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REVIEW

Matthew Baerman, Dunstan Brown & Greville G. Corbett. *Morphological Complexity* (Cambridge Studies in Linguistics 153). Cambridge: Cambridge University Press, 2017. Pp. xx + 188.
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The book *Morphological Complexity* by Matthew Baerman, Dunstan Brown and Greville G. Corbett is a study of inflectional classes, defined in terms of (i) the DIFFERENT SHAPES that inflectional markers take across different sets of lexemes and (ii) the VARYING DISTRIBUTION of inflectional markers within paradigms. Complexity is taken to be the most characteristic property of morphology as an autonomous component of language. Under this overarching definition, the book's main objectives are to provide an overview of the manifold configurations that morphological complexity can take across the languages of the world and to develop quantitative measures that can be applied across languages and attested morphological systems.

The volume is divided into eight chapters, including an introduction. Chapter 1 defines the scope of the investigation and introduces some key concepts, such as INFLECTIONAL CLASS and COMPLEXITY. Inflectional classes are defined as ways of combining lexical and grammatical information such that the different forms that words take in order to express a given grammatical meaning are lexically specified and structured into paradigms. In this context, morphological complexity coincides with paradigmatic structure, and for analytical purposes, we can think of it as a bidimensional typological space, which is bound to vary both horizontally and vertically. Horizontal variation has to do with how the realization of one and the same inflectional pattern varies across different sets of lexemes (for instance, case exponents may vary across different sets of nouns), while vertical variation is concerned with the way in which inflectional distinctions are organized within specific lexical sets (for instance, some case distinctions may receive the same morphological realization in one lexical set but not the others).

Chapter 2 provides a typological classification of inflectional classes based on patterns of exponence, which the authors refer to as 'an external typology of inflectional classes'. Affixation is the most canonical exponent of inflection and can be based on ALLOMORPHY, POSITION, and DISTRIBUTION. Under allomorphy, different

inflectional classes are realized through different patterns of affixation, the most common of which being suffixes. Inflectional classes may also be distinguished by how a given affix is positioned with respect to the stem. In Somali (Afro-Asiatic, Cushitic), the same series of affixes is used with all verbs, and affixes generally follow the root. However, with a small, lexically specified class of verbs, these affixes are used prefixally. Inflectional classes can also be identified on the basis of how affixes are distributed within a paradigm. For instance, in the Oto-Manguean language Otomí, the suffix *-di* can mark first, second, or all three persons, depending on the lexical class of the verb and aspect–mood distinctions. Beyond affixation, inflectional class distinctions can be encoded via stem alternations, suprasegmental features, uninflectedness, and, to a certain extent, even by words in their entirety. Examples of inflectional classes based on stem alternation are strong and weak nominal paradigms in Estonian (Uralic, Finnic). Tone, stress, and various vocalic features such as length, aspiration, and glottalization are examples of suprasegmental features that inflectional class distinctions may be based on by themselves or in combination with affixal patterns. Lack of inflection (or uninflectedness) may affect entire lexemes or parts of the paradigms of individual lexemes. For instance, in Russian (Indo-European, Slavic), nouns such as *pal'to* 'coat' and *kenguroo* 'kangaroo' do not inflect for case and number and may or may not trigger agreement in these categories. In this case, uninflectedness has scope on the entire lexical set. However, in Polish (Indo-European, Slavic), there exists a small class of nominal lexemes which inflect in the singular but not in the plural, which is an example of uninflectedness having scope on parts of the paradigm associated with a given lexical set. The chapter ends with an overview of cases in which the distribution of words – and not just affixes, stems, or suprasegmental features – is constrained by criteria that are reminiscent of those governing inflectional classes. This is, for instance, the case of auxiliary selection in languages like Italian and German, where intransitive verbs differ depending on whether they take the 'be' or 'have' auxiliaries in periphrastic verb forms.

Chapter 3 surveys inflectional class systems based on the particular morphosyntactic feature that they realize, and under the condition that inflectional patterns are 'pure', that is unambiguously attributable to only one feature. The morphosyntactic features under examination are, in line with Corbett (2012), case, number, person, gender, and tense/aspect/mood. A straightforward example of case-induced inflectional class system is found in the New Guinean language Bauzi, where case is the only morphological distinction marked on nouns and five different classes can be identified on the basis of case marking allomorphy. Lexically specified number marking is strikingly common across the languages of the world and, above all, it manifests itself via variation in the domain of plural marking. Allomorphy in singular marking is much rarer and goes usually in parallel with allomorphy in non-singular number values. An extreme example of number-governed allomorphy is the tripartite number system of Nilo-Saharan languages, where both the singular and plural have several allomorphs. Nominal plural allomorphy can also extend to agreement marking. This is the case of the language isolate Seri, where nearly all plural allomorphs attested on nouns also occur on the subject markers on the

verbs. Person-based inflectional classes are found on verbs and possessors. In the Trans-New Guinea language Golin, for instance, the suffix *-in* is used for second-person possessors with some nouns and for third-person possessors with other nouns. This is an example of distributional person-based inflectional classes. Inflectional class distinctions purely based on gender are thus far not attested. This gap is most probably due to the fact that 'pure' gender marking is rare across the languages of the world, and the encoding of gender distinctions tends to conflate with that of other features, most commonly number. The English distinction between strong and weak past tense forms is an example of inflectional class distinction in the domain of tense/aspect/mood. An important generalization – which is laid out at the end of the chapter and calls for further empirical testing – is that the more a morphosyntactic feature interacts with lexical semantics the higher the likelihood that its morphological realization be crosslinguistically lexically specified. In this context, number marking stands out as a strong attractor of allomorphy across the languages of the world.

Chapter 4 discusses the motivation behind inflectional class assignment. While, in principle, inflectional class assignment is assumed to be arbitrary, complete arbitrariness is rarely attested. In most cases, at least subparts of a given inflectional system can be explained, and various orders of explanation can be identified, among which phonological, morphological, and semantic. While the chapter discusses a variety of examples for each of these cases, for reasons of space, only semantic conditions are discussed here in some detail. Semantic motivation for morphological variation is most frequently attested with nouns. In the Pama–Nyungan language Diyari, nominal inflectional classes are organized on the basis of a sharp distinction between common nouns, men's personal names, and women's personal names. Semantic conditioning on nominal inflectional classes has also natural connections with the domain of nominal classification. For instance, if a language has overt gender marking on nouns and if gender assignment is at least partially semantically motivated, a correspondence may be posited between nominal inflectional classes and gender values. However, since there often are more inflectional classes than gender values, the authors argue that the two domains, albeit clearly interacting, should be kept distinguished for analytical purposes. Semantic conditioning in inflectional classes is also attested in the verbal domain and tends to be based on argument/role marking. For instance, in the New Guinean language Rotokas, verbal inflectional classes are distinguished on the basis of subject-marking patterns. The chapter continues with a discussion of various types of paradigm-internal irregularities, such as deponency. In some of the cases discussed, seemingly arbitrary inflectional patterns can be motivated at the level of morphosyntax, whereas in other cases, both accounts, morphological arbitrariness and morphosyntactic motivation, may be considered to be valid. The take-home message that the authors put forward is that a distinction between both levels of explanation should be maintained while at the same time working towards 'a more precise mapping between the two' (p. 67).

Chapter 5 investigates conditions on inflectional paradigms and the way in which they affect the organization and structuring of inflectional classes both semantically and formally. For instance, a condition on Russian nominal inflectional classes is that only count nouns are sensitive to the distinction between singular and plural

number, whereas noncount nouns have no plural. This is an example of a semantic condition having scope on paradigmatic cells across all inflectional classes. Another example from Russian is the role of animacy as a condition on the realization of accusative marking: with animate masculine or plural nouns, the accusative is syncretic with the genitive, while in all other cases, the accusative is syncretic with the nominative. In both conditions, the antecedent lies in lexical semantics (countability, animacy) while the consequents differ. In the first case, the consequent is the abstract content of the paradigm, while in the second case, it is the pattern of realization of specific paradigmatic cells. Antecedents can be semantic, syntactic (part of speech), morphological, and phonological. Consequents can be content paradigm, realization, and form paradigm. A typology of conditions is laid out based on the 12 possible combinations of antecedent and consequent types and against the theoretical background of canonical typology and morphology (Brown, Chumakina & Corbett 2013). All logically possible types are attested except the two which run counter the expectation that syntax is both morphology and phonology free. The 10 attested types are illustrated with a wealth of examples from different languages of the world. Beyond this typology, more complex configurations, involving multiple antecedents, are also attested. This is illustrated by taking the example of the plural augment in Serbo-Croat (Indo-European, Slavic), where the antecedent is both morphological and phonological.

Chapter 6 examines paradigm structure and how differences between inflectional classes are spread over the paradigm based on allomorphy, distribution, or a combination of the two. Allomorphic inflectional classes range between two extreme types: (i) paradigm structures where exponents are maximally distinguished in terms of realization and each inflectional class functions as a self-contained entity, and (ii) paradigm structures where inflectional classes are not distinguished based on exponent sets but rather based on how different exponents are combined with each other. While in systems of the former type any given exponent implies the rest of the paradigm, no such implication is possible for the second type of paradigm structures. Most of the systems attested across the languages of the world fall in between these two extreme types. A typology of allomorphic inflectional classes is proposed. Systems where exponents are maximally distinguished across inflectional classes and feature values are labeled GRID SYSTEMS. HIERARCHICAL SYSTEMS are those where the forms realizing one value are maximally distinctive, but those realizing another value are conflated, and conflated values thus subsume the series of maximally distinguished values. If one more level of conflation is found in another feature value, we have a MAXIMAL HIERARCHICAL SYSTEM. CROSS-CLASSIFYING SYSTEMS are those for which the number of inflectional classes outnumbers the number of forms for each of the values to be distinguished. Thus, for instance, in a system with four inflectional classes (ABCD) and two feature values, class A and B, on the one hand, and C and D, on the other hand, may have the same formal realization for value 1, whereas for value 2, A and D, on the one hand, and B and C, on the other hand, could be conflated. MAXIMAL CROSS-CLASSIFYING systems are those where yet another level of conflation is attested for, say, a third feature value. This typology can also be applied to inflectional classes of the distributional type, albeit with a limited scope, which is related to the fact that distributional variation between two exponents is the necessary condition for these types to exist. Most of the

inflectional systems attested in the world's languages exhibit paradigmatic structures that are, in fact, a combination between allomorphic and distributional patterns. A few such examples are discussed at the end of the chapter.

In Chapter 7, the canonical types of inflectional class systems introduced in Chapter 6 – grid, hierarchical, and cross-classifying – are matched against a three-dimensional typology of complexity. The first of these dimensions is ORGANIZATION, which addresses the extent to which paradigm structure is rule based and thus predictable. The second dimension is EMERGENT COMPLEXITY, which is the opposite of organization and measures the degree of unpredictability of a system. The third dimension is CENTRAL SYSTEM COMPLEXITY, which measures the interaction between organization and emergent complexity, and is at its highest when the two are in balance. In grid systems, there is a straightforward relationship between exponents and values, which can be easily accounted for by a set of rules, the grammar. These systems thus score high in organization and low in emergent complexity. Cross-classifying systems presuppose a high level of lexical stipulation. In such systems, the relationship between exponents and values is unpredictable and relies on listing, that is, the lexicon. Cross-classifying systems thus display a low level of organization and high emergent complexity. Hierarchical systems are a mid-way between grammar and the lexicon. The relationship between exponents and values is not entirely unpredictable, and the predictability is directional (going from one set of features and values to the other). They pattern with central system complexity. The chapter discusses different quantitative measures that can be used to investigate the contribution of each of the three dimensions to the overall complexity of an inflectional system. This is further illustrated with a case study of the marking of subject, person number, and TAM values in the Oto-Manguean language Tlatepuzco Chinantec, which is based on an intricate interplay between grammatical rules and lexical stipulation.

Chapter 8 concludes with some short remarks on the concepts and models discussed in the volume and on the relationship between morphological complexity and morphological autonomy.

Morphological Complexity is a very welcome contribution to the typological study of morphological complexity, its main strength lying in the fine combination between actively engaging in the scientific debate on morphological theory and discussing a wealth of empirical data from languages spoken all across the globe. The concepts and tools that the authors introduce for the analysis of inflectional classes and of the relationship between grammar and the lexicon are very clearly laid out and accompanied by always sharp and informative examples. This culminates in the model proposed in Chapter 7, which is systematically integrated with all the facets of morphological complexity discussed in the preceding chapters. Against this background, some aspects of the proposed analysis stand out, in my opinion, as especially relevant to the field. These are the typology of conditions outlined in Chapter 5 and the analysis of paradigm structure proposed in Chapter 6 and further developed in Chapter 7. While, as the authors point out, conditions on inflectional classes are almost always treated as exceptional patterns, their discussion often being relegated to footnotes and/or very cursory analyses both in language descriptions and in typological investigations; the classification of types of conditions proposed in Chapter 5 is, to my knowledge, the first comprehensive treatment of this topic.

The schemas presented by the authors provide a beautiful baseline for further cross-linguistic and/or diachronic studies of conditions in paradigm structures across the world's languages. Likewise, the classification of types of paradigm structures outlined in Chapter 6 and further developed in Chapter 7 has the potential to become a model for language-specific and comparative descriptions of inflectional systems.

REFERENCES

Brown, Dunstan, Marina Chumakina & Greville G. Corbett (eds.). 2013. *Canonical Morphology and Syntax*. Oxford: Oxford University Press.

Corbett, Greville G. 2012. *Features*. Cambridge: Cambridge University Press.

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