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Reviewed by Patricia Carvalho Ribeiro & Rahel T. Dires

1 Introduction

Grammatical gender is commonly defined as a grammatical feature, classified as a noun class, which is present in several languages. More precisely, in almost half of the languages in the world (Audring 2016). Such a feature is often linked to biological sex for animate referents. For inanimate referents, however, grammatical gender can be related with other properties of the noun. Another characteristic of grammatical gender is agreement. According to Corbett (2013), "gender is about agreement", which means that evidence of gender should trespass the nouns themselves to agree with other expressions in the phrases it heads. Thus, how does gender agreement occur in different languages? Understanding the nature of grammatical gender across the languages of the word is not a trivial task.

In *Grammatical gender and linguistic complexity, Volume I: General issues and specific studies*, and *Grammatical gender and linguistic complexity, Volume II: World-wide comparative studies*, Francesca Di Garbo, Bruno Olsson, and Bernhard Wälchli present a collection of up-to-date studies investigating the typological aspects of grammatical gender and its evolution in languages of the world. We consider this set of papers to be an important contribution to the field of Typological Linguistics, since it presents traditional and modern tools of analysis to measure gender complexity cross-linguistically, as well as discusses how these complexities evolve and change over time. Hence, these papers go back and forth in time, presenting both diachronic and synchronic studies on the complexity of gender systems, not only in large cross-linguistic samples but also in individual languages not well described in the literature so far.

2 Volume I: General issues and specific studies

The first volume of the publication contains 10 chapters distributed in four parts. Chapter 1, as defined by the editors, is an overview of the books' contents meant to contextualize the volumes in the field of grammatical gender studies, as well as establish the key concepts supporting the questions discussed in the papers.

2.1 Part I: General issues

In the first part of the book, the reader will be introduced to the theoretical foundations of gender complexity in three chapters. In Chapter 2, *Canonical, complex, complicated?*, Jenny Audring applies the canonical typology from Corbett & Fedden (2016) to build up an approach to compare and contrast CANONICITY, COMPLEXITY, and DIFFICULTY. In this study, canonicity is taken as the baseline for assessing complexity, while difficulty is presented as an independent notion. One strength of the chapter is the way in which it provides a nuanced view of the concept of canonical structures. Audring argues that while canonical structures can be useful as a reference point for language analysis, they are often oversimplified and do not accurately reflect the full complexity of linguistic systems. She uses several examples from different languages to demonstrate how apparently canonical structures can vary in different contexts or be subject to various exceptions. Regarding complexity, this work presents a detailed study of the complexity of gender systems. The principles applied in judging complexity are presented here, and a concrete example of it is given on page 23 via the PRINCIPLE OF TRANSPARENCY, which states that markers having different functions are more complex than markers dedicated to only one function. In addition, difficulty is defined as inherently relative and possibly influenced by a range of external factors, thus, it needs to be observed in context. For example, according to the evidence found here, difficulties in acquiring a gender system are related to the frequency with which children are exposed to nouns accompanied by agreeing words. Although the chapter is balanced between theoretical discussion and illustrative examples, the terminology is specific to canonical typology and needs to be considered in light of the descriptions presented by the author, which might negatively affect the impact of the chapter in other contexts of typological studies.

In Chapter 3 *Gender: Esoteric or exoteric?*, Östen Dahl describes how the limitations concerning the data on language ecology[1] hinder the understanding of the relations between grammatical complexity and factors external to the language system. More specifically, Dahl questions to what extent ecological factors influence the growth, maintenance, and loss of gender systems, arguing that it is necessary to go beyond the patterns presented in databases such as WALS to understand in which conditions gender systems emerge and mature. Additionally, Dahl betakes the notions of ESOTERIC NICHE and EXOTERIC NICHE coined by Lupyan & Dale (2010) to differentiate languages with comparatively smaller populations, smaller areas, and fewer linguistic neighbours (esoteric) from those with larger populations, larger areas, and more linguistic neighbours (exoteric). A strong contribution of the paper is that it draws attention to an important shortcoming in the study of the evolution of gender systems. However, the chapter does not propose ways in which the limitations regarding the availability of data on language ecology on the databases could be surpassed.

In Chapter 4 *Why is gender so complex? Some typological considerations*, Johanna Nichols continues the discussion about the relation of grammatical gender and language complexity, testing three hypotheses about the overall complexity of languages with and without gender:

  I. Languages with gender are more complex overall than those without gender.

 II. Languages with gender are more complex morphologically than genderless languages.

III. Languages with gender have a higher inflectional synthesis of the verb than genderless languages (p. 74).

Nichols' work is innovative in that it measures language complexity not only through the number of elements in the inventory or the values in a system (inventory complexity) but also by the amount of information required to describe a system (descriptive complexity). By doing so, she concludes, in light of a wide cross-linguistic sample, that languages with gender are not more complex than gender-less languages.

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[1] Data related to language ecology include information such as community size, degree of contact with other language communities, number of speakers learning or speaking the language non-natively, and so on.

2.2 Part II Africa

In Chapter 5, entitled *Niger-Congo "noun classes" conflate gender with deriflection*, Tom Güldemann and Ines Fiedler use a methodological approach with four analytical concepts to discuss grammatical gender in Niger-Congo: 1. agreement class; 2. gender; 3. nominal form class, and 4. DERIFLECTION – a blend of inflection and derivation which refers to a relevant morphological or phonological phenomenon interacting with gender (p. 95). Proposing an analysis of Niger-Congo languages[2] not based on Bantu systems, this paper creates descriptions that are broader than usual and suitable for the analysis of other language families outside Africa, building an interesting framework to describe and compare gender cross-linguistically.

According to Güldemann & Fiedler's results, nominal form classes[3] and agreement classes conflate in Niger-Congo gender systems. That is the main reason for problems in the analysis of this language family since the traditional Niger-Congo framework fuses two independent linguistic phenomena associated with nouns (gender agreement and deriflection) in the concept of "noun class". The strengths of this chapter lie in its analysis and recognition of nominal prefixes in Akan, which previous authors failed to relate to a nominal system. Additionally, the chapter highlights the specific developments in Bantu philology that have shaped the framework, while also considering the typological treatment of gender. It brings a cross-linguistic approach that offers valuable insights into these systems. Moreover, the chapter's context and insights help shed light on the complexities of gender and deriflection systems in the languages discussed.

In Chapter 6 *Gender in Uduk*, Don Killian focuses on the complexities and features of gender in Uduk – a Koman language spoken on the border of Ethiopia and Sudan. The paper has a special value to the studies of grammatical gender since it discusses some unusual properties of the gender system of Uduk, such as the predominant arbitrariness of gender assignment, where the features of the referents (animacy, sex) most of the time seem to be irrelevant for gender assignment. In addition, Killian's analysis of Uduk demonstrates that a non-canonical gender system can also be relatively simple. By challenging common gender assignment assumptions, this chapter shows its

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[2] Namely, three Niger-Congo groups in West Africa: Akan, Guang and Ghana-Togo-Mountain.

[3] "Nominal form classes are established in the present approach by word forms with identical morphological or phonological properties; they represent the counterpart of agreement classes in the realm of morpho(phono)logy." (p. 99)

arbitrariness. It highlights verb agreement intricacies with different genders and unveils distinct gender treatment in a narrative context. Pronominal objects' indexation patterns are also explored. While insightful, further research is needed to clarify some aspects, indicating the evolving nature of linguistic analysis.

2.3 Part III New Guinea

Opening this part dedicated to New Guinea, Chapter 7 *Gender in Walman*, written by Matthew S. Dryer, describes gender and gender-like phenomena in the language of the Torricelli family spoken on the north coast of Papua New Guinea. The chapter studies language samples, revealing how PLURALIA TANTUM and diminutives share gender similarities but differ too. In this sense, pluralia tantum nouns can represent an additional gender form, coexisting with masculine and feminine. The study revealed that the corpus studied contains twice as many pluralia tantum nouns as lexically masculine, while diminutives show less gender-like traits, lacking lexically diminutive nouns.

In Chapter 8 *The gender system of Coastal Marind*, Bruno Olsson provides an overview of the gender system of Coastal Marind, a Papuan language of the Anim family of Southern New Guinea. In this language, nouns are divided into four genders: masculine, feminine and two inanimate genders. The chapter provides a detailed analysis of the different genders and their manifestations in various aspects of the language, including nouns, pronouns, adjectives, and verb agreement. The paper also explores the relationship between gender and plurals, considering the possibility that the Gender IV nouns in Walman could be seen as pluralia tantum. However, the author ultimately rejects this analysis and argues that the Gender IV nouns should be considered a separate gender. Olsson argues pluralia tantum nouns as a precursor to the fourth gender. Thus, an initial 3-gender system might have expanded to 4 genders, potentially spurred by grouping pluralia tantum nouns. The author concludes that the Coastal Marind data implies that Anim languages could represent a distinct case of gender system complexity due to a unique number-related interaction (p. 222). This paper is unique in its in-depth analysis of gender in a specific language, providing valuable insights into the structure and functioning of the gender system in Walman.

Ending this part of the volume about New Guinea, in Chapter 9 *Gender in New Guinea*, Erik Svärd classifies the gender systems of 20 languages in the New Guinea region. Using five criteria established by Di Garbo (2014)

in her analysis of gender systems of African languages,[4] Svärd identified four typologically rare characteristics of the New Guinea languages: 1. size and shape as important criteria of gender assignment, with large/long being masculine and small/short feminine, 2. the co-existence of two separate nominal classification systems, 3. no gender distinctions in pronouns, and 4. verbs as the most common indexing target (p. 225). The comparison between the gender systems of New Guinea and Africa shows that they are very different, with the main difference focusing on the prevalence of non-sex-based gender systems and gender marking on nouns in Africa, while the opposite occurs in New Guinea. Importantly, Svärd defends that pluralia tantum is a significant category of study for gaining a full understanding of gender systems in the New Guinea languages.

2.4   Part IV South Asia

Chapter 10 *Gender typology and gender (in)stability in Hindu Kush Indo-Aryan languages*, by Henrik Liljegren, takes the reader to South Asia. This ambitious contribution aims at the understanding of gender distribution and manifestation across 25 Indo-Aryan languages spoken in the Hindu Kush-Karakorum region – an area composed of mountains located in the North-eastern part of Afghanistan, Northern Pakistan, and the disputed territory of Kashmir. The article presents a micro-typology of gender systems in HKIA, summarizing related language traits (p. 282). The inherited sex-based system endures but fades in some Northwestern languages. In Western languages, an animacy-based system emerges alongside or instead of sex-based structures, impacting their setup. Gender's strength varies, being entrenched in the East but waning in the West. The North shows weaker semantic transparency, while the South emphasizes formal assignment and object agreement. An important finding of this study is the suggestion of non-trivial interactions between neighbouring languages, with languages without gender (or with markedly different assignment systems) possibly influencing the development of gender languages.

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[4] The five criteria established by Di Garbo (2014) are: 1. sex-based and non-sex-based gender systems, 2. number of genders, 3. gender assignment, 4. number of gender-indexing targets, and 5. occurrence of gender marking on nouns (p. 230).

3   Volume II: World-wide comparative studies

In the second volume of *Grammatical gender and linguistic complexity*, the reader will be presented to studies that explore several geographic areas, diverse gender systems, and, with special attention, the dynamic nature of gender complexity. Three extensive chapters describe diachronic and typological case studies on gender systems, while a final chapter discusses traditional and modern theoretical and empirical challenges concerning the investigation of grammatical gender. Chapter 1, as presented in volume I, is an overview of the books' contents meant to contextualize the volumes in the field of grammatical gender studies, as well as establish the key concepts supporting the questions discussed in the papers.

In Chapter 2 *The evolving complexity of gender agreement systems*, Francesca Di Garbo & Matti Miestamo defend the necessity of taking diachrony into account to deeply understand the relationship between gender and complexity, i.e., how gender systems vary in complexity and how this variation is distributed cross-linguistically. Matasović (2018) surveys agreement systems, including gender. Being a typology, the approach is similar to Di Garbo and Miestamo's. However, in this chapter from Di Garbo and Miestamo the objective is to use a diachronic perspective to understand how and why gender systems vary in complexity, which contributes particularly to the understanding of the patterns behind the development of gender systems, and their change or loss. The study examines 36 languages in 15 sets, revealing shared traits of borrowed gender agreement patterns which emerge from borrowed nouns and adjectives, are confined to noun phrases, and rely on semantic assignment for conveying properties of nouns and natural gender distinctions (p. 44). Readers of the *Finnish Journal of Linguistics* may be particularly interested in the description of the Swedish gender system development (p. 28–30). The authors mention that many nonstandard varieties of Swedish and other Scandinavian languages maintain a tripartite gender system, which seems to be a previous stage in use before standard varieties with bipartite gender systems, such as Danish and Swedish, started to spread. Another interesting aspect of Swedish is the presence of a pervasive reduction of gender agreement morphology in Karleby Swedish – a variety spoken in the town of Karleby, located in the Finnish region of Ostrobothnia (p. 36). This fact raises the question of a possible influence coming from Finnish, which is a genderless language.

In Chapter 3 *The feminine anaphoric gender gram, incipient gender marking, maturity, and extracting anaphoric gender markers from parallel texts*, Bernhard Wälchli performs a typological investigation of feminine anaphoric gender grams (i.e., grammatical items equivalent to the words she/her in English), in a world-wide sample of 816 languages (with only 187 showing feminine anaphoric gender grams). The paper discusses how simple gender differs from more mature and genealogically stable forms of anaphoric gender. Thus, three simple forms of gender are extracted from the corpus of parallel texts from the New Testament: 1. non-compositional complex noun phrases (e.g.: *that woman*), 2. reduced nominal anaphors (e.g.: *woman*), and 3. general nouns (e.g.: *girl*; *she*). Based on his results, Wälchli concludes that anaphoric gender grams exhibiting suppletion or neutralization must have undergone some kind of grammaticalization process, presupposing earlier stages with simpler gender grams more similar to nouns or developed from markers of other grammatical categories. However, the author explains that not all cases of incipient anaphoric gender markers come from grammaticalization developments since linguistic gender categories can also be a result of language planning. As an example, he mentions that in Swedish the gender-neutral form *hen* has been used to replace the masculine *han* 'he' and the feminine *hon* 'she', especially in generic use (p. 95). One of the strengths of this chapter is Wälchli's use of parallel texts to extract anaphoric gender markers. By comparing the same biblical text translated in different languages, the author can identify patterns in the use of gender markers and provide insights into how they have evolved over time. One of the weaknesses is that the language of the chapter is highly technical, which can prevent the study from being widely applicable. Also, it lacks clear and concise summaries that would help readers understand the key takeaways.

In Chapter 4 *On the distribution and complexity of gender and numeral classifiers*, Kaius Sinnemäki applies the statistical tool of generalized linear mixed models to determine whether there is a trade-off of complexity between gender and numeral classifiers, analysing the presence vs. absence of these variables in a language. The sample contains 360 languages, stratified genealogically and areally. The use of generalized linear mixed models revealed the interesting fact that languages with numeral classifiers are significantly less likely to have gender than those with no numeral classifiers. From the total of 360 surveyed, only 22 languages (6%) attested both gender and numeral classifiers, supporting the idea that languages tend to avoid breaking the principle of economy and prefer not to develop or maintain more than one system

with the same function simultaneously. Conversely, since the use of generalized linear mixed models requires a large and representative dataset, the use of the tool in the study of gender and numeral classifiers in languages with limited data availability or small sample sizes might not be the most effective.

Finally, Chapter 5 *The dynamics of gender complexity* written by Bernhard Wälchli & Francesca Di Garbo ends this volume with a wide-ranging enquiry into the diachrony and complexity of gender systems. The paper presents state-of-the-art research on the topic, re-examining phenomena that are central to studies of gender, such as animacy hierarchy, assignment rules, agreement, and cumulative expression with other inflectional categories. In this work, grammatical gender is seen as a mature phenomenon[5] which functions as a dynamic entity evolving over time. The authors use the formula FROM X TO Y to represent the pathways in which a more mature manifestation of gender is organized in the form of noun classes. In this sense, the main point of the paper is to understand why gender can become quite complex in some languages and remain simple, or develop into being simple once again, in other languages. This dynamic nature of gender systems is the reason for the adoption of what the authors denominate as a dynamic approach to the definition of gender. Thus, considering this dynamic approach, Wälchli and Di Garbo propose the following definition for gender:

> Gender is a grammatical category type with a semantic core of animacy and/or sex reflecting classes of referents, which have a propensity to turn into classes of noun lexemes. It is overtly marked on noun-associated forms. It typically exhibits cumulative exponence with number, case, and/or person. Gender is organized in the form of systems (Volume II: 207).

In sum, one major contribution of this paper is the presentation of an alternative definition for gender in which gender systems are considered as a category centred on the semantics of animacy and/or sex, but with a propensity to turn into noun lexemes, forming what is called lexical gender. The paper describes languages in which it is plausible to assume that gender originates as referent-based items at the top segment of the animacy hierarchy, with a tendency to spread to inanimate referents due to factors such as agentivity, uniqueness or possession. In other words, gender is a category that can change from referent-based to mostly lexical items – which have the possibility of re-

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[5] A linguistic feature forged in a lengthy period of historical development, presupposing a nontrivial prehistory (Dahl 2004: 2).

verting to referent-based in some cases. This definition of gender differs from other definitions in the sense that it brings light to the evolution of gender systems over time, putting the semantics of animacy and/or sex at the centre of this process of development. Additionally, the authors defend that gender should not be considered in isolation since it frequently behaves as dependent on other grammatical categories such as number, case, and person. In line with other contributions in this publication, this inquiry finds that number is particularly connected with gender in pluralia tantum and other phenomena related to lexical plurality.

4   Conclusion

This collection of papers composing the two volumes of *Grammatical gender and linguistic complexity* combines sophisticated research methods with linguistic analysis in the investigation of grammatical gender, offering researchers interested in this topic a valuable source of theoretical frameworks, linguistic data, and references for future studies. The collection of papers composing the two volumes presents studies about languages from continents which were not yet well represented in the traditional literature on gender, filling in an important gap in the research about grammatical gender. Grammatical gender is depicted in this publication as a complex system that varies cross-linguistically and can change over time due to several factors. In this sense, the dynamic nature of gender systems emerges as a central issue to be pursued by researchers on this topic.

Reading these papers can be challenging, but certainly enriching. The discussion of complex topics and the description of extensive data are well guided by the systematic division and organization of the contents. The data attached in the appendices of some of the chapters is especially useful for doctoral researchers in typological linguistics investigating gender or other nominal categories. For example, a helpful tool for novice researchers is the appendix to Chapter 5 *The dynamics of gender complexity* (Volume II: 355), which offers a long list of key concepts with brief definitions and page locations. In summary, we strongly recommend these volumes to every linguist interested in cross-linguistic studies, language diversity, language change, and especially in the evolution of gender systems.

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Contact information:

Patricia Carvalho Ribeiro
Faculty of Arts, Programme in Language Studies
University of Helsinki
e-mail: patricia(dot)ribeiro(at)helsinki(dot)fi

Rahel T. Dires
Faculty of Arts, Programme in Language Studies
University of Helsinki
e-mail: rahel(dot)t(dot)dires(at)helsinki(dot)fi