English Language and Linguistics 9.2: 377–405. © Cambridge University Press 2005
Printed in the United Kingdom

REVIEWS

doi:10.1017/S1360674305211772

Kingsley Bolton, *Chinese Englishes: a sociolinguistic history*. Cambridge: Cambridge University Press, 2003. Pp. xviii + 338. Hardback £45/$70, ISBN 0 521 81163 5.

Reviewed by Phil Benson, University of Hong Kong

According to some recent estimates, there are now more than 300 million speakers of English in China. If this figure is accurate, China now has a larger population of English speakers than any other country in the world. Estimates of this kind are, of course, open to interpretation. How frequently, in what situations, and to what degree of proficiency do Chinese people actually speak English? The majority, one would suspect, have learned English at school or privately as adults, but make very little use of it in their daily lives. To leave the matter there, however, would be to ignore the complexity of what it means to be a Chinese speaker of English for a significant minority of these 300 million individuals.

To give an idea of the degree of this complexity, highly competent Chinese speakers of English are now found in a variety of rural and urban regions of China, in Hong Kong, Macau, and Taiwan, and in numerous Chinese diaspora communities around the world. In addition, increasing numbers of Chinese, Hong Kong, Macanese, and Taiwanese citizens are travelling overseas for educational and political reasons. A significant number of these emigrants have made careers for themselves as English-language writers and the work of Chinese language authors is becoming increasingly well-known internationally through English-language translations. The exponential growth of English in mainland China and the rise to prominence of Chinese writing in English on European, North American, and Australasian bookshelves are essentially new phenomena. Nevertheless, there are records of Chinese speakers using English dating back almost three centuries and the first published work in English by a Chinese writer appeared at least a century ago. We might also take into account English-language work about China written by non-Chinese authors, which has a history of more than 400 years.

The pluralization in the title of Bolton's *Chinese Englishes* highlights the author's view that, just as there is no single 'English', there is also no single 'Chinese English' in either a synchronic or diachronic sense. Nor, according to Bolton, is Hong Kong English (the most thoroughly treated Chinese English in the book) separable in either of these senses from the phenomenon of English in Chinese contexts as a whole. To capture the complexity of this phenomenon in all its contemporary breadth and historical depth would perhaps require an encyclopaedic scope that Bolton does not aim at. His major thesis, that Hong Kong English has 'a forgotten past' that connects it to the larger reality of contemporary Chinese Englishes, is, however, convincingly argued and supported by a wealth of linguistic, sociolinguistic, and historical data.

The book is divided into five chapters. Chapter 1 reviews the literature on the global dimensions of English and establishes the author's theoretical identification with Kachru's 'World Englishes' thesis. Chapter 2 discusses the late colonial history of English in Hong Kong, taking the reader roughly from 1980 up to the resumption of Chinese sovereignty in 1997. Chapter 3 pushes the historical aspect of the inquiry back further, through an exploration of the roots of Hong Kong English in contacts between English and Chinese in southern China from the early seventeenth century onwards. Chapter 4 offers a closer examination of the formal and pragmatic features of Hong Kong English, and chapter 5 concludes the book with a brief discussion of the nineteenth- and twentieth-century history of English in mainland Chinese contexts. The chronology of the book reflects Bolton's view that his third chapter represents an 'archaeology' of a forgotten past. Each of the chapters is, however, relatively self-contained and readers who prefer their histories to begin at the beginning are unlikely to suffer unduly by reading chapter 3 before chapter 2.

Bolton's major thesis is first developed through a review of the now extensive body of literature dealing with English as a global phenomenon. His review clearly demonstrates that this literature is both heterogeneous and multidisciplinary, with contributions from the fields of English studies, English corpus linguistics, sociolinguistics, pidgin and creole studies, applied linguistics and lexicography. Bolton also discusses the contributions of 'popularizers' such as David Crystal, 'critics' such as Robert Phillipson, and 'futurologists' such as David Graddol. The work of significant authors is reviewed biographically under each of these headings and is conveniently tabulated on pages 46–7 of the book. Adopting a largely historical approach to the discussion of this work, he argues cogently that there has been a significant shift away from the description of the formal linguistic features of localized 'varieties of English' around the world towards a more intense discussion of the political and moral implications of English as a global phenomenon, partly in response to Phillipson's critique of the globalization of English as a form of linguistic imperialism. In the context of this shift, Bolton aligns himself with Kachru's view of 'World Englishes' as a complex multidimensional construct involving pragmatic, sociolinguistic, and literary dimensions, avoiding the simplistic view that each English-using region has its own distinctive 'English' belonging to its inhabitants and describable in terms of formal linguistic variation.

A second theme developed in the literature review concerns the assumption that the phenomenon of World Englishes is essentially 'new'. From the outset, Bolton takes issue with the term 'New Englishes', which was used during the 1980s to describe African, Asian, and Caribbean Englishes, now identified with Kachru's 'outer' and 'expanding' circles of English. The implication of this term, which derived from the use of the term 'New World' to describe the former colonial territories of the Americas and Australasia, was perhaps that these varieties of English were not as new as they seemed to be. Nevertheless, Bolton is in my view substantially correct in pointing to a prevalent assumption that the Englishes of Africa, Asia, and the Caribbean emerged *sui generis* from processes of decolonization, or at least that they were disconnected

from any prior history of English in the regions to which they belonged. In this context, the observation that Phillipson's critique has encouraged investigation of the historical dimensions of 'new' varieties of English is an interesting one.

In the context of Hong Kong, the implication of the assumption of 'newness' is that Hong Kong English has largely been viewed as a product of decolonization and of associated processes of identity formation among the Chinese population of the colony between 1980 and 1997. As Bolton shows in his discussion of this period, Hong Kong English has largely been seen as an exponent of new localized identities, in which a sense of cultural separateness from both China and the United Kingdom is at issue. Many doubt that Hong Kong English really exists, however, suggesting that in contrast to, for example, Singapore English, it is little more than the sum of regular patterns of non-native linguistic 'error'. In the course of chapter 2 (and later in chapter 4) Bolton marshals a good deal of evidence to counter this view. But at the same time, the reader may be left with the impression that the debate on whether Hong Kong English does or does not exist has become somewhat sterile. Although Bolton has been one of the major contributors to this debate, it is clear that he now takes the view that the terms of the debate are limited by the perspectives of earlier periods of scholarship and that the more important issues now revolve around the multiple uses of English in Hong Kong and the ways in which they are interwoven with the history of English in southern China from the early seventeenth century onwards.

Chapter 3, which deals with the history of English in China from 1637 to 1949, is in many ways the most interesting in the book. Building his history around key documentary sources, Bolton succeeds in conveying a sense that we are, in fact, faced with a history, rather than a series of unconnected textual events. The history begins with the earliest contacts between English and Chinese, represented by Peter Mundy's 1637 account of the first English voyage to reach Macao and Canton, and proceeds with similar accounts from the eighteenth-century sources. Bolton then documents nineteenth-century descriptions and glossaries of 'pidgin' English, the lingua franca of the 'linguists', or interpreters, who mediated between Chinese and foreign traders at Macao and Canton, which was typically acquired by foreigners on arrival. Although the name 'pidgin' was not used until the mid-nineteenth century, attestations of its use go back to the early eighteenth century. In the eighteenth century, it appears that the use of pidgin was restricted to a small number of professional interpreters who spoke Chinese but were often of non-Chinese origin. By the middle of the nineteenth century, pidgin was evidently used by a much wider range of individuals including Chinese employees and servants of foreign trading houses and shopkeepers of various kinds. By the early twentieth century, it appears to have spread even further and there are reports of its use among Chinese who spoke mutually incomprehensible dialects of Chinese, notably among officers in the Republican armed forces. English language schools were established as early as the 1840s in Hong Kong, however, leading to the development of an English-speaking class who were often contemptuous of pidgin.

One of the strengths of Bolton's treatment of this period lies in the way that he carefully compares and evaluates the extant sources on pidgin in China. Especially

useful is his discussion of two Chinese-language texts designed to teach English: the 'Redhaired Glossary' of c. 1835 and the 'Chinese and English Instructor' of 1862. Although these texts have been described elsewhere by pidgin scholars, Bolton is the first to place them side by side in the context of a broader history of English in China. The 'Chinese and English Instructor', which is described as the major source on Chinese pidgin English, is of particular interest because it includes for certain words separate English and pidgin pronunciations, presumably in order to help learners of the former to avoid the latter. On the basis of the somewhat scanty, and almost entirely second-hand, evidence available to us, however, it is difficult to judge how stable Chinese pidgin English was over the course of its history of 200 years or more. The term 'pidgin English' came into use around the middle of the eighteenth century and we may question whether it applies in the same way to the lingua franca of the eighteenth century and to the broader efforts of Chinese speakers to use English in the early twentieth century. What Bolton makes clear is that there are certainly common elements in early pidgin and twentieth-century Chinese Englishes, but that the latter developed primarily through English-language education over a relatively long period in which they overlapped with and ultimately replaced pidgin.

In chapter 4, Bolton returns to modern times with a discussion of the status, functions, and features of English in present-day Hong Kong. Readers who expect to discover that the importance of English has declined in Hong Kong since the resumption of sovereignty will perhaps be surprised by this chapter, which reveals not only a persistent concern with 'standards' of English, but also new dimensions of creativity involving the English language. There has for example been a remarkable growth in literary writing in English over the past decade and Bolton provides an especially interesting extract from an online chat session between two university students which reveals a fascinating combination of generic and localized features.

The final chapter of the book deals briefly, and rather tantalizingly, in view of the detailed discussion of historical issues in the formation of Hong Kong English, with the history of English China. Bolton begins this history with the establishment of English missionary schools in Hong Kong, from which a number of graduates went on to occupy high office in China. He then describes how similar schools and colleges were set up in the main cities of China and how, in the work of writers such as Lin Yutang, ideologies of republicanism, modernism, and anti-imperialism were often tied up with knowledge and use of English. It is primarily within the complex roles of English in the formation of China's pre-1949 'colonial modernity', Bolton suggests, that links between Hong Kong English and other Chinese Englishes are to be found. The chapter also discusses the suppression of English during the period from 1949 up to the later years of the Cultural Revolution and its resurgence in recent years, which is primarily dealt with through a discussion of Li Yang's 'Crazy English' movement.

The focus of the book as a whole falls upon the English of southern China, justifiably so in view of Bolton's aim of recovering the 'forgotten history' of Hong Kong English. In recovering this aspect of the history of Chinese Englishes, however, it also opens a number of questions about other aspects of that history that stand in need of deeper

investigation. The choice of 1637 as the historical starting point for English in China, for example, raises questions about the role of earlier English-language texts concerned with China. Mundy's 1637 text is selected because it is the earliest known text to be written originally in English by a writer who had actually set foot in China. Mundy's account was not published in its own era, however, and it was not until the turn of the nineteenth century that a substantial body of English writing on China began to emerge. Bolton focuses on travellers' accounts of Canton largely because they furnish evidence of the use of English *in* China. But as Bolton notes, Mundy's journal was preceded by a number of works by European authors, notably Mendoza's *History of the Great and Mighty China*, which was printed in Spanish in 1585 and in English translation in 1588. More importantly, by the turn of the nineteenth century a considerable number of scholarly European works on China had been translated into English and it seems likely that it was largely through this body of translation that the English language acquired a lexicon for the description of China and 'things Chinese'.

A second aspect of the textual history of English in China that deserves deeper investigation is the body of English-language translations of classical Chinese literature produced by European sinologists in the late nineteenth century, which established words such as 'face' and 'filial piety' as quintessentially 'Chinese'. Perhaps the most remarkable aspect of the phenomenon of Chinese Englishes, however, is the sheer quantity of published scholarly and creative work on China produced by twentieth-century Chinese authors writing in English. In order to understand the language of this work, we need to know far more about the ways in which western writers have appropriated Chinese concepts and words in their writings on China and the ways in which Chinese English-language writers have reappropriated this work in the twentieth century.

Bolton's *Chinese Englishes* presents us with a detailed and insightful account of English in Hong Kong and southern China from linguistic, sociolinguistic, and historical perspectives. In this respect, it is a unique contribution to the literature on World Englishes, which has so far largely ignored the historical dimensions of varieties of English around the world. It is clearly a book that anyone interested in this area of research should own, not least because it is likely to become the standard source of reference for future research on the English of China. At the same time, it should be of considerable interest to others in the field of World Englishes for the comprehensive and radically historical approach that it takes to its subject matter.

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(Received 24 November 2004)

doi:10.1017/S1360674305221779

Rens Bod, Jennifer Hay, and Stefanie Jannedy (eds.), *Probabilistic linguistics*. Cambridge, MA: MIT Press, 2003. Pp. 451. Hardcover US$95, ISBN 0 262 02536 1, Paperback US$38, ISBN 0 262 52338 8.

Reviewed by Stefan Th. Gries, University of California, Santa Barbara

1 Introduction[1]

The book under review originated as a symposium on probability theory in linguistics as part of the 2001 meeting of the LSA organized by the editors. According to the preface, the book was motivated in part by 'the sense that a handbook on probabilistic linguistics, providing necessary background knowledge and covering the various subfields of language, was badly needed' (p. vii). In addition, to make the book more accessible to a general audience, the book features a tutorial on elementary probability theory (chapter 2), as well as a glossary of probabilistic terms.

2 Summaries of chapters

The introductory chapter by the editors sets the stage for the chapters to follow by illustrating that probabilities permeate the language system on virtually every level of linguistic analysis. The authors point out a variety of examples (to be discussed in more detail in the other chapters) that illustrate that the traditional assumption of the categoricality of linguistic competence cannot be upheld. More specifically, the argument is that the traditional discretizing approach focuses on the extreme points of a continuum of probabilities, namely the impossible cases where the probability p of some phenomenon A is zero (i.e. $P(A) = 0$) versus the certain cases where the probability p of A is unity (i.e. $P(A) = 1$), but that there is a wealth of evidence supporting an approach that integrates variability and gradience, and allows for also investigating the 'gradient middle ground' where A is likely to different degrees (i.e. $0 \leq P(A) \leq 1$). The evidence the authors refer to is copious; examples include variable syntactic grammaticality/acceptability judgements, frequency effects in the domains of word recognition, sense interpretation, speech reduction, as well as morphological productivity and decomposability, category membership of phonemes, etc. As the authors say, 'practically every level of representation provides robust evidence for the involvement of probabilities' (p. 10). The following chapters take up many of these examples in quite some detail.

The chapter by Bod ('Introduction to elementary probability theory and formal stochastic language theory') aims at introducing the most important concepts from probability theory to readers unfamiliar with this domain in order to make the book more

[1] I thank Bas Aarts and Jennifer Hay for their feedback and comments. Naturally, I alone am responsible for any errors and omissions.

accessible even to the uninitiated. To that end, Bod first defines the notion of probability on the basis of relative frequencies (i.e. percentages) of particular outcomes from the set of all possible outcomes (i.e. the sample space). He starts out with defining simple probabilities and continues with the *sum rule* (stating that the probability of observing one of x mutually exclusive events is the sum of the probabilities of these x events). In the next step, Bod turns to *joint probabilities* (i.e. the probabilities of observing two or more mutually independent outcomes), as well as to *conditional probabilities* (i.e. the probabilities of observing an outcome B when outcome A has already been observed) and the *multiplication rule* (stating that the probability of observing A and B is the probability of A $P(A)$ times the probability of B given A $P(B|A)$). The next steps are Bayes' rule, as well as the chain rule and the related concept of x-order Markov models, a model in which the probability of an event is contingent on x preceding events.

These notions are then applied to an example of a probabilistic grammar with which the probabilities of syntactic phrase structure rules and derivations combining several phrase structure rules can be computed from the number of occurrences of phrase structure rules in a treebank (i.e. a parsed corpus) to decide for instance which out of several possible parses is the analysis that is most likely correct. By way of examples, Bod then moves on to briefly introduce several kinds of probabilistic grammars with a focus on his model of Data-Oriented Parsing (DOP), a model that is referred to in several later chapters. The key point is that probabilities of syntactic analyses can be computed from the probabilities of their parts, although it may be difficult to decide what the parts are which enter into the computation. Bod concludes by briefly discussing the size of these parts, the generality of such models and comparisons of probabilistic grammars.

After a brief introduction on the relation of frequency and probability, Jurafsky ('Probabilistic modeling in psycholinguistics: linguistic comprehension and production') discusses a multitude of examples of lexical and syntactic frequency effects in language comprehension (as there appear to be no corresponding effects in the domain of production). These examples include (i) single-word effects such as lexical frequency effects (on, e.g., word recognition and naming), morphological and syntactic category frequency effects (on, e.g., parsing preferences), sense frequency effects on response latencies, and (ii) joint-words effects modeled in terms of co-occurrence frequencies, conditional probabilities or other measures on, say, reading times, gaze duration, phonological reduction, etc. Further examples are concerned with subcategorization frequencies, conditional syntactic frequencies, and constructional frequencies (where *constructional* is used here in the traditional sense of the term) and their influence on comprehension.

The next major section of this chapter is devoted to a discussion of psycholinguistic architectures and how they model frequency effects. By means of examples mostly relating to different kinds of disambiguation, Jurafsky introduces constraint-based models (which focus on the simultaneous interactions of many different probabilistic constraints) as well as Bates and MacWhinney's Competition Model and Anderson's rational model, and then turns to a discussion of more complex graphical models used

for lexical category (i.e. POS tagging) and syntactic disambiguation. The final type of model discussed (in quite some detail) is the Bayesian belief network, which allows for the continuous updating of probabilities once new evidence is provided.

The final major part of this chapter lists a few critical questions and common (mis)conceptions that are often leveled against probabilistic approaches in general and some answers to clarify these points.

Chapter 4 by Mendoza-Denton, Hay, and Jannedy ('Probabilistic sociolinguistics: beyond variable rules') introduces probabilistic approaches in sociolinguistics. The authors set the stage by pointing out that – contrary to many other domains in linguistics – sociolinguistics has long been statistical and empirical in a way strongly differing from, say, the study of an ideal speaker–hearer on the basis of intuition(s) by theoretical linguists. A particularly relevant point here is the authors' discussion of the notion of variable rules (as well as several points of critique against variable rules) and their computation by means of Varbrul (for Varbrul for MS-DOS, cf. ftp://ftp.cis.upenn.edu/pub/ldc/misc_sw/varbrul.tar.Z), statistical software which is similar in spirit to binary logistic regression for nominal/categorial factors without interactions. In this connection, Mendoza-Denton, Hay, and Jannedy discuss general (and notorious) problems of, for example, interview studies as compared to experimentation and/or corpus studies (biased and low frequencies, etc.), as well as shortcomings of Varbrul.

The major part of this chapter is a case study of monophthongization of [ay] in the speech of the talk show host Oprah Winfrey. The authors code 229 words containing [ay] together for a variety of independent variables including characteristics of the word containing [ay] (e.g. its POS and log-transformed frequency in the CELEX database), variables in the linguistic context (e.g. articulatory features of preceding and following sounds), and characteristics of the user (e.g. gender, ethnicity). Two kinds of results are then discussed in detail. First, the authors discuss 'traditional' Varbrul results, providing Varbrul weights for individual factors, interactions between variables by means of added factor groups, and significance tests, together with a qualitative interpretation of self-reference patterns. Second, the authors provide a brief introduction to, and the results of, an analysis on the basis of Classification and Regression Trees (CART). These different kinds of analyses are then compared to identify their special advantages and disadvantages. The authors conclude with a discussion of how the identified probabilistic patterns can be integrated into sociolinguistic frameworks.

Zuraw's paper ('Probability in language change') discusses the role that frequencies and probabilities play in the domain of language change by looking at four different topic areas. First, she illustrates how the investigation of language relatedness relies on determining whether the number of vocabulary correspondences between two languages is significant. She criticizes recent work for its statistical shortcomings and advocates either an exact test on the basis of hypergeometric distribution or – lest the computational demands become too high – a simulation based on many permutations.

Second, Zuraw turns to how probabilities change over time. She provides examples of S-shaped curves of (the time course of) language change and discusses attempts to

explain and model them (e.g. Kroch's constant rate hypothesis and logistic functions, as well as connectionist modeling and simulations and the role frequencies play for reanalysis).

The third major part of the chapter looks at the detailed changes that may take place over time. On the basis of recent usage-based grammatical theory (e.g. work by Bybee) and exemplar-based theories (e.g. Pierrehumbert in the book under review) in which every use of a particular linguistic element updates its own representation as well as that of the categories to which the exemplars belong, Zuraw illustrates how frequency of usage influences phonological changes, semantic diversification and grammaticalization, to name but a few.

The final major part of this chapter is devoted to language agents in a probabilistic environment. Arguing that, ultimately, language change derives from millions of interactions and how they influence interlocutors' behavior on subsequent occasions, Zuraw focuses on the adoption of new words and on how learners react to a probabilistic environment (by, for example, not simply adopting input frequencies).

Pierrehumbert ('Probabilistic phonology') begins by establishing a minimal list of five differently abstract levels all of which exhibit different probabilistic effects: parametric phonetics, phonetic encoding, word forms in the lexicon, the phonological grammar, and morphophonological correspondences. She then discusses evidence that knowledge at all these levels is best characterized as probabilistic. For example, the level of parametric phonetics is probabilistic in the sense that its acquisition boils down to the acquisition of probability distributions over a multidimensional phonetic space (whose dimensions are formant frequencies, degree of jaw opening, etc.), an assumption for which Pierrehumbert discusses several pieces of evidence. In this context, she introduces *exemplar theory*, a theory in which 'labels are associated with a distribution of memory traces in a parametric space' such that categorization of an input stimulus amounts to assigning a probable label on the basis of the distribution of differently strong traces of similar perceptual events. Similarly, on the level of phonological grammar, there is some evidence of probabilistic effects; for example, that well-formedness judgements and the frequencies of outcomes in a blending task reflect frequencies of rhymes.

Then, Pierrehumbert turns to how probabilistic/statistical reasoning (on the basis of comparing observed frequencies to expected ones) 'predicts limits on the inferences that can be made about language' by both scientists and learners, allowing for ways of analysis that are not possible on the basis of, say, well-formedness judgments; various examples of cases where expected frequencies exceed observed ones (what Pierrehumbert refers to as *underrepresentation*) are cited. While Pierrehumbert devotes an additional section to caution the reader to exercise care – since the utility of the necessary computations depends on the sample sizes and/or the probabilities to be investigated – she also points out how statistically robust the linguistic system to be acquired actually is. The examples she uses (in a discussion reminiscent of signal detection theory) are concerned with the robustness of (i) the categorization of phonemes and (ii) phonological constraints.

Finally, Pierrehumbert addresses the issue of how probabilistic information is correlated across the different phonological levels outlined at the beginning, discussing in some detail the Gradual Learning Algorithm within stochastic Optimality Theory.

After (i) a brief introduction to the development of information technology and its implications for linguistics and (ii) a short discussion of the controversy of connectionist and symbolic approaches to language, Baayen's chapter ('Probabilistic approaches to morphology') discusses case studies from three domains which demonstrate that probabilistic approaches are more important to, and rewarding for, morphological studies than has hitherto been assumed.

First, Baayen addresses a topic of much recent interest, namely morphological productivity. After pointing out that the distinction between unproductive and productive is not as straightforward as is often suspected, Baayen turns to probabilistic measures of morphological productivity proposed in his own earlier work, namely an affix's hapax-conditioned degree of productivity and its category-conditioned degree of productivity. These can be explained by assuming that one samples successively all word types within a corpus. The former productivity measure is the probability that a new word type sampled from a corpus contains the affix in question, while the latter is the probability that, if we draw a word with the affix in question, it is a new word type. He concludes this section by briefly discussing how the probabilistic approach to productivity is related to phonological transparency and the parsability of morphologically complex forms.

The second domain investigated is the production of morphologically complex words. In one case study, Baayen investigates the seemingly erratic distribution of linking elements in Dutch nominal compounds using an information-theoretic approach: he identifies the predictive power of various phonological properties of the head and the modifier of a compound in terms of the reduction of the entropy of the linking elements' distribution, obtaining a cross-validated prediction accuracy of 92 percent for the linking elements in Dutch compounds in the CELEX database. He then relates these effects to psycholinguistic spreading activation models. As a similar example, Baayen discusses the distribution of syllable-final obstruents in Dutch. He then concludes with a discussion of how different quantitative models can accommodate the data.

The final domain investigated is the comprehension and the segmentation of differently probable combinations of morphological constituents. Baayen discusses the application of MATCHECK, an implementation of interactive activation models, to the segmentation of morphologically complex nouns and plurals in Dutch and German.

After a short introduction, Manning ('Probabilistic syntax') begins his chapter with a detailed exposition of how concrete categorical statements concerning the grammaticality or acceptability of sentences, as well as the theoretical assumptions underlying categorical syntax, can be undermined once authentic data from corpora are investigated. On the basis of the example of verbal subcategorization, more specifically the argument-adjunct distinction, he shows how enriching subcategorization frames with probabilistic information (conditional probabilities, in this case) allows for a more comprehensive account of the empirical facts than categorical approaches. He

goes on to address several aspects of probabilistic models in syntax, which include the issues of the scope of grammar when probabilities are included (not restricted to overt elements), how probabilistic information relates to grammaticality and learnability, and to what degree probabilities as well as degrees of categoriality (e.g. of POS) can be of explanatory value.

Manning then turns to models of syntax in terms of probabilistic constraints over representations – as opposed to probabilistic applications of rules. He discusses the hypothesis that '[t]he same categorical phenomena that are attributed to hard grammatical constraints in some languages continue to show up as soft constraints in other languages'. To that end, he discusses an example where the choice of active vs. passive voice is determined by various conflicting factors (linking: subjects are preferably agents; givenness: subjects are preferably given; empathy: first/second-person subjects are natural points of empathy). While the choice in English is far from categorical, this is not so in many other languages. Categorical approaches would state how the constraints interact and which combinations of constraints are possible. The quasi-intermediate approach of Standard Optimality Theory, an approach which Manning considers 'a retreat from a quantitative framework', is to rank constraints to accommodate the distributional facts. However, Manning argues that often a more numerical approach is ultimately necessary. One such approach, stochastic Optimality Theory with continuously scaled predictors and their stochastic evaluation, is briefly discussed. The emphasis here is especially on showing that stochastic approaches are not restricted to the investigation of mere surface phenomena, but can also support the heart of theoretical accounts. A final part of the chapter deals with statistical models. More specifically, Manning discusses loglinear models and generalized linear models (e.g. logistic regression) and how they relate to, for example, syntactic analyses within Optimality Theory.

The chapter by Cohen ('Probabilistic approaches to semantics') is concerned with the question of how semantic accounts in which probability theory aids traditional truth-conditional semantics deal with the meanings of expressions. Cohen first discusses the meanings of generics and frequency adverbs (e.g. *always*, *sometimes*, *never*), conditionals, vagueness, as well as *many* and *even* and the indirect use of probabilities. Cohen's main conclusion is to outline a theory of semantics in which understanding the meaning of a sentence is not the ability 'to judge its truth and falsity in any situation', as in traditional truth-conditional accounts, but 'the ability, given a situation, to assess its probability' (pp. 377f.).

3 Critical evaluation and conclusion

On the whole, this book is very difficult to evaluate. This is not because the chapters are not well written or the book is not well edited – quite the contrary; it is due to the fact that, as the editors make clear from the outset, this book is intended to illustrate the omnipresence of probabilistic effects on various linguistic levels, and to my mind succeeds in doing so. However, from this it follows that the optimal reviewer would

have to be an expert in all areas covered by the book, which I can certainly not lay claim to. A second minor reason is that, at least in my case, the authors are preaching to one who's already converted. The optimal reviewer would therefore have been one who was sceptical of probabilistic reasoning within linguistics. In spite of these limitations, I do have a few comments to make. I will begin with some comments on individual chapters, and then I will turn to a more general assessment, which will take up the only major critical point I have to make.

To me, the chapter by Bod comes in two very different parts. The first part is a very well-written introduction to probability theory, which fully attains its goal of familiarizing even the novice with some of the most useful fundamentals, even though the prose is quite dense and the progression is relatively quick. However, the second major part of the chapter is less well suited to this objective of setting the stage: while the DOP model is taken up in several later chapters, the discussion of DOP vs. other models – interesting as it doubtless is – is not very helpful to those readers who are happy they just made it through all the formulae to p. 18. A gentler introduction would have continued to introduce the general perspective and fundamental assumptions of probability theory a little further (or done so at a slower pace) before turning to this much more specific domain.

The chapter by Jurafsky is a very well-written overview of frequency (effects) in psycholinguistics and the different (classes of) models used to model such effects. It is characterized by very accessible prose and lucid exposition and provides such a good overview that I have already used it as an overview reading assignment in one of my courses. In particular, the section on potential challenges to, and confusions about, probabilistic models is so useful that it could also have been an important part of the introductory chapter.

The chapter by Mendoza-Denton, Hay, and Jannedy is also much more accessible to me than some of the other chapters, even though my knowledge of sociolinguistics is limited. Two admittedly minor drawbacks I see are the following. First, the authors discuss in great detail the results they obtained from their Varbrul analysis. While this is understandable, given the important influence Varbrul has had in the field, the shortcomings also discussed by the authors (lack of interaction, only nominal/categorical independent variables) – to my mind at least – outweigh this historical primacy, which is why I would have preferred a discussion on the basis of a technique not fraught with these problems, such as binary logistic regression (especially since the authors mention this technique themselves and point to the need for sociolinguistic studies to also include continuous independent variables). This, together with the discussion of the CART results, would have made me appreciate the chapter even more. A second, even smaller, quibble that I have is that I think readers would have benefited from a more comprehensive comparison of the two kinds of quantitative results. While the authors discuss different properties of the techniques, they do not discuss in detail the differences of the results. For example, as I understand the results of the Varbrul analysis for vowels/glides, and liquids, these strongly favor monophthongization while obstruents strongly disfavor monophthongization, and nasals do so only very slightly

(insignificantly?). However, the CART results concerning segments following [ay] seem to group nasals together with liquids on the one hand and vowels/glides with obstruents on the other hand (after a first split of referees!). Especially as someone who has also used CART before (in a comparison with linear discriminant analysis), I would have appreciated some discussion of these superficially contradictory results.

Pierrehumbert's chapter is much more accessible than several of the other chapters. It strikes a nice balance between the theoretical and the methodological issues and addresses the important point of how statistical approaches can provide ways around the lack-of-negative-evidence problem. From my personal perspective as a corpus linguist, this is interesting because it is often argued that corpora don't provide negative evidence. However, following Pierrehumbert, the comparison of observed and expected frequencies may well be a strategy by means of which this problem can be solved, and this discussion should therefore be interesting to corpus linguists of all persuasions.

Like the other chapters, the chapters by Zuraw, Baayen, and Manning argue their points very well. The beginnings of these chapters are also very accessible even to readers without a strong probabilistic background – especially some of the methods in Baayen's first case studies (e.g. productivity measures and entropy reduction) can be quickly adapted to one's own purposes. However, the theoretical discussion of the simulation models in Zuraw's chapter, the last section on morphological comprehension in Baayen's chapter, and Manning's discussion of stochastic OT treatments are fairly demanding (cf. below).

As to the chapter by Cohen, I am not in a position to comment on it since it is completely outside my area of expertise. However, I would like to mention one very subjective impression. Cohen's chapter is quite different from the others in terms of how the notion of probability is discussed. In all other chapters, it is the data or the methods that are probabilistic. The most prominent example of the former is that, for example, linguistic elements are differently frequent, which is then taken to represent the gradience of categories, properties of representations, and/or processes of learning, comprehension, and production. An example of the latter is that distributional differences are evaluated statistically and, thus, probabilistically. This is also reflected in the fact that the introductory chapter on probability by Bod is helpful in setting the stage for all others, where probability figures as a quantitative means of analysis. In Cohen's chapter, by contrast, probability does not so much figure as the quantitative means of analysis, but as the topic investigated by means of formal semantics. Due to this difference, I was actually a little surprised that the chapter on probabilistic approaches to semantics was as it is since, given all the other chapters, I would have expected a chapter concerned with, say, different senses of words and the implications this has for acquisition and/or processing, etc. This discrepancy with my expectation is of course not a shortcoming of the chapter – I was just struck by the difference of this chapter to all others.

The glossary of probabilistic terms is quite a useful addition to the book. As far as I could see, it contains entries for all probabilistic terms in a narrow sense of the term plus a variety of entries on statistical procedures. To my mind, the definitions and

explanations of the entries are very good; the only minor quibble I have is with the selection of some of the entries for statistical procedures. For example, the glossary features entries for *correspondence analysis* and *principal components analysis*, but not for *loglinear analysis* or *logistic regression*, although these are arguably among the most important multidimensional techniques (for the latter, the glossary has at least a reference to the treatment in Manning's paper). Also, the notion of c*lassification and regression trees* made it into the index, but not into the glossary, but these points must not distract from the overall good quality of the glossary. Finally, the book has an extensive (47-page) reference section, as well as indices for names and subjects. While I have not checked the reference section for errors exhaustively, I found only two negligible errors during the normal reading process: Bailey and Hahn (2001) did not appear in volume 4 of *Journal of Memory and Language*, and references to studies by Howes are once given with middle initial and once without. Apart from that, I came across just one typo I find noteworthy because it may hamper understanding: on pp. 16f., it says '[t]he probability $P(H)$ is usually called the *prior probability*, while the probability $P(E|H)$ is called the *posterior probability*', but to my knowledge it should say 'while the probability $P(H|E)$ is called the *posterior probability*'.

However, these minor quibbles should not detract from the fact that *Probabilistic Linguistics* is a very valuable volume. It not only insightfully exemplifies and discusses probabilistic approaches in a variety of different areas of linguistic research, all the contributions successfully show how the probabilistic approaches can go beyond mere number-crunching and relate to sophisticated linguistic theories and how theories enriched with probabilistic approaches can be superior to categorical ones. (While I sometimes thought that the individual chapters could have been crossreferenced more often, this is definitely not a major shortcoming since I would expect that few readers will read all chapters in one go.) Thus, the editors have done a great job to ensure how the individual chapters contribute to the book.

I have one final critical comment, though. The editors envisage the book as a 'handbook on probabilistic linguistics' (p. vii), and even cared to include an introductory chapter for beginners in probabilistic linguistics. However, to my mind, several chapters are characterized by a quick progression and/or a fairly demanding and technical discussion which makes parts of them quite difficult to understand. For example, later parts of the chapters by Baayen, Manning, or Zuraw discuss phenomena with reference to theoretical models and/or computational/probabilistic implementations which, however interesting I actually find them, are difficult to follow for readers who do not already have a firm grasp of probabilistic approaches in general or even the specific models adopted in particular. True, this is a very subjective statement, but as somebody who considers himself a quantitatively oriented corpus linguist with quite some knowledge of statistical methods I found some chapters challenging enough to think that not all readers would be able to appreciate as much of the book as the editors intended, and to my mind at least this would even include many corpus linguists who, although they are already convinced of the utility of frequency-based approaches, may not be familiar enough with some of the approaches discussed in this book. By this I do

not mean to criticize the individual chapters, but I just wish to highlight the mismatch between the introductory guise implied by the beginning of the book and the high standards required in some later chapters. But this does not do damage to the overall positive assessment: *Probabilistic Linguistics* is destined to become one of the most widely quoted works on probabilistic/quantitative approaches to language for years to come and, to end on a personal note, I hope it succeeds in increasing the recognition of the importance of probabilistic approaches in linguistics.

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(Received 17 January 2005)

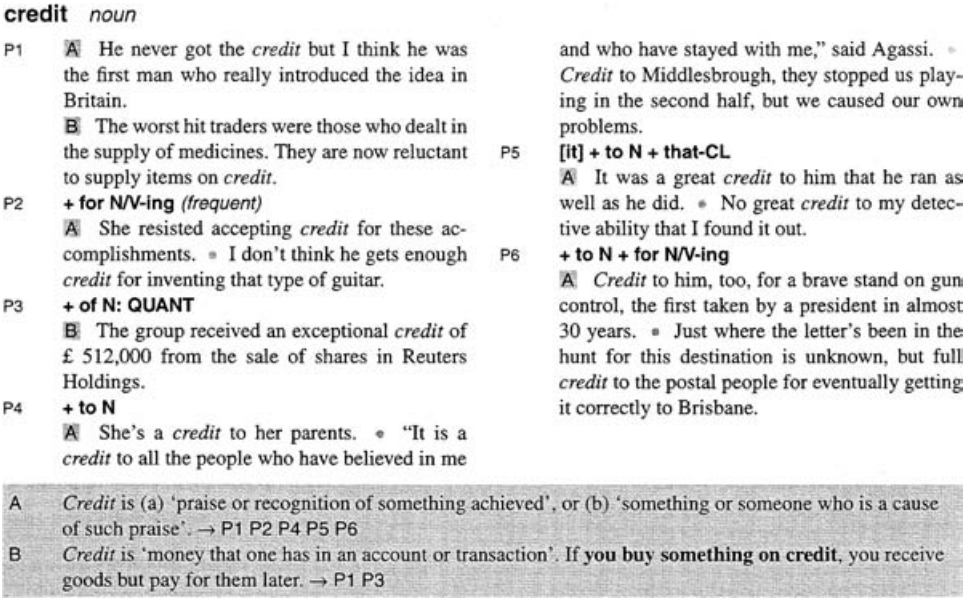
doi:10.1017/S1360674305231775

Thomas Herbst, David Heath, Ian F. Roe, and Dieter Götz, *A valency dictionary of English: a corpus-based analysis of the complementation patterns of English verbs, nouns and adjectives.* Berlin and New York: Mouton de Gruyter, 2004. Pp. xlii + 962. ISBN 3 11 017194 5.

Reviewed by Nadja Nesselhauf, University of Heidelberg

Information on valency, or 'the number and type of other elements with which a word can occur' (p. vii), can be found in many types of dictionaries. For the English language, the present volume is, however, the first dictionary focusing on the phenomenon. It assumes a wide definition of valency, covering not only the patterns of verbs, but also those of nouns and adjectives. On the basis of data from the Bank of English, the patterns of over 1,300 words are described in detail, with information on their semantic and lexical realizations, their frequency, and the relation between valency patterns and different word senses. The dictionary is aimed at four groups of users, namely linguists, advanced foreign learners (for the production of correct English), non-native teachers of English (for marking learner production), and developers of teaching materials such as applied linguists, grammarians, and lexicographers (p. vii).

Each entry in the *Valency Dictionary* is subdivided into different sections. The entries for adjectives and nouns consist of two sections each. The first section, the 'pattern-and-examples section', provides a list of the different valency patterns (termed 'P1', 'P2', etc.) in which the headword occurs, each pattern being followed by an example sentence (in most cases an authentic example taken from the Bank of English). Patterns that are particularly rare or particularly frequent, either in absolute or in relative terms, are marked accordingly. The second section, called the 'note block' (p. xxi), consists of



credit *noun*

P1 A He never got the *credit* but I think he was the first man who really introduced the idea in Britain.
B The worst hit traders were those who dealt in the supply of medicines. They are now reluctant to supply items on *credit*.

P2 **+ for N/V-ing** *(frequent)*
A She resisted accepting *credit* for these accomplishments. • I don't think he gets enough *credit* for inventing that type of guitar.

P3 **+ of N: QUANT**
B The group received an exceptional *credit* of £ 512,000 from the sale of shares in Reuters Holdings.

P4 **+ to N**
A She's a *credit* to her parents. • "It is a *credit* to all the people who have believed in me and who have stayed with me," said Agassi. • *Credit* to Middlesbrough, they stopped us playing in the second half, but we caused our own problems.

P5 **[it] + to N + that-CL**
A It was a great *credit* to him that he ran as well as he did. • No great *credit* to my detective ability that I found it out.

P6 **+ to N + for N/V-ing**
A *Credit* to him, too, for a brave stand on gun control, the first taken by a president in almost 30 years. • Just where the letter's been in the hunt for this destination is unknown, but full *credit* to the postal people for eventually getting it correctly to Brisbane.

A *Credit* is (a) 'praise or recognition of something achieved', or (b) 'something or someone who is a cause of such praise'. → P1 P2 P4 P5 P6

B *Credit* is 'money that one has in an account or transaction'. If **you buy something on credit**, you receive goods but pay for them later. → P1 P3

Figure 1. Entry for *credit*

definitions of the meaning(s) of the headword; if a headword has several senses, these are marked 'A', 'B', etc. In the first section, these letters serve to indicate which sense(s) the individual patterns may have. Each definition is followed by a crossreference to the patterns the word in this particular sense can occur in. The semantic range of the complements is also indicated in the note block and typical lexical co-occurrences are listed. An example of a noun entry is *credit* (figure 1). Two senses and definitions are given in the grey note block, with crossreferences to the relevant patterns, as well as one frequent collocation in bold print. Six patterns are listed in the first section of the entry, with one (P2) marked 'frequent'. Most patterns are additionally marked as referring exclusively to sense A, one (P3) as referring exclusively to sense B, and one (P1) as referring to both senses. If a pattern allows variation, as for example P2 in this entry, a sentence is given for each variant (one for the **for N** variant and one for the **for V-ing** variant).

Entries for verbs also consist of a pattern-and-examples section and a note block with information on the meaning of the verb and the semantic and lexical range of its complements. They start out, however, with a section listing the complete complement inventory of the headword, and additionally contain a section after the note block giving information on the valency patterns of idiomatic phrasal verbs (if phrasal verbs with the head word as their lexical element exist). An example of a verb entry (for *lend*) is given as figure 2. In the second line of sense 'A', information on quantitative valency is provided by stating the minimum and maximum number of complements in finite active and passive clauses, as well as the possibility of a

lend *verb*

A	... money		
	Active: 1/3 Passive: 1/3 General: 0		
I	**[N]$_A$ / [by N]**		
II	**[N]$_{P-2}$** *ÆFFECTED*	D1	T1–3
III	**[N]$_{P-1}$** *BEN/REC*		T1
	[to N]$_P$	D3	T3
IV	**[on N]$_P$**	D2	T2
B	'grant'		
	Active: 2/3 Passive: 1/3		
I	**[N]$_A$ / [by N]**		
	[V-ing]$_A$		T1.3
	[that-CL]$_A$		T1.3
II obl	**[N]$_{P-2}$** *ÆFFECTED*	D1	T1.3
III	**[N]$_{P-1}$** *BEN/REC*		T1
	[to N]		T3

C	'be suitable'		
	Active: 3/3		
I obl	**[N]$_A$**		
II obl	**[REFL PRON]**		T4
III obl	**[to N/V-ing]**		T4

M A The banks are not really willing to *lend*.

D1 **+ N$_P$**

A My father approached the local butcher who also had a lorry and asked him if he would *lend* it for the occasion.

B You want to *lend* guidance, give advice, and, when necessary, enforce some discipline. ◦ The circle form can be used very effectively in many settings, *lending* a tone which was not there before.

● Perhaps, if you wouldn't think me too bold in suggesting it, I could *lend* a hand here, just until Chance's business is finished, of course. (= help)

D2 **+ on N$_P$**

A It says it judges every property on its own merits, but will always *lend* on a property it has *lent* on before.

D3 **+ to N$_P$** *(frequent)*

A Now central banks all over the world in fact *lend* both to their governments and to the private sector. ◦ It provided subsidies to builders to erect houses of modest dimensions and allowed local authorities to *lend* to them for the same purpose.

T1 **+ N$_P$ + N$_P$**

A I won't *lend* you any money. ◦ She was the great one: she used to try and integrate us by *lending* us books. ◦ Can you *lend* us the chaps to shift them?

B The question has been *lent* added urgency by the fact that the Soviet President, Mr Mikhail Gorbachev, will be present in London during the summit.

T2 **+ N$_P$ + on N**

A No bank or building society will *lend* money on a mortgage unless every adult living in the property has agreed that they leave. ◦ This real world of business does not *lend* money on dreams.

T3 **+ N$_P$ + to N**

A Banks are reluctant to *lend* money to poor people. ◦ He has to *lend* his girlfriend to the gambler for the weekend.

B It stood majestically on a slight rise, as strongly rooted as the towering oaks that framed and *lent* a sense of timelessness to the old mansion. ◦ An increasing number of research studies are *lending* credibility to this belief.

● For a commonsense view of such matters it is traditional to *lend* an ear to that fountain of knowledge on all subjects, the London cabbie. (= listen carefully)

T4 **+ REFL PRON + to N/V-ing** *(frequent)*

C Loe Pool, the largest natural lake in Cornwall, *lends* itself, as Tennyson discovered, to such flights of fancy. ◦ Because of the location of stoves, etc., the room does not *lend* itself readily to being divided up. ◦ The majority of the exercises *lend* themselves to group participation and support, and are ideal for use in self-help or therapy groups

A **A person or an institution such as a bank^{I} can lend something they own, especially money, or a person they employ^{II} to someone^{III}**, i.e. make it temporarily available for them.
→ M D1 D2 D3 T1 T2 T3 also in phrasal verbs: lend out

B *Lend* can mean 'supply with something', a more formal alternative to *give*; typically used in expressions such as **lend urgency, credibility^{II} to something^{III}**. → D1 T1 T3

C **If someone or something^{I} lends themselves^{II} to something or a particular course of action^{III}**, they are particularly suitable for it. → T4

Idiomatic phrasal verbs

+ out ↔ N If she was offered the part of Maria, he had planned to refuse to *lend* her *out* until she signed a new contract. (= lend) ◦ Banks could *lend out* more money than they actually held to prospective buyers. (= lend)

Figure 2. Entry for *lend*

zero-valent use of the verb in question. Thus, 'Active: 1/3, Passive 1/3, General: 0' indicates that in an active clause one complement only, the subject, is necessary (as in *The banks are not really willing to lend*) and a maximum of three complements are possible (as in *Banks are reluctant to lend money to poor people*). In a passive clause the minimal requirement is also one complement (the subject) and maximally three complements are possible (as in *[M]oney was lent [. . .] by Mr Fynn to the trust*, BNC J7A 972). Finally, a zero-valent use is possible (as in *Lending is normally limited to the financing of the foreign exchange costs of the imported goods*, BNC EC3 289).[1] Then the syntactic patterns of the possible complements are given, grouped according to the semantic role that is expressed by each of them. For each group, the degree of obligatoriness of the complement is indicated. Five degrees are distinguished. 'Obl' denotes obligatory complements; 'cont' indicates contextually optional complements, i.e. those that have to be realized unless their referent can be identified from the context; 'imp' indicates complements that are not necessary with imperatives if the referent can be identified from the context, and 'marg' denotes marginal complements, i.e. those whose status is close to that of an adjunct. If no degree of obligatoriness is indicated for a group, this means that the complements are optional. If two complements in different groups are identical in form, the semantic roles expressed by their lexical realizations are indicated. For *lend* as in *lend money*, the entry indicates that four groups of complements have been identified. The third group of complements can be realized in two different ways, namely either as a noun phrase or as a noun phrase preceded by *to*. All (groups of) complements are optional (as the roman numerals are not followed by an abbreviation denoting the degree of obligatoriness). If a noun phrase not preceded by a preposition occurs with *lend*, it can express either the semantic role of ÆFFECTED ('a person or entity that is affected by the process or action described or can be seen as its result or outcome', p. xiii) or of BEN/REC ('a person or entity at whom an action or process is directed or that benefits from it', p. xiii). The subscript numbers indicate that if two noun phrases are present expressing these two different semantic roles, the one expressing the role of BEN/REC precedes the one expressing the role of ÆFFECTED. Subscript 'A' indicates that the complement can occur as the subject of an active clause, 'P' that it can occur as the subject of a passive clause. The combinations of letters and numbers given to the right (D1, T1–3, etc.) refer to the pattern-and-examples section of verb entries. These are constructed in the same way as the ones for noun and adjective entries, except that the patterns are not merely marked 'P1', 'P2', etc. but according to the number of complements they contain, 'D', for example, denoting a divalent pattern, 'T' a trivalent pattern, etc. (so that 'D1' means divalent pattern number 1, etc.). Thus, a complement of *lend* with the pattern **on N**, for instance, can be found to occur in the divalent pattern marked 'D2' and the trivalent pattern marked 'T2', which are illustrated in the second section of the entry by *It says it judges every property on its own merits, but will always*

[1] 'BNC' stands for British National Corpus. Quotations from the BNC are used in this review to illustrate certain points; they do not appear in the dictionary.

lend *on a property it has lent on before* (pattern D2, + **on** $\mathbf{N_P}$) and *This real world of business does not* lend *money on dreams* (pattern T2, + $\mathbf{N_P}$ + **on** $\mathbf{N_P}$).

The grey note blocks of verb entries are constructed in the same way as those of the noun and adjective entries, with additional crossreferences to the phrasal verb section where relevant. Also, in the definitions, the different complements are marked with roman numerals. These serve to indicate which of the complement groups distinguished in the first section the semantic and/or lexical range given in the definition refers to. For sense 'A' of *lend*, for example, the third group of complements (noun phrase or noun phrase preceded by *to*) can be lexically filled by all noun phrases denoting a person, which is indicated by the superscript roman III after 'someone' in the definition. If a verb has idiomatic verb–particle combinations, these are listed after the note block together with all their valency patterns, example sentences, and a brief indication of their meaning in brackets after the example. In the case of *lend*, only one such combination is listed: + **out** ↔ **N**, with the double arrow indicating that the noun phrase can occur before and after the particle.

Preceding the actual dictionary, which comprises almost 1,000 pages, are two pieces of introductory writing, one more practical and one more theoretical in orientation. The first introductory section, 'A brief guide to the *Valency Dictionary of English*', starts out by briefly outlining the aims of the dictionary, its data base, and the types of information users can expect to find. It then gives a step-by-step description and explanation of the entries, illustrated with several extracts from the dictionary and many examples. The second section, 'Valency theory and the *Valency Dictionary of English*. A few remarks on the linguistic and lexicographical principles', written by Thomas Herbst, focuses on the theoretical background and the lexicographical decisions that have informed the making of the dictionary. First, some of the basics of valency theory are outlined, such as the distinction between complements and adjuncts, and between obligatory and optional complements. The fact that these categories are in fact not discrete but subject to gradience is also discussed. Then, the way in which such theoretical issues have been solved in this volume is outlined and explained. For example, the problem of the distinction of complements and adjuncts has been dealt with by considering borderline cases to be complements 'where this information is considered to be important for the learner' (p. xxxiv). Issues such as the selection of words for inclusion in the dictionary and the evidence on which the classifications are based are also addressed. In addition to the Bank of English, native-speaker intuition was consulted in some cases, since, in particular for some noun and adjective patterns, even the evidence from the Bank of English was insufficient. As to the selection of headwords, three criteria were taken into account, namely 'frequency, complexity of valency structures and potential difficulty for the foreign learner' (p. xxxviii).

At the end of the book, two pages are provided for quick reference. One provides a list of the abbreviations used in the entries, the other one briefly states two types of questions with which users can approach the dictionary and outlines the procedures to be followed in these two cases. The first type of approach envisaged is 'To find out whether a pattern is used with a word and what it means' and the suggested procedure is to 'Start with the

patterns indicating which *patterns* there are → leading to the *examples* → leading to the *notes with information on meaning and collocational range*.' The second type of approach is 'To use a word in a particular sense', and to this end the user is advised to 'Start with the note block giving information on *the meaning and the collocational range* of a word → referring to the *pattern block and the phrasal verbs* → leading to the *examples*.'

In view of the fact that valency patterns also receive considerable attention in many general dictionaries and learner dictionaries and in view of the fact that a number of other published reference works which record valency are also based on the same source of data as the dictionary under review here, the question arises in what ways the information that can be found in the *Valency Dictionary* differs or goes beyond these related works. A publication based on data from the Bank of English which deals exclusively with valency patterns is *Collins COBUILD Grammar Patterns*. The major difference between *Grammar Patterns* and the *Valency Dictionary* is that whereas the entries in the latter are (alphabetically) ordered according to the headwords, the entries in the former are ordered according to patterns, providing information on how these patterns can be lexically filled. Although an index of lexical items at the end of *Grammar Patterns* also allows the user to find information on the question in which pattern a certain lexical item occurs, this is extremely time-consuming, whereas this type of information can be accessed very fast in the *Valency Dictionary*. More closely related to the dictionary under review here is the *Collins Cobuild English Dictionary* (*CCED*), also created on the basis of the Bank of English. Valency receives a great deal of attention in this dictionary, which not only provides typical valency patterns in the definitions and examples but also lists frequent valency patterns in an extra column. What is also common to both dictionaries is the emphasis on the collocational properties of the headwords. One respect in which the *Valency Dictionary* differs from the *CCED* (and therefore in all likelihood from all general and learner dictionaries) is that for most entries a greater number of possible valency patterns are listed and exemplified. Largely as a consequence of this, there are far fewer entries in the *Valency Dictionary*, and sometimes not all senses of a word are considered in an entry. To give just two randomly selected examples of the difference in the number of patterns in the two dictionaries: for the adjective *tense*, the *Valency Dictionary* gives the complementation patterns + **about N**, + **over N** (marked 'rare'), and + **with N**, whereas no complementation patterns are given in the *CCED* (neither explicitly nor in the examples). For the noun *error*, the *CCED* indicates that this is often used with a preposition, and the example sentences contain the patterns *error in* + noun and *error of* + noun. In the *Valency Dictionary*, these two patterns are also given (explicitly) and both marked 'frequent', and in addition the variant + **in V-ing** (*Hewlett Packard said errors in predicting demand for its product lines depressed earnings far below analysts' expectations*) is listed, as well as the patterns **+ of N + in N/V-ing** (*The governor said that there had been errors of judgement in handling the siege*), **+ by N** (*An error by the Treasury overstated tax revenues projected over the next five years by $133 billion*), and **[it] + it-INF** (*He also said it's a political error to link events in Russia to those in Serbia*). The information on the frequency of different valency patterns is also more refined in the *Valency Dictionary*

in that many patterns are marked for their (degree of) frequency. On the other hand, phraseological units figure more prominently in the *CCED* (for instance, the collocation *the error of their ways* is listed in the *CCED* but does not appear in the *Valency Dictionary*). However, the semantic and collocational range that the lexical items realizing the different valency patterns can have receive even greater attention in the *Valency Dictionary* than in the *CCED* (which has set new standards itself in this respect). For example, for the pattern *break into* + noun (such as *run, song, grin,* etc.), the definition in the *CCED* reads as follows: 'If someone breaks into something, they suddenly start doing it.' The definition in the *Valency Dictionary* gives more detailed information on the possible nouns here, namely 'A person or animal can break into some kind of action or behaviour.' Similarly, for the verb *blow* the *CCED* lists *wind* and *breeze* as subject–verb collocations, while the *Valency Dictionary* in addition lists *draught*, *storm* and *gale*.

A further difference between the two dictionaries is the way in which the entries are constructed. Whereas in the *CCED* the principal structuring of the entries is naturally according to the different senses of the headwords, the principal structuring of the entries in the *Valency Dictionary* is according to the different patterns. The latter structure enables the user to quickly find out which sense a word is used in when it occurs in a certain pattern. (If a sense is not listed in the note block, it is given in a concise definition after the example.) In the note block, where the different senses are then listed, fewer senses are usually distinguished than in the *CCED*, since similar ones, in particular those that occur in the same patterns, are combined. This makes finding a certain sense whose patterns the user is interested in easier.

While including fewer headwords and fewer senses and phraseological units than most general and learner dictionaries, all aspects concerning valency are recorded with unrivalled meticulousness in the *Valency Dictionary*. In particular, the information on the link between patterns, meanings, and semantic and collocational range is probably unsurpassed.

As to the selection of headwords, the representation of the different word classes included in the dictionary (544 adjectives, 511 verbs, and 274 nouns) does not seem entirely justified. The proportions seem to reflect neither the relative frequency of these word classes nor the relative complexity of their valency patterns nor their potential difficulty for learners, which are the criteria for the selection of headwords given in the introduction (cf. p. xl). A number of fairly infrequent adjectives are included (e.g. *avid, foolhardy, irate*), whereas a frequent noun such as *possibility*, whose valency pattern often poses difficulties for learners, is not entered.

Due to the fairly high degree of complexity of the information presented, the *Valency Dictionary* can hardly be used without any prior consultation of the introductory matter. However, as the introduction is written in a concise and highly accessible style, the time a user needs to invest is reasonable. Unfortunately, there is one error in the introduction that might be confusing to the user: in the description of the complement inventory section, the entry from which an extract is represented (*supply*) gives 2 as the minimal valency, whereas the ensuing text explains why the minimal valency is given as 1 in this example. A helpful feature of the dictionary is that the final page

listing the many abbreviations used can be folded out and can thus be consulted at the same time as the entries. The appendix which discusses the different approaches to the dictionary is probably also only comprehensible once the introduction has been read, as it is not immediately clear what expressions such as 'pattern block' and 'note block' refer to. For the first-time user the complex pattern inventory list at the beginning of verb entries might have some deterrent effect. That this list is intended mainly for users with a theoretical interest again probably only becomes clear after consulting the introduction. What greatly contributes to the user-friendliness of the dictionary is the clear structure of the entries (with the small inconsistency that some adjective entries only have a pattern-and-examples section but no note block defining their meaning; cf. for example the entries for *eccentric, empty*, and *foolish*). It is also helpful that the division into different blocks is supported by the layout.

The level of detail recorded in the dictionary is doubtless useful for linguistically trained specialists, be they researchers or developers of teaching materials (in particular for the advanced level). For the other two groups of users envisaged in the introduction, the dictionary has a great deal to offer, too. For the non-native speaker teacher who has to mark learner writing, information on the nonexistence of valency patterns can be inferred from this dictionary (and hardly from any other available resource, except by directly consulting a corpus). Provided the word in question is listed in the dictionary, the absence of a valency pattern that a learner has used can to a great degree of certainty be taken to mean that it does not exist or is exceedingly rare (as a large amount of data was investigated and all patterns, including rare ones, found there are listed). No such thing can be inferred from a general or learner dictionary (the pattern *opportunity of -ing*, for example, is absent even from the *CCED*, although it is fairly frequent in absolute terms). For learners, the *Valency Dictionary* is not necessarily more helpful than a learner dictionary for fairly simple questions of valency such as 'Is it *avoid to do something* or *avoid doing something*?' which are mentioned in the introduction (p. vii). Such information can probably be found faster in a dictionary such as the *CCED*, where there is, in addition, usually no risk that the word the learner is interested in is not entered. For information on more complex patterns, however, the *Valency Dictionary* is probably in many cases the only resource available (again, except for a corpus). For example, if an (advanced) learner wonders whether to produce *It is plain for me that . . .* or *It is plain to me that . . .*, this information can be found here, and it can be found easily. The indications of the frequency of patterns can also be of use for the learner when choosing a pattern in production. Particularly relevant for the learner is the detailed and well-presented information on the semantic and collocational range of the lexical items with which certain patterns can be realized, as this is one of the areas that even very advanced learners often have difficulty with. A feature particularly helpful for the language learner and probably unique to the *Valency Dictionary* is the possibility of directly looking up what a word means when it occurs in a particular pattern. For example, if a learner is uncertain about the meaning of the verb *set* in a sentence such as *[T]he UK fast food market is set to continue growing* (BNC, A0C 144), the identification of the relevant pattern under *set* (**set + to-INF**) leads directly

to a brief definition, 'be certain or likely to'. For learners, the dictionary is therefore not only useful for production (as stated in the introduction, cf. p. vii) but also for comprehension.

The *Valency Dictionary of English* clearly fills a gap in the large body of lexical reference works available for the English language. The small investment of time necessary before it can be put to effective use is worthwhile not only for linguists, but also for non-native teachers and advanced learners of English.

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References

Collins Cobuild grammar patterns 1: verbs (1996). London: HarperCollins.
Collins Cobuild grammar patterns 2: nouns and adjectives (1998). London: HarperCollins.
Collins Cobuild English dictionary (1995). London: HarperCollins.

(Received 25 February 2005)

doi:10.1017/S1360674305241771

Laura Rupp, *The syntax of imperatives in English and Germanic: word order variation in the minimalist framework*. Basingstoke: Palgrave Macmillan, 2003. ISBN 0 3339 9342 X.

Reviewed by Chung-hye Han, Simon Fraser University

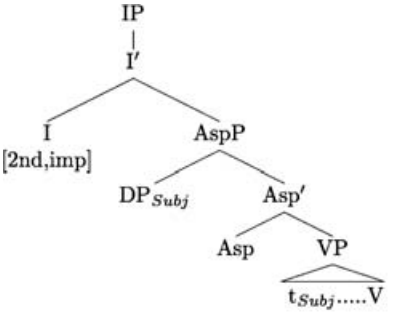
This work contains a clear exposition and a sound analysis of various syntactic properties of the English imperative within the framework of the Minimalist Program. While the bulk of the work is centred on English, the book contains one chapter outlining some of the properties of imperatives in other Germanic languages, hence providing a comparative perspective that adds to the depth and breadth of this book. In this review, I outline the main arguments and the proposal of the book, interleaved with critiques on some of the points.

Rupp begins this book with a summary of some of the basic tenets of the Minimalist Program that are most relevant to understanding her proposed analyses. In the same chapter, she outlines the data and syntactic properties of the English imperative to be examined in subsequent chapters.

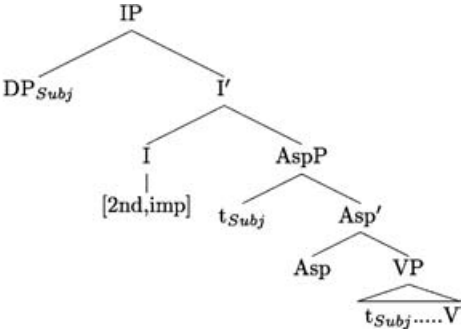
In chapter 2, Rupp looks into the clause structure of the English imperative, and proposes that the English imperative is an IP structure, not a CP structure, with a

functional projection, most likely an Aspect Phrase (AspP), between IP and VP, as represented in (1).

(1)(a)



(b)



She postulates that INFL in the English imperative clause structure may be specified with agreement features (though she changes her position in chapter 7), presenting facts from Early Modern English as supporting evidence: the imperative verb was inflected for number and the imperative subject was inflected for nominative case. Rupp also places a force feature [imp] in INFL, following an idea from Belletti & Rizzi (1996). She notes that an imperative is never introduced by an overt complementizer, even when introduced as an indirect speech complement (e.g. *The judge said [(*that/*for) hand over my driving license!]*), and takes this to mean that the imperative clause structure does not project C. The main motivation for the presence of AspP in the clause structure of the imperative comes from imperatives with aspectual *have/be* (e.g. *Be waiting for me on the corner at six!, Have seen The Full Monty before you die!*). Following a series of recent work on aspectual auxiliaries, Rupp places *have/be* in Asp. This chapter also addresses why negative imperatives with *have/be* require do-support (e.g. *Do not be working when I get back!*), unlike negative declaratives with *have/be* (e.g. **You did not be working when I got back, You were not working when I got back*). Rupp speculates, using Rohrbacher's (1994) proposal that in Old English there were two paradigms of *be*, that *have/be* is generated under INFL in finite declaratives, but generated under Asp with no further movement to INFL in imperatives. Under this analysis, *do*-support is required in negative imperatives with *have/be* because features in INFL need to be supported, just as in negative declaratives with main verbs. This approach places the source of the different syntactic behavior of *have/be* in imperatives and declaratives in the auxiliaries themselves, and leaves unanswered the question why different types of auxiliaries are used in the two types of clauses. Another approach, which the author did not explore, is to place the source of the difference in the feature content of INFL. For example, in Han (2000), it is proposed that the presence/absence of a tense feature in INFL explains the difference in the syntactic behavior of *have/be* in the two types of constructions: in negative declaratives, the tense feature in INFL attracts *have/be*, hence no *do*-support is necessary, whereas in negative imperatives,

INFL lacks any tense feature, *have/be* cannot be attracted to INFL, and so *do*-support is required.

Chapter 3 begins with a clarification that except for first-person pronouns (e.g. **We/*I go home!*), practically all sorts of DPs, quantifiers, indefinites, partitives, definite phrases, bare noun plurals, proper nouns, and even third-person pronouns, are possible as the subject of the English imperative, given the right context. She argues that these DPs are not vocatives and presents various supporting arguments that they have the syntactic status of regular subjects: for example, no intonational break is necessary between these DPs and the rest of the sentence, DPs that clearly cannot be vocatives occur in imperatives (e.g. *Nobody make a move!*), they can be passivized (e.g. *Don't anyone be caught speeding!*), and can participate in raising (e.g. *You just appear to be sick when your wife comes in!*) and subject control (e.g. *Don't you forget to check the locks before going home!*). In the same chapter, Rupp also argues that imperatives without a lexical subject still have a phonetically null but syntactically active subject, and that the syntactic status of this covert subject is *pro*. She argues that even though English does not allow *pro* in other contexts, given its weak agreement, *pro* is allowed in imperatives because it can be identified. Rupp considers two possible approaches to the restrictions (or nonrestrictions, rather) on admissible subjects in imperatives and how imperative *pro* can be identified: a semantic/pragmatic and a morphosyntactic one. As in Potsdam (1998), given that the semantics/pragmatics of imperatives dictates that they be directed at one or a number of addressees to get them to bring about an event, only DPs that can be ascribed some addressee interpretation are acceptable subjects in imperatives. Further, imperative *pro* can be identified as the addressee because this is part of the meaning of imperatives. Alternatively, as in Zhang (1990) and Henry (1995), it could be that the imperative INFL is specified with [second], but not [first] and [third], identifying imperative *pro* as second person. And DPs that can either morphosyntactically or semantically agree with [second] in INFL are acceptable subjects, where semantic agreement allows third-person DPs with addressee interpretation. She defers deciding on this issue until chapter 7 when she considers how imperative subjects behave in other Germanic languages. It seems to me that neither approach, however, gives a satisfactory answer to why first-person subjects are not possible in imperatives. As the author herself points out, the fact that hortatives (e.g. *Let's go to the beach!*) exist with first person suggests that the unavailability of first-person subject in imperatives does not quite follow from semantics/pragmatics. Moreover, if third person DPs can semantically agree with [second] in INFL, it is not clear why first-person pronouns can't behave in this way.

Chapters 4 and 5 investigate the syntax of *don't*-imperatives, such as *Don't you try again!* and *You don't try again!*, and address the issue of why *do*-support is necessary even though imperatives are not tensed and where in the clause structure *don't* and the subject are located. Rupp thoroughly evaluates previous studies that propose that *don't* occurring in imperatives is special in one way or another, and identifies problems with each one of them. Rupp says that *do* in imperatives is nothing other than a last resort auxiliary inserted in INFL for feature checking, in negative and emphatic

contexts, as was argued in Potsdam (1998). But unlike Potsdam, she argues that *do* is inserted in INFL in imperatives, and does not go any higher than that in the phrase marker. Potsdam and others argue that subject–aux inversion in imperatives, as in *Don't you try again!*, is derived through the movement of the auxiliary to C, just as in the CP structure of interrogatives. Rupp, however, provides a few arguments against the CP-analysis: first, while *do* is obligatory in positive interrogatives, it is not so in affirmative imperatives, except in emphatic contexts (e.g. *DO YOU try again!, DO AT LEAST YOU have a go, even if the others won't!*); second, unlike in interrogatives, imperatives with a subject intervening between *do* and *not* are impossible (e.g. **Do you not try again!*); third, neg-inversion (e.g. *On no account should they open the door*), which is standardly assumed to involve a movement of a negative constituent to [Spec,CP] and I-C movement, is impossible in imperatives, and Rupp attributes this to the nonavailability of a CP projection in imperatives; fourth, in examples like *Don't everyone expect a raise!*, only a *not>every* reading is available, but adopting Hornstein's (1995) approach to scope-taking, if the subject raises from a VP-internal to a VP-external position and *don't* raises from INFL to C, then we would expect scope ambiguity because Neg could be interpreted in C or I and the subject could be interpreted in a VP-internal or VP-external position. It seems to me that none of these points are knock-down arguments against the CP-analysis. As for the first argument, it may not be so strange that C in imperatives does not force obligatory movement given the behavior of INFL in declaratives. In declaratives, it is standardly assumed that INFL attracts auxiliary *have/be*, but not main verbs. C in imperatives could be like this. It could be attracting whatever is under INFL, namely *do* in negative and emphatic imperatives, but not *have/be* which is in Asp or main verbs that are in V. This was the analysis laid out in Han (2000). As for the second argument, imperatives like *Do you not try again!* were possible in Early Modern English (Ellegård, 1953). Given this, it might be plausible to provide a pragmatic or prosodic explanation as to why such imperatives are not possible in Present-day English, as suggested in Davies (1986) and Han (2000). Third, the fact that imperatives cannot participate in neg-inversion is evidence for a CP-analysis, rather than against it. If imperatives are IP projections, then they are like declaratives, and so we should expect neg-inversion to be possible in imperatives, just as in declaratives. Also, as the author notes, interrogatives do not participate in neg-inversion either. So, if imperatives are CP projections, then we can say that whatever blocks neg-inversion in interrogatives is in play in imperatives as well. Fourth, it is standardly assumed that negation does not reconstruct in general, as shown in Potsdam (forthcoming) (e.g. *Didn't everyone get a raise?, Only on Fridays doesn't everybody come*). Hence, the restricted scope fact in inverted imperatives is not a strong argument against the CP-analysis.

Under the assumption that *don't* is in INFL, Rupp further argues that '*don't*-subject' order is derived by movement of the subject from [Spec,VP] to [Spec,AspP], as in (1a), and '*subject-don't*' order is derived by movement of the subject from [Spec,VP] to [Spec,IP], as in (1b). She ends this chapter by raising the question of how the proposed optionality in subject placement can be accounted for within the Minimalist framework and returns to this issue in chapter 8.

Chapter 6 addresses the constrained use of *not* in imperatives. While *not*-imperatives with a clause-initial subject (e.g. *Somebody do not desert me!*), or covert subject (e.g. *Do not desert me!*) are possible, those with an inverted subject are not (e.g. **Do you not desert me!*). Further, in some cases, the subject can follow *not* (e.g. *Do not ALL of you desert me!*). Noting that the CP-analysis incorrectly predicts examples like *Do you not desert me!* to be possible, Rupp says that in her analysis, *do* is in INFL and *not* projects NegP between INFL and Asp, and so the '*do*-Subject-*not*' order simply cannot be derived. She also says that '*do-not*-Subject' order (e.g. *Do not you desert me!*) is generally ruled out because NegP, which is below IP, blocks nominative case checking between INFL and the subject in [Spec,AspP], and in cases that show '*do-not*-Subject' order (e.g. *Do not ALL of you desert me!*), *not* is a constituent negation on the subject, rather than sentential negation. Further, in *not*-imperatives with a clause-initial subject or covert subject, the subject is in [Spec,IP], and from there nominative case checking is done in a Spec-head configuration with INFL. This analysis however raises a question as to why '*don't*-Subject' imperatives are possible (e.g. *Don't you desert me!*). If *n't* also heads a NegP, then case-checking between INFL and the subject in [Spec,AspP] should be blocked, just as in '*do-not*-subject' order. To address this, Rupp clarifies her view on *n't*, and says that *n't* is an inflection on the auxiliary, not an independent Neg head, and forms like *don't* are unitary elements in the lexicon, which get inserted into INFL directly. This raises more questions though. If Rupp's analysis of *n't* is correct, then we would expect other verbs to be able to enter the derivation already inflected with *n't*. The restricted occurrence of *n't* on auxiliary verbs requires an explanation. Also, Rupp has been assuming that *do*-support is triggered when a head hosting negation or an emphatic element intervenes between INFL and V. If *n't* is not a head of its own, then the trigger for *do*-support in this case needs to be explained.

Chapter 7 examines subject properties of other Germanic languages, in comparison to English. Rupp notes the following differences between Dutch and English: (i) verbs are marked for [second] person in Dutch imperatives but not in English, (ii) [third] person DPs that can be understood as the addressee(s) may be used as the subject of English imperatives, but not in Dutch, and (iii) the position of the subject can vary in English imperatives, but it is fixed in [Spec,IP] in Dutch. Based on these differences, Rupp concludes that in Dutch imperatives, INFL is specified with [second] feature, but in English, INFL lacks phi-features altogether. So, in Dutch, *pro* is restricted to [second] person. Using [third] person DPs as subjects results in a feature mismatch, causing the derivation to crash, and the subject must be placed in [Spec,IP] to check subject–verb agreement. In English, with INFL lacking phi-features, subject properties are determined by the semantics/pragmatics of the imperative: *pro* is always the addressee, third-person DPs are possible as subjects as long as they denote the addressee(s), and subjects need not occur in [Spec,IP] because there are no phi-features to check in INFL, and the variation in the subject position correlates with variation in discourse functions. Accordingly, Rupp then formulates the [Agr] hypothesis: '(a) where imperatives are [+Agr], we only find grammatically 2nd person subjects and subject position is fixed; (b) where imperatives are [−Agr], we find subject DPs other than 2nd person and subject position may vary' (p. 151). She then tests this hypothesis against a number of

Germanic languages. She shows that while German showed somewhat mixed behavior, Belfast English patterns as a [−Agr] language, whereas West Flemish and Danish pattern as [+Agr] languages. A prediction emerges from Rupp's [Agr] hypothesis, which would be interesting to test. Given that Early Modern English imperatives had number agreement, it would be classified as a [+Agr] language. If so, the subject property of earlier English should pattern like Dutch, West Flemish, and Danish.

Rupp concludes this book with her thoughts on optional movement and how it meshes with the notion of Economy and Last Resort within the Minimalist framework. The proposed subject placement for English imperatives raises several questions: what forces subject movement to [Spec,AspP]? Why is subject movement to [Spec,IP] not obligatory? What allows subject movement to [Spec,IP]? Economy and Last Resort dictate that if there is an EPP feature in INFL, subject movement to [Spec,IP] should be obligatory, and if there is no EPP feature, subject movement is unmotivated, so must not occur. Does this then mean that an EPP feature is optionally present in imperative INFL? Rupp does not think Asp can host an EPP feature, and leaves the question as to why the subject moves to [Spec,AspP] as an open problem. As for the question as to why subject movement to [Spec,IP] is not obligatory, she speculates, following an idea from Platzack & Rosengren (1997), that this may have something to do with the fact that imperatives do not have truth values, unlike declaratives. She says that the fact that imperatives do not have truth values means that they do not constitute a proposition, which in turn means that they need not instantiate predication through placing the subject in [Spec,IP]. But then this raises the issue of why subjects are standardly assumed to be in [Spec,IP] in questions, even though they don't have truth values either. Further, even though imperatives cannot be assigned a truth value in the current world, they still have propositional content, which is true or false in some possible world. So it seems to me that imperatives still call for an instantiation of predication. Perhaps, this can be connected to why the imperative subject needs to move to [Spec,AspP]. As for the optionality of subject movement to [Spec,IP], Rupp appeals to Reinhart's (1995) interface economy, which permits a formally less economical derivation to achieve a certain interpretative goal that would not arise had displacement not been applied, and argues that the two positions for the subject, [Spec,AspP] and [Spec,IP], correspond to two different interpretative effects. With this approach, optionality in the subject placement is only apparent, and is conditioned by semantic/discourse or prosodic considerations. The question of optionality in subject placement arises not only in Rupp's IP analysis but also in other competing analyses. While the syntactic characterization of this optionality may vary across these analyses, Rupp's suggestion that this optionality is really an issue of the interface between the syntax and interpretive components is applicable to any analysis.

To conclude, this book has a commendable empirical coverage, comprising data from Early Modern English as well as other Germanic languages. The review and critique of previous work on imperatives is thorough and extensive, and the proposed analysis raises many interesting questions that any theoretical framework would have

to address. It makes a valuable contribution not only to the area of imperatives but also to the area of clause structure in general.

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References

Belletti, A. & L. Rizzi (1996). Introduction. In *Parameters and functional heads: essays in comparative syntax.* Oxford: Oxford University Press. 3–10.
Davies, E. (1986). *The English imperative*. London, Sydney, and Dover, NH: Croom Helm.
Ellegård, A. (1953). *The auxiliary do: the establishment and regulation of its use in English*, volume II of *Gothenburg Studies in English*. Göteborg and Stockholm: Almqvist, Wiksell.
Han, C. (2000). *The structure and interpretation of imperatives: mood and force in universal grammar*. Outstanding Dissertations in Linguistics. New York: Garland.
Henry, A. (1995). *Belfast English and Standard English: dialect variation and parameter setting.* Oxford: Oxford University Press.
Hornstein, N. (1995). *Logical form: from GB to minimalism.* Oxford: Blackwell.
Platzack, C. & I. Rosengren (1997). On the subject of imperatives: a minimalist account of the imperative pronoun and negated imperative. *Journal of Comparative Germanic Linguistics,* **1**: 177–224.
Potsdam, E. (1998). *Syntactic issues in the English imperative*. Outstanding Dissertations in Linguistics. New York: Garland.
Potsdam, E. (forthcoming). Analysing word order in English imperatives. In *Imperative clauses in generative grammar: studies offered to Frits Beukema.* Amsterdam: John Benjamins.
Reinhart, T. (1995). Interface strategies. In *OTS Working Papers in Linguistics.* OTS/Utrecht University.
Rohrbacher, B. (1994). The Germanic VO languages and the full paradigm: a theory of V to I raising. PhD thesis, University of Massachusetts, Amherst.
Zhang, S. (1990). The status of imperatives in theories of grammar. PhD thesis, University of Arizona.

(Received 28 June 2005)