaticalization and generative grammar have had an uneasy relationship. Proponents of generative grammar see syntax as autonomous (see e.g. Chomsky 1957), whereas advocates of grammaticalization see meaning and function as the determining factors behind syntactic structure and, of course, behind change. The emphasis on function and meaning has prompted one side to say there are no structural representations (e.g. Hopper 1987, cited in Newmeyer 1998) and the

Table 4.1. Grammaticalization phenomena dealt with by generativist historical linguists

Modals	Roberts and Roussou (2003)
Negation	Simpson and Wu (2002); van Gelderen (2004)
Definiteness	Roberts and Roussou (2003)
Mood particles	Abraham (1991)
Demonstrative to C	Simpson and Wu (2002); van Gelderen (2004); Wu (2004)
Aspect	Simpson and Wu (2002); Wu (2004)
Full pronoun to agreement	van Gelderen (2004); Fuß (2005)
Future	Roberts (1993a: 1993b); Roberts and Roussou (2003)
Infinitival marker	Abraham (2004); van Gelderen (2004); IJbema (2002)
P(P) to C	van Gelderen (2009)
N to P	Longobardi (2001)

other that there is no grammaticalization (Newmeyer 1998: 226). Lightfoot (1999: 83) argues that languages change gradually but that grammars change abruptly.

In this chapter, I have chronicled the initial reluctance of generative grammar to work on historical linguistics in general and grammaticalization in particular. This is currently no longer the case. Due to the introduction of functional categories in the late 1980s and features in the 1990s, it has become possible to account for gradual unidirectional change in a generative framework. There is generative work that sees the (unidirectional) pathway as determined by language learning and cognitive principles that the child applies. Table 4.1 summarizes some recent work.

....

GRAMMATICALIZATION AND FUNCTIONAL LINGUISTICS

....

PETER HARDER

KASPER BOYE

1. INTRODUCTION[1]

....

Functional linguistics is a multi-stranded phenomenon, also from the point of view of grammaticalization; and many other chapters in this volume will demonstrate the breadth of functional contributions to the study of grammaticalization. The central motif here is the element of tension between the two keywords in the title: grammaticalization is about structure, while function is about what language is used for. An adequate theory of grammaticalization based on function has to reflect a function-based theory of what grammar is. We begin by discussing why there have been problems in clarifying what such a theory must be like, and then focus on what we see as the functional nucleus of grammaticalization.

2. FUNCTIONAL LINGUISTICS

The term 'function' is slippery because it has an ambiguous relation with 'structure'. From one perspective, function and structure are opposites, because structure looks inward (what is the anatomy of the object?), while function looks outward (what can it be used for?). From another perspective, function and structure share an agenda focusing on *relations* as opposed to substantive, non-relational properties: in the early days of cognitive science, 'computational functionalism' referred to the belief that it does not matter whether processing is performed by brain matter or silicon chips, as long as the elements have the right relational complexity. Broadly speaking, the two perspectives can be captured by a distinction between internal function (which is closely associated with 'structural role') and external function (which contrasts with internal anatomy).

Ramifications of this ambiguity pervade the understanding of 'function' as a linguistic topic. Traditional word-based grammar began with form and meaning, where the formal properties were more or less equal to morphology and meaning was 'notional'. Functional properties typically came third in line, covering everything else apart from the properties of the element viewed in isolation. As such, functional properties included both syntactic properties (e.g. linguistic expressions 'function' as subjects) and pragmatic properties (the vocative served to mark the 'function' of addressing someone).

This perspective, where function and structure go together, remains the predominant understanding in European linguistics. The structuralist revolution highlighted the privileged status of internal structural relations, and the more rigorous structuralists (including Hjelmslev, cf. 1966[1943]) regarded only these as being part of linguistics, but nevertheless structural relations were generally understood as manifesting functional properties. This association earned this general approach the epithet 'structural-functional' theories (cf. Butler 2003).

More recently, in relation to generative grammar, 'functional' increasingly came to be used as the antithetical term to 'structural' or 'formal'. When the sentence (rather than the word) became the object of structural description, the word 'function' became associated primarily with external function, especially 'use in communication'. In this perspective, rather than being associated, structure and function come to be viewed as competing sources of explanation. The disagreement goes beyond conflicting hypotheses: because there is no shared view of what structure is, it has been difficult even to agree on where the precise disagreements are (cf. the efforts by Croft 1995; Newmeyer 1998 to map out the territory). As stressed in various contexts by Tomlin (e.g. 1990), functionalists have not always been very clear about what precisely a functional approach entails, including how it differs from what Givón (2002) calls 'naïve functionalism': the assumption that structure can be explained directly by reference to external function.

From the traditional European perspective, it is not surprising that (internal) grammar should arise gradually out of (external) usage and reflect the functions served by words in changing patterns of language use. However, when the modern discussion on grammaticalization arose, the existence of recurrent pervasive paths of grammaticalization constituted a striking argument against the radical separation between grammar and language use that was a prominent feature of the generative revolution. The generative dominance thus gave rise to what may be called usage functionalism, in which the role of structural generalizations that abstracted from actual usage was kept to a minimum.

This issue has determined the approach of 'classic' grammaticalization theory (as found in Bybee, Perkins, and Pagliuca 1994; Hopper and Traugott 1993/2003), in which great emphasis was assigned to a gradual as opposed to a dichotomous view of grammar vs. lexicon. The aim of eliminating the radically autonomous status of grammar is clearly a functionalist feature, and is shared with the views expressed below—but it became associated with a slightly different purpose: to tone down the distinction between grammar and the rest of language. Hopper thus rejects the idea that grammaticalization can be viewed as a form 'entering the grammar'— rather, one and the same form can be sometimes lexical and sometimes grammatical (cf. Hopper 1991: 33, who understands this as Meillet's view as well).

In our view, however, a proper understanding of grammaticalization depends on a version of functionalism that is neither structural-functional in the sense that takes structure to be the bottom line, nor strictly usage-functional in the sense that it rules out the idea of a linguistic feature 'entering the grammar'. Another way of formulating our position is to say that we believe in a usage-*based* theory of grammar, and also in a clear *distinction* between usage and grammar. Grammaticalization has a central position in such a theory, because it is the process whereby grammar emerges out of usage. A satisfying account of grammaticalization can thus demonstrate both how the two levels are distinct and simultaneously how they are linked.

We take the basic framework for such a functionalism to include a form of evolutionary dynamics (cf. Croft 2000). This entails a panchronic approach (as suggested by Heine, Claudi, and Hünnemeyer 1991), rather than one that prioritizes either the synchronic or the diachronic dimension. In such a panchronic perspective, functions are defined in terms of selection–adaptation relations that create 'lineages', i.e. successive reproductions of linguistic forms that are shaped by their contribution to overall communicative success. Both lineages that go on essentially unchanged and lineages that undergo change are shaped by degrees of success or failure in actual usage, i.e. by functional relations with the context of communication. The difference is that selection pressures in one case favour the usage range of the linguistic form as it is, while in another case some parts of the usage range are more selectively favoured than others, yielding a gradually changed usage profile