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Grammatical Gender: A Close Look at Gender Assignment Across Languages

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Abstract

This review takes a broad perspective on one of the most fundamental issues for gender research in linguistics: gender assignment (i.e., how different nouns are sorted into different genders). I first build on previous typological research to draw together the main generalizations about gender assignment. I then compare lexical and structural approaches to gender assignment in linguistic theory and argue that a structural approach is likely more successful at explaining gender assignment cross-linguistically.

1. INTRODUCTION

1.1. Overview

Grammatical gender is widely attested and is a highly salient area of linguistic variation for laypersons and linguists alike. Accordingly, there is a substantial literature on many aspects of grammatical gender including typology (e.g., Corbett 1991), sociolinguistics (e.g., Hellinger & Bußmann 2001–2015), psycholinguistics (e.g., Schiller 2014), and morphosyntax (e.g., Kramer 2015). This article does not review all the results of previous gender research, nor does it identify all the open questions (for recent overviews, see Kilarski 2013 on the history of gender research, Corbett 2014a on a variety of nontheoretical topics, Corbett & Fedden 2016 on typology, Kramer 2016 on morphosyntax, and Mathieu et al. 2018 on a variety of theoretical topics). Instead, I focus on a key question for all gender research: How is gender assigned to nouns? This question cuts to the heart of grammatical gender as a phenomenon since gender is fundamentally about sorting nouns into different boxes. In this article, I ask how that sorting happens, both empirically (What linguistic properties correlate with genders?) and theoretically (What grammatical mechanisms encode/model gender assignment?).

In Section 2, I review nominal properties that correlate with grammatical gender; these include semantic, morphological, and phonological properties. I also present evidence that gender can be assigned arbitrarily. In Section 3, I review theoretical proposals for the mechanism of gender assignment—that is, how the generalizations in Section 2 are best represented in the synchronic grammar. I suggest that a structural approach to gender assignment (as opposed to a lexical approach) seems most promising. Section 4 concludes. In the remainder of this introduction, building on much previous research, I provide a definition of grammatical gender.

1.2. Defining Grammatical Gender

Grammatical gender is primarily a way to classify nouns, as stated in clause *a* of example 1:

- (1) Grammatical gender is
- (a) the sorting of nouns into two or more classes;
 - (b) reflected by agreement patterns on other elements; and
 - (c) assigned depending on animacy, humanness, and/or social gender for humans¹ /biological sex for animals, for at least some animate nouns.

(Kramer 2015, p. 70; based on Corbett 1991; Greenberg 1978, p. 49; Hockett 1958, p. 231; Nichols 1992; *inter alia*)

However, there are two crucial additional clauses in example 1. Clause *b* involves agreement: Different genders are distinguished by different agreement patterns on targets like demonstratives, verbs, and adjectives. This distinguishes grammatical gender from other nominal classification phenomena, such as declension class and classifiers. This part of the definition also allows for phenomena often called noun classes to be treated as grammatical gender since different noun classes in, say, Bantu languages trigger different agreement patterns (see Section 2.2.1).

Clause *c* of example 1 was introduced in my previous work (Kramer 2015), and it has not previously been considered part of the definition of grammatical gender. However, it reflects a robust, well-established cross-linguistic generalization. Each grammatical gender system has at

¹I use the term social gender for the property of human beings indexed by grammatical gender; I acknowledge that gender in humans is a social construct (Butler 1990) and that the gender binary reflected in grammatical gender is artificial. Also, an animal likely can be treated as if it had social gender if the animal has a social relationship with a speaker, but I leave this for future research.

least a subset of nouns whose gender is assigned based on animacy, humanness, and/or social gender for humans (see Footnote 1) and biological sex for animals (see, e.g., Aksenov 1984; Corbett 1991, p. 8; Nichols 1992, p. 129; Dahl 2000; Matasović 2004, p. 22; Corbett 2014b, p. 110; Kramer 2015, p. 70). In other words, grammatical gender systems always have a semantic core of nouns whose gender is semantically predictable. I refer to this as the semantic core generalization, shown in example 2:

(2) Semantic core generalization

Grammatical gender is always assigned to at least a subset of nouns on the basis of animacy, humanness, and/or social gender for humans/biological sex for animals.

In my previous work (Kramer 2015, chapter 4), I argued that the semantic core generalization should be considered part of the definition of grammatical gender because it helps distinguish gender from other (ϕ) features that can affect agreement. For example, number is loosely correlated with the semantic property of cardinality, whereas gender is correlated with animacy, humanness, social gender, etc. The semantic core generalization also highlights the universality of semantic gender assignment (in languages that have gender) even though previous research has often set semantic gender assignment aside (see, e.g., Bernstein 1993, p. 117; Picallo 2008, p. 50).

All of the languages discussed in the remainder of this article have grammatical gender as defined in example 1. I now explore the factors that determine how the sorting of nouns occurs—that is, the facts of gender assignment.

2. THE FACTS OF GENDER ASSIGNMENT

2.1. Introduction

How is grammatical gender assigned to nouns? The conventional view (see, e.g., Corbett 1991, 2014b) is that there are three different types of gender assignment: semantic (see Section 1.2), morphological (all nouns with the same affix or same morphological property have the same gender), and phonological (all nouns with the same phonological property have the same gender).

However, several factors complicate this perspective. For example, all languages assign gender semantically to at least some nouns. In contrast, not all languages use morphological or phonological assignment criteria. Also, it is difficult to draw the line between semantic gender assignment and certain types of morphological assignment since additional affixes often bring additional components of meaning; consequently, a noun might have a particular gender both because it has a particular affix and because that affix carries a particular meaning (see, e.g., Corbett 1991, p. 34). Finally, there may be no correlation between a noun and its gender; that is, gender can be assigned arbitrarily.

In the following sections, I provide an overview of gender assignment and attempt to move beyond the traditional classification. To start, I focus on semantic gender assignment in Section 2.2. Section 2.2.1 covers semantic assignment in simplex nouns, and Section 2.2.2 addresses semantic assignment in derived nouns (encompassing some previous instances of morphological gender assignment). Section 2.2.3 discusses semantic gender assignment involving the properties of the noun's referent. In Section 2.3, I turn to nonsemantic assignment including arbitrary gender assignment (Section 2.3.1) and morphological and phonological gender assignment (Section 2.3.2). Section 2.4 concludes.

Crucially, at this point in the article, the investigation of gender assignment adopts a descriptive perspective regarding which generalizations connect linguistic properties and nominal genders. I refer to this phenomenon as either (*a*) which gender is assigned to nouns or (*b*) which nouns are assigned a gender (for discussions of the difference, see Thornton 2009, pp. 14–15; Corbett

2014b, p. 110). However, for now these correlations/generalizations are intended to be accurate and clear descriptive characterizations, not commitments to an analysis.

2.2. Semantic Gender Assignment

This section investigates semantic gender assignment, looking first at simplex nouns (Section 2.2.1), then derived nouns (Section 2.2.2), and finally nouns whose gender seems to be assigned based on the properties of their discourse referents (Section 2.2.3).

2.2.1. Semantic gender assignment in simplex nouns. Every language assigns gender to some nouns semantically—that is the semantic core generalization shown in example 2. Unfortunately, there have been no large-scale surveys of the type and nature of semantic properties that are used for gender assignment, so the discussion here provides a sense of the attested patterns rather than nuanced and categorical cross-linguistic generalizations.

Every language uses at least one of the semantic properties in example 3 to assign gender to some nouns; that is, the semantic core in example 2 holds true:

- (3) (Minimal) properties for semantic gender assignment
- (3a) Animacy
- (3b) Humanness
- and/or
- (3c) Social gender for humans (see Footnote 1)/biological sex for animals

For example, Sochiapan Chinantec (Otomanguean: Chinantecan) assigns gender using animacy; animate nouns are assigned one gender (seen in example 4 in the agreement on ‘one’), and inanimate nouns, including plants, are assigned another gender (seen in example 5):

- (4)

hã ^M	ca ^L -kuá ^H
one.AN	horse ²

‘one horse’ [Foris 2000, p. 199, (590)]
- (5)

káũ ^M	ʔi ^L
one.IN	tortilla

‘one tortilla’ [Foris 2000, p. 199, (589)]

Many Niger–Congo languages assign gender using humanness, as shown in examples 6 and 7 from Akɔ́sɛ (Niger–Congo: Bantu):

- (6)

mod	n-hóg
1.man	1-one

‘a man, a certain man’ [Hedinger 2008, p. 51, (133)]
- (7)

hóm	a-hóg
5.place	5-one

‘a place, a certain place’ [Hedinger 2008, p. 52, (133)]

In Akɔ́sɛ, all human-denoting nouns belong to the same gender (Hedinger 2008, p. 11); in example 6, the human-denoting noun ‘man’ triggers a particular agreement pattern on the numeral ‘one.’ This human gender is referred to as Gender 1/2 (1 for the agreement pattern with singular nouns and 2 for plural). In contrast, a nonhuman-denoting noun like ‘place’ belongs to a different

²Gloss abbreviations follow the Leipzig Glossing Rules except for 1, Noun Class 1; 5, Noun Class 5, AN, animate; IN, inanimate; and SPEC, specific.

gender—Noun Class 5/6—and thus triggers a different agreement on the numeral ‘one,’ as seen in example 7.

Although animacy (example 3a) and humanness (example 3b) can be used to assign gender semantically, it is more common for a language to use social gender for humans and biological sex for animals (example 3c). Among the languages with grammatical gender surveyed in *The World Atlas of Language Structures Online*, about 75% (84/112) assign grammatical gender to some nouns in this way (Corbett 2013). However, these languages vary as to which entities they consider differentiable regarding social gender/biological sex. For example, Amharic (Afroasiatic: Semitic) assigns masculine gender to all male-denoting nouns and feminine gender to all female-denoting nouns regardless of whether these nouns denote humans with social gender (examples 8a,b) or animals with biological sex (examples 9a,b) (see, e.g., Leslau 1995, p. 161ff.; Kramer 2015, p. 15ff.):

- (8a) bal-iyye-w
husband-SPEC-DEF.M
‘the husband’
- (8b) mist-iyye-wa
wife-SPEC-DEF.F
‘the wife’
(Leslau 1995, p. 161)
- (9a) bäre-w
ox-DEF.M
‘the ox’
- (9b) lam-wa
cow-DEF.F
‘the cow’
(Leslau 1995, p. 155)

In contrast to Amharic, in Tamil (Dravidian: Southern Dravidian), animal-denoting nouns are never assigned different grammatical genders based on biological sex, and there are even certain human-denoting nouns (e.g., infant) that are not assigned different grammatical genders based on social gender (Asher 1982, pp. 136–37). In between are languages like Spanish, which consider certain animal-denoting nouns and almost all human-denoting nouns differentiable by social gender/biological sex (see, e.g., Harris 1991).

While every language with grammatical gender assigns gender to some of its nouns according to the properties in example 3, some languages assign gender to nouns on the basis of other, additional semantic properties, including animal-ness, type of animal, type of plant, and type of inanimate object. For example, Nzakara (Niger–Congo: Ubangi) assigns a special gender to animals that is different from the gender for humans and the gender for inanimates (Tucker & Bryan 1966, pp. 146–47). Some languages assign gender according to type of animal: For example, Ngangikurrungurr (Southern Daly) has a separate gender for canines (Tryon 1974, pp. 231–33; Corbett 1991, p. 140), and the Rikvani dialect of Andi (Nakh–Daghestanian: Avar–Andic–Tsezic) has one for insects (Corbett 1991, pp. 30, 199). In Mayali (Gunwinyguan: Gunwinygic), there is a separate gender for plants and the products of plants, often referred to as the vegetable gender (Evans et al. 2002). Inanimate objects can also have their own genders, as in Supyire (Niger–Congo: Gur), which has a single gender for almost all nouns that denote liquids and other pourable items (Carlson 1994, pp. 104–5), and Ngangikurrungurr, which has a separate gender for hunting weapons (Tryon 1974; Corbett 1991, p. 140).

There is unfortunately little research on the range of semantic properties that can correlate with grammatical gender (beyond those listed in example 3). The properties listed above are a somewhat motley crew encompassing many categories found in the natural world. To the best of

my knowledge, there is not yet typological research that maps out these properties and, more importantly, identifies which categories are never used for gender assignment (for initial discussion, see, e.g., Corbett 1991, pp. 30–32; Thornton 2009). However, at least three complicating factors make it difficult to identify patterns among these additional properties used for gender assignment. First, languages vary in whether they assign an entire distinct gender to nouns with a particular semantic property (i.e., the gender includes no other nouns) or whether a single gender contains all nouns with a particular semantic property and others as well. For example, Ngangikurrunggurr has a gender that contains only nouns referring to canines (Tryon 1974), but the liquid gender in Supyire contains nonliquids as well [e.g., some abstract nouns and nominalizations (Carlson 1994)]. Second, it can be difficult to determine whether the nouns in these genders are morphologically complex. Does a noun have a particular gender because of an intrinsic semantic property or because it has a particular affix (which might be phonologically null) that carries both this property and a particular gender feature? This question is particularly relevant when gender seems to be assigned according to size; for example, if small objects are all Gender X, does this mean there is a null diminutive suffix that carries a Gender X feature? (For an analysis like this for Amharic, readers are referred to Kramer 2015, pp. 217–18.) Finally, if a language makes use of many additional semantic properties, it can be unclear where to draw the line between classifier systems and gender systems; for example, Corbett (1991, p. 140) sketches how Ngangikurrunggurr is developing a gender system from a classifier system by innovating new agreement markers. For all these reasons, it is difficult to generalize across the semantic properties that are relevant for gender assignment across languages. However, although the full set of cross-linguistic generalizations remains to be discovered, the fact that every language uses semantic gender assignment must be built into any analysis of gender assignment.

2.2.2. Semantic gender assignment in derived nouns. In this section, I briefly discuss gender assignment in morphologically complex nouns. Nominal inflection (e.g., number marking, case marking, possessor agreement) does not tend to affect gender assignment, so the focus here is on derived nouns.³ Cross-linguistically, it is common for nouns with the same derivational affix to have the same gender and/or for gender affixes themselves to be used to derive new nouns. For example, in German, abstract denominal nominalizations ending in the suffix *-schaft* are all feminine:

- | | | |
|-------|----------------------|-----------------------------------|
| (10a) | die Bürger-schaft | ‘the.fsg citizens (collectively)’ |
| (10b) | die Freund-schaft | ‘the.fsg friend-ship’ |
| (10c) | die Studenten-schaft | ‘the.fsg student body’ |
- (Durrell 2011, p. 479)

In Akɔɔse, adding a Gender 1/2 prefix to a verb forms an agentive noun, and accordingly all such nouns have Gender 1/2, as shown in example 11:

- | | | | | | |
|-------|------|------------|---|--------|--------------------|
| (11a) | chīb | ‘to steal’ | → | n-chīb | ‘thief’ (Class 1) |
| (11b) | chog | ‘to play’ | → | n-chog | ‘player’ (Class 1) |
- (Hedinger 2008, p. 23)

This phenomenon is often referred to as morphological gender assignment (see, e.g., Corbett 1991) because gender seems to correlate with the presence of an affix, but it also correlates with

³The major exception is number marking, which can affect gender in certain languages that have highly “lexical” plurals (see Acquaviva 2008 on lexical plurals and Kramer 2015 on gender assignment affected by lexical plurality).

the semantic properties that this affix brings. Because every language already uses semantic gender assignment, it seems simpler to posit that semantic gender assignment is at play here as well, with the semantic property in these cases expressed by an extra piece of morphology. This is the view I adopt henceforth (sometimes the extra piece can be phonologically null; see Section 2.2.1).

The relationship between affix and gender is not always one-to-one. For example, different affixes with the same meaning can all have the same gender (many affixes to one gender), as with French deadjectival nominalization in examples 12a–c:

- (12a) la banal-ité ‘the.FSG banal-ity’
 - (12b) la faibl-esse ‘the.FSG weak-ness’
 - (12c) la moit-eur ‘the.FSG damp-ness’
 - (12d) la drôl-erie ‘the.FSG funni-ness’
- (Kramer 2015, p. 196)

Moreover, the same derivational affix can be used with two different genders (one affix to many genders), as with the suffix *-ista* in Spanish (Butt & Benjamin 2011, p. 3). Overall, any theory of gender assignment must predict that nominalizations are often gendered but that the correlation between affixes and genders is not necessarily one-to-one (for one approach to these facts, see Kramer 2015, chapters 9 and 10).

2.2.3. Semantic gender assignment based on the referent. In some languages, gender assignment for certain nouns is not based on the properties of the noun but, rather, on the properties of the noun’s discourse referent. Referent-based gender assignment is attested using each of the semantic properties listed in example 3: animacy, humanness, and social gender/biological sex. For example, Algonquian languages mostly have animacy-based gender systems, and in some (but not all) of these languages, a typically inanimate noun can trigger animate agreement when it has an animate referent in a narrative (for examples from Menominee, see Goddard 2002, pp. 202–4). In Akɔɔse, animals in folk tales that have human characteristics take the personifier suffix *-ε* and trigger Class 1 (human) agreement; for example, the noun *kûl* ‘tortoise (Class 9)’ changes to *kûle* ‘Tortoise (Class 1)’ (Hedinger 2008, p. 26).

This is likely the same kind of referent-based gender assignment as in what I have called same-root nominals in Amharic (Kramer 2015). These nouns are assigned gender according to the social gender/biological sex of their referent, as shown in examples 13a,b:

- (13a) hakim-u
doctor-DEF.M
‘the (male) doctor’
 - (13b) hakim-wa
doctor-DEF.F
‘the (female) doctor’
- (Kramer 2015, p. 17)

The noun *hakim* ‘doctor’ is neither inherently male-denoting nor female-denoting but, instead, is compatible with either masculine (example 13a) or feminine (example 13b) gender depending on the social gender of its referent. This kind of noun is relatively common across languages; similar instances are shown in example 14:

- (14a) Spanish: *estudiante* ‘student,’ *patriota* ‘patriot,’ *testigo* ‘witness’ (Harris 1991)
- (14b) Archi (Nakh-Daghestanian: Lezgi): *lo* ‘child,’ *misgin* ‘poor person’ (Corbett 1991, p. 181)
- (14c) Greek: *odigos* ‘driver,’ *musikos* ‘musician,’ *ipurgos* ‘minister’ (Alexiadou 2004, p. 40)

Another major kind of referent-based gender “assignment” is so-called hybrid gender agreement. Hybrid agreement occurs when a noun is expected to have one grammatical gender (e.g., due to a morphological property) but can trigger agreement in a different grammatical gender based on some semantic property of its referent (e.g., humanness, social gender; see, e.g., Corbett 1979, 1991, 2006). The most well-studied case of hybrid gender agreement is from Russian, which has a small set of nouns that are morphologically masculine (see Section 2.3.2) but capable of triggering feminine gender agreement when they have a referent whose social gender is female. One classic example is *vrač* ‘doctor’:

- (15) ona xoroš-ij/aja vrač
 she good-M/F doctor
 ‘She is a good doctor.’
 (Corbett 1991, p. 238)

These nouns also can have a mixture of masculine and feminine agreement on different agreement targets, as in example 16:

- (16) očen’ xoroš-aja glavn-yj vrač
 very good-F head-M doctor
 ‘a very good head doctor’
 (Glossing/data slightly simplified from Pesetsky 2013, p. 37)

The generalizations about which type of agreement target agrees in which gender have been investigated in depth by Corbett (1979) and Pesetsky (2013), among many others.

This type of noun is challenging for theories of gender assignment because it seems that a morphosyntactic operation (gender assignment/agreement) needs to access properties of the discourse referent, which are presumably located in the part of the grammar associated with semantics/pragmatics. Moreover, the same analytical solution might not fit all of these nouns, especially since some of them allow a mixture of agreement (e.g., hybrid agreement), whereas others do not (e.g., same-root nouns). I return to these facts in Section 3.3.2; for now, I note that referent-based gender assignment is pervasive and should be included in any theory of gender assignment.

2.3. Nonsemantic Gender Assignment

Semantic gender assignment plays a part in every language with grammatical gender. However, nonsemantic gender assignment is also attested, and in this section I review two types: arbitrary gender assignment in Section 2.3.1 and gender assignment based (solely) on morphological and phonological factors in Section 2.3.2.

2.3.1. Arbitrary gender assignment. Some nouns are not assigned gender semantically, morphologically, or phonologically; rather, they are assigned gender arbitrarily. I refer to this set of nouns as the remainder [Corbett (1991) calls them the “semantic residue”]. For example, in Spanish, nouns that are not differentiable in terms of social gender/biological sex are assigned gender arbitrarily, with few strong correlations between the gender of a noun and its meaning or morphophonology (see, e.g., Roca 1989; Harris 1991, p. 36; Morin 2010; Kramer 2015, p. 92; see Harris 1991, p. 36, footnote 13, and Kramer 2015, p. 92, footnote 95, on the handful of exceptions). This is shown for inanimate nouns in **Table 1**, in which the masculine nouns on the left and

Table 1 Spanish inanimates: arbitrary gender

Masculine		Feminine	
libro	‘book’	pluma	‘pen’
domicilio	‘home’	residencia	‘residence’
pañó	‘cloth’	mano	‘hand’
amor	‘love’	flor	‘flower’
plátano	‘banana’	manzana	‘apple’
caso	‘case’	casa	‘house’

Data from Butt & Benjamin (2011), Harris [1991, p. 36, (11)], and Kramer [2015, p. 92, (4)].

the feminine nouns on the right have related meanings and/or phonology but different genders.⁴ Thus, gender assignment in general is not solely about semantics or even solely about grammatical properties; it can also associate a noun and a gender by chance (from a synchronic perspective).

Additionally, languages vary regarding whether the remainder nouns have all the same or different genders and whether the gender they are assigned is recycled from a gender that is also assigned to nouns semantically. All possible combinations of these properties are attested across languages, as shown in **Table 2**.

Some languages put all the remainder nouns into a single gender. For example, in Dieri (Pama–Nyungan: Karnic), nouns denoting female humans are feminine, nouns denoting male humans are masculine, and all other nouns (animals and inanimates) are masculine (Austin 2011; Kramer 2015, chapter 5). Tamil (see Section 2.2.1) has a nearly identical semantic core to Dieri, but the remainder animal and inanimate nouns have a novel gender: neuter (Asher 1982, pp. 136–37). It is impossible for a language to assign all of its remainder nouns to the same gender while using recycled and novel genders; thus, this cell in **Table 2** is marked as not applicable.

Other languages distribute the remainder nouns across two or more genders. For example, Spanish arbitrarily assigns remainder nouns to either masculine or feminine gender, as seen in **Table 1**. Similarly, Akɔɔse assigns remainder nouns to at least seven distinct genders (Hedinger 2008, pp. 12–13). Finally, in Blackfoot (Algic: Algonquian), inanimate nouns are assigned either a novel inanimate gender or a recycled animate gender (Frantz 2017, p. 11). The empirical landscape is not very limiting, but because all combinations are attested, any analysis of gender assignment must ensure that they are allowed.

Finally, languages vary if, among the remainder nouns, there are any nouns that could have been assigned gender semantically. Some languages do not have any nouns left out of the semantic core in this way; for example, Amharic appears to lack any such nouns because all human and animal nouns are assigned gender according to social gender/biological sex (Kramer 2015, p. 98). This does not hold for, say, Spanish, in which some well-known, human-denoting nouns are not

Table 2 Cross-linguistic variation in arbitrary gender assignment

Are the remainder nouns assigned...	All the same gender?	Different genders?
Recycled gender(s)?	Dieri	Spanish
Novel gender(s)?	Tamil	Akɔɔse
Both recycled and novel gender?	Not applicable	Blackfoot

⁴Following much previous work (e.g., Harris 1991, Alexiadou 2004, Bermúdez-Otero 2013), I assume that the final vowels *-o* and *-a* are declension class markers that are partially conditioned by gender but are not gender markers themselves.

assigned gender according to social gender, such as *persona* ‘person,’ which is feminine regardless of the social gender of its referent. I return to these facts in Section 3.2.

2.3.2. Morphological and phonological gender assignment. In some languages, gender is described as assigned according to a morphological or phonological property. In this section, I review two instances of this kind of gender assignment: (a) gender correlated with a (solely) morphological property in Russian (Corbett 1991) and (b) gender correlated with a phonological property in Hausa (Newman 1979, 2000).

I begin with Russian, which has three genders: masculine, feminine, and neuter. Masculine and feminine are assigned semantically to humans and higher animals per the semantic core generalizations in examples 17a,b:

- (17) Semantic core for Russian
 - (17a) Male humans and higher animals are masculine.
 - (17b) Female humans and higher animals are feminine.
- (based on Corbett 1991, p. 34)

There are very few exceptions to the semantic core (the most prominent being hybrid nouns; see Section 2.2.3). The remainder nouns are not covered by these rules; instead, lower animals and inanimates are assigned gender morphologically. More specifically, these nouns are assigned gender according to their declension class. In Corbett’s (1991) classic analysis, the following gender assignment correlations are posited:

- (18) Gender assignment in remainder nouns in Russian
 - (18a) Declension Class I → masculine (e.g., *zakon* ‘law’)
 - (18b) Declension Class II or III → feminine [e.g., *škola* ‘school (Class II),’
kost ‘bone (Class III)’]
 - (18c) All others → neuter (e.g., *vino* ‘wine’)
- (Corbett 1991, p. 36)

To paraphrase examples 18a–c, nouns in Declension Class I are masculine, nouns in Class II or III are feminine, and all other nouns are neuter. There are many additional complications, such as gender assignment to indeclinable nouns (Corbett 1991, pp. 40–41) and the role of animacy, but they cannot be pursued for purposes of space; for further discussion of gender in Russian, readers are referred to Corbett (1991), Beard (1995), Fraser & Corbett (1995), Doleschal (2000), Nikunlassi (2000), Müller (2004), and Steriopolo (2018).

One additional dimension of gender assignment in Russian should be mentioned. Example 18b states that nouns in Declension Class III are feminine. However, there are some exceptions to this generalization, as shown in examples 19a,b:

- (19) Class III nonfeminine nouns in Russian
 - (19a) *znamja* ‘banner’ Class III neuter
 - (19b) *put* ‘way’ Class III masculine
- (Corbett 1991, pp. 37, 39)

The noun *put* ‘way’ is the only masculine noun in Class III, but there are around a dozen nouns like *znamja* ‘banner’ that are Class III yet neuter. Beard (1995) and Bailyn & Nevins (2008) present further examples that call into question an easy link between gender and declension class and argue that neither declension class nor gender can completely predict the other in Russian. So, while there are correlations between declension classes and genders in Russian, declension class features determining the gender of a noun may not provide the best way to understand these correlations.

I move on now to phonological gender assignment and use Hausa (Afroasiatic: Chadic) as a case study. Hausa has two genders: masculine and feminine. Masculine and feminine genders are assigned semantically to humans and higher animals, as shown in examples 20a,b:

- (20) Semantic core for Hausa
 (20a) Male humans and higher animals are masculine.
 (20b) Female humans and higher animals are feminine.
 (based on Newman 2000, pp. 200–1)

In the remaining masculine nouns, gender assignment is arbitrary (Newman 2000, p. 201). However, in the remaining feminine nouns, gender correlates with a phonological property. Specifically, these remaining feminine nouns mostly end in the same vowel, *-ā* (Newman 1979, Newman 2000, p. 208), as demonstrated in examples 21a–e:

- (21) Feminine nouns in Hausa (inanimates/lower animates)
 (21a) fuskā ‘face’
 (21b) àkuyā ‘goat’
 (21c) gùguwā ‘whirlwind’
 (21d) kibiyā ‘arrow’
 (21e) kujērā ‘chair’
 (Newman 2000, p. 208)

In contrast, masculine nouns can end in any vowel (Newman 1979, pp. 197–98) [Hausa disallows word-final consonants generally (Newman 2000, p. 404)], as shown in examples 22a–e:

- (22) Masculine nouns in Hausa (inanimates/lower animates)
 (22a) hancī ‘nose’ (Newman 2000, p. 201)
 (22b) zōbè ‘ring’ (Newman 2000, p. 213)
 (22c) dàbīnō ‘date (tree)’ (Newman 2000, p. 201)
 (22d) duhù ‘darkness, denseness (of forest)’ (Newman 2000, p. 202)
 (22e) kadā ‘crocodile’ (Newman 2000, p. 209)

In Hausa, then, feminine gender is correlated with a phonological property—namely, what vowel the noun ends in. Importantly, the correlation is unidirectional: If a noun has feminine gender, then it likely ends in *-ā*. However, not every noun that ends in *-ā* has feminine gender; masculine nouns can also end in *-ā* (e.g., example 22e). This raises the question of whether the final *-ā* is a morpheme (rather than a phonologically relevant piece of the noun). In Section 3.3.1, I argue that it is indeed a morpheme, and thus this is not true phonological gender assignment.

In the discussion of arbitrary gender assignment in Section 2.3.1, I identify several key areas of cross-linguistic variation. However, less is known about morphological and phonological gender assignment from a comparative perspective, so it is difficult to do the same here. There is one main similarity: Morphological and phonological gender assignment occur in addition to semantic gender assignment in Russian, Hausa, and all such languages. It is worth repeating that no language has only morphological or only phonological gender assignment.⁵

⁵Furthermore, in both Russian and Hausa, semantic gender assignment takes precedence; that is, if a noun could be assigned one of two genders according to its semantic properties and its morphological/phonological properties, actual gender assignment is based on semantic properties (see, e.g., Corbett 1991, p. 34ff., on Russian; Newman 2000, p. 201, on Hausa). However, it is not clear whether “rules” assigning gender according to morphological or phonological properties are truly attested; readers are referred to the discussion in the sidebar titled Morphological Gender Assignment and Section 3.3.1 on phonological gender assignment.

Table 3 Summary of gender assignment factors

Factor	Basis of gender assignment	Example language	Notes
Semantic	Animacy	Sochiapan Chinantec	At least one of these three factors is used to assign gender for some nouns in every language with gender.
	Humanness	Akɔɔse	
	Social gender/biological sex	Amharic	
Other semantic factors	Animalhood	Nzakara	
	Type of nominalization	German	
	Property of discourse referent	Russian	
Arbitrary	No linguistic property	Spanish	
Morphological	Declension class	Russian	
Phonological	Identity of final vowel	Hausa	See discussion in Section 3.3.1; the final vowel is likely a morpheme.

2.4. Summary: Gender Assignment Factors

This section has reviewed the range of linguistic properties that correlate with grammatical genders across languages. These properties are summarized in **Table 3**. How can these wide-ranging correlations between a linguistic property and a grammatical gender best be captured in a theory of gender assignment? Section 3 takes this question as its starting point.

3. THEORY OF GENDER ASSIGNMENT

3.1. Introduction

In this section, I explore the implications of Section 2 for linguistic theory. In Section 3.2, I contrast lexical approaches to gender assignment (gender assigned via lexical rule) versus structural approaches to gender assignment (gender assigned via syntactic merge of a head with gender features). In Section 3.3, I assess these approaches with respect to the results of Section 2 and conclude that the structural approach has a slight advantage.

3.2. Major Approaches to Gender Assignment: Lexical and Structural

Section 2 demonstrates that there are correlations between linguistic properties and genders in every language with gender. Therefore, any theory of gender assignment must encode these correlations in the grammar. This rules out simple approaches that only list grammatical gender on each noun in the lexicon. Instead, a theory of gender assignment must combine a gender feature with a noun in some way and encode the correlations between linguistic properties and gender features.

Along these lines, there are two major types of gender assignment theories; I refer to them as lexical gender assignment and structural gender assignment. Lexical gender assignment uses lexical rules to relate a grammatical gender feature to a property of a noun (see, e.g., Roca 1989; Harris 1991; Ralli 2002; Riente 2003; Carstens 2010, 2011). Structural gender assignment combines a gender feature on a syntactic head with (loosely speaking) a noun via Merge during the syntactic derivation (see, e.g., Lecarme 2002; Ferrari 2005; Kihm 2005; Lowenstamm 2008; Kramer 2009, 2014, 2015; Acquaviva 2018; Déchaine 2018; Fassi Fehri 2018; for alternative formal approaches to gender assignment, see, e.g., Corbett & Fraser 2000, Evans et al. 2002, Nessel 2006, Plaster et al. 2013, Rice 2006). In this section, I briefly lay out one specific theory of lexical gender assignment (Harris 1991) and one specific theory of structural gender assignment (Kramer 2015)

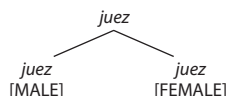


Figure 1

Human Cloning lexical rule in Spanish. Figure based on example 32b from Harris (1991, p. 51).

for the same language: Spanish. In Section 3.3, I compare and contrast the theories' coverage of gender assignment across languages as per Section 2.

Before diving in, it is necessary to quickly describe gender assignment in Spanish (the discussion here is based on Harris 1991, Kramer 2015, and many sources cited therein). The semantic core of Spanish is based on social gender/biological sex: Male humans and higher animals are masculine (e.g., *padre* 'father,' *perro* 'dog'), whereas female humans and higher animals are feminine (e.g., *madre* 'mother,' *perra* 'female dog'). However, as noted in Section 2.3.2, lower animals and inanimate nouns (the remainder) are assigned masculine or feminine gender arbitrarily (see **Table 1**), as are several human-denoting nouns that are exceptions to the semantic core (e.g., *persona* 'person,' which is always feminine). Finally, Spanish assigns gender semantically to certain morphologically complex nouns; for instance, all nouns with the nominalizing suffixes *-tud* or *-(V)dad/tad* are feminine (Morin 2010, p. 158). I turn now to Harris (1991) and Kramer (2015); many details have been omitted or compressed for purposes of space.

Harris (1991, p. 51) relies on two main lexical rules to enact gender assignment in Spanish. The first of these rules takes a lexical entry with the feature [HUMAN] and "clones" it, creating two identical lexical entries except that one has a [MALE] feature and one a [FEMALE] feature. This rule, referred to as Human Cloning, is shown in **Figure 1** for the noun *juez* 'judge'.⁶

A second lexical rule relates the feature [FEMALE] to a feminine grammatical gender feature [F]:

- (23) Human Gender lexical rule in Spanish
 [FEMALE] → [F] / — [HUMAN]
 [Harris 1991, p. 51, (32a)]

This ensures that all female human-denoting nouns have feminine gender. As for male human-denoting nouns, they lack gender features and trigger masculine gender agreement by default (Harris 1991, p. 44). Higher animals (e.g., dogs) are considered humans *honoris causa* and thus have the same gender assignment patterns as human-denoting nouns (Harris 1991, p. 53). Lower animal-denoting nouns and inanimates are lexically listed as having an [F] feature or having no gender features (Harris 1991, pp. 49–50); this successfully captures the arbitrariness of their gender assignment. A noun like *persona* 'person' (always feminine) is lexically listed with an [F] feature, which ensures that it always has feminine gender even if it undergoes Human Cloning (Harris 1991, p. 53; recall that [MALE] does not trigger any particular gender feature). Finally, although Harris (1991) does not explicitly treat derivational morphology, nominal suffixes that impose feminine gender can be listed with an [F] feature as well. In sum, Harris (1991) captures the main gender assignment facts of Spanish assuming that social gender features (e.g., [FEMALE]) and the features that trigger gender agreement (e.g., [F]) are distinct, that gender features are assigned via the lexical rules in **Figure 1** and example 23, and that masculine gender agreement results from the lack of gender features.

⁶This rule is blocked from applying when it would replicate an already-existing lexical entry; for instance, it does not apply to *padre* 'father' because *madre* 'mother' (by assumption) already has a separate lexical entry.

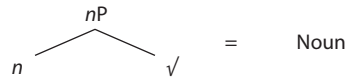


Figure 2

The structure of a noun.

In my previous work (Kramer 2015), I build on Harris's (1991) approach to gender features, but I propose a different mechanism for gender assignment. I assume lexical decomposition (see, e.g., Marantz 1997, 2001; Arad 2003, 2005), whereby lexical categories like nouns, verbs, and adjectives are made up of a noncategorical root and a categorizing head that turns a root into a particular category. For example, to build a noun, a noncategorical root ($\sqrt{}$) combines with a nominalizing head n , as shown in **Figure 2**.

I argue that gender features are located on the nominalizing head n , and thus gender is an integral part of building a noun (see also Lecarme 2002, Ferrari 2005, Kihm 2005, Lowenstamm 2008). Following the approach to syntactic features in Chomsky (2000, 2001), I assume that gender features are either uninterpretable (i.e., they have no semantic effect) or interpretable; that is, they cause a nominalized root to be interpreted as male/female-denoting (for a language with social gender-based gender assignment like Spanish).

Under this approach, Spanish requires four n 's for gender assignment; they are in examples 24a–d:

- | | | |
|-------|----------------|--|
| (24) | Spanish n 's | |
| (24a) | n i [+FEM] | = Female-denoting, triggers feminine agreement |
| (24b) | n i [-FEM] | = Male-denoting, triggers masculine agreement |
| (24c) | n | = No semantic effect, triggers masculine agreement |
| (24d) | n u [+FEM] | = No semantic effect, triggers feminine agreement |
- [Kramer 2015, p. 96, (16)]

In example 24, i stands for interpretable, whereas u stands for uninterpretable. At the level of semantic interpretation, the n 's with interpretable features (examples 24a,b) are only licit with roots that can be interpreted as male/female when nominalized—that is, humans and higher animals. Lower animals and inanimates arbitrarily combine with either the n that lacks gender features (example 24c) or the n with uninterpretable gender features (example 24d); the difference is encoded via licensing conditions between roots and n 's that hold at Phonological Form (PF), a postsyntactic level of the grammar where morphological and phonological operations occur (arbitrary licensing conditions between n 's and roots are independently necessary to capture the idiosyncrasies of nominal derivational morphology). This approach thus uses licensing conditions at the interfaces to encode correlations between semantic properties and grammatical gender as well as the arbitrariness of gender assignment to lower animals and inanimates.

As for gender agreement, feminine gender is attributable to a single feature ([+FEM]), so female-denoting nouns (formed via example 24a) and arbitrarily feminine nouns (formed via example 24d) are predicted to agree in the same way. To see how gender agreement works for masculine nouns, it is necessary to provide more theoretical background. In the framework of Distributed Morphology, the syntax contains abstract feature bundles that lack phonology; at PF, these abstract feature bundles are matched to pieces of morphophonology known as vocabulary items. I propose that there are two vocabulary items for each gender agreement target in Spanish: one that has a [+FEM] feature and one that is underspecified for gender. This is shown for the definite determiner in examples 25a,b:

- (25) Spanish definite determiners
 (25a) [D], [DEF], [+FEM] ↔ *la* [+FEM] Vocabulary item
 (25b) [D], [DEF] ↔ *el* Underspecified vocabulary item
 [Kramer 2015, p. 96, (17)]

Male-denoting nouns cause a determiner to have a [−FEM] feature via agreement, and this determiner matches best with the vocabulary item *el* (example 25b) at PF. Arbitrarily masculine nouns cause a determiner to lack gender features, and this determiner will also be matched with the vocabulary item *el* (example 25b). This is because *la* (example 25a) has more features than this determiner, and it is impossible to insert a vocabulary item with more features into an abstract feature bundle [the subset principle (Halle 1997)]. Therefore, through the use of independently necessary tools in Distributed Morphology, gender agreement targets with [−FEM] features and gender agreement targets with no gender features are correctly predicted to use the same agreement marker (e.g., *el* in example 25b)—that is, to have the same “masculine” gender.

Nouns like *persona* ‘person,’ which are always feminine despite being human-denoting, are exceptional in that their roots are only licensed to combine with the *n* with an uninterpretable gender feature (example 24d). As for morphological gender assignment, nominalizing morphology has the category *n*, and thus it follows that nominalizing suffixes like *-tud* have gender features.

Overall, then, both Harris (1991) and my previous work (Kramer 2015) successfully explain many facets of gender assignment in Spanish, although from different perspectives. In Harris’s (1991) work, gender (the [F] feature) is assigned via lexical rule, whereas in my previous work, gender is assigned when an acategorical root combines with a *n* in the syntax.

3.3. Assessment

Harris (1991) and Kramer (2015) capture many properties of gender assignment with approximately equal success. For example, the basic association of a semantic property with a gender is done via lexical rule by Harris (1991) (the Human Gender rule; example 23), and in my previous work (Kramer 2015), it holds because one and the same feature is interpreted as the semantic property (e.g., femaleness) and used for morphosyntactic agreement (e.g., feminine gender). The system Harris (1991) proposes for Spanish easily extends to other semantic features that nouns may have in the lexicon (e.g., animacy), and so does structural gender assignment (see, e.g., Kramer 2015, p. 110ff. on gender assignment in Algonquian languages). In Spanish, arbitrary gender assignment uses recycled genders (masculine/feminine), but both lexical and structural approaches can be extended to capture novel genders for arbitrary gender assignment as in, for example, many Bantu languages (for a lexical approach to Bantu gender assignment, see Carstens 2010, 2011; for a structural approach, see Fuchs & van der Wal 2018).

However, the lexical and structural approaches pull apart with respect to three phenomena of cross-linguistic gender assignment from Section 2: phonological gender assignment (Section 3.3.1; see Section 2.3.2), gender assignment in hybrid nouns (Section 3.3.2; see Section 2.2.3), and the semantic core generalization (Section 3.3.3; see example 2 and the sidebar titled Morphological Gender Assignment).⁷ In Section 3.3.1, I argue that phonological gender assignment initially seems problematic for a structural approach, but a closer look at the data reveals that it is easy to capture. In Sections 3.3.2 and 3.3.3, I argue that the structural approach has an advantage

⁷In a way, assessing Harris (1991) with respect to cross-linguistic gender assignment may seem unfair because Harris’s system was developed solely for Spanish. However, it is one of the most thoroughly worked out lexicalist approaches to gender assignment within a mainstream generative framework, and later lexicalist approaches adopt it without further elaboration (see, e.g., Carstens 2010, 2011).

MORPHOLOGICAL GENDER ASSIGNMENT

It is unclear whether the theories can be differentiated with respect to morphological gender assignment. A lexical approach to gender assignment can capture Russian gender assignment assuming that declension class features are listed on nouns in the lexicon. For a structural approach, it depends on the location of declension class features in the grammar. If these features are in the presyntactic lexicon (see, e.g., Alexiadou & Müller 2008), then an analysis could be developed in which they form part of the feature bundle of a *n*. However, most research on declension class within Distributed Morphology assumes that declension class features are inserted at PF (see, e.g., Oltra-Massuet 1999, Embick & Halle 2005, Oltra-Massuet & Arregi 2005). They are inserted at *n*, so they can be conditioned by gender features [as in my analysis of Spanish declension class (Kramer 2015, chapter 10)], but it should not be possible for them to condition gender features, as in Corbett's (1991) analysis of gender in Russian sketched in Section 2.3.2. Nevertheless, if Russian gender/declension class correlations could be analyzed as gender features conditioning declension class rather than as declension class assigning gender, then the structural approach works without a hitch (for an analysis of Russian along these lines, see Beard 1995). Alternatively, if agreement happens at PF (at a later stage than the insertion of declension class features), then declension class features can affect gender agreement (see, e.g., Bobaljik 2008 on agreement at PF). So, it remains an open question whether a structural approach to gender assignment can capture morphological gender assignment.

in explaining the phenomena. Overall, then, the data discussed in Section 2 support a structural approach to gender assignment.

3.3.1. Phonological gender assignment. Section 2.3.2 lays out the gender assignment system of Hausa: Gender is assigned semantically to humans and higher animates according to social gender/biological sex, and the remainder of the feminine nouns tend to end in *-ā*, whereas the remainder of the masculine nouns can end in any vowel. If the final *-ā* found in feminine nouns is a phonological property (e.g., as described in Corbett 1991), then Hausa assigns gender according to phonology. This presents a problem for a structural approach to gender assignment. Gender would not be assigned by merging a separate head bearing a gender feature to the derivation, and more fundamentally, structural approaches like that proposed in Kramer (2015) assume that the syntax lacks any information about phonology (and thus phonology cannot influence a syntactic operation like gender agreement).

In a lexical approach like that of Harris (1991), phonological gender assignment is not problematic as long as the phonology of nouns is accessible in the lexicon to serve as the input for a lexical rule like that shown in example 26:

- (26) Hausa phonological gender assignment rule (to be disputed)
[...ā]_N → [F]

However, as noted in Section 2.3.2, not all nouns that end in *-ā* are feminine, as example 26 falsely predicts (see, e.g., example 22e). Moreover, *-ā* is probably best analyzed as the realization of a feminine gender feature. For example, feminine adjectives are formed via an *-ā* suffix (Newman 2000, p. 210), female counterparts of male humans/higher animals are formed via an *-ā* suffix (Newman 2000, p. 210), and even simplex nouns with semantically assigned gender mostly end in *-ā* (e.g., *mātā* 'wife') (Newman 2000, p. 201). Therefore, in Hausa, the most accurate generalization is that a feminine gender feature is morphophonologically realized as *-ā* in many contexts, and this is easily modelable in both lexical and structural approaches to gender assignment. A lexical approach can simply reverse the direction of the lexical rule in example 26 (i.e., change it to

[F] → ā), and a structural approach can posit a syntactic head *n* [+FEM] that is realized with a vocabulary item *-ā*.

Overall, then, phonological gender assignment in Hausa initially seems problematic for a structural approach, but in fact it is not truly phonological gender assignment. If all purported instances of phonological gender assignment can be reanalyzed like this, then, in accordance with what a structural approach to gender assignment would predict, phonological gender assignment is not attested in natural language. This seems likely, especially because recent work on purported phonological gender assignment in Kru languages (Sande 2018) develops a sophisticated analysis of phonological concord that does not require phonological gender assignment. However, further work is necessary to fully determine whether phonological gender assignment exists.

3.3.2. Gender assignment in hybrid nouns. Section 2.2.3 discusses semantic gender assignment based on the properties of the discourse referent. This section focuses on one phenomenon discussed there: hybrid agreement. For example, in Russian, the hybrid noun *vrač* ‘doctor’ can trigger masculine agreement on some agreement targets and feminine agreement on others in one and the same sentence, as in example 16, repeated here as example 27:

- (27) očen’ xoroš-aja glavn-yj vrač
 very good-F head-M doctor
 ‘a very good head doctor’
 (Glossing/data slightly simplified from Pesetsky 2013, p. 37)

Instances such as example 27 pose a challenge to lexical approaches like Harris’s (1991).⁸ There is no way for a noun to have both masculine and feminine grammatical gender in the lexicon, and yet a single noun can trigger agreement in both. Granted, a structural approach to gender assignment must be elaborated upon to explain hybrid nouns, most likely by adding a projection with social gender features to the nominal extended projection (e.g., Sauerland 2004, Pereltsvaig 2006, Yatsushiro & Sauerland 2006, Steriopolo & Wiltschko 2010, Pesetsky 2013, Rappaport 2013, King 2015). However, this would be just an additional instance of structural gender assignment, which is unsurprising if gender is generally assigned structurally. Therefore, hybrid nouns suggest that a structural approach to gender assignment is needed rather than a lexical approach as in Harris’s (1991) study.

3.3.3. Semantic core generalization. Recall the semantic core generalization (repeated in example 28), which states that all languages with gender have at least some semantic gender assignment:

- (28) Semantic core generalization
 Grammatical gender is always assigned to at least a subset of nouns on
 the basis of animacy, humanness, and/or social gender/biological sex.

From the perspective of Harris (1991), it is unclear how to explain the semantic core generalization. It is not obvious why something like the Human Gender rule in example 23 must always be part of the grammar of a language with grammatical gender, connecting animacy, humanness, and/or social gender/biological sex to a feature that is relevant for morphosyntactic agreement. Thus, the lexical approach fails to prevent a language in which each noun has an arbitrarily assigned gender feature and those features divide the nouns into two different agreement classes without correlating to anything about nominal semantics. This kind of language is unattested.

⁸However, see Wechsler & Zlatić (2003) for a lexical approach to hybrid nouns (and gender assignment in general), albeit in a different framework from that of Harris (1991).

In contrast, the structural approach to gender assignment developed in my previous work (Kramer 2015) lends itself to an explanation of the semantic core generalization, given certain assumptions about syntactic features. Recall that gender features are interpretable (e.g., for femaleness) or uninterpretable (e.g., for the feminine gender of inanimate nouns). If this is combined with the thesis of radical interpretability, shown in example 29, the result comes very close to explaining the semantic core generalization:

- (29) Thesis of radical interpretability
Each feature must receive a semantic interpretation in some syntactic location.
(Brody 1997)

The thesis of radical interpretability (example 29) was proposed by Brody (1997, pp. 143–44) and influentially taken up by Pesetsky & Torrego (2001, 2007) mostly to address questions about syntactic agreement. It is typically understood to mean that each syntactic feature must receive a semantic interpretation in some syntactic location in a given syntactic derivation to characterize the relationship between an agreeing head like T (with, say, number features that are semantically irrelevant) and a DP that controls agreement (whose number features are semantically contentful).

However, if example 29 is viewed as a condition on the inventory of syntactic features within a whole language, the semantic core falls out. Essentially, example 29 reduces to the idea that an uninterpretable instantiation of a feature *F* in a Language *X* implies an interpretable instantiation of *F* in Language *X*. Combined with Kramer's (2015) analysis, this predicts that we should find some languages with only interpretable gender features (e.g., Sochiapan Chinantec, in which all gender is assigned semantically) and other languages with both interpretable and uninterpretable gender features (e.g., Spanish), but no languages with only uninterpretable gender features; that is, grammatical gender is never completely independent from semantic properties of nominals. This is the semantic core generalization in a nutshell, so Kramer's (2015) approach plus a version of the thesis of radical interpretability successfully predicts that gender is always semantically assigned for at least some nouns.⁹

This broader conception of a thesis of radical uninterpretability seems like a promising way to explain the semantic core generalization. However, one aspect of the semantic core generalization remains unexplained through this approach: Why are animacy, humanness, and social gender/biological sex the key semantic properties used to assign grammatical gender across languages? Neither Harris (1991) nor my previous work predicts the specialness of these particular properties, and I leave this question open for future research.

3.4. Interim Conclusion: Assessment

Overall, I have argued that structural gender assignment has a slight edge over lexical gender assignment. In combination with the thesis of radical uninterpretability, structural gender assignment predicts that all languages assign gender semantically, and this approach is also more easily adapted to explain hybrid agreement. Phonological gender assignment poses a problem for structural approaches, but it is not clear that phonological gender assignment actually exists (moreover, if phonological gender assignment does not exist, this is further evidence in favor of a structural approach). Additionally, there is further evidence against lexical approaches from other sources—for instance, the specific properties of gender assignment in individual languages

⁹This idea raises questions about other types of features, such as case, which is typically analyzed as only uninterpretable. However, in many approaches (see, e.g., Marantz 1991, Bobaljik 2008), case is in fact not a syntactic feature because it is assigned postsyntactically.

(see, e.g., Kramer 2014, 2015 on Amharic) and gender assignment in code switching (see, e.g., Alexiadou et al. 2015). Thus, it seems highly likely that gender is assigned structurally.

4. CONCLUSION

This review has taken a broad perspective on gender assignment, drawing together the main generalizations about gender assignment across languages and then comparing lexical and structural approaches to gender assignment. Many questions remain open (e.g., Why are animacy, humanness, social gender, and biological sex always part of the semantic core?), but it is clear that gender is assigned semantically at a minimum and that a structural approach to gender assignment is likely more successful at explaining gender assignment cross-linguistically.

DISCLOSURE STATEMENT

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