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REVIEWS

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Jay David Atlas, *Logic, meaning, and conversation: semantical underdeterminacy, implicature, and their interface*. Oxford: Oxford University Press, 2005. Pp. xv + 284.

Reviewed by Claudia Bianchi, San Raffaele University

Jay David Atlas is well known for his work on presupposition and negation. *Logic, meaning, and conversation*, his second book after *Philosophy without ambiguity* (1989), is the result of a long gestation (which is summarised in lively fashion in the preface), following its inception at the Second European Summer School on Language, Logic, and Information, held in Leuven in 1990. The original lessons have been reworked for over fifteen years, but the text maintains some of the qualities and weaknesses of a seminar: it is fresh and informal, but too often repetitive and occasionally ill-structured. Paradoxically, however, the book's major shortcoming is its publication date of 2005. The consultation of the literature evidently ended much earlier, and there are no references beyond the year 2000 – a particularly serious drawback in a domain that in the last five years has produced an enormous amount of experimental work as well as theoretical analysis.

The volume has the general aim of examining 'the relationship between literal sentence-meanings and utterance-interpretations, where the interpretation derives in part from a form of inference that is both reliable and hermeneutic – *generalised conversational inferenda*' (30). Atlas revises and extends Grice's account of generalised conversational implicatures to an account of generalised interpretative inference – a form of 'inference to the best interpretation' (Atlas & Levinson 1981: 50). However, the author explicitly distances himself from Grice's ambition of pursuing a neo-Kantian investigation 'on the conceptual possibility of any future pragmatics of language' (x).

In chapter 1, 'Semantical underdeterminacy', the notion of semantical nonspecificity is introduced (relying heavily on Atlas 1975 and 1989) and applied to the classical problem of metaphor. Chapter 2, 'Grice's theory of conversational inference: a critical exposition', is devoted to an accurate critical evaluation of Grice's views. According to Atlas, Grice's theory requires revision in two directions: (i) while Grice was concerned with the role of inference in implicit communication, Atlas claims that pragmatic inference is also required for the explicit side of communication, the level of

'what is said'; (ii) Grice's maxims of conversation give a descriptively and explanatorily inadequate account and allow overgeneration of implicatures that are logically contradictory. In chapter 3, 'The rise of neo-Gricean pragmatics', Atlas discusses several neo-Gricean accounts, including Stephen Levinson's, Laurence Horn's, Yan Huang's and his own – all of which are devoted to a revision of Grice's maxims of conversation. In chapter 4, 'The post-Gricean theory of presupposition', Strawson's and Frege's theories of presupposition are criticised, and a reduction of presupposition to entailment and Gricean implicatures is outlined. In chapters 5 and 6, Atlas presents two applications of his account. While chapter 5, 'Assertibility conditions, implicature, and the question of semantic holism: *almost but not quite*', is concerned with comparative adjectives, equatives, adverbials of degree and adverbial approximatives, chapter 6, 'The third linguistic turn and the inscrutability of literal sense', provides a treatment of numerical adjectives, where the author argues that a numerical adjective has a determinate meaning only in the context of a noun phrase. The book concludes with four appendixes, devoted to (i) Moore's use of the term *imply*, (ii) Hitzeman's analysis of *almost*, (iii) the semantics and pragmatics of cleft sentences, and (iv) notation.

Atlas' starting point is the early 1970s and the revision of the Gricean notion of implicature, and the project evolves gradually towards a general theory of the role of inference in communication. With Grice, and with most contemporary pragmatic scholars, he shares the view that comprehension is partly inferential. However, he departs from Grice's account in two respects: (i) by arguing that pragmatic inference is also required for explicit communication (and not only for resolving ambiguity or determining indexical reference as in the Gricean framework); and (ii) by revising Grice's maxims of conversation – that is, the expectations guiding the comprehension process. Let us examine these two points in detail.

According to Grice, if we abstract from ellipsis, ambiguity and indexicality, it is possible to attribute truth conditions to a sentence independently of its context, that is, by virtue of its meaning alone. Hence, we must distinguish between the proposition literally expressed by an utterance ('what is said' by the utterance, its literal truth-conditions) and the implicit meaning of the utterance ('what is communicated' by a speaker using the utterance) – the former is the object of semantics, the latter the object of pragmatics. Over the past thirty years, however, linguists and philosophers have started to stress the phenomenon of SEMANTIC UNDERDETERMINATION, that is, the fact that the encoded meaning of the linguistic expressions employed by a speaker underdetermines the proposition explicitly expressed by the utterance. Pragmatic inference contributes to explicit content – even after disambiguation and reference assignment. On this point, agreement among most pragmatic scholars is more or less established. Far less consensus surrounds the analysis of the SEMANTIC level of 'what is said' and the status of

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the PRAGMATIC contributions of the proposition expressed. There is a wide variety of positions. According to literalism, sentences encode something close to full propositions. Neo-Griceans (such as Atlas himself, Levinson and Horn) think that all the pragmatic effects at the semantic level must be construed as a form of generalised implicature, acting locally and by default. These inferential processes are pragmatic, but are triggered by particular lexical expressions or constructions, such as *some*, *and*, *if*, *not*, etc. Post-Griceans (relevance theorists and contextualists like François Recanati) see sentence meaning as too schematic and incomplete to determine a full proposition. Recanati argues for the existence of pragmatic constituents of the proposition expressed by an utterance, that is, for constituents that do not correspond to any syntactic or semantic element of the utterance ('inarticulated constituents'). Relevance theorists, on the other hand, abandon the traditional distinction between generalised and particularised implicatures, and claim that all implicatures are triggered as a matter of contextual relevance – neither by default nor by the presence of certain lexical items.

Given that a central task of semantics is to provide a systematic account of our intuitions concerning meaning, truth, entailment, contradiction and so on, the distinction between 'what is said' and 'what is implicated' is of major philosophical interest. For this reason, neo-Griceans focus on generalised conversational implicatures, which are standardly or normally (i.e. in the absence of a particular context) carried by the use of a certain expression or construction, and depend very little upon particular contextual features. According to Atlas, 'what is said' is usually less informative – in other words, less PRECISE and less SPECIFIC – than 'what is communicated', and must thus be enriched by generalised conversational inference. The source of semantical nonspecificity may be lexical or phrasal. Atlas claims that words like *neighbour*, *take* or *some*, phrases like *John's book*, and sentences like *Kurt went to the store and bought some wine* are semantically underdeterminate, that is, semantically non-specific with respect to either a semantic feature, a constituent or a structure. He also argues that there is a general principle that licenses an inference from 'what is said' to 'what is communicated'. Inferential comprehension is guided by expectations about the behaviour of the speaker, which are mainly expectations about informativeness, spelled out in Atlas' maxims of relativity.

Atlas has the huge merit of providing an account that is both descriptively adequate for a wide range of classical linguistic phenomena and respectful of theoretical economy. To use the author's slightly immodest words, '[n]o competing linguistic theory or philosophical account has these predictive virtues with such modest theoretical commitments and with such empirically verifiable constructs' (117). Such a bold statement, however, should be supported by a more careful review of the alternative theories on the market nowadays. As mentioned earlier, many scholars today agree that the level

of 'what is said' must be supplemented by pragmatic processes, variously labelled saturation, completion, free enrichment or strengthening. We may easily point to at least half a dozen different accounts of this enriched level of 'what is said': the indexicalist view held by Jason Stanley and Zoltán Gendler Szabó, the neo-Gricean accounts examined by Atlas, the syncretic view, defended by Kent Bach, and radical contextualism, advocated by Recanati and, in a different version, by relevance theorists. It is hard to claim, for example, that relevance theory does not provide a theory as descriptively adequate as Atlas' own. Indeed, it could be argued that relevance theory has a broader scope (including particularised conversational implicatures, about which neo-Griceans have traditionally had little to say) and even fewer theoretical commitments (only the Principle of Relevance).

Disagreement between neo-Griceans such as Atlas, moderate contextualists (such as Bach) and radical contextualists mainly concerns whether it is necessary to postulate a minimal notion of 'what is said' apart from the enriched level. Post-Griceans maintain that this minimal level cannot be SPEAKER-MEANT, that is, it does not correspond to our pre-theoretical intuitions as to 'what is said':

> The view that 'saying' is a variety of nonnatural meaning entails that what is said (like what is meant in general, including what is implied) *must* be available – it must be open to public view … 'what is said' must be analysed in conformity to the intuitions shared by those who fully understand the utterance – typically the speaker and the hearer. (Recanati 2004: 48f.)

In recent years, the new field of experimental pragmatics has developed in an extraordinary way. Linguistic intuitions and philosophical analyses are strengthened, contradicted or fine-tuned in the light not only of intuitions and collection of linguistic data, but also of experimental evidence (see Noveck & Sperber 2004 for a recent representative review). Scalar implicatures are an interesting case in point. According to neo-Griceans, such implicatures typically contribute to an enrichment of sentence meaning. They are automatically associated with the use of a weak term (e.g. *some*), producing a more informative meaning (e.g. *some but not all*), and only afterwards, when checked against a particular context, may they be cancelled. Relevance theory contends that scalar implicatures are not drawn through default inferences triggered by the mere presence of a particular term. Instead, it holds that they are just ordinary inferences driven by the hearer's expectations of relevance. It has now been proposed to test the predictions of the two accounts via experimental research. The general idea is that a treatment of scalars in terms of default inferences would predict that the first competent and measurable interpretation is the more informative one (*some but not all*). Experimental findings, however, seem to exclude the possibility that *some* has a default interpretation of *some but not all*, supporting the relevance theory account. In terms of time course, the earliest

treatment of *some* is the minimal reading (*some and possibly all*) (see Noveck 2004).

Such considerations notwithstanding, this is an extremely rich and fascinating book, challenging much received wisdom, and packed with suggestions and innovative analyses of classical phenomena, including scalar and clausal implicatures, asymmetric conjunction, conditional perfection, bridging, definite descriptions, coreference, comparative and numerical adjectives, and negation. Its major value is that of providing an elegant framework within which the descriptive inadequacy of Grice's account may be dealt with. Moreover, it has the indisputable advantage of bringing together an inferential view of comprehension with a conception of meaning that is compatible with formal semantics and generative grammar.

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Andrew Barss (ed.), *Anaphora: a reference guide* (Explaining Linguistics). Oxford: Blackwell, 2003. Pp. xii + 288.

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Anaphora is at the centre of research on the interface between syntax, semantics and pragmatics in linguistic theory. It is also a key concern of psycholinguistics and computational linguistics, and of work on the philosophy of language and on the linguistic component of cognitive science. As pointed out in Huang (2000: 1; 2004), it has aroused this interest for three main reasons. In the first place, anaphora represents one of the most complex phenomena of natural language, and as such is the source of a host of fascinating problems. For example, whereas English in general does not

allow the dropping of a pronoun from the subject position of a tensed clause, Bani-Hassan Arabic, Italian and Modern Greek do. Other problems concern the fact that in many West African languages, the reporting of the perspective of an internal protagonist of the sentence or discourse requires the use of a special, logophoric pronoun, and that both Chinese and Japanese place restrictions on long-distance reflexivisation but differ in the type of blocking effect that they exhibit. Secondly, anaphora has long been regarded as one of the few 'extremely good probes' (Chomsky 1982: 23) in furthering our understanding of the nature of the human mind, and thus in facilitating an answer to what Chomsky considers to be the fundamental problem of linguistics, namely, the logical problem of language acquisition. In particular, certain aspects of anaphora have repeatedly been claimed by Chomsky to present evidence for the argument that human beings are born equipped with some internal, unconscious knowledge of language, known as the language faculty. Thirdly, anaphora has been shown to interact with syntactic, semantic and pragmatic factors. Consequently, it has provided a testing ground for competing hypotheses concerning the relationship between syntax, semantics and pragmatics in linguistic theory.

Given all this, Andrew Barss has done linguistics and its related fields a good service by putting together a collection of papers that address a number of important issues in the study of anaphora. The major selling point of the book under consideration is twofold. First, the articles contained in the volume are of high quality overall. Despite a certain unevenness (which is to be expected in a collection like this), most of the contributions in the book are cogently argued, insightfully written and sure to become the basis for further inquiry and research. Secondly, the book represents a welcome attempt to relate linguistics to cognitive science, thus helping to shed new light on our quest to attain a better understanding of human cognition.

The book consists of eight chapters. Chapter 1, 'Timing puzzles in anaphora and interpretation', by Andrew Barss, puts forward a model of the syntax–semantics mapping. According to this model, the semantic representation for a sentence is computed incrementally in the course of its syntactic derivation. The parallel process of syntactic and semantic computation obeys two conditions: a constraint on earliness of semantic interpretation (following Pesetsky's (1989) Earliness Principle) and a constraint on dependency formation. Barss argues that his parallel model can account for a number of timing puzzles in referential and bound-variable anaphora as well as for other phenomena, such as head scope, adverbial modification and strict cyclicity for *wh*-movement. Barss' incremental semantics model, if correct, has important implications for Chomsky's Minimalist programme.

The topic of the next chapter is scrambling in Japanese. In 'Two types of scrambling in Japanese', Ayumi Ueyama divides the Japanese Object–Subject (OS) construction, known as the 'scrambling construction', into what she calls the Deep OS-type and the Surface OS-type. Based on a number

of new observations, her main argument is that, contrary to earlier analyses, the Deep OS-type construction, which shows A-chain properties, is base-generated and does not involve movement.

Janet L. Nicol & David A. Swinney's chapter is concerned with 'The psycholinguistics of anaphora'. More specifically, they focus on the processing of intrasentential anaphora, especially of intrasentential reflexives and pronouns during language comprehension. They note that the processing of these anaphoric expressions in auditory contexts differs from that in visual contexts. With the auditory data, the appearance of a reflexive or pronoun initiates the search for its antecedent immediately. The initial establishment of a set of potential antecedents for the anaphoric expression is subject to syntactic constraints like Chomsky's binding conditions. The subsequent selection of one out of the set of structurally possible antecedents involves morphological, semantic and pragmatic factors. Nicol & Swinney's analysis works well for English, where a reflexive is normally bound in its local domain. However, if the data were drawn from a long-distance reflexivisation language like Chinese, Icelandic or KiNande, their account would be seriously challenged. This is because in such languages, the initial establishment of a set of potential antecedents for a reflexive does not abide even by a parameterised and/or expanded version of Chomsky's binding condition A.

Dana McDaniel's chapter, 'Two pronominal mysteries in the acquisition of binding and control', similarly has a psycholinguistic focus. The first of the two 'mysteries' is the so-called 'Principle B lag', which refers to children's failure to observe Chomsky's binding condition B on a variety of tasks. Having considered a number of previous analyses of the lag, McDaniel offers her own explanation, which is largely phonological: the violation of binding condition B is attributed to children's lack of phonological knowledge about emphatic stress. But note that a neo-Gricean pragmatic account of this phenomenon is also possible, according to which the binding condition B pattern is subject to a general neo-Gricean inferential law like Levinson's (2000) Q-principle.

(1) *Levinson's Q-principle* (simplified)
Speaker: Do not say less than is required.
Addressee: What is not said is not the case.

The basic idea of the Q-principle is that the use of a semantically weaker expression (e.g. *some*) in a set of contrastive semantic alternates Q-implicates the negation of the interpretation associated with the use of the semantically stronger expression (e.g. *all*) in the same set. This has the consequence that in the domain of reference, a Q-implicature will arise if a semantically weaker pronoun rather than the semantically stronger reflexive is employed. The implicature in question will be that no coreference is intended by the speaker, which in turn explains the binding condition B pattern. Thus, on such a

neo-Gricean pragmatic account, the reason why children fail to interpret the binding condition B pattern correctly is because they have not yet mastered the Q-principle.

McDaniel's second mystery involves the problem known as the 'Pronoun Coreference Requirement'. This has to do with the phenomenon whereby children systematically interpret the pronoun *he* in a sentence like (2) as referring sentence-internally, on a par with the interpretation of the non-arbitrary PRO in a control adjunct like (3).

(2) Grover kisses Big Bird before he jumps over the fence.
(3) Grover kisses Big Bird before PRO jumping over the fence.

McDaniel's speculation is that the Pronoun Coreference Requirement may eventually be accounted for in terms of the interaction between grammatical and discourse factors.

In chapter 5, 'Reference transfers and the Giorgione problem', Mario Montalbetti discusses a puzzle that was discovered by medieval grammarians and reintroduced by the philosopher W. V. O. Quine. It can be illustrated with a sentence like (4), where the particle *so* refers to the name *Giorgione*, and the pronoun *his* refers to whatever individual *Giorgione* refers to.

(4) Giorgione was so-called because of his size.

Of further interest is how these Giorgione sentences interact with syntactic phenomena. For example, they allow for a sloppy reading; that is, (5) can be interpreted as 'Giorgione was called Giorgione because of Giorgione's size and Pepino was called Pepino because of Pepino's size'.

(5) Giorgione was so-called because of his size and Pepino was too.

This indicates that *so* has to be analysed as a bound variable. Montalbetti proposes that the Giorgione problem, as shown in (4), be treated as follows: Giorgione is coerced by the predicate *called* to shift from the individual to his name, and the name is referred to by the particle *so*. The anaphoric pronoun *his* is free to refer back to the unshifted referent Giorgione. Interpreting the Giorgione sentences as a case of deferred ostension or referential shift, Montalbetti is of the view that the analysis can be generalised to a variety of classic examples of reference transfer. While I find Montalbetti's account quite convincing, what is missing in his analysis is a discussion of how Giorgione is PRAGMATICALLY shifted from the individual to his name (see, for example, Recanati 2003 and Huang 2006 for discussion of the pragmatics of semantic/reference transfer).

In chapter 6, 'Tense and anaphora: is there a tense-specific theory of coreference?', Karen Zagona provides a negative answer to the question in the title. In other words, according to Zagona, there does not exist a separate, tense-specific theory that licenses and construes tense. On the basis of a careful examination of temporal dependencies in a range of syntactic constructions,

she concludes that some of the referential dependencies between times fall under the standard constraints of Chomsky's binding theory; others, such as sequence of tense, are the outcome of the interaction between, for instance, aspect and mood.

In chapter 7, 'Surface and deep anaphora, sloppy identity, and experiments in syntax', drawing on data from Japanese and English, Hajime Hoji conducts a set of syntactic experiments to substantiate his claim that the sloppy construals of surface and deep anaphora are of a different character. With surface anaphora (e.g. an empty verb phrase in verb phrase ellipsis), the sloppy reading can only be formed syntactically, that is, by means of the language faculty; with deep anaphora (e.g. *do it*), it can be expressed pragmatically, that is, at a non-linguistic conceptual level without the involvement of the language faculty. It would be of interest to see if and how the distinction made by Hoji can shed new light on some of the questions that have been central to the study of verb phrase ellipsis (see, for example, Lappin & Benmamoun 1999 for a list of such questions).

The final chapter, by D. Terence Langendoen & Joël Maglore, 'The logic of reflexivity and reciprocity', takes up the logical properties of a number of reflexive and reciprocal constructions in plural contexts. The various types of reflexive and reciprocal sentences that they examine include (i) those with reflexive one-place predicates, as in (6); (ii) those with reflexive two-place predicates, as in (7); (iii) those with reciprocal one-place predicates, as in (8); (iv) those with reciprocal two-place predicates, as in (9); (v) those with 'hypo-reciprocal' two-place predicates, as in (10); and (vi) those with 'reciproco-reflexive' two-place predicates, where the reflexive/reciprocal distinction is neutralised, as in (11).

(6) John and Bill are shaving.
(7) Anna and Bob are in love with themselves.
(8) Anna and Bob disagree.
(9) Anna and Bob are looking at each other.
(10) Anna and Bob are lying on top of each other.
(11) Chłopcy rozmawiali ze sobą. (Polish; Huang 2000: 101)
boys-NOM talked with self/each other
'The boys talked with themselves/each other.'

In these constructions, reflexivity/reciprocity is encoded overtly by an anaphor in (ii), (iv), (v) and (vi) (examples (7), (9), (10) and (11), respectively), but expressed covertly by incorporation into a one-place predicate in (i) and (iii) (examples (6) and (8)). As noted in Huang (2000: 101f.), the use of the same form for reflexives and reciprocals as in type (vi) – be it a (grammaticalised/lexicalised) noun, a verbal affix, a particle or a preposition – is found in a range of the world's languages as genetically distinct and structurally diverse as Bardi, Maxakali and Spanish. From a geographic point of view, this polysemous pattern appears to be particularly

widespread in African and Australian aboriginal languages. In their chapter, Langendoen & Maglore show rather convincingly that the logical properties of the various reflexive/reciprocal constructions can largely be accommodated by the interaction of three factors: an account of plural antecedents, an account of plural predicates, and an account of the morphological form (overt/non-overt realisation) of the reflexive/reciprocal. The chapter is an excellent piece of work. However, the authors have missed one pattern in the marking of reflexivity. Cross-linguistically, reflexivity can be marked in three distinct ways: (i) lexically, by the use of an inherently reflexive verb, as in (12); (ii) morphologically, by the employment of a reflexive affix attached to the verb, as in (13); and (iii) syntactically, either by the use of an anaphor, as in (7) above, or by the use of a grammaticalised lexeme, as in (14) below (Huang 2000: 160–164, 216–219).

(12) On that occasion, the boys behaved badly.

(13) Xizhuren zisha le. (Chinese)
head of department self-kill CRS [=Currently Relevant State]
'The head of department killed himself.'

(14) 'o mbari hoore maako. (Ful; Huang 2000: 219)
he killed head his
'He killed himself.'

While Langendoen & Maglore's account provides an elegant analysis of the logic of the lexical and syntactic marking of reflexivity, it does not capture the logical properties of the morphological marking of reflexivity.

Sometimes it pays to take a look at a book's subtitle. In this case the book is subtitled as *A reference guide*, which brings me to the three main reservations that I have about this volume. First, the phenomenon of anaphora can be both intrasentential and discoursal. It is intrasentential when the anaphoric expression and its antecedent occur within a single simplex or complex sentence; it is discoursal when the anaphoric expression and its antecedent cross sentence boundaries. While this book contains a lot of material about intrasentential anaphora, there is virtually nothing about discourse anaphora. Secondly, intrasentential anaphora clearly involves syntactic, semantic and pragmatic factors. In fact, there are currently three main theoretical approaches to intrasentential anaphora/binding: (i) a syntactic approach, represented by Chomsky's Principles and Parameters theory and its Minimalist descendent; (ii) a semantic approach, whose representative is Reinhart & Reuland's (1993) reflexivity theory; and (iii) a pragmatic approach, as exemplified by Levinson's (1987, 2000) and Huang's (1991, 2000, 2004) neo-Gricean theory. Whereas the orthodox Chomskyan syntactic approach is fully present in the volume (though nowhere is there any representation of the revisionist Optimality Theory syntactic approach, for which see some of the papers collected in Barbosa et al. 1998), both the semantic and the pragmatic approaches are completely ignored. A third weakness of the book

as a reference guide is its limited cross-linguistic coverage of data. Only English and Japanese are adequately discussed. This lack of extensive cross-linguistic empirical coverage is to be regretted, especially given the fact that one of the most remarkable achievements in the contemporary study of anaphora is that theorising is frequently based on data drawn from a wide array of the world's languages (see for example Huang 2000, which contains a rich collection of data taken from more than 550 of the world's languages). By way of conclusion, while the book deserves to be read by anyone who is seriously interested in the study of anaphora, a definitive reference guide to this important and fascinating topic in linguistics and its related fields remains to be written.

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D. N. S. Bhat, *Pronouns* (Oxford Studies in Typology and Linguistic Theory). Oxford: Oxford University Press, 2004. Pp. xii + 320.

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In the classical analysis of the *pronomen*, various *accidentia* of the pronoun were distinguished. For example, in the oldest available grammatical text in

the occidental tradition, the *Tékhne grammatiké* by Dionysius Thrax, person, gender, number, case, shape and species are mentioned as possible attributes of pronouns. Many (slightly) different versions of this list of attributes can be found in the classical literature, though they all agree on one point: the attributes are an unordered list of characteristics that are all equally relevant to the analysis of pronouns. A number of proposals for a more structured analysis of pronouns have been put forward since then, but none has really succeeded. In this book, D. N. S. Bhat makes a new attempt, distinguishing between what he calls 'personal pronouns' and 'proforms', based on an investigation of a wide array of languages from all over the world. In Bhat's proposal, personal pronouns are restricted to first and second person forms, and proforms are basically demonstrative, indefinite and interrogative pronouns. Third person pronouns are considered to be an intermediate category between the two classes.

In chapter 1, 'Introduction', Bhat lays out his proposal and gives a general survey of the book. Additionally, he proposes a distinction between 'free-pronoun' and 'bound-pronoun' languages. However, the rest of the book is concerned only with free pronouns, suggesting that this section was added at a later stage. The next five chapters deal with personal pronouns. In chapter 2, 'Relation with the referent', Bhat argues that the indexical nature of personal pronouns elucidates several of their syntactic peculiarities. Chapter 3, 'Coreference and non-coreference', discusses logophoric, anaphoric, reciprocal and reflexive pronouns, but it remains somewhat unclear how these different pronoun types relate to the pronoun–proform distinction advocated in the book. In chapter 4, 'Association with grammatical categories', Bhat addresses the interaction between person and number, gender and case. The rather short chapter 5, 'Conflicting characteristics', turns to a discussion of some aspects of person marking that seemingly did not fit in elsewhere. In chapter 6, 'The position of third person pronouns', Bhat argues that there is a typological distinction between languages where third person pronouns belong to the system of personal pronouns ('three-person languages') and languages that, roughly speaking, use demonstratives instead ('two-person languages').

Chapters 7–11 are about proforms. First, in chapter 7, 'The structure of proforms', Bhat argues that proforms mostly consist of two parts: a 'pronominal term', which identifies the type of proform (for example, demonstrative *th-* vs. interrogative *wh-* in English), and a 'general element', which denotes categories like person, thing, or place. Chapter 8, 'Constituent elements of proforms', investigates these two parts of proforms in somewhat more detail, showing their cross-linguistic variability in form and function. Following on from this, chapter 9, 'Characteristics of proforms', discusses some topics related to the usage and meaning of proforms. In chapter 10, 'Interrogative-indefinite puzzle', Bhat suggests that the often-observed similarity between interrogative and indefinite pronouns is essentially due to

the inherently indefinite nature of both. Chapter 11, 'Other related puzzles', discusses the various kinds of overt marking that are found in indefinites. However, Bhat does not give an explanation of the fact that, if there is any overt marking, it is always the indefinite pronoun, rather than the interrogative, that is overtly marked. Finally, chapter 12, 'Concluding remarks', summarizes the main arguments of the book.

The book addresses a wealth of issues that relate to the proposed distinction between pronouns and proforms, and it is simply impossible to discuss them all in this review. It is highly inspiring to see so many important subjects being discussed side by side. However, the wide array of topics included may have come at the expense of scholarly precision. Just one example of Bhat's often awkward discussion of past research is section 4.2.5, where the author considers the problem of so-called 'minimal/augmented' person paradigms. In such paradigms, a sole inclusive dual form (without accompanying duals for the other persons) is best analyzed on a par with the singular forms, as suggested by morphological and paradigmatic arguments. As this inclusive dual is not referentially a singular, a different name is needed – a terminological quibble that by now spans over fifty years of scholarly debate (see Cysouw 2003: 85–90). Over the last decades, it has become established to refer to the relevant category as 'minimal' rather than 'singular'. Bhat clearly has completely misunderstood the debate when he notes that 'these analyses appear to be rather ad hoc because one cannot escape from the fact that the 1 + 2 form [the inclusive dual, MC] is unlike singular forms in that its reference is non-singular' (103). Of course inclusive duals are referentially non-singular, but they also have some affinity with singular forms, and that is exactly what urged scholars to seek a new analysis.

Notwithstanding these comments, the proposed distinction between pronouns and proforms is interesting for a number of reasons. The morphological and semantic structure of indefinites, interrogatives and demonstratives is clearly related – and completely different from that of first and second person forms. Regrettably, Bhat does not present details on the cross-linguistic similarities of the morphology of the various proforms. For example, it might be argued for English that interrogative *wh-* is in complementary distribution with demonstrative *th-*. However, there are gaps in this generalization, as the counterparts of *who* (**tho*), *which* (**thich*), *this* (**whis*) and *these* (**whese*) do not exist, and the interrogative counterpart of *thus* is *how* and not **whus*. Indeed, recurrent similarities between interrogatives, demonstratives and indefinites are found throughout the world's languages, but likewise there always appear to be some arbitrary gaps in the general patterns. One extremely interesting topic for typological research would be the question of whether there is any regularity among these irregularities. Unfortunately, instead of investigating this, Bhat simply assumes that the apparent similarities of indefinites, interrogatives and demonstratives are indicative of a need for an integral analysis under the name 'proform'.

Whether this approach is warranted by the world's linguistic diversity remains unanswered.

In the course of the book, Bhat makes many claims about the typological structure of pronouns and proforms, but often without much argumentation. A few randomly chosen examples are the following: 'proforms are generally made up of two different elements' (12); 'distance-oriented deictic systems are generally preferred by two-person languages whereas person-oriented deictic systems are preferred by three-person languages' (14); 'bound pronoun languages show several distinctions in their independent personal pronouns that are absent among agreement markers' (20); and 'the use of G[eneral]P[ronominal] structure for proforms appears to be one of the characteristics of verb-initial languages' (158). These claims (and many more) are proposed as universally valid typological statements and are illustrated with examples from a wide array of languages. However, the evidence for their universal validity remains meager. To take up just one of Bhat's assertions, I will scrutinize the evidence for a proposed correlation between person and gender marking, only to conclude that Bhat's universal is spurious.

Bhat makes the following claim:

> [T]he cross-linguistic variation concerning the occurrence of gender distinction among third person pronouns appears to correlate with the distinction between two-person and three-person languages in the sense that gender distinction in third person pronouns occurs primarily among two-person languages. (139)

As mentioned above, he defines two-person languages as languages that do not have a clear distinction between third person marking and demonstratives. Putting aside the problem of how one can talk about 'gender distinction in third person pronouns' in the case of a two-person language, Bhat thus claims that three-person languages tend not to have gender marking in the third person, with English being an obvious counterexample. The numbers, as presented by Bhat and shown in table 1, indeed indicate an implicational universal, though only of a statistical kind, with thirteen counterexamples (Fisher's Exact $p < 0.0001$).

The question remains whether this typological distribution is meaningful. One approach to investigating such typological distributions further is Dryer's test (Dryer 1989), in which the world's languages are divided into independent macro-areas. While Bhat does not include the raw data for his judgments on the presence of gender distinctions in all the languages investigated, this information can be extracted from Haspelmath et al. (2005). Bhat's own contribution to this mammoth project (Bhat 2005) provides the data on two-person vs. three-person languages; the data on gender marking in independent pronouns is supplied by Siewierska (2005). From these sources, the distribution of Bhat's typology over the six macro-areas can easily be extracted, as shown in table 2 (which follows the format proposed

	Two-person language	Three-person language
3rd person gender	49	13
3rd person no gender	77	86

Table 1
The correlation between person and gender marking (139)

	Africa	Eurasia	SouthEast Asia & Pacific	New Guinea & Australia	North America	South America	Total
two-person language & gender	[11]	[9]	[3]	[6]	3	[9]	41
three-person language & gender	5	4	2	1	3	1	16
two-person language & no gender	1	[11]	11	[13]	11	[9]	56
three-person language & no gender	[10]	7	[15]	8	[12]	6	58

Table 2
The macro-areal distribution of person and gender marking according to Dryer's method

by Dryer 1989; the boxes indicate the highest number of languages with gender marking and without gender marking in each macro-area).

Not all languages from Bhat's survey appear in Siewierska's data, which includes only 171 languages from Bhat's set of 225 languages. Further, Siewierska's judgments about what counts as gender marking are not always the same as Bhat's. This can be seen most clearly by the number of three-person languages with a gender distinction in the third person, which provide the exceptions to Bhat's claimed correlation. Bhat found only thirteen such combinations in his sample of 225 languages, but in the intersection of Bhat's and Siewierska's data sets, there are sixteen such languages out of 171 languages. While such discrepancies are not necessarily problematic, given that there may be a good reason for different judgments (such as different definitions of the concept 'gender'), it shows how important it is to supply

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full references for every classification in a typology. The totals from the Bhat/Siewierska typology, as shown in the last column of table 2, still show a statistically significant interaction between the two parameters (Fisher's Exact $p=0.003$), although it is clearly less strong than that suggested by Bhat's figures (cf. table 1).

The first observation that emerges from sorting the data by macro-area is that we do not find identical preferences with respect to gender marking in all areas. This already makes it difficult (if not completely unwarranted, cf. Cysouw 2005) to derive any universal interpretation. To be sure, where there are gender distinctions in the third person, two-person languages outnumber the three-person languages everywhere (cf. the top two rows of table 2). However, the same preference for two-person languages is also found WITHOUT gender marking in Eurasia, New Guinea/Australia and South America (cf. the bottom two rows of table 2). In these three areas, there is a general preference for two-person languages, irrespective of the presence or absence of gender marking. When these three macro-areas are combined, no significant interaction between person and gender can be established (Fisher's Exact $p=0.06$). Conversely, gender marking in the third person is unusual throughout the macro-areas of Southeast Asia/Pacific and North America, and its distribution is similarly independent of the opposition between two-person and three-person languages (Fisher's Exact $p=0.4$). The only macro-area to corroborate Bhat's claimed interaction is Africa – although, paradoxically, this is the area with the highest number of counterexamples.

There is clearly no world-wide universal correlation between person and gender in the sense claimed by Bhat. More generally, it appears that all of the numerous typological claims made by Bhat rely on similarly slight tendencies. I expect that all of them will vanish once the macro-areal breakdown is considered; and explaining away counterexamples by regarding them as 'non-prototypical' (173) is simply a bad magician's trick. Bhat's lighthearted approach to typological research, whereby he proposes many claims without scrutinizing the evidence, is not helpful. Instead of dealing with so many topics superficially, it would have been better to choose a single topic for a book-length investigation, or to publish a survey-like monograph with the scope of the present book but without its many spurious claims about cross-linguistic correlations.

In the tradition of publications by Oxford University Press, this book has comprehensive indexes and has been thoroughly proofread. I found only one unfortunate error: Amele is part of the Gum family, not the Gur family (45). In contrast, the text is somewhat clumsy stylistically. Bhat's recurrent use of phrases like 'point out', 'however' and 'on the other hand' becomes a bit tedious when reading the book from cover to cover, and internal cross-references, however helpful to the reader, are used far too frequently. There are also various factual claims in this book that might be considered controversial. For example, I find it contentious to list Nicobarese as part of the

Munda family (89). Moreover, contrary to Bhat's claim (122), the typical Australian inclusive dual *ŋali* is not obviously related to the first person *ŋa* (cf. Dixon 2002: 122ff). Yet, such criticism is probably inevitable in the case of books like this, containing so much factual information on so many different languages.

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Juliette Blevins, *Evolutionary phonology: the emergence of sound patterns*. Cambridge: Cambridge University Press, 2004. Pp. xix + 366.

Reviewed by BART DE BOER, Rijksuniversiteit Groningen

Evolutionary phonology is a thought-provoking and accessible book that presents cultural evolution as an alternative to innate constraints and features in explaining universals of phonology. It is NOT a book about the biological evolution of speech, as (in order to avoid all confusion) the author makes clear from the beginning. The book contains everything that makes a linguistics book fascinating to read: an overview of the field, a provocative new theory for explaining phonological facts, and numerous contemporary and historical examples from a wide sample of languages to support the new theory. Nevertheless, Juliette Blevins' book can sometimes be a little hard-going, especially if the reader is not used to long quotations in the text and a large number of footnotes.

The central thesis of the book is that synchronic properties of the sound systems of human languages should not be explained by recourse to

phonological processes in the human mind/brain if it is possible to explain them as the result of historical change. In preferring historical explanations that rely on the use of speech over explanations that rely on processes and properties of the brain, Blevins' theory is in accord with other recent data-oriented theories of language. According to the central premise of evolutionary phonology, as stated by the author, 'principled diachronic explanations for sound patterns have priority over competing synchronic explanations unless independent evidence demonstrates, beyond reasonable doubt, that a synchronic account is warranted' (23).

The author compares the process of language transfer from adults to children with biological evolution. Use of speech introduces variation, and the learning process causes selection to take place. Since variation and selection are the two main processes needed for evolution, the author calls her theory 'evolutionary phonology'.

Elaborating this view and introducing evolution and evolutionary theory are the aims of part I, 'Preliminaries'. First, the author gives an overview of the phenomena addressed and provides an outline sketch of the theory itself and of its goal, which is neatly summarised as follows: '[b]y extracting from synchronic phonologies all patterns whose explanation is found in the diachronic domain, we are able to investigate the essence which remains' (19). The author then presents the three basic mechanisms of sound change that she distinguishes. She calls them 'change', 'chance' and 'choice'. Change describes the situation where a sound change results from a language learner mishearing a speaker's utterance. Chance involves a speaker's utterance that is intrinsically phonologically ambiguous and can be analysed in multiple ways by the listener/learner, possibly differing from the speaker's original representation. Finally, choice occurs when a speaker uses different pronunciations of a word, from which the learner needs to choose one as the best exemplar. Again, language change occurs when this representation is not the same as that of the speaker. These three mechanisms provide an extremely useful perspective on the interaction between speaker pronunciation and language learning, even if one may not quite agree with the exact three mechanisms proposed.

What is particularly appealing about Blevins' perspective on phonology is that the mechanisms of change, chance and choice, which provide the underpinnings of the evolutionary phonology framework, can be tested in the laboratory. The idea of evolutionary phonology is that many recurring sound patterns in human language can be explained as the historical result of these three mechanisms, and not as the result of innate constraints on representation or on the learning of sound systems. It is therefore important that it can be experimentally tested whether the kinds of misperceptions that are necessary for the proposed historical explanations actually occur in human subjects.

Unfortunately, Blevins' discussion of the parallels between biological evolution and evolutionary phonology is less good. In trying to avoid the

impression of teleology (broadly paraphrasable as 'sound systems are optimal, hence there must be a goal-directed factor in their evolution'), the author confuses long-term goals and short-term mechanisms. In biology, mutations are random, but that does not mean that in cultural evolution of speech, optimising mutations cannot occur. The insistence on the randomness of linguistic 'mutations' is a recurring theme throughout the book, but in my opinion it is totally unnecessary. The important elements of an evolutionary process are transfer of information, variation and selection. How these are implemented is unimportant. In cultural evolution, where transfer of information takes place through learning and imitation, it is quite possible that variation is biased towards some kind of optimality, most likely ease of pronunciation. The author's position in this matter is possibly explained by her relying mostly on Stephen Jay Gould's books as sources on evolution. Gould, although having written excellent introductions to evolution, is known to have a somewhat extreme position on the role of randomness.

Another criticism of the book concerns the fact that a number of the references on biological topics are incomplete or incorrect. For example, the text has a reference to Gould (1991) – most likely a reprint of *Ever since Darwin* – which is missing from the bibliography. Theodosius Dobzhansky is referred to as Dobshansky in the book. Material used in the section on frog calls is claimed to be taken from *Nature London* and the *Philological Transactions of the Royal Society of London*, whereas the correct citations should list the journal titles *Nature* and *Philosophical Transactions: Biological Sciences*. Problems with references also occur in other parts of the book. Although this is a matter of editing rather than content, it is nevertheless regrettable.

Part I closes with a very useful comparison between evolutionary phonology and the approaches of other phonological theories, such as the Neogrammarians, the Prague school, functional phonology, theories of hypo- and hyperarticulation, and Optimality Theory. Blevins' discussion nicely clarifies the differences between those theories and evolutionary phonology, and provides a good overview of the different trends in phonology, especially for those readers who (like myself) come to this book from disciplines other than phonology.

Part II of the book, entitled 'Sound patterns', applies the theory developed in part I to a number of phenomena. The sound patterns discussed include (i) laryngeal features (where Blevins addresses the questions of why there appear to be symmetries in the systems of, for example, voiced/voiceless or laryngealised/breathy consonants, and how universals of voicing and devoicing can be explained); (ii) place features (where Blevins considers, among other things, how sequences of sounds influence each other's place of articulation, and why certain places of articulation tend to occur in certain positions); (iii) sound patterns that are spread over multiple segments (vowel and nasal harmony, lenition and the sonority hierarchy); and (iv) gemination.

The final chapter of part II is devoted to an explanation of why certain sound patterns are rare; it demonstrates how evolutionary phonology can also account for rare sound patterns and not just the frequent ones.

I consider the examples discussed by Blevins to provide a compelling argument that many universals of sound systems can be explained as the result of historical processes. One possible weakness in some of the explanations is that the author avoids all explanations that would require optimising variation in speech. As pointed out above, this is unnecessary and at times only complicates the explanations. Another potential weakness of Blevins' explanations is that most of them appear to be rather ad hoc, and that there is no strong formalism in which to generate them. However, I do not necessarily consider this to be a bad thing: language is a complicated phenomenon, and the brain processes information in much more complex ways than can be modelled in simple formalisms. It may thus be advantageous to use a flexible theory when explaining language universals.

Part III of the book, 'Implications', investigates the implications of evolutionary phonology for the study of sound systems and, more generally, the implications of the evolutionary perspective for the study of other aspects of language. If most complex phenomena involving human sound systems can be explained as the result of historical processes, what is left of phonology, according to the evolutionary perspective, is a number of simple learning and generalisation rules, in addition to distinctive features and prosodic categories. The author proposes an investigation of these aspects as a new way of studying language, which she calls 'pure phonology'.

In this part of the book, the evolutionary phonology model is also used to explain processes of diachronic linguistics. Although I judge these explanations to be generally successful, they are sometimes needlessly complicated because the author is set on avoiding any trace of a functional bias on the variability of speech.

Finally, Blevins applies the ideas that form the basis of the evolutionary perspective to a different modality (sign language) and to two other aspects of language (morphology and syntax). I particularly liked the discussion of sign language, in which it is argued that the kind of sign language that one would find if it followed the same constraints and markedness properties as spoken language would be quite different from the sign languages that are actually found. The properties of sign language can, however, be convincingly explained from a functional and (cultural) evolutionary perspective.

The discussion of morphology, on the other hand, is less persuasive. Of course morphology is not the main topic of the book, and it is quite conceivable that, with more study, the morphological phenomena that are presented could be explained from an evolutionary perspective, but as it stands, the author succeeds only in pointing out the problems of traditional morphological 'universals' rather than in providing a convincing evolutionary

alternative. Fortunately, Blevins fares rather better with her discussion of syntax and word order universals.

As a whole, I think the book makes an interesting contribution to the field of phonology. The theory presented proposes that much of the complexity of human sound systems is due to historical processes that are set in motion by different kinds of misperception, while the actual learning and representations in the mind/brain are relatively simple and general. In this respect, the book fits in with an emerging trend in linguistics to move away from what I would call algorithm-driven theories (i.e. theories that propose that most of the complexity of language is due to the way we process it) towards data-driven theories (i.e. theories that propose that much of the complexity of language inheres in the linguistic data itself and that a lot of this is learned and stored by comparatively simple and general mechanisms). This trend is also exemplified by the work of Jackendoff (2002) and Tomasello (2003).

Blevins' theory does not propose strict formal rules and algorithms to process and learn sound system, but rather a number of mechanisms, heuristics and ways of looking at linguistic phenomena that can be adapted to particular instances. Rather than a weakness, I consider this to be a practical perspective. Perhaps evolutionary phonology should be regarded more as a methodology for studying phonology than as an all-explaining theory of phonology.

It may be the case that this methodology has wider application. In the book, a number of instances are presented where phonetics and phonology become closely intertwined, as well as a number of instances where phonology and morphology influence each other. One cannot help but wonder if the final outcome of the evolutionary (and the data-driven) perspective will be that the separation between these different aspects of language will become less important.

There are a few problems with the book, which fortunately do not detract from the main argument. I have already mentioned Blevins' insistence on randomness when it comes to variation in speech, which, to repeat my point, is unnecessarily complicating her explanations. I have similarly referred to the problems with missing and incomplete references. Another problem is that, although the book is presented as intended for an interdisciplinary readership (neurology, psychology, computer science, philosophy and anthropology are mentioned in the preface), it contains a lot of technical terms. A glossary of technical terms would make reading easier for a more general audience. Moreover, some of the more technical descriptions in the book could be made more accessible by providing simple examples of the phenomena that are described. However, all in all, I found this book easier to read and less formal than most books on phonological theory. To conclude, I think this book is well worth reading for a new perspective on phonology that conforms to the trend towards more data-driven models of language.

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Anne Breitbarth & Henk van Riemsdijk (eds.), *Triggers* (Studies in Generative Grammar **75**). Berlin: Mouton de Gruyter, 2004. Pp. vi + 496.

Reviewed by CATERINA DONATI, University of Urbino

Reflection on 'triggers', that is, on the factors that yield syntactic operations such as movement, has always been central in generative research. To mention just two of the most influential proposals, the Case Filter (Chomsky 1981) was one of the first explanations advocated for displacement, while more recently the Criteria approach (Rizzi 1996) tried to reduce instances of movement to the necessity of realizing specifier–head agreement relations.

The Minimalist program represents an important milestone in this research into syntactic motivations. More precisely, besides simply pursuing the line of inquiry of the 1980s, Chomsky's program (1995, 2000, 2001) radically imposes severe restrictions both on the format and on the locus of triggers. Given the Principle of Full Interpretation (Chomsky 1986), according to which 'there can be no superfluous symbols in representations' (Chomsky 1995: 151), movement is triggered by the necessity of deleting/valuing all morphosyntactic features that are redundant and hence not interpretable by the interfaces.

Positioning the definition of triggers at the core of syntactic investigation has profound consequences for most major issues of the theory. First, given the Minimalist assumption that variation is limited to morphosyntactic features, the issue of triggers interacts very closely with that of parametric VARIATION. Moreover, if an operation is triggered, i.e. automatically forced by some factor, the issue of OPTIONALITY arises as a potential problem. If triggers for movement always involve feature checking, the standard TYPOLOGY of movements (A- vs. A′-, head vs. phrase, overt vs. covert) requires a radical revision. Finally, if features triggering movement are said to be uninterpretable, the exact nature of the INTERFACES and their interaction with the computational system needs to be further investigated. For all these

reasons, a volume on triggers is really a volume on core syntactic theory and is therefore of crucial interest for scholars in the field.

Triggers, edited by Anne Breitbarth & Henk van Riemsdijk, is the result of a workshop held on 24–26 October 2002 at the University of Tilburg. The book reflects the workshop's extensive empirical coverage both in terms of the languages involved (which range from Afrikaans to Gungbe and Kiswahili, including Classical Greek, Breton, Japanese, Romanian, German, Dutch, Hungarian, Italian, Bulgarian, Russian and many more) and the phenomena investigated, which are rich and diverse in content.

The volume contains fourteen contributions, which are alphabetically ordered. They are preceded by the editors' introduction, which addresses some overarching questions and briefly outlines the contributions. The contributions are divided into four groups according to the nature of the triggers isolated. Thus, the editors distinguish between (i) syntax-internal, (ii) syntax-external, (iii) discourse-related and (iv) system-internal triggering operations. However, this division is rather artificial, especially when it comes to distinguishing group (ii) from group (iii), and takes no account of some of the important theoretical issues that are raised by the book. Thus, rather than adopting the editors' relatively opaque 'typological' division, I will focus in this review on three theoretical points that seem of crucial importance to me.

If what syntax really sees is features, the status of the distinction between head movement and phrase movement becomes of central concern. Chomsky (2001) tries to avoid this question by simply banning head movement from syntax. In the volume under review, four papers address the place of head movement in the grammar. While they approach the topic from different directions, all claim that the syntactic component does include head movement, and show that it yields interpretive effects.

In 'Snowballing movement and generalized pied-piping', Enoch Oladé Aboh discusses two verb-focusing constructions in Gungbe, an African language, arguing that head movement and phrasal movement display the same interpretive properties and are triggered by the same EPP (Extended Projection Principle) feature.

Mariana Lambova also argues for the syntactic nature of head movement in her contribution, 'On triggers of movement and effects at the interfaces'. She demonstrates that the marked participle–auxiliary order in Bulgarian, when interpreted non-neutrally, derives from traditional head movement of a complex head to a discourse-related position (obeying the Head Movement Constraint), which is then followed by 'scattered deletion' (Bošković 2001) to comply with a phonotactic constraint at Spell Out.

Neither of these chapters addresses with sufficient clarity the intrinsic and radical incompatibility of a feature-based approach with stipulating a locality condition that is specific to head movement, such as the Head Movement Constraint. On the other hand, Milan Rezac's contribution, 'The EPP in Breton: an unvalued categorial feature', makes a serious attempt at

exploring the possibility of a complete unification of locality conditions. Rezac investigates the syntax of the unique preverbal position of Breton Verb-second clauses, which he identifies as the specifier of the Tense Phrase (SpecTP). He argues that SpecTP can be filled in one of three ways, all of which are unselective and local operations: (i) by an expletive, (ii) by the highest Determiner Phrase (i.e. the subject), and (iii) by long head movement. Interestingly, some details of this analysis anticipate the notion of edge feature, recently proposed in Chomsky (2004).

In 'A case for head movement at PF: SAI in comparatives', Fumikazu Niinuma & Myung-Kwan Park discuss some well-known interactions between verb phrase ellipsis, sentence stress assignment and subject–auxiliary inversion (SAI) in English comparatives, which they explain by analysing I-to-C movement in English comparatives as movement at Phonetic Form (PF). Yet, by showing that I-to-C movement in English comparatives is not to be confused with 'canonical' head movement in interrogatives, they indirectly provide evidence against the strong claim that (any) head movement is phonological.

A final contribution concerned with head movement is Arthur Bell's 'How N-words move: bipartite negation and "split-NegP"', which presents an analysis of negative indefinites in Afrikaans.

As discussed above, a corollary of a trigger-centered theory of movement is that any movement is by definition obligatory. Hence, optionality becomes problematic. At least four contributions in Breitbarth & van Riemsdijk's book focus on phenomena traditionally labeled as optional and try to account for them in terms of triggers. Although very different in scope, they all adopt a strategy which has become almost standard as a solution to the optionality problem: it is argued that the phenomena under consideration are only apparently optional, being triggered by 'non-pure' morphosyntactic features, such as discourse and information structure requirements. This move, although promising, has two potential costs. It amounts either to loosening the definition of what constitutes a syntactic feature, opening the door to virtually any possible trigger, or to admitting that syntax can be interface-driven, which violates the strong thesis of the autonomy of syntax.

In 'Optionality at the interface: triggering focus in Romanian', Gabriella Alboiu deals with a puzzling asymmetry. While *wh*-operators are obligatorily associated with a left peripheral position in Romanian (which is a multiple *wh*-fronting language), focus operators appear to be free in their position.

The three contributions of Roland Hinterhölzl ('Scrambling, optionality and non-lexical triggers'), László Molnárfi ('On scrambling as defocusing in German and West Germanic') and Ruriko Kawashima & Hisatsugu Kitahara ('Phonological content and syntactic visibility') focus on the almost prototypically optional phenomenon of scrambling. Hinterhölzl's contribution, which deals with scrambling in Germanic, has the great merit of addressing the nature and the limits of the distinction between

A- and A′-movement, which is too often taken as a primitive. Outlining in detail the distribution of various kinds of scrambled noun phrases, he argues that non-lexical features (e.g. scopal or discourse-related features, such as 'familiarity') that are introduced in the course of the derivation trigger scrambling as a result of interface requirements.

What Hinterhölzl calls 'familiarity' is called 'antifocus' by Molnárfi, the major difference being that the latter is considered a syntactic feature, not a consequence of an interface requirement. The apparent optionality of scrambling is reduced to the nature of the antifocus trigger, which has the ability of allowing two convergent derivations.

In Kawashima & Kitahara's contribution, Japanese scrambling data provide the starting point for an interesting review of phase theory (Chomsky 2001). Here, the authors develop a critique of cyclic transfer (Epstein & Seely 2002) and formulate an original proposal.

Three other papers attribute phenomena to triggers which are discourse-related features (or to their syntactic implementation). Norbert Corver's 'Some notes on emphatic forms and displacement in Dutch' presents a fine-grained analysis of a peculiar emphatic schwa-affix which shows up on a variety of (apparently) heterogeneous hosts, such as a quantity-denoting noun, a degree adverb, and a restricted set of pronouns. The schwa is analyzed as the head of a small clause, and its hosts as predicates undergoing predicate fronting.

In 'Scope marking constructions in Dayal-type indirect dependency', Anikó Lipták discusses a construction found in Hungarian, Frisian and Slavic languages which provides a real challenge for any trigger approach. In these languages, scope-marking constructions (SMCs) display a dissociation between a scope marker (which is found in the main clause) and the actual *wh*-element (which occupies a place in the periphery of the embedded clause). After constructing a typology of SMCs, which distinguishes between sequential and subordinated SMCs, where the latter include cases of complex questions with embedded relative and noun-associate clauses, Lipták addresses the issue of what triggers the movement of the embedded *wh*-element.

Eric Mathieu's 'Hyperbaton and haplology' is concerned with split constructions or so-called hyperbatons in a number of languages, which range from Classical Greek to Russian. He argues in detail against a phonological account that derives hyperbaton from haplology, i.e. deletion in order to avoid adjacent identical phonetic or phonological material, instead analyzing the phenomenon as displacement which is triggered by a Q/WH feature.

There is of course no general consensus that all instances of movement can be derived from triggers which are definable in terms of (syntactic) features, nor on the very notion of movement as being triggered (Kayne 1994). Two contributions in the volume are representative of these departures from the triggers approach.

Chris Collins' 'The agreement parameter' investigates the relationship between agreement and movement by looking at agreement patterns in Bantu languages. He ends up proposing a (macro-)parameter which determines whether Agree requires Move (as in the Bantu languages) or not (as in English, French and Icelandic).

I would like to close this brief survey by particularly commending the second contribution that presents a departure from the triggers approach. Andrea Moro's 'Linear compression as a trigger for movement' contains original and non-standard claims and conclusions (for example, movement is defined as a symmetry-breaking phenomenon at PF) and reflects intelligently and thoughtfully on the assumptions made by the triggers approach – something that is lacking in most of the other contributions in the volume.

The major merit of *Triggers* is that it conveys a vivid idea of what has been the impact of the Minimalist program on syntactic inquiry. Minimalism forces any syntactic researcher to give thought to the driving forces of movement in a substantially restricted framework. This conceptual shift, which can be viewed positively insofar as it reduces any artificial separation between theoretical and empirical studies, also has some negative aspects, which the volume faithfully reflects. The almost chaotic richness of proposals and claims that are contained in the fourteen contributions testifies to the difficulties of doing research and of comparing competing analyses and results within such restrictive boundaries.

While many of the individual analyses presented in this volume are of great interest and value, I would not recommend *Triggers* to students or scholars who aim to understand the concept itself and the role of triggers in syntactic theory. With very few exceptions, the book does not provide REFLECTIONS on triggers but rather PROPOSALS for triggers. The consequences that arise from this plurality are addressed neither by the contributors nor by the editors. The superficial and brief introduction and the alphabetic rather than thematic organization of the volume do not help the reader to make his or her way in what looks like a deep, fascinating and perhaps even dangerous sea.

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Sandra Chung & William A. Ladusaw, *Restriction and saturation* (Linguistic Inquiry Monographs **42**). Cambridge, MA: MIT Press, 2004. Pp. xiv + 173.

Reviewed by DIANE MASSAM, University of Toronto

The semantics of lesser-studied languages is a relatively uncharted area of study, but significant progress is currently being made. The book *Restriction and saturation* by Sandra Chung and William A. Ladusaw (henceforth C&L) marks a key contribution to this area, focusing on the semantics of predicate–argument relations in Māori and Chamorro. The book also develops our general understanding of the semantics of indefiniteness, of noun incorporation, and of nominal functional categories. Its main claim is that in addition to the generally assumed operation of saturation for predicate–argument composition, which C&L term SPECIFY, there is another non-saturating mode of composition, termed RESTRICT. The bulk of the book explores various sorts of evidence for this claim.

Restriction and saturation is densely packed both empirically and theoretically, yet it sticks closely to its main point. It is very well-structured and a model of clear and careful argumentation. There is something in the book for just about everyone. While the formal semantics is rich and intriguing, the focus on morphemic and structure-based analyses will appeal to syntacticians and morphologists, and the inclusion of fascinating and complex real-language examples, based on Chung's extensive work on both Māori and Chamorro, will engage the interest of typologists and field linguists.

The book consists of three chapters and two appendices. The first chapter, 'Modes of composition', lays out the formal context for the semantic discussion, and explains the proposed concepts of Restrict and Specify. The second chapter, 'Indefinites in Maori', examines two indefinite determiners in Māori, *he* and *tētahi*, and argues that these illustrate the two proposed modes of composition. In the third chapter, 'Object incorporation in Chamorro', the authors turn to Chamorro and the semantics of object incorporation, arguing that the incorporated argument is composed by Restrict, and further, that multiple linking is possible, as long as there is only one composition of Specify. The first appendix (appendix A), 'The syntax of

Chamorro incorporation', discusses syntactic issues raised by Chamorro (and Māori) incorporation, while the second (appendix B), 'Maori and Chamorro', briefly provides background information on the two languages. The book ends with 'Notes' and 'References'. In this review, I will first comment on each of these sections and then provide some general comments on the book.

In chapter 1, C&L set out the view that objects are complete and saturated, whereas predicates are incomplete and unsaturated. They argue that a calculus of saturation underlies the semantic composition of predicates with their arguments, but they question the view that all syntactic predicate-argument relations are interpreted as saturating, and propose a non-saturating mode of composition (Restrict), which composes the property of the indefinite with the predicate, limiting its semantic domain but leaving it unsaturated. In contrast, Specify shifts the property to an individual, which saturates the predicate's argument. C&L further claim that both modes of composition can apply in one construction. Their proposal provides an alternative to the traditional view of type-shifting.

If there are two modes of composition, we might expect each to be capable of morphological realization. In chapter 2, the authors argue that this is the case in Māori, a Polynesian language of New Zealand, which has two indefinite articles, *he* and *tētahi*, the differences between which have remained elusive. C&L propose that *he* marks an argument composed via Restrict, whereas *tētahi* marks an argument composed via Specify. This claim is supported in detail, not only by referencing previous literature, but also by bringing new data and new observations to bear on the issue. C&L demonstrate that *he* and *tētahi* are syntactically and semantically similar. Both are indefinite determiners that can introduce a referential argument in episodic sentences. For both, the argument must be new, and both can have narrow scope with negatives and quantifiers. Where the two determiners differ is in that *tētahi* can take wide scope with negation, but *he* cannot. Furthermore, *he*-nominals can serve as pivots of (three types of) existential sentences, whereas *tētahi*-nominals cannot.

Having laid out the properties of the two determiners, C&L go on to discuss the correct semantic analysis for them. They first consider contrasts from the literature on indefinites: specificity, referentiality, and wide vs. narrow scope. They argue that none of these is the relevant semantic feature to differentiate *he* and *tētahi*, but that the proposed Restrict vs. Specify distinction can account for the similarities and differences between the two determiners. The discussion invokes requirement of existential closure at the event level for arguments targeted by Restrict, in order to allow semantic composition to proceed beyond this level. At the end of the chapter, C&L examine additional properties of *he*- and *tētahi*-nominals. The chapter includes forays into narrative discourse pragmatics and, interestingly, the labeling system of the Māori collection in the Te Papa Tongarewa Museum

in Wellington, and it concludes with some speculations about the character of possible cross-linguistic systems of indefiniteness.

Chapter 3 turns to object incorporation, in which Restrict also applies. C&L's analysis predicts that if a predicate and argument undergo Restrict, it is possible for the predicate to undergo Specify with an additional argument, thus allowing for multiple linking, which would be impossible under the view that all predication involves saturation. Multiple linking is illustrated with data from Chamorro, an Austronesian language of the Mariana Islands. Like many Austronesian languages, Chamorro has noun incorporation, but it is unusual in exhibiting doubling of the incorporated object by an independent noun phrase (for which the English equivalent would be something like *I pet-have a cat*). C&L provide a detailed picture of the syntax and semantics of Chamorro noun incorporation, arguing that the incorporated noun is semantically incomplete, hence combined via Restrict. Turning to the extra argument, they show that it is adjoined rather than in an argument position, given that it does not trigger agreement, cannot be moved and constitutes an island for extraction. However, as C&L argue extensively, the extra argument is nonetheless composed with the verb's internal argument. The chapter concludes with a discussion of the semantic formalism required for these operations, and moves on to consider implications for analyses of noun incorporation among other structures.

C&L's analysis of Chamorro incorporation is based on evidence from syntax, and in appendix A they turn to syntactic issues. They demonstrate that for both Māori and Chamorro noun incorporation, the incorporated element is a full NP. They further contend that the NP is morphologically incorporated into the verb, so that in the end the verb is a compound that contains a phrase. Whether this compound is to be derived lexically or syntactically remains unclear. C&L present arguments in favor of each approach to incorporation, although they lean to a syntactic analysis. Doubling of the incorporated noun by DP might seem to argue against a syntactic account, but the authors dispense with this problem by arguing that the doubling DP is in fact an adjunct, and is not in object position.

Appendix B, a mere two pages in length, is really an extended footnote, giving some basic facts about Māori and Chamorro, as well as information about abbreviations, data sources, and orthography.

This book is short, accessible, and richly textured in its argumentation, and it contains a wealth of interesting examples. The weakest link is in the syntax. Structures under discussion are not always illustrated, and when they are, they are underspecified, hence often unclear. Some of the assumptions will be problematic to some readers, such as the fact that C&L posit violations of the Co-ordinate Structure Constraint. The authors remain agnostic as to how Verb–Subject–Object (VSO) word order is to be derived for Māori, yet consider the syntax of equatives to be 'unproblematic', in spite of the fact that their proposed structure (62) is not transparently compatible with VSO

order. Turning to the semantics, the reader is left with some questions. For example, Māori has both *he*-nominals and noun incorporation; both are argued in this book to involve Restrict. What are the differences between them, and why does Māori have both? Is noun incorporation in Chamorro more similar to Māori *he*-constructions or to Māori noun incorporation? But it would be hard to conceive of a book of this accessible length that did not leave some questions unanswered. In general, the book is a valuable contribution to the literature on the relation between syntax and semantics, and on the semantics of lesser-studied languages.

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Paul D. Elbourne, *Situations and individuals* (Current Studies in Linguistics **41**). Cambridge, MA: MIT Press. Pp. xii + 234.

Reviewed by Barbara Abbott, Michigan State University

This excellent book, which starts with an analysis of donkey sentences (hinted at by the striking photo of a boy and his donkey on the cover), aims ultimately to provide a unified analysis of all definite DPs – pronouns, definite descriptions (which are assumed to subsume demonstratives), and proper names. The 'Introduction' in chapter 1 presents the donkey sentence problem, a number of proposed solutions to this problem, and problems for all of those proposed solutions.

A classic example of the donkey problem is given in (1).

(1) Every man who owns a donkey beats it.

The problem is presented by the final pronoun, whose interpretation varies with that of its antecedent, *a donkey*. The latter, however, is within a relative clause, and should not be available to bind the pronoun.

In addition to Jacobson's (1999, 2000) variable-free semantics, two major categories of solutions to this problem have been proposed. The description-theoretic type of approach analyses the pronoun as a definite description – *the donkey* (*that he owns*). Combined with situation semantics (as in Heim 1990), this approach satisfies the uniqueness required by the definite article *the* by using minimal situations for each man–donkey pair. Three problems face this type of approach. The first one is the problem of indistinguishable participants, as in example (2) (which goes back to Hans Kamp).

(2) If a bishop meets a bishop, he blesses him.

The problem is that, even in a minimal situation for this sentence, we do not have a unique bishop to serve as the referent of *the bishop*, which either pronoun abbreviates. The second is the problem of a formal link between antecedent and pronoun. In some versions of the description-theoretic approach, the content of the definite description can come from anywhere in the context. Yet, as the sentence pair in (3) shows, some kind of nominal antecedent seems to be required (but see below).

(3) (a) Every man who has a wife is sitting next to her.
(b) *Every married man is sitting next to her.

The third problem is that, on this approach, it seems that donkey pronouns are fundamentally different from referential and bound pronouns.

The second major type of approach to solving the donkey sentence problem comes from dynamic semantics. Here, in effect, *a donkey* winds up being able to bind the *it* after all. But this type of approach also has problems. First, there is the problem of disjunctive antecedents, as in (4).

(4) If Mary hasn't seen John lately, or Ann misses Bill, she calls him.

There seems to be no way to get the pronouns bound by both antecedents. Second is the problem of 'deep anaphora' – sometimes it is possible to have a donkey-type pronoun without a linguistic antecedent, although in this case there must be an obvious referent in the non-linguistic context. An example from Polly Jacobson is given in (5).

(5) *A new faculty member picks up her first paycheck from her mailbox. Waving it in the air, she says to a colleague*:
Do most faculty members deposit it in the Credit Union?

A third, related, problem is how to account for what have been called 'paycheck' pronouns, as in (6).

(6) John gave his paycheck to his mistress.
Everybody else put it in the bank.

The problem here is that the pronoun introduces new referents rather than being bound by an antecedent.

Chapter 2, 'D-type pronouns', presents Elbourne's own approach to donkey sentences, which falls in the description-theoretic category. His proposal (following Postal 1966) is that pronouns are actually determiners taking a noun phrase argument which is, in most cases, deleted by the rule of NP deletion, illustrated in (7).

(7) Sue only bought two books, but Mary bought at least three [books].

A formal semantics for the approach is given, which follows Heim (1990) in using situations relative to which a unique referent for the donkey pronoun

can be found. The problem of the formal link is automatically solved, in virtue of the fact that NP deletion shows the same pattern of constraints as donkey pronouns – namely, there must be an explicit linguistic antecedent or some salient entity in the environment to serve that function. This is shown by the examples in (8).

(8) (a) Mary's husband is in Texas. And Sue's is the man drinking the Martini.
(b) *Mary is married. And Sue's is the man drinking the Martini.
(c) *Mary is fixing Martinis*. Ooh, can I have one?

These examples parallel examples (3a), (3b) and (5) above, respectively.

Chapter 2 also presents a new problem for earlier versions of the description-theoretic approach to donkey pronouns that is not a problem for Elbourne's approach. This is the fact that so-called 'sloppy identity' readings (as in (9)) are not available for donkey pronouns.

(9) Mary loves her husband and Sue does too.

The sloppy identity reading of (9) is the one on which *Sue does too* is interpreted to mean that Sue loves her own husband, not Mary's. It can be seen that (10) does not have the corresponding type of reading.

(10) In this town, every farmer who owns a donkey beats it, and the priest does too.

The example in (10) can mean only that the priest beats the farmers' donkeys, not that he beats his own donkey. On standard description theories, (10) would be analyzed as (11).

(11) In this town, every farmer who owns a donkey beats the donkey that he owns, and the priest does too.

It can be seen that, unlike (10), (11) does have the sloppy reading. Thus, these theories predict that (10) should have it too, but it does not.

The remainder of the chapter shows that Elbourne's analysis can handle donkey pronouns with split antecedents, as in (4) above, as well as Bach-Peters sentences, as in (12).

(12) Every pilot who shot at it hit the MiG that chased him.

Moreover, Elbourne's model can account for paycheck sentences (as in (6) above), and cases of modal subordination (as in (13)).

(13) John wants to catch a fish. He hopes I will grill it for him.

Chapter 3, 'On the semantics of pronouns and definite articles', extends Elbourne's analysis to bound and referential pronouns, and to definite descriptions. The analysis of the latter causes some changes in the overall theory. Elbourne first reviews the classical analyses. A traditional problem

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for Fregean approaches is their failure to capture the *de dicto–de re* ambiguity, which was analyzed by Russell as a scope ambiguity. Consider the example in (14).

(14) Mary believes that the man who lives upstairs is a spy.

On the *de dicto* interpretation, (14) means that Mary believes that whoever it is who lives upstairs must be a spy. On the *de re* interpretation, (14) means that the man who lives upstairs is such that Mary believes him to be a spy (although she may not know where he lives). Elbourne cites Bäuerle (1983) (among others) as showing how to capture this ambiguity using situation variables. On the *de dicto* interpretation, the definite description is indexed to Mary's belief worlds, while on the *de re* interpretation it is indexed to the actual world. Elbourne reviews a number of arguments that the new approach is actually superior to Russell's scope analysis.

The remainder of the chapter considers further refinements. The existence of bound definite descriptions, as in (15), argues that definite descriptions (like pronouns) must contain an index; and the fact that they can also occur in donkey sentences, as in (16), leads to the postulation of a special non-bindable index.

(15) Mary talked to no senator before the senator was lobbied.
(16) Every man who owns a donkey beats the donkey.

The result is some support for a semantic version of Donnellan's (1966) referential–attributive distinction. One of Donnellan's examples is given in (17).

(17) Who is the man drinking a martini?

Donnellan argued that (17) could be taken in two ways: as asking about the identity of a particular person, say in a bar, where any other accurate description would do as well (the referential use), or, at an Alcoholics Anonymous meeting perhaps, where the fact that the individual is drinking a martini is crucial (the attributive use). Elbourne's account allows for this. Definite descriptions with a bindable index will be referential; those with the special non-bindable index are attributive. Interestingly, the following minimal pair supports his analysis:

(18) (a) Thad Cochran, the Republican senator from Mississippi, announced today that …
(b) Thad Cochran, Mississippi's Republican senator, announced today that …

Given that Mississippi has two Republican senators, (18a) is anomalous on the attributive reading, which implies that there is only one. However, when coindexed with Thad Cochran (the referential reading), it is fine. (18b) does not have the latter type of reading, and so is anomalous in implying that there is only one Republican senator from Mississippi. Given that possessive

determiners do not take indices, this is exactly what Elbourne's analysis predicts. Thus, the definite article takes both an index and an NP as arguments (which Elbourne argues is true of pronouns as well). Unfortunately, Elbourne's account also predicts that Donnellan's most famous example, given in (19), does not have a semantic referential–attributive ambiguity either, contrary to fact.

(19) Smith's murderer is insane.

Chapter 4, 'Indistinguishable participants', returns to the problem of Kamp's 'bishop' sentence, as illustrated above in (2), repeated here as (20).

(20) If a bishop meets a bishop, he blesses him.

Elbourne reviews prior attempts to deal with this problem, arguing that each solution is ultimately unsatisfactory. His own solution relies on distinguishing the minimal situations for the two antecedent DPs (the two occurrences of *a bishop*) in terms of the surrounding situation structure, which reflects the syntactic structure of the sentence. Elbourne provides support for this approach with examples like (21).

(21) *If a bishop and a bishop meet, he blesses him.

The coordinate structure in (21) does not provide an asymmetrical situation structure for the two DPs, which, as a result, are not distinguished.

Chapter 5, 'Japanese *kare* and *kanozyo*', concerns the Japanese third person male (*kare*) and female (*kanozyo*) pronouns. Elbourne argues that since they cannot be bound, dynamic semantics approaches predict that they cannot occur as donkey pronouns. However, they can, providing further support for Elbourne's analysis.

'Proper names' is the title of chapter 6, where a number of arguments are given in support of a definite-description type of analysis. A proper name N is analyzed, following Burge (1973), as a common noun meaning 'entity called N'. An abstract definite article is the usual determiner (although we do have DPs like *a nervous George Bush*), and indices are also included. Thus, proper names have the same type of structure as pronouns and definite descriptions. This chapter challenges the widely accepted view of proper names as non-descriptional, following Kripke (1972).

The final chapter, entitled 'Conclusion', contains a brief summary of the accomplishments of the book, and suggests that future research resulting in the replacement of situations with (possibly complex and plural) events will result in a slimmer ontology.

Elbourne's book is a tremendously impressive achievement. He has managed to present and develop an interesting and unusual approach to definite DP structure and interpretation, and to defend it against all competitors in intricate detail with a variety of arguments and types of evidence. The technical details of the analysis are indeed complex, as I hope is suggested by this

review (which is of course incomplete). However, Elbourne is somehow able to explain these details both fully and clearly, and yet quite concisely. It is rare that a book is both required reading and as enjoyable as this book is; it may well become a classic in its field.

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Bernd Heine & Tania Kuteva, *Language contact and grammatical change* (Cambridge Approaches to Language Contact). Cambridge: Cambridge University Press, 2005. Pp. xvii + 308.

Reviewed by ADRIENNE BRUYN, Radboud University Nijmegen & NIAS

In the wealth of studies that have appeared during the past decades on grammaticalization, language change of this kind has primarily been viewed as a language-internal process. In *Language contact and grammatical change*, Bernd Heine & Tania Kuteva (henceforth H&K) take a different perspective and explore the role of language contact in grammaticalization. Their main concern is with GRAMMATICAL REPLICATION or the transfer of meanings/functions from one language to another without the borrowing of morpho-phonological material. Building on research by scholars such as Aikhenvald, Haase and Nau, and taking into account a vast number of case studies, the

authors argue that internal and contact-induced grammaticalization should not be regarded as mutually exclusive, and that the latter does not differ in essence from internally-motivated processes of grammatical change.

In the first chapter, 'The framework', H&K present the central concepts of the theory and position their approach vis-à-vis a selection of research in the area of language contact.

Chapter 2, 'On replicating use patterns', is concerned with recurrent discoursal units that convey some grammatical meaning without having full-fledged grammatical status. While use patterns – collocations, formulaic expressions and constructions – may grammaticalize further within a language, they can also serve as a model for replication in another language, which will thus act as a replica language. Replication of this kind usually involves an already available use pattern becoming more frequent while being extended to new contexts or across categories. An example is the generalized use of full subject pronouns, under the influence of English, by immigrants in the U.S.A. speaking Spanish, Serbian or other languages that are originally pro-drop. The replication process may lead to the emergence of new, incipient grammatical categories, such as articles or evidential markers, thus setting off processes of grammaticalization.

Two types of contact-induced grammaticalization are distinguished in chapter 3, 'Grammaticalization', depending on whether or not the developmental route taken in the replica language R is the same as in the model language M. ORDINARY CONTACT-INDUCED GRAMMATICALIZATION refers to changes brought about in R by the existence of a category in M, but proceeding in a fashion unrelated to M. This involves the mechanism outlined in (1) (H&K's (2), 81).

(1) (a) Speakers notice that in language **M** there is a grammatical category **Mx**.
    (b) They create an equivalent category **Rx** in language **R** on the basis of the use patterns available in **R**.
    (c) To this end, they draw on universal strategies of grammaticalization, using construction **Ry** in order to develop **Rx**.
    (d) They grammaticalize **Ry** to **Rx**.

Examples include the grammaticalization of Solomons Pijin *kam* 'come' (= Ry) into an auxiliary translatable as 'went ahead and' (= Rx), which thus became equivalent to the particle *me'e* (= Mx), which introduces consecutive events in the Eastern Oceanic model language Kwaio (Keesing 1988). Cross-linguistically, it is not uncommon to draw on a verb 'come' to express this function, and the fact that *kam* assumed this role in Solomons Pijin is apparently independent from the Kwaio model.

By contrast, in the case of REPLICA GRAMMATICALIZATION, the speakers of R, rather than drawing on a universal strategy (cf. 1c), repeat a grammaticalization process they assume to have taken place in M, using an analogical

formula of the kind [My > Mx]: [Ry > Rx] (92). For example, speakers of Chinese and colloquial Singaporean English employ *have* (= Ry) to denote existence (= Rx), replicating in their English the grammaticalization process from possession verb to existential marker (= My > Mx) that has taken place in Chinese.

H&K review a variety of cases and issues in order to show that grammatical replication is a ubiquitous process, which makes use of the same conceptual sources as non-contact-induced grammaticalization and proceeds in accordance with the same principles of unidirectionality and gradualness. However, replica categories differ from their corresponding model in that they are less grammaticalized (119). This characteristic is also called upon to distinguish between replica grammaticalization and POLYSEMY COPYING or grammatical calquing, which does not involve a gradual process of grammaticalization in the replica language. Stating that most cases that could be interpreted as polysemy copying can also be analysed as grammaticalization processes (101), H&K appear reluctant to classify actual cases as polysemy copying – even more so than in their 2003 article to which they refer. While data on actual diachronic developments are often lacking, the authors view not only the fact that replica constructions are less grammaticalized than the corresponding construction in the model language but also the occurrence of intermediate stages in the replica language to be indicative of a process of grammaticalization. It is not so evident, however, that the co-occurrence of less and more grammatical uses could not also be the result of polysemy copying. Nor is it clear why the most grammatical usage in the copying language should necessarily be as advanced on the cline of grammaticalization as the most grammatical usage attested in the model language at some point in time.

Chapter 4, 'Typological change', deals with the structural effects that contact-induced grammaticalization may have on a replica language, including the emergence of new categories; the coexistence of old and new structures encoding the same category; category extension, differentiation, and replacement; and the restructuring of an existing category to become equivalent to a model category. Grammatical replication may have an impact on an entire domain of the grammar. Originally aspect-oriented Nilotic languages have developed elaborate tense marking under the influence of Bantu languages; and the North Arawak language Tariana has come to express evidentiality on the model of East Tucanoan languages. In some cases, the typological profile is affected, as in the case of Takia, which Ross describes as an instance of metatypy (see, for example, Ross 2001). In origin a Western Oceanic language, Takia has developed several features leading to a high degree of intertranslatability with the Papuan model language Waskia: Subject–Verb–Object word order became Subject–Object–Verb word order, prepositions gave way to postpositions, and postposed determiners replaced preposed ones.

Metatypy again figures in chapter 5, which focuses 'On linguistic areas' or sprachbunds. According to H&K, areal relationships can be better understood by investigating grammaticalization areas, that is, 'a group of geographically contiguous languages that have undergone the same grammaticalization process as a result of language contact' (182). They show that quite a few features in linguistic areas such as the Balkans, Meso-America, Southeast Asia and Ethiopia lend themselves to an analysis in terms of grammaticalization areas. The boundaries of grammaticalization areas are not necessarily co-extensive with those of the respective sprachbunds, and, representing single features, are more clear-cut than those of sprachbunds, which involve more features by definition, not all of which are of the grammaticalization type.

Here, as well as in the earlier chapters, the discussion focuses on the regularities of grammaticalization rather than on issues of contact. In support of the claim that grammatical replication does not differ from grammaticalization not involving contact, the authors present a selection of cases and data in a necessarily sketchy manner throughout the book. At times I was left with questions pertaining to the sociolinguistic setting, to the diachronic development in the replica language, and to possible correlations with non-grammaticalizing changes and/or material borrowing. I also would have appreciated more information on the details of the model. Nor was it always clear to me whether a particular case would classify as ordinary contact-induced grammaticalization, as replica grammaticalization, or even as polysemy copying. One could imagine that shortcuts or other deviations from an expected route of development could be seen as indications that contact played some role in a particular case. Indeed, it is possible that such 'deviations' could shed more light on the interaction of contact and grammaticalization in general. While it is true that sufficient data are often lacking, it seemed at times that H&K were only too willing to fill in any gaps by referring to oft-attested developments.

Chapter 6, 'Limits of replication', is concerned with the characteristics of the environment in which replication takes place and the possible constraints on the process. The issues being addressed include typological constraints, the relation between replication and borrowing and between replication and attrition, the role of written discourse, and naturalness. While H&K make worthwhile observations, I have to admit that I found the way in which they engage in discussion with positions taken in the literature not always enlightening – a criticism which also applies to parts of chapter 1, where some of the same issues were raised.

In an extensive discussion of the notion of equivalence, H&K draw attention to the fact that grammatical replication often serves the establishment of semantic rather than morphosyntactic equivalence. What remains somewhat problematic in this connection is the suggestion of goal-orientedness. I agree with H&K (34f., 81) that replication should be seen as a creative

activity in the sense that speakers' language usage can result in new structures, and one can even attribute purposefulness to certain language-creating activities (see, for example, Thomason 1995). However, the terms in which replication is described here seem to imply that speakers actually aim at creating a category to match the model (cf. also the formulations in (1) above). An alternative account would be to consider any equivalence to be the result of speakers expressing in the replica language certain pragmatic, semantic or syntactic functions that they are used to expressing in the model language (see, for example, Slobin 1996). In situations of long-term, widespread bilingualism, this may well lead to the kind of changes described by H&K, who indeed stress that this is where grammatical replication is most likely to occur. Apart from the fact that H&K do not always make a clear distinction between the individual and the social level, their finding that replication can proceed from a second to a first language (adoption, borrowing) as well as the other way around (imposition, interference through shift) is therefore not completely unexpected. Any directionality can be neutralized in long-term bilingual contexts, where a distinction between first and second language does not really apply as such. H&K's assertion, put forward also at the beginning of the concluding chapter, that grammatical replication is fairly independent of sociolinguistic factors, should perhaps be interpreted under the assumption of long-term and intense contact involving bilingualism. Where this does not apply, as for example in situations of relatively rapid shift, replication may turn out to proceed in a less regular manner.

H&K's book makes an important contribution to the field of grammaticalization by bringing contact into play. It shows convincingly that it is worthwhile to take contact into account in investigating grammatical change, and to look at language contact phenomena from the perspective of grammaticalization. It also offers a rich collection of interesting cases where structural interference is at issue without any morphological material being transferred.

Unfortunately, it is not always easy to locate the exact place in the book where something is being discussed. The table of contents does not list subsections. Moreover, cross-sectional references are sometimes imprecise, the subject index lacks entries for quite a few topics that are mentioned in various places (e.g. pronouns, metatypy), and parts of the book appear to have escaped thorough indexing. In particular, the indices often fail to refer to languages and authors figuring in the first two chapters: there is, for example, no reference in the 'Index of languages' to page 33 for Tok Pisin or to page 53 for Macedonian, and the 'Index of authors' does not refer to page 9 for Myers-Scotton or to page 63 for Filppula. However, these are only minor obstacles that should not prevent the book from becoming a starting point for further investigation of the interplay between grammaticalization and language contact.

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D. Eric Holt (ed.), *Optimality Theory and language change* (Studies in Natural Language and Linguistic Theory **56**). Dordrecht: Kluwer Academic Publishers, 2003. Pp. 459.

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Theoretical historical linguistics unites areas of study that are often otherwise (sometimes sadly to their detriment) pursued separately. It can, at its best, contribute (i) to our knowledge of how language can change, (ii) to the fast-moving world of linguistic theory construction, and even (iii) to our understanding of the initiation and patterning of particular changes in particular languages. Several of the pieces in this volume, which grew out of a session on 'Optimal Approaches to Language Change', organised by the editor at the 2000 International Linguistics Association conference, successfully engage with (i) and (ii) or (iii), and some even with all three, showing the truly interdisciplinary nature of the best theoretical historical linguistics. In this review, unable to discuss everything, I will concentrate on issues relating to (i) and (ii).

Many of the theoretical issues addressed in this volume are inspired by Optimality Theory (OT), but several contributions deal with fundamental questions in theoretical historical linguistics that, although discussed here in OT terms, could equally be discussed in a framework-neutral way. The volume should thus appeal, beyond those who already have a commitment to OT to anyone with an interest in theoretical historical linguistics – or, at least, in theoretical historical phonology, for the book is unashamedly unbalanced in

its coverage. Twelve chapters deal with phonology, only two with syntax. This imbalance is not inbuilt in theoretical historical linguistics – there are significant streams of work in theoretical historical syntax – but it reflects the differing extent to which OT has penetrated the linguistic subfields. While it is the default framework in theoretical phonology, with only minority competitors, it is far less dominant in syntax.

Optimality Theory and language change has three parts. The first, 'Optimality Theory and language change: overview and theoretical issues', begins with the editor's introductory chapter 1, 'Remarks on Optimality Theory and language change', which provides descriptions of the chapters, a brief run-through of the history of (American) generative historical phonology and an introduction to OT historical linguistics. This is followed by chapter 2: Paul Boersma's 'The odds of eternal optimization in Optimality Theory'; 3: Randall Gess' 'On re-ranking and explanatory adequacy in a constraint-based theory of phonological change'; 4: Ricardo Bermúdez-Otero & Richard M. Hogg's (henceforth B-O&H) 'The actuation problem in Optimality Theory: phonologisation, rule inversion and rule loss'; 5: April McMahon's 'When history doesn't repeat itself: Optimality Theory and implausible sound changes'; and 6: Charles Reiss' 'Language change without constraint reranking'. This part contains most of the discussion of fundamental matters in historical phonology, reaching out beyond OT-exclusive issues.

Some of the chapters in the second part, 'Case studies of phonological change', will mainly interest those who know the particular data and diachronic events that are dealt with, but (especially) chapters 7 and 12 also address general issues of wider importance. Part II comprises chapter 7: Donka Minkova & Robert Stockwell's (henceforth M&S) 'English vowel shifts and "optimal" diphthongs: is there a logical link?'; 8: Viola Miglio & Bruce Morén's (henceforth M&M) 'Merger avoidance and lexical reconstruction: an OT model of the Great Vowel Shift'; 9: Haike Jacobs' 'The emergence of quantity-sensitivity in Latin: secondary stress, Iambic Shortening and theoretical implications for "mixed" stress systems'; 10: Conxita Lleó's 'Some interactions between word, foot and syllable structure in the history of the Spanish language'; 11: D. Eric Holt's 'The emergence of palatal sonorants and alternating diphthongs in Old Spanish'; and 12: Jaye Padgett's 'The emergence of contrastive palatalization in Russian'.

Part III, 'Case studies of syntactic change', contains chapter 13: Benjamin Slade's 'How to rank constraints: constraint conflict, grammatical competition and the rise of periphrastic *do*', and 14: Larry LaFond's 'Historical changes in verb-second and null subjects from Old to Modern French'. The volume concludes with a 'Bibliography on Optimality Theory and language change' and several detailed indices.

The syntactic papers adopt standard Government and Binding Theory/Minimalism-type clause and phrase structure, but show that OT offers new

ways of conceiving of syntactic issues. For example, Slade models the rise of *do*-support by promoting anti-movement and similar constraints above the V + INFL constraint (paraphrasable as 'a verbal head must be attached to Agreement, Tense and Mood features, i.e. no unbound inflection morphemes'), and LaFond accounts for the loss of null subjects by suggesting the demotion of DROPTOPIC ('leave arguments coreferent with the topic structurally unrealised') below PARSE (which requires an input subject, like everything else, to be realised overtly). In addition to this, though, the authors of these papers are interested, respectively, in modelling variation through partial constraint ranking as a better way of implementing the speaker-internal 'grammar competition' model of change, and in the extra-grammatical factors (such as speakers' preferences in expression) that might be thought to have CAUSED the constraint reranking.

In this latter point, LaFond raises one of the fundamental issues that several phonological chapters address, which touches on questions of explanatory adequacy and the location of change in the speaker/adult-to-hearer/acquirer chain: to what extent is the formal modelling that theoretical historical linguists do a CAUSE or an EFFECT of a change? In OT, the question is principally whether constraint reranking enacts change, or whether it follows it. But the same question arises in rule-based frameworks: does the addition (or loss, reordering, etc.) of a rule constitute a change, or is it a reflection of a change that was caused by factors external to I-language? This issue rightly runs through several papers. Gess makes it a centrepiece of his thoughtful chapter, maintaining that standard reranking in the lexical phonology does not explain change by itself. He argues, following others, for the incorporation of phonetic motivation (of the CONSERVEARTICULATORYEFFORT and cue-preservation type) into theoretical historical phonology, but restricts cue-preservation constraints to a register-dependent, inherently variable postlexical stratum which has stylistic and lexical variation built in. He is surely right that speakers play a role in change, but it is not immediately clear what causes reranking in their register-dependent phonology, which is what eventually causes hearer-driven phonologisation 'when there is a re-ranking of lexical phonology constraints from one generation to another' (74). Nonetheless, Gess raises important issues, and his basic position – that reranking follows change – is also considered by others (e.g. Holt, M&S, Jacobs, Lleó and Slade).

Boersma seems to take the opposite position in his chapter, at least to judge from his claims that specific constraints may 'fall from the top to the bottom of the entire constraint hierarchy' (33), which causes constraints whose effects had previously been hidden to have an effect and alter the output. Boersma otherwise cleverly argues that – tied to OT-specific argumentation and the assumption that occulted constraints are ordered randomly and differently within the population – all changes of the particular set that he considers can be seen as improvements, even in what seem like

circular changes (once his non-standard constraints, features and other assumptions are allowed).

Gess' position on reranking and explanation ties in with points discussed by Reiss, who, in an important paper, sets out what we might call the 'acquisitionist' position in historical phonology: change ONLY EVER occurs in first language acquisition. Reiss clearly explains the acquisitionist case, a position which is widely assumed in the rhetoric of theoretical historical phonologists. Unusually, he also draws out its logical implication – that theoretical historical phonology cannot really be done. This is because we cannot consider 'constraint reranking' or 'rule addition' as anything other than a metaphorical manner of comparing differing synchronic grammars. It means that we cannot assume that a language's phonological structure can guide or constrain change, nor predict what is a possible change, because all we can do is compare pre-change/adult grammars and post-change/child grammars and work out the phonetics of Ohalaesque confusability that allowed the children to mistake the output of one grammar as the output of another (and consider the lexical restructuring that this effects). I think this is wrong, but to reject it, we need to reject acquisitionism – change must also be able to occur in post-acquisition grammars. Others in the volume also disagree with Reiss (including, overtly, McMahon and B-O&H), but they do not draw the anti-acquisitionist conclusion.

B-O&H take a masterfully argued third way between phonology-less acquisitionism and its opposite. They argue along lines similar to Reiss' for 'standard' sound change, which they see as the 'phonologisation of non-grammatical phonetic effects' (92) due to acoustic confusability and misparsing, and hence not really the province of phonology. Departing from Reiss, they insist that such changes ARE constrained by phonological structure, both universal and language-specific, contending that this can be implemented in acquisition through markedness constraints. In this they avoid the phonetic and diachronic reductionism that many have recently adopted (Reiss here, for example; see also Blevins 2004), but they do not really explain HOW language-specific phonological structure can affect first language acquisition (if it doesn't already exist in the child's grammar). They also differ from Reiss when modelling analogy, and contend that the mechanics of OT, or, rather, of the Stratal OT that they advocate, can best explain such change. They argue that phonological structure also constrains possible analogical reanalyses and that the lexical/input restructuring (which Reiss claims is the only thing that need be considered in modelling analogy) makes sense when seen as the OT-specific mechanism of Input Optimisation (B-O&H's Stratal-OT implementation of Lexicon Optimisation).

Several chapters address another fundamental point: how should we model the related issues of merger avoidance, chain shifts and contrast maximisation? In a significant chapter, M&S discuss four changes in sets of bimoraic vowels, including cases of merger, diphthongisation and dissimilation,

and changes to several vowels showing merger-avoidance. They argue that the latter should NOT be seen as ontological chain shifts, but rather as due to the interaction in ranking relationships of (i) functional pressures to 'optimise' the relationship between the two parts of diphthongs in the two classic ways (maintain contrast vs. minimise effort), formalised as phonetically-evaluated HEARCLEAR ('maximise the difference between the nuclear vowel and the following glide') and *EFFORT ('have the shortest possible trajectory'), and (ii) constraints on segmental contrasts and inventories, namely IDENTIO(contrast) ('preserve categorial contrasts') and MINDIST ('maximise the auditory distinctiveness of contrasts'). All of these are really families of detailed constraints, partially instantiating Flemming's (1995) Dispersion Theory (DT).

Padgett focuses on DT, linking it explicitly to Martinet's (1955) recognition of functional forces in change, and arguing that it allows theoretical historical phonologists to combine generative phonology's formal rigour with structural phonology's emphasis on the role of the system. This enables OT to evaluate whole languages, or, at least, to compare pairs of forms. Padgett employs *MERGE ('no output word has multiple correspondents in the input') rather than IDENTIO(contrast), but focuses on the 'maximise perceptual distinctiveness' impetus in DT (which he formalises as SPACE, rather than MINDIST), arguing that this is needed to understand the phonologisation of Russian palatalised consonants after yer-deletion and their contrast with what he claims are velarised consonants (creating two marked series of obstruents without their unmarked equivalent).

Holt also investigates systemic factors in change (using *MERGE) to account for the palatalisation of geminates in Spanish, whereas they were simply degeminated in Galician/Portuguese, where merger with singletons was not a danger. Insightfully, Holt links DT's evaluation of systemic factors to anti-acquisitionism and the causal relation of reranking and change: '[i]f systemic factors hold in the constraint hierarchy, then indeed the constraint reranking must occur first (in at least some speakers), with concomitant surface simplification' (304).

M&M focus on the English ('Great') Vowel Shift and argue (contra M&S) that such sets of changes SHOULD be seen as structurally coherent and connected. Indeed, they contend that the changes comprising the Great Vowel Shift all occurred concurrently and should be modelled through the reranking of feature-specific faithfulness constraints and constraints (on outputs, not systems) which penalise the addition of moras to particular vowels, thereby forcing raising and diphthongisation. The authors use constraint conjunction to prevent mergers, rather than *MERGE or similar, illustrating the non-Dispersion OT approach to this.

Jacobs makes a point of using only a few, well-attested constraints in his neat analysis of change in the basis of stress assignment in Latin. Lleó argues that Spanish vowel loss, due to exogenous influence, should be modelled as

constraint promotion, whereas endogenous change must involve constraint demotion. And McMahon's contribution is a skilfully constructed example of theory comparison in theoretical historical phonology. Her chapter is the most critical of OT in that she shows that OT is just as able as standard generative phonology to model 'impossible changes', such as the almost certainly nonexistent West Saxon Palatal Diphthongisation, thus weakening the claim that OT is more restrictive than rule-based approaches.

In sum, this volume contains some essential reading for any theoretical and/or historical phonologist and, to a lesser extent, syntactician. It shows how the latest theoretical ideas can open up new ways of understanding change in general and in the specific sets of (mostly Romance and Germanic) historical data dealt with. Many of the 'fundamental' issues addressed are not OT-specific, but are no less interesting for that, and there are also cases, perhaps most clearly in Boersma's, B-O&H's, M&S's, Jacobs', Padgett's and Slade's chapters, where the architecture of OT is argued to offer novel possibilities for understanding change. Conversely, there are cases where the specifically historical nature of the data informs the theoretical machinery argued for within OT (for example, in modelling merger avoidance and in adopting stratal structure), showing how theoretical linguistics can learn from an engagement with diachrony. The book is well produced and packed full of ideas. It deserves a place in every linguistics reference library.

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Luigi Rizzi (ed.), *The structure of CP and IP: the cartography of syntactic structures*, vol. 2 (Oxford Studies in Comparative Syntax). Oxford: Oxford University Press, 2004. Pp. vii + 367.

Reviewed by ELENA ANAGNOSTOPOULOU, University of Crete

This book contains ten articles that were presented at the Workshop on the Cartography of Syntactic Positions and Semantic Types, held at Certosa di Pontignano (Siena) on 25–26 November 1999. It is part of a series of three

volumes investigating the architecture of functional projections. Cartographic projects take as their starting point Rizzi's (1997) and Cinque's (1999) work on clausal structure, according to which the core functional categories C, T and *v* are replaced by highly articulated structural fields. The descriptive goal of such projects is to investigate the number and labels of the functional heads building the clause.

The book begins with an illuminating introduction by Luigi Rizzi, 'On the cartography of syntactic structures'. Rizzi traces the origins of cartography to the following theoretical assumptions: (i) inflectional morphology is distributed in syntax; (ii) phrases are uniformly structured (cross-categorial harmony); (iii) functional heads project their own phrasal categories; and (iv) clause structure is invariant across languages. He summarizes different types of evidence that have been used in the exploration of cross-linguistic clausal architecture, including morphological data from languages with rich inflection, syntactic evidence based on adverb placement and word order patterns, and investigations of the interpretive properties associated with particular positions. Rizzi compares cartographic research to Minimalism, highlighting the positions where the two approaches converge (economy, local simplicity and emphasis on interfaces) as well as an area of theoretical tension between the two programs. More precisely, while syntactic representations in Minimalist work rely exclusively on the three functional heads C, T and *v*, cartographic approaches employ more elaborate representations. Rizzi argues that, for a number of reasons, the tension is only apparent. To begin with, Chomsky (2001) explicitly acknowledges that the heads C, T and *v* are a shorthand for referring to a more articulated functional structure. Moreover, Agreement projections, which are rejected by Minimalism due to their uninterpretability, are not necessarily indispensable in cartography. They can be replaced by contentful heads such as Mood or Aspect. Finally, the C domain, according to Rizzi (1997), contains heads with interpretive import: Force, Topic, Focus and Finiteness. In this way, the syntactic computation yields representations that are transparent to the interpretive systems. The introduction closes with an overview of the papers in the volume, many of which explore the consequences of Rizzi's (1997) analysis of the left periphery.

The first contribution, 'Aspects of the low IP area', is by Adriana Belletti. Belletti extends Rizzi's analysis of the Complementizer Phrase (CP) area in terms of Topic and Focus positions to the *v*P domain in order to account for postverbal subjects in Italian. She compares Free Inversion (FI) in Italian to Stylistic Inversion (SI) in French. Adopting Kayne & Pollock's (2001) analysis of SI, according to which the postverbal subject is moved to the left periphery followed by remnant movement of the Inflection Phrase (IP) to its left, Belletti argues that subjects in FI constructions occupy a low position. Their postverbal ordering is the result of movement of the verb over the subject rather than the product of remnant movement. Belletti furthermore

suggests that subjects in FI are associated with new information focus and occupy a Focus position above *v*P. Comparing ungrammatical Verb–Subject–Object (VSO) to grammatical Verb–Subject–Preposition Phrase orders in Italian, Belletti then argues that VSO orders are ruled out due to Relativized Minimality: the object must be related to a Case-checking position above the FocusP that hosts the subject, but the subject blocks this relation. Belletti discusses a number of other constructions involving post-verbal subjects in Italian. For example, well-formed VS#O orders (where the object has been dislocated) and VSO orders with pronominal subjects are analyzed as a combination of (i) subject movement to a peripheral focus position, (ii) topicalization of the object to a peripheral topic position, and (iii) remnant movement of the rest of the IP to a position above the subject. VOS, on the other hand, involves movement of the subject to the low FocusP, followed by remnant topicalization of VO to a clause-internal TopicP. Finally, postverbal subjects in *wh*-interrogatives are shown to fill a low topic position. Belletti's paper is carefully argued and offers a valuable picture of the empirical facts of subject inversion in Italian and other Romance languages. The specific analyses that she proposes, however, are constrained by the general hypothesis that topic and focus interpretation and intonation are always linked to designated Topic and Focus positions. There are alternative analyses, however, according to which postverbal subjects remain in their base position (Alexiadou & Anagnostopoulou 1998, 2001). For such approaches, focus interpretation in FI is not linked to the presence of a FocusP; rather, sentence stress is assigned by phonological rules, and the interface systems make use of the available stress in interpreting the subject as focus (Zubizarreta 1998, Alexiadou 1999, building on Cinque 1993). I do not see why an analysis based on an extensive use of Topic and Focus projections provides a simpler view of the interface between syntax and information structure than one relying on well-established mapping rules mediated through sentence stress (see, for example, Zubizarreta 1998 and Reinhart 1995 for arguments in favor of the latter view).

The next article, 'Topic, Focus, and V2: defining the CP sublayers', by Paola Benincà & Cecilia Poletto, revises Rizzi's (1997) analysis of the CP layer. On the basis of evidence from Italian dialects, Benincà & Poletto argue that Rizzi's proposal should be modified in two respects. First, instead of assuming a recursive Topic projection, the Topic field is split up into a series of functional projections with distinct and discrete properties (Hanging Topic, Scene Setting adverbials, Left Dislocation, List Interpretation XPs). Second, building on results from an investigation of Weak Crossover effects, the authors argue that there are no TopicPs lower than Focus. All projections below Focus host operator-like elements, even when they do not visibly carry focus intonation. This leads them to propose that the Focus field consists of a (non-singleton) set of projections. Benincà & Poletto's paper contributes to the study of the cartography of the left periphery

by providing strong arguments for novel distinctions, based on a rich empirical foundation. I am not entirely convinced, though, that the objective to eliminate recursion is fully successful. As there is no limit to the number of arguments that may undergo Clitic Left Dislocation, one would, for example, have to admit that at least the Left Dislocation position is recursive.

The next paper, 'Resumptive relatives and LF chains', by Valentina Bianchi, explores the typology of resumptive pronouns in relative clauses. Bianchi identifies three types of resumptives: optional resumptives corresponding to Determiner Phrase arguments, obligatory resumptives in inherently Case-marked positions, and resumptives that rescue island violations. Bianchi proposes that resumptive pronouns spell out the referential index of the lowest link of chains at Logical Form (LF). She argues that the distribution of optional resumptive pronouns varies cross-linguistically depending on the type of the relative clause (non-restrictive, restrictive specific, restrictive non-specific, maximalizing relatives), and accounts for optional resumptive pronouns in terms of the nature of the LF chain involved in the respective constructions. The obligatoriness of resumptive pronouns in oblique positions is linked to a constraint demanding that inherent Case must be spelled out, while pronouns rescuing island violations are analyzed in terms of representational pronominal chains. The paper addresses issues of cartography only indirectly: Bianchi makes use of Rizzi's (1997) ForceP and argues for a GroundP, which hosts presupposed material.

Anna Cardinaletti's 'Toward a cartography of subject positions' complements Belletti's contribution. While Belletti investigates postverbal subjects and the low IP domain, Cardinaletti examines preverbal subjects, that is, she focuses on the high IP area. Cardinaletti argues that preverbal subjects in null subject and non-null subject languages occupy several positions, as illustrated in (1).

(1) SpecSubjP SpecEPPP SpecAgrSP

Nominative Case and subject φ-features are checked in AgrSP, while SubjP is a projection where the 'subject of predication' feature is checked. Moreover, EPP features are checked in an EPP position located between the two. Cardinaletti argues that the three projections host different types of subjects: SpecAgrSP hosts weak subjects (in the sense of Cardinaletti & Starke 1999; that is, pro, the Italian weak pronoun *tu*, and weak pronominal subjects in non-null subject languages), while SpecSubjP hosts strong referential and quirky subjects. Finally, the EPP position hosts the weak locative *there* in English and the corresponding null locatives in pro-drop languages. Cardinaletti offers an extremely detailed picture of preverbal subjects in several languages, reaching the convincing conclusion that weak and strong subjects occupy different positions. Some aspects of her analysis raise questions, though. For example, the exact intuition behind the 'subject of

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predication' feature is unclear; in particular, it does not seem to correspond to the distinction between categorical vs. thetic statements, that is, the distinction between statements that have a subject–predicate structure vs. statements that do not (see Ladusaw 1994). Weak as well as strong subjects qualify as subjects of predication; yet only the latter occupy SpecSubjP.

In 'Remnant movement in the theory of phases', Carlo Cecchetto investigates the question of what distinguishes grammatical from ungrammatical remnant movement in the configuration schematically represented in (2).

(2) $[_Z \ldots t_X \ldots] \ldots X \ldots t_Z$

In syntactic structures such as (2), ungrammaticality arises whenever the dislocation process targeting X and the operation responsible for remnant movement of the containing category Z fall in the same group of movement types. Cecchetto presents arguments against Relativized Minimality accounts for this generalization and develops an analysis in terms of Chomsky's (2001) Phase Impenetrability Condition. Crucial for his analysis is the proposal that there is just one escape hatch from the *v*P. Cecchetto investigates more abstract properties of cartography in discussing the conditions that turn phases into opaque or transparent domains for extraction. As a result, he provides arguments against the pervasive use of the kind of remnant movement currently popular in syntactic theorizing, and in support of a principled use of this concept, which requires remnant movement analyses to have directly observable phonetic reflexes.

'Complementizer deletion in Italian', by Alessandra Giorgi & Fabio Pianesi, argues that so-called 'complementizer deletion' does not represent a process licensing an empty complementizer, but rather is the result of a missing CP layer. The authors propose that in complementizer deletion, two different sets of features (Mood and φ-features) are introduced into the derivation by a unique functional category. When the two sets are distributed over two functional projections, Mood is lexicalized by *che* 'that' and by φ-features on Agr.

In 'Clitics: cooccurrence and mutual exclusion patterns', M. Rita Manzini & Leonardo M. Savoia argue, following Sportiche (1996), that clitics are functional heads that are ordered in the IP domain in accordance with a universal hierarchy. The sentence has a functional structure akin to that of nouns, and the order of clitics mirrors the order of functional heads in nominals. Parametrization in the order of clitics (dative–accusative vs. accusative–dative), mutual exclusion of clitics (accusative and dative, object and subject) and 'spurious' *se*-phenomena are explained syntactically, without appealing to morphology. I found this paper hard to follow. In particular, I found it difficult to evaluate the differences between a syntactic characterization of the internal structure of clitics and a morphological characterization, given that current theories of morphology make available a substantial amount of structural information.

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Cecilia Poletto & Jean-Yves Pollock's 'On the left periphery of some Romance *wh*-questions' explores the left periphery of *wh*-questions in French, Bellunese and Italian. Adopting a line of research initiated by Kayne (1998) and Koopman & Szabolcsi (2000), the authors develop a comparative analysis of Romance interrogatives following two general guidelines. First, Universal Grammar does not allow covert movement, that is, all movement operations are overt. Second, head movement is (by and large) replaced by remnant movement. The analysis leads to the identification of five different layers in the complementizer domain: ForceP, GroundP, Op1P, Op2P and TopP. The paper discusses an impressive array of data, but the conceptual advantages of replacing covert and head movement by extensive remnant movement are not entirely clear to me.

In an interesting comparative paper, 'The C-system in Brythonic Celtic languages, V2, and the EPP', Ian Roberts investigates the C system in Welsh and other Celtic languages. He compares Welsh particle constructions to Verb second (V2) in Germanic and motivates a unified analysis of the two systems. Roberts argues that Celtic particles, which McCloskey (1996) analyzes in terms of cliticization of C to I at the level of Phonetic Form, can be reanalyzed in Rizzi's C system as heads lexicalizing Fin. A similar requirement drives V2 in Germanic. This leads to a unified analysis of the two phenomena: unselected Fin must be lexicalized in both. In addition, Fin's specifier position must be filled in Germanic due to the EPP.

The last paper, by Ur Shlonsky, investigates the syntax of 'Enclisis and proclisis'. Shlonsky compares the patterns of cliticization in Catalan, Spanish and Italian to those in Portuguese, Galician and other Iberian dialects, and develops a uniform analysis of proclisis and enclisis in the two language groups. The account proposed relies crucially on the idea that clitic placement is sensitive to inflectional completeness. Shlonsky argues that enclisis occurs when the verb adjoins to the functional head containing the clitic. Due to a strict version of the Head Movement Constraint, this is possible only when the verb is inflectionally complete, that is, when it has fully checked its features before it raises to the cliticization site. Proclisis arises when the verb does not cross over the clitic position. As such, it is a cover term for a number of language-specific rules. More specifically, it can arise either when the clitic adjoins to the functional head containing the verb or when the clitic precedes its host without being incorporated into it. Shlonsky proposes that enclisis takes place whenever possible, while proclisis occurs as a last resort, that is, only when enclisis is ruled out. Shlonsky's paper is a valuable contribution to the study of clitic placement since it provides a single analysis for enclisis and proclisis in two branches of Romance – a non-trivial task, given the diversity and complexity of the patterns involved.

Overall, the volume offers an important addition to existing studies of functional clausal architecture. It contains a balanced collection of

high-quality papers which cover a wide range of phenomena in the CP and IP domains. The book is particularly impressive as a rich source of data and interesting empirical generalizations. At the same time, it provides original and detailed analyses of the phenomena. It would have been advantageous, though, if the empirical focus had not been almost exclusively centered on Italian and, to a lesser extent, other Romance languages. Moreover, there are certain theoretical choices in some of the papers which are debatable, such as the extensive use of remnant movement and Topic- and Focus-related projections, which require a more careful investigation of their semantic impact. Still, the merits of the book by far outweigh these two points of criticism. There is no doubt that this collection is on its way to becoming a standard reference for the study of clausal architecture.

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Wendy Sandler & Diane Lillo-Martin, *Sign language and linguistic universals*. Cambridge: Cambridge University Press, 2006. Pp. xxi + 547.

Reviewed by KEARSY CORMIER, University College London

This book quite nicely fills a void long present in the sign linguistics literature. Most sign linguistics volumes have focused on one particular issue or theme (e.g. gesture, space, modality, classifier constructions), and/or covered topics within just one sign language – usually American Sign Language (ASL). It is rare to come across a book that gives a comprehensive overview of theoretical issues in sign linguistics research AND covers data from more than one sign language. *Sign language and linguistic universals* does both, reporting data and analyses on ASL but also substantially on Israeli Sign Language (ISL) and on the sign language used in Brazil, Língua de Sinais Brasileira (LSB).

The book is intended for linguists (or linguistics students) who have little or no knowledge of any sign language but do have a grounding in theoretical linguistics (particularly in generative frameworks). Thus, it is quite different from typical sign linguistics textbooks (e.g. Valli & Lucas 1995, Sutton-Spence & Woll 1999) which are aimed at students who know or are learning sign language and have no background in linguistics.

Sign language and linguistic universals covers the key areas within theoretical sign language linguistics, and also presents the research of the major players in the field. It attempts to synthesize the various perspectives, pointing out where different analyses converge or diverge from each other. Although Wendy Sandler & Diane Lillo-Martin note that their book is 'not intended to be an exhaustive overview of the field' (xvi), it is quite thorough. However, one drawback to the authors' approach is that it results in a rather large book. At 547 pages, *Sign language and linguistic universals* is hefty, not a trivial amount of weight in one's knapsack. That said, the book is very reasonably priced, and you get quite a lot for your money.

Unit I, 'Introduction', which comprises chapter 1, 'One human language or two?', gives, as its name suggests, an introduction to the book and asks the central question of what sign languages as visual/gestural languages have to tell us about linguistic theory. The authors explain that they endeavour to address this question in their book by covering the major subfields of linguistics (morphology, phonology and syntax). They justify their decision to concentrate on works and analyses within generative frameworks by arguing that sign languages provide an interesting testing ground for Chomsky's notion of Universal Grammar, which is central to generative theories. This sets the stage for their later concern with questions about how sign languages can inform what we know about language universals, that is, those

characteristics or features of language that may be universal vs. those that are language- (and perhaps modality-)specific.

Unit II, 'Morphology', includes an introduction in chapter 2 ('Morphology: introduction') and is followed by chapters on 'Inflectional morphology' (chapter 3) and 'Derivational morphology' (chapter 4). In chapter 5, 'Classifier constructions', the authors outline the descriptive work that has been done on classifier constructions involving verbs of motion and location, which are known for their morphological complexity. They discuss how poetry and other artistic uses of sign languages utilize classifier constructions in very productive and creative ways. However, they neglect to point out that sign language users can exploit the iconicity of classifiers – and thus come up with very productive and creative uses – even in everyday discourse. It is true that some signers are more skilled at this than others, which may be similar to the way that some speakers of spoken languages are more skilled at creative uses of language than others. But on the whole, all sign languages that we know about are much more suited to creativity and productivity (particularly in their morphology) than spoken languages are. The authors point out (as many others have) that a major reason that sign languages are structured so differently from spoken languages is that the visual/spatial modality lends itself to visually motivated structures. The productive use of classifier constructions in a variety of situations and registers (and not just poetic uses) occurs for the same reasons: the modality allows and even encourages it.

Chapter 6, 'Entering the lexicon: lexicalization, backformation, and cross-modal borrowing', looks at the relationship between morphology and the lexicon in sign languages. Lexicalization, particularly in the context of classifier constructions, is a very tricky issue, so it is good to see that the authors chose to include it. This chapter also looks at borrowing and other ways that new signs typically enter the sign lexicon. The unit on morphology then closes with chapter 7, fittingly entitled 'Morphology: conclusion'.

Unit III, 'Phonology', comprises nine chapters. The authors begin in chapter 8, 'Meaningless linguistic elements and how they pattern', by defining the various phonological parameters of a sign. Then, in chapter 9, 'Sequentiality and simultaneity in sign language phonology', they consider how these parameters are similar to and different from phonological segments in spoken languages, particularly with regard to simultaneity and sequentiality. Here, Sandler & Lillo-Martin introduce a few models of sign phonology that rely on these notions, including Liddell & Johnson's (1989) Move-Hold model and Sandler's (1989) Hand Tier model. The next four chapters describe the major phonological parameters of 'Hand configuration' (chapter 10), 'Location: feature content and segmental status' (chapter 11) and 'Movement' (chapter 13), with chapter 12 covering issues relating to 'The non-dominant hand in the sign language lexicon' as articulator versus place of articulation. Chapters 14 ('Is there a syllable in sign language?') and

15 ('Prosody') cover the notion of syllable and prosody in sign languages, respectively. In several of these chapters, the authors discuss sign phonology models that are particularly relevant to the parameters/features related to these levels of linguistic organization. Finally, chapter 16, 'Phonology: theoretical implications', looks at what sign language phonology can reveal about general linguistic theory.

Unit IV, 'Syntax', begins with a unit overview in chapter 17 ('Syntax: introduction'), followed by a chapter on 'Clausal structure' in sign languages in general (chapter 18), including issues in basic word order and phrase structure, in which the authors explain their reasons for adopting a generative framework. Chapter 19, 'Clausal structure across sign languages', deals with syntactic phenomena that are known to vary across sign languages (e.g. auxiliary elements), and includes an in-depth look at the structure of the sign language used in Brazil, LSB. Chapter 20, 'Variations and extensions on basic sentence structures', considers the structure of determiner phrases, adjective phrases, possessives, classifier constructions and negative constructions. Chapter 21, 'Pronouns', covers syntactic phenomena related to sign language pronouns, examining issues such as reference and referential shift (with comparisons to logophoric pronouns in spoken languages), as well as overt and null pronouns in sign languages. Chapter 22, 'Topic and focus', examines the fact that all known sign languages seem to be discourse- rather than sentence-oriented, which obviously has effects on how information is packaged in sign languages. Chapter 23, '*Wh*-questions', reviews recent debates in the literature on whether *wh*-movement in sign languages is leftward or rightward. Chapter 24, 'Syntax: summary and directions', takes stock of syntactic issues within sign languages and raises the question of modality effects.

Throughout the phonology and syntax units, the authors present different phonological models and syntactic analyses, in each instance critiquing the strengths and weaknesses of the respective models. Among the various phonological models that are presented, the authors invariably end up arguing in favour of Sandler's (1989) Hand Tier model. When it comes to syntactic accounts, the authors favour the analyses proposed by Lillo-Martin and colleagues (e.g. Petronio & Lillo-Martin 1997). While Sandler & Lillo-Martin provide appropriate evidence for their conclusions, a reader with little knowledge of the sign linguistics literature needs to bear in mind the partisan nature of these two chapters, given that the authors are more theoretically neutral in the rest of the book.

The final unit of this book is Unit V, 'Modality'. Although the rest of the book provides a good summary of recent and important research within the areas of morphology, phonology and syntax, the sole chapter in this unit, 'The effects of modality: linguistic universals and sign language universals' (chapter 25), brings it all together and highlights some key elements seemingly unique to the sign language modality, and perhaps universal among

sign languages. These elements include the use of space for referential purposes (particularly pronouns and verb agreement), the use of simultaneity in sign languages, iconicity/motivatedness in sign languages, and, finally, the effect of language age on structure (i.e. all known sign languages are relatively much younger than established spoken languages, so much so that many comparisons have been made between sign languages and creoles).

The authors recognize – and reiterate throughout the book – that more research on other sign languages is sorely needed before we can begin to make real claims about language modality, especially about features that are prevalent in, and may even be universal across, all sign languages. One real strength of this book is the use of examples from various sign languages (particularly ASL, ISL and LSB). However, there are some cases where the authors base an argument on a single example. In chapter 10, Sandler & Lillo-Martin argue that hand configuration encompasses both handshape and palm orientation. As evidence they present the ASL example OVERSLEEP, a compound sign composed of SLEEP and SUNRISE. Sandler & Lillo-Martin suggest that this example provides evidence for Sandler's (1989) Hand Tier model, in which selected fingers of a handshape may assimilate, but if they do, then orientation is necessarily assimilated also. They then claim that '[T]HESE DATA motivate the representation of hand configuration in the Hand Tier model' (157, emphasis added), even though they have given only one example. While it is a telling example, more examples (especially from other sign languages) would have made their argument much stronger.

Although it is good and important that this book includes data and analyses on sign languages other than ASL, there does, in some cases, seem to be an underlying assumption (found in various sections throughout the book) that what holds for ASL probably holds for other sign languages as well. For instance, in the chapter on the sign language lexicon (chapter 6), the authors start by saying that many European sign languages and also ISL have 'a fair amount of mouthing of words from the ambient spoken languages' (104). They then offer arguments as to why such mouthings should not be considered to be speech that is produced simultaneously with sign. One such argument is that 'only a relatively small percentage of signs are normally accompanied by mouthing' (104). In many sign languages, this simply is not true. In British Sign Language (BSL), for example, mouthings are widespread (Sutton-Spence & Day 2001). The same has also been reported for many other European sign languages, as the authors themselves note earlier in the same paragraph. Although the claim about the low frequency of mouthings does not detract from the authors' larger point (which is that mouthings are not simply speech accompanying sign), it is yet another example of claims made about 'sign languages' that are actually only known (or believed) to be true for ASL. Again, this points to the need for more research on other sign languages.

That said, where examples are used in this book, they are appropriately illustrated and/or described. This is not a trivial matter. Because sign languages have no standard written form, it can be difficult to make sign language data accessible to sign-naive audiences in written form. This is a problem for sign language researchers accessing descriptions of sign languages they do not know, but even more so for researchers who do not know any sign language at all. Fortunately, this book is relatively well-illustrated: there are an appropriate and adequate number of illustrations, photos, video captures, and descriptions of sign examples for all the sign languages described. (One would like to see more, but cost and space are always issues to consider.)

To conclude, I recommend this book to linguists interested in learning more about sign languages. Given the overall theme, the book would be of particular interest to those studying language typology. I would also recommend this book to students who have some background in theoretical linguistics (particularly in phonology and syntax), and to anyone who is interested in the nature of modality and human language.

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