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Thom Westveer, Petra Sleeman and Enoch O. Aboh

Competing genders: French partitive constructions between grammatical and semantic gender

Abstract: In a study on the acceptance of semantic versus grammatical gender agreement in French, Sleeman & Ihsane (2016) argue that the acceptability of gender mismatches in partitive constructions is related to (i) the type of partitive construction and (ii) the type of animate noun involved. They base their argumentation on judgements of a limited number of (Swiss) French informants on a limited number of test sentences. The aim of the present study is to further explore gender agreement in partitive constructions in a more systematic way and with a larger sample of speakers, by means of a controlled grammaticality judgement task, administered to 62 native speakers of French. Our results are generally compatible with those of Sleeman & Ihsane and can be accounted for using their theoretical analysis. In addition this paper provides more insight into the linguistic factors that influence the acceptability of semantic agreement in French partitive constructions.

Keywords: partitive constructions, gender agreement, semantic vs. syntactic gender, gender mismatches, French

1 Introduction

This paper focusses on partitive constructions of the type X of Y (e.g. *the youngest of my children*), in which a subset X is selected from a set Y. We label X, referring

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to the subset, as the outer DP and Y, referring to the set, as the inner DP. In languages overtly marking gender distinctions, such as French, these partitive constructions can present an interesting case of gender agreement: the outer DP and the inner DP may have different gender values, thus showing a gender mismatch. In the French example in (1a), the outer DP *la plus jeune* is feminine, while the inner DP *des anciens étudiants* referring to a mixed group of females and males, exhibits the masculine plural form.¹ This sentence presents a gender mismatch between the outer and the inner DP. In example (1b), however, the outer DP *le plus jeune* and the inner DP *des anciens étudiants* agree and both take the masculine form, even though the subset, to which the outer DP refers, is female.

- (1) a. *La plus jeune des anciens étudiants s'appelle Hélène.*
 the.F most young of.the former.M.PL student.M.PL is.called Hélène
 'The youngest of the former students is called Hélène.'
 b. *Le plus jeune des anciens étudiants s'appelle Hélène.*
 the.M most young of.the former.M.PL student.M.PL is.called Hélène

Although these constructions are not specifically taught in school or discussed in grammar books, native speakers have intuitions about when a gender mismatch is acceptable or not. Sleeman & Ihsane (2016) investigated these intuitions with a limited number of informants and show that the acceptability of gender mismatches depends on the type of partitive construction and on the type of noun. Based on their results, they propose a theoretical analysis of gender agreement in partitive constructions, which we report on in section 2.

The aim of the present study is to further explore gender agreement in partitive constructions in a more systematic way and with a larger sample of speakers and test sentences. We submitted a questionnaire to 62 native speakers of French, enabling us to perform statistical analyses on our data, which was not possible in Sleeman & Ihsane's study, given the limited size of their sample. Our larger sample also enables us to check for influence of the factors sex and age of the participants, as the acceptability of gender mismatches may be influenced by the ongoing debate on feminisation and inclusive language use in French. Thus, younger speakers may accept gender mismatches more often than older speakers. Besides, several studies (e.g. Van Compernelle 2009) suggest a difference between female and male speakers when it comes to feminisation and inclusive language use, which may also impact the acceptability of gender mismatches. In

¹ In French, masculine gender serves as default gender for animate nouns if the referent's sex is unknown or irrelevant or if a noun refers to a mixed group of females and males.

addition, our more systematic test design, including a larger number of test sentences, allows us to investigate noun type differences. We formulate our research questions and discuss the methodology in section 3. Section 4 contains a detailed presentation of the results. In section 5, we discuss the results in more detail and compare them to those of Sleeman & Ihsane. We present some conclusions in section 6.

2 Gender agreement in French partitive constructions

In French, all nouns are assigned a grammatical gender, which can either be masculine or feminine. Nominal elements, such as pronouns, determiners, or adjectives, all agree in gender with the noun they combine with or refer to. For instance, the indefinite determiner and the adjective show masculine agreement with the masculine noun *chanteur* ‘singer’ in (2a) and feminine agreement with the feminine noun *chanteuse* ‘female singer’ in (2b).

- (2) a. *Julien Clerc est un/*une chanteur merveilleux/*merveilleuse.*
 Julien Clerc is a.M/.F singer.M.SG marvelous.M/.F
 ‘Julien Clerc is a marvelous singer.’
- b. *Françoise Hardy est une/*un chanteuse merveilleuse/*merveilleux.*
 Françoise Hardy is a.F/.M singer.F.SG marvelous.F/.M
 ‘Françoise Hardy is a marvelous singer.’

With inanimate nouns, gender assignment is not semantically motivated and therefore arbitrary, even though a noun’s gender is often predictable from its ending (cf. Lyster 2006): nouns that end in a vowel in spoken language tend to be masculine (e.g. *un palet* [palet] ‘a.M puck’); those that end in a consonant tend to be feminine (*une palette* [palet] ‘a.F palette’).² Animate nouns, in contrast, usually exhibit a gender that matches with the biological sex of the noun’s referent.

² Please note that in spoken French, final consonants of nouns are not pronounced, except when followed by a vowel; in written French, masculine and feminine nouns present the opposite image: masculine nouns tend to end in a consonant, feminine nouns in a vowel.

Therefore, in (2a), *chanteur*.M refers to a male singer, while *chanteuse*.F (2b) designates a female.³ However, some animate nouns – for instance the feminine noun *victime* ‘victim’ – have a fixed gender, even though they can refer to both females and males. Agreement with such nouns can be challenging. In the example in (3), the feminine noun *victime* refers to a male. The definite determiner and the adjective agree with the feminine gender of the noun. For the pronoun in the follow-up sentence, in contrast, there are two possible sources of gender agreement: the feminine noun *victime* or its male referent *Pierre*. If the pronoun shows agreement with the gender of the noun, it takes the feminine form. We refer to this type of agreement as syntactic agreement. If, on the other hand, the pronoun agrees with the biological sex of the referent, it will take the masculine form, an instance of semantic agreement (Corbett 2006).

- (3) *Pierre était la seule/*le seul victime ?Elle/?Il a survécu.*
 Pierre was the.F only.F/.M victim.F.SG She/He has survived
 ‘Peter was the only victim. He survived.’

Throughout this paper, we use the term agreement for sharing of gender features on all types of syntactic configurations. We do not distinguish between different syntactic configurations by using additional notions, such as concord or matching. Neither do we distinguish between valuation via a syntactic relationship between a valued and an unvalued feature, and semantic feature valuation from the non-linguistic context (following, e.g. Corbett 1991, Audring 2013, Kučerová 2018). Consequently, we do not use the term agreement in a technical sense.

Superlative partitives may also display competition between syntactic and semantic gender agreement, as is illustrated in (4). The agreement target in the outer DP in (4a-b) has two possible controllers: (i) the inner DP *des nouveaux professeurs* in the default masculine form or (ii) the NP *Hélène Manier*, referring to a female. In (4a), the default masculine form *le plus gentil* syntactically agrees with the default masculine gender of the noun *professeur*. In (4b), however, the feminine form *la plus gentille* agrees with its female referent, *Hélène Manier*, hence a case of semantic agreement.

³ We leave aside the long-standing debate whether both the masculine form *chanteur* and the feminine form *chanteuse* are stored separately in the lexicon (full storage approach), or, instead, only the separate morphemes, that is, the stem *chant-* and the suffixes *-eur* and *-euse* (decomposition approach) (cf. Haspelmath & Sims 2010 and references therein). See Labbé Grunberg (2020) for a detailed investigation of cognitive processing of complex and non-complex words by native speakers of Dutch.

- (4) a. *Le plus gentil des nouveaux professeurs s'appelle Hélène Manier.*
 the.M most kind.M of.the new.M.PL teacher.PL is.called H  l  ne Manier
 b. *La plus gentille des nouveaux professeurs s'appelle H  l  ne Manier.*
 the.F most kind.F of.the new.M.PL teacher.PL is.called H  l  ne Manier
 'The kindest of the new teachers is called H  l  ne Manier.'

Sleeman & Ihsane (2016) establish that the acceptability of gender mismatches depends on multiple factors. One such factor is the type of partitive construction: gender mismatches are accepted in superlative partitive constructions, as in (5), but not in quantified partitive constructions (6).

- (5) *La/Le plus jeune de mes nouveaux coll  gues s'appelle Antoinette.*
 the.F/.M most young of my new.M.PL colleague.PL is.called Antoinette
 'The youngest of my new colleagues is called Antoinette.'
- (6) **Une/Un de mes nouveaux coll  gues s'appelle Antoinette.*
 one.F/.M of my new.M.PL colleague.PL is.called Antoinette
 'One of my new colleagues is called Antoinette.'

In a quantified partitive, a quantifier, such as *un* 'one' in (6), heads the outer DP, whereas in a superlative partitive, the outer DP is headed by a definite determiner combined with a superlative adjective (5). Only in the latter case, speakers may accept a mismatch between inner and outer DP.

Another factor that appears to affect the acceptability of semantic agreement – only in superlative partitive constructions like (5) – is the type of (animate) noun involved in the sentence. Sleeman & Ihsane (2016) (following Ihsane & Sleeman 2016) distinguish four types of animate nouns in French, based on the strategy used to derive the feminine form of the noun:

Tab. 1: Classification of animate nouns according to Sleeman & Ihsane (2016)

Class A	suppletive forms: stem alternation resulting in two unrelated forms for masculine and feminine	un frère – une sœur 'a brother – a sister' un garçon – une fille 'a boy – a girl'
Class B	alternating forms: masculine and feminine forms derived from the same morphological stem by suffix alternation or affixation	un étudiant – une étudiante 'a student' (affixation) un policier – une policière ⁴ 'a police officer' (affixation) un directeur – une directrice 'a director' (suffix alternation)
Class C	epicene forms: one stem for female and male referents, triggers either feminine or masculine agreement	un ministre – une ministre 'a minister' un élève – une élève 'a pupil'
Class D	fixed-gender forms: one stem for female and male referents, can only trigger agreement with one fixed gender	un personnage 'a character' une sentinelle 'a guard'

Sleeman & Ihsane's group of class B nouns could be further split into two distinct groups, based on the way the feminine and masculine forms of these nouns are derived: nouns with a feminine form, which derives from the masculine one by adding a suffix (e.g. *étudiant* > *étudiante*), labelled 'affixation class B', and nouns for which there is a suffix alternation (e.g. *chanteur* – *chanteuse*), called 'suffix alternation class B'.⁵

According to Sleeman & Ihsane, gender mismatches should not be possible with class A and class D nouns (7-8). Therefore, they did not include these nouns in their study, since class A and class D nouns should always trigger syntactic agreement. With class C nouns (9), on the other hand, gender mismatches in superlative partitives seem to be possible, as the judgements of Sleeman & Ihsane's informants suggest.

⁴ We leave aside here the question whether the feminine form *policière* derives from the masculine form *policier* by affixation, or, instead, the masculine form derives from the feminine form by a deletion operation.

⁵ An anonymous reviewer pointed us towards this distinction, suggesting to investigate if it affects agreement behaviour.

- (7) *Le/*La plus jeune des gentils garçons s'appelle Jean-Luc.*
 the.M/.F most young of.the kind.M.PL boy.M.PL is.called Jean-Luc
 'The youngest of the kind boys is called Jean-Luc.'
- (8) *La/*Le plus jeune des nouvelles sentinelles a une longue barbe.*
 the.F/.M most young of.the new.F.PL guard.F.PL has a long beard
 'The youngest of the new guards has a long beard.'
- (9) *La/Le plus jeune des nouveaux ministres est Madame Garnier.*
 the.F/.M most young of.the new.M.PL minister.PL is Mrs. Garnier
 'The youngest of the new ministers is called Mrs. Garnier.'

With class B nouns, the picture is somewhat more complicated. Some informants accept gender mismatches in superlative partitives with these nouns, whereas others reject them.

- (10) *??La/Le plus jeune des nouveaux directeurs s'appelle Mme Héloïse.*
 the.F/.M most young of.the new.M.PL director.M.PL is.called Mrs. Héloïse
 'The youngest of the new directors is called Mrs. Héloïse.'

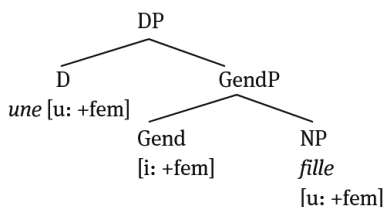
Following up on a discussion of some recent theoretical analyses on gender agreement by Kramer (2009) and Atkinson (2015), Ihsane & Sleeman (2016) show that these fail to account for the differences between agreement in partitive constructions, which can display semantic agreement, and agreement in more local environments, such as with attributive adjectives, which only exhibit syntactic agreement. Therefore, they propose an alternative theoretical analysis of gender agreement, which they further develop in Sleeman & Ihsane (2016) and show to account for their observations. In the Minimalist framework (Chomsky 2000, 2001), agreement results from the operation Agree. Agree operates on feature valuation and interpretability and constitutes a relation between a target (i.e. an element that requires a specific feature value) and a controller (i.e. an element bearing a matching feature that saturates the target). In Minimalist terms, the target referred to as the goal is endowed with an unvalued agreement feature that needs to be valued by the probe (i.e., the controller). While feature valuation holds of the licensing of formal syntactic features, these features may have semantic correlates (i.e., they affect interpretation). It is commonly assumed that (un)valued and (un)interpretable features are licensed simultaneously through Agree.

Under standard Minimalist assumptions, however, the fact that the uninterpretable grammatical gender feature is not always accompanied by an interpretable counterpart, as is the case with the class D nouns, would lead the derivation to crash, contrary to facts. Therefore, Sleeman & Ihsane (2016) build on Legate (2002) and Pesetsky & Torrego (2007) in arguing for a view that dissociates Agree from interpretability, which may derive from other (formal) operations. This way a mismatch between feature valuation and feature interpretability does not lead the derivation to crash.

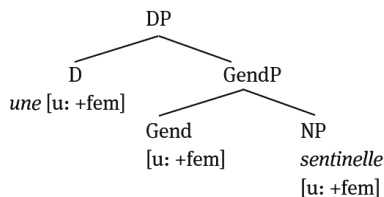
Sleeman & Ihsane's analysis consists of two parts, corresponding to the two parts of a partitive construction: (i) the inner DP, referring to the superset, and (ii) the outer DP, referring to the subset. We will start with the analysis of the inner DP. Sleeman & Ihsane argue that grammatical and semantic gender should be separated. In French, in principle, nouns come with a lexically fixed grammatical gender, which is assumed to be uninterpretable within the current Minimalist framework. Semantic gender, on the other hand, is encoded on a specific functional projection, Gender Phrase (GendP⁶), only present in the structure of animate nouns. Semantic gender is interpretable with class A, class B and class C nouns, but uninterpretable with class D nouns, because with the latter type the referent's biological sex does not always match the noun's grammatical gender.

As Sleeman & Ihsane report, semantic gender agreement seems to be possible with class C and to a lesser extent with class B nouns, but not with class A and class D nouns. They argue that the differences between these noun classes are situated in the lexicon. Class A and class D nouns bear a specific grammatical gender feature in the lexicon. The structures in (11a-b) for the feminine class A noun *fille* 'girl' and the feminine class D noun *sentinelle* 'guard' illustrate this: these nouns bear a feminine-valued uninterpretable feature on the lexical noun, whose value is then transferred from the noun onto the Gend-head.⁷

(11) a. 'a girl'



b. 'a guard'

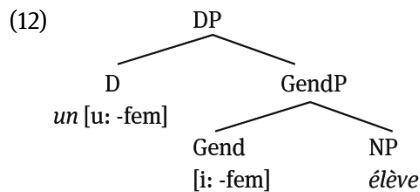


⁶ Sleeman & Ihsane (2016) abbreviate this functional projection as GenP, but we use the notion GendP instead, to avoid potential confusion with 'Genitive'.

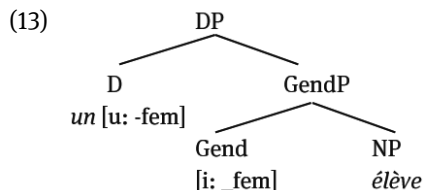
⁷ Sleeman & Ihsane (2016) code gender as either [+fem], [-fem] or $_$ fem], representing feminine, masculine and unspecified gender, respectively, following Kramer (2009) and Atkinson (2015).

Since with class A nouns (11a), the gender feature on Gend is interpretable, it can be interpreted as a biological sex feature and the noun's referent has to be a female, whereas in (11b), with the class D noun *sentinelle*, the gender feature on Gend is uninterpretable and cannot be interpreted as a biological sex feature – the referent of *sentinelle* can either be female or male.

With class C nouns, there is no grammatical gender stored in the lexicon and these nouns enter the derivation unvalued, as the absence of an uninterpretable gender feature on the class C noun *élève* 'pupil' in (12) shows. Gender specification of these nouns takes place through valuation of the semantic gender feature on Gend. In (12), the noun *élève* receives a gender value from the noun's referent in the non-linguistic context.⁸ If the referent is a male, the semantic gender feature on Gend is valued as masculine, consequently triggering masculine agreement on the determiner *un*. As the gender feature on Gend is interpretable, it can be interpreted as referring to the biological sex of the noun's referent.



It is also possible that the semantic gender feature on Gend does not receive a gender value, the noun thus being unmarked for gender. Normally, the derivation would crash in such a case. However, Sleeman & Ihsane, following Preminger (2011), argue that this does not happen, because the absence of a gender value results in the spell-out of default gender, which is the masculine form in French. This is what Preminger calls Failed Agree, exemplified in (13).



⁸ The assumption that features may also receive their value from the non-linguistic context is defended by studies in multiple domains. With respect to gender, Matushanksy (2013) shows that in Russian, agreement with some animate nouns may not only depend on the noun's grammatical gender, but also on semantic information from the non-linguistic context. Cartographic approaches to syntax also assume valuation from the non-linguistic context (cf. Rizzi 1997).

The interpretable semantic gender feature on the Gend-head in (13) does not receive a value from the non-linguistic context, as marked by the absence of a feature value [i: _fem]. Still, the derivation does not crash, as Failed Agree (Preminger 2011) applies, resulting in default masculine agreement on the determiner *un*. Only in this case, a gender mismatch may occur, as we will see below.

The second part of the analysis concerns the outer DP, referring to the subset. Sleeman & Ihsane, building on Sleeman & Kester (2002), argue for a two-noun analysis of partitives. The noun of the outer DP is a copy of the noun of the inner DP, but remains unpronounced. Importantly, in a superlative partitive – but not in a quantified partitive, as we will see – both DPs are headed by a Gender Phrase. The gender value of the inner DP's Gender Phrase is copied together with the noun into the outer DP and the outer DP's Gender Phrase receives its value from the gender feature on the copy of the noun, as is shown in (14-15).

(14) No mismatch – masculine agreement

[_{DP} *le* [_{DegP} *plus jeune* [_{GendP} M [_{FP} *jugé* [_{PP} *des* [_{GendP} M [_{NP} *juges français*]]]]]]]]

(15) No mismatch – feminine agreement

[_{DP} *la* [_{DegP} *plus jeune* [_{GendP} F [_{FP} *jugé* [_{PP} *des* [_{GendP} F [_{NP} *juges françaises*]]]]]]]]

However, if Failed Agree has taken place in the inner DP (as in (13)) and no gender value is present on the inner DP's Gender Phrase, there is no gender value to be transferred to the outer DP's Gender Phrase either. In this case, the outer DP's Gender Phrase presents a second opportunity to insert a semantic gender value, as indicated by the arrows in the example in (16).

(16) [_{DP} *la* [_{DegP} *plus jeune* [_{GendP} F [_{FP} *jugé* [_{PP} *des* [_{GendP} _ [_{NP} *juges français*]]]]]]]]

In (16) there is no gender value on the inner DP's Gender Phrase and Failed Agree has taken place, leading to the spell-out of default masculine gender in the inner DP. The Gender Phrase of the outer DP, in contrast, is valued as feminine, which triggers feminine agreement on the outer DP's determiner *la*.

In quantified partitives, on the other hand, Sleeman & Ihsane assume that the outer DP is not headed by a second Gender Phrase. In this way, they explain why gender mismatches seem not to be possible in quantified partitives, since there is no second opportunity to insert a semantic gender value in the outer DP after Failed Agree has taken place in the inner DP. Instead, the outer DP has to agree with the inner DP's default masculine gender.

(17) [_{NumP} un [_{FP} collègue [_{PP} de [_{DP} mes [_{GendP} _ anciens collègues]]]]]

Until now, we have not addressed class B nouns. As Sleeman & Ihsane's results suggest, some speakers of French seem to accept gender mismatches with class B nouns, whereas others appear not to do so. Sleeman & Ihsane argue that for speakers that accept gender mismatches with class B nouns, these nouns behave like class C nouns and are thus unmarked for grammatical gender in the lexicon. If valuation of the semantic gender feature on the Gend-head through the non-linguistic context does not take place, Failed Agree applies, resulting in default masculine gender in the inner DP and in superlative partitives. Through valuation of the semantic gender feature on Gend in the outer DP, a gender mismatch may arise, as in (18a). In contrast, some speakers do not accept a mismatch with class B nouns, but prefer sentences as the one illustrated by (18b).

- (18) a. *La plus jeune de mes anciens étudiants s'appelle Hélène.*
 the.F most young of my former.M.PL student.M.PL is.called Hélène
 b. *Le plus jeune de mes anciens étudiants s'appelle Hélène.*
 the.M most young of my former.M.PL student.M.PL is.called Hélène
 'The youngest of my former students is called Hélène.'

Sleeman & Ihsane do not present an analysis for speakers that do not accept a mismatch with class B nouns. Ihsane & Sleeman (2016), in turn, propose a lexical analysis to explain speaker differences: for speakers that do not accept a gender mismatch, class B (and class C) nouns bear a grammatical gender feature in the lexicon, which values the feature on the Gend-head too, leaving no room for valuation from the non-linguistic context. For speakers that accept a mismatch, class B (and class C) nouns are unmarked for grammatical gender. Thus, in (18b), the class B noun *étudiant* 'student' is stored as a masculine noun in the lexicon. The masculine gender of the group noun *étudiants* in the inner DP is transferred onto the outer DP and triggers masculine agreement. Feminine agreement in the outer DP, which would give rise to a gender mismatch between inner and outer DP, is not accepted by these speakers. Variation between individual speakers could thus be related to differences in the way nouns are stored in a speaker's mental lexicon.

As Sleeman & Ihsane (2016) report, with class B nouns most of their informants prefer the use of a feminine plural group noun if the subset is a female, as in (19), instead of a sentence potentially presenting a gender mismatch between the inner and the outer DP (18a).

- (19) *La plus jeune de mes anciennes étudiantes s'appelle Hélène.*
 the.F most young of my former.F.PL student.F.PL.is.called Hélène
 'The youngest of my former students is called Hélène.'

As opposed to (18a), in (19) no gender mismatch can arise, since both the inner and the outer DP display feminine gender. However, in (19) the feminine plural group noun *étudiantes* only refers to a group of female students, not to a mixed group of female and male students. In (18a/b), on the other hand, the (default) masculine group noun *étudiants* refers to a group of females and males.

3 Research questions and methodology

Sleeman & Ihsane's study involved only 10 (Swiss) French participants and it is not clear to what extent the results and analysis can be generalised to speakers of French in general. Due to the limited number of participants, the authors could not report any statistics. In addition, the participants were only exposed to a small set of sentences which did not include all possible agreement conditions. For instance, their test sentences did not include contexts with syntactic agreement and the investigated sentences did not involve many different nouns for each of the noun classes. The present study aims at further exploring the phenomenon of gender agreement in French partitive constructions, taking into account the limitations of Sleeman & Ihsane's approach. Building on Sleeman & Ihsane's study, we start from the following questions: (i) Do superlative and quantified partitives significantly differ with respect to the acceptance of semantic agreement, as Sleeman & Ihsane's results suggest? (ii) Do class B, class C and class D nouns significantly differ with respect to the acceptance of semantic agreement in superlative partitives? Since we collected grammaticality judgements from a larger number of speakers, we have the possibility to perform statistical analyses on our data. Based on the informants' judgements reported by Sleeman & Ihsane, we formulate the following hypotheses that need to be tested: (a) In superlative partitives, semantic agreement is judged to be significantly more acceptable than in quantified partitives. (b) In superlative partitives, the acceptance of semantic agreement depends on the type of animate noun: semantic agreement is judged significantly more acceptable with class C and then with class B nouns, whereas syntactic agreement is judged significantly more acceptable with class D nouns. We discuss our results in relation to these hypotheses in section 5.

The classification of animate nouns over four classes – of which we include three in our experiment – may prove to be too general, as differences between nouns may not only depend on morphological properties, but also on semantic or frequency-related factors. Therefore, we want to check for differences between individual nouns of all three noun classes under scrutiny too. This translates into our third question, for which we cannot formulate any hypotheses yet: (iii) Is there a significant difference in the acceptability of semantic agreement between individual nouns? Finally, as we already mentioned in the Introduction, we wonder whether the age and/or sex of a participant might influence the acceptability of semantic agreement. Sleeman & Ihsane (2016) could not investigate these factors due to their limited number of participants. These points motivate our final question: (iv) Is there a significant difference in the acceptance of semantic agreement between younger and older and between female and male participants?

In order to investigate which factors determine a speaker's choice between syntactic and semantic agreement in partitive constructions, we carried out a grammaticality judgement task, created in Google Forms, which was spread online, via a linguistic mailing list in France. Participants were not paid for their participation. In addition to the grammaticality judgement task on gender agreement in partitive constructions, the questionnaire we submitted to our participants consisted of two other parts, one on the feminisation of profession nouns and one on inclusive writing, of which the results are not discussed in this paper. Before submitting the final questionnaire, we first carried out a pilot study.

The questionnaire was filled in by 80 people, of which we excluded 18, who either were non-native speakers of French, were not living in France at the moment of testing, or had not completed the tasks. The remaining 62 participants were living in France at the moment of testing and were born and/or raised there too. All participants were asked to fill in a background questionnaire with questions on age, sex, language background, profession, where they were born and raised, where they had lived, as well as some additional questions on different topics to check their attitude towards changes in language and society.⁹ In the analysis of our results, however, we will only consider the variables sex and age. Table 2 presents information on our participants concerning these variables. Please note that the imbalanced age and sex groups are partly due to online testing and that we did not specifically target specific age groups.

⁹ The test was approved by the Ethical Committee of the University of Amsterdam and all participants consented to take part.

Tab. 2: Participant information

Age	< 30	30–40	40–50	50–60	> 60	
	9	5	10	11	27	62
Sex	male	female				
	20	42				62

The Grammaticality Judgement Task consisted of 80 sentences containing a partitive construction. The participants had to judge each sentence on a 5-point scale, 5 indicating a fully acceptable and 1 a fully unacceptable sentence. In the instructions we indicated that the participants should follow their own intuitions and should not reflect too long on each sentence. The participants first saw an example before starting the task.

The test sentences contained 13 different nouns, representing the different noun classes established by Sleeman & Ihsane and listed below in Table 3. The nouns were selected based on the results of a dictionary search (Westveer, Sleeman & Aboh 2018), in which we investigated the inclusion of feminine forms of profession nouns throughout time in different editions of the French monolingual *Petit Robert* dictionary. The selection of nouns was based on the feminisation strategy used to derive the feminine form of the profession noun and on the societal status of the profession referred to. We did not include class A nouns in the test, because these never give rise to a gender mismatch: syntactic and semantic agreement always match with these nouns. As we noted previously, Sleeman & Ihsane’s group of class B nouns could be further split into two distinct groups, based on the way the feminine and masculine forms of these nouns are derived: the affixation class B nouns (e.g. *étudiant* > *étudiante*) and the suffix alternation class B nouns (e.g. *chanteur* – *chanteuse*). Therefore, for class B, we included nouns of both types: *étudiant* and *policier* as examples of affixation class B and *chanteur* and *recteur* as examples of suffix alternation class B.

Tab. 3: Nouns included in the task

Class B	chanteur	singer
	étudiant	student
	policier	police officer
	recteur	rector
Class C	collègue	colleague
	guide	guide
	ministre	minister
	professeur	teacher
Class D	personne (fem.)	person
	sentinelle (fem.)	guard
	victime (fem.)	victim
	génie (masc.)	genius
	personnage (masc.)	character

As noun class internal differences might be influenced by the relative frequency of the different nouns, we checked the lemma frequency of our 13 test nouns in the online *Lexique* corpus (New & Pallier 2019).¹⁰ The lemma frequencies of our test nouns in the *Lexique* corpus are listed in Table 4.¹¹

Tab. 4: Lemma frequency test nouns

Class B nouns	Frequency	Class C nouns	Frequency	Class D nouns	Frequency
chanteur	41.24	collègue	71.02	génie	82.08
étudiant	76.25	guide	40.36	personnage	70.45
policier	55.77	ministre	122.56	personne	336.90
recteur	3.72	professeur	162.47	sentinelle	10.55
				victime	94.92

Next to noun class, the test includes two more predictors: (i) partitive type (quantified or superlative) and (ii) agreement type (syntactic or semantic). Thus, all nouns figured at least in four sentences throughout the task: two times in a quan-

¹⁰ We thank an anonymous reviewer for pointing us out the importance of investigating the lemma frequency of our test nouns in a corpus.

¹¹ For the class B nouns, the lemma frequencies indicated in Table 4 include both masculine and feminine forms of the nouns.

tified and two times in a superlative partitive. For each noun in each partitive type, we included a sentence with syntactic and one with semantic agreement, as exemplified for the noun *étudiant* in a superlative partitive in (20): in example (20a) the inner DP *de mes anciens étudiants* is default masculine and so is the outer DP *le plus intelligent*, even if the intended referent is female: (20a) presents a case of syntactic agreement. In (20b), the inner DP is default masculine, but the outer DP's gender matches with its referent's biological sex and therefore takes the feminine form, exhibiting semantic agreement.

- (20) a. *Le plus intelligent de mes anciens étudiants s'appelle*
 the.M most intelligent.M of my former.M.PL student.M.PL is.called
Françoise.
 Françoise
- b. *La plus intelligente de mes anciens étudiants s'appelle*
 the.F most intelligent.F of my former.M.PL student.M.PL is.called
Françoise.
 Françoise
 'The most intelligent of my former students is called Françoise.'

Within the total number of 80 test sentences, $4 \times 13 = 52$ sentences were constructed in this way. The remaining 28 sentences were control sentences in which no gender mismatch was possible, thus not showing any competition between syntactic and semantic agreement. One of the control sentences was in the masculine form (21a) and one in the feminine form (21b):

- (21) a. *Le plus intelligent de mes anciens étudiants s'appelle*
 the.M most intelligent.M of my former.M.PL student.M.PL is.called
Henri.
 Henri
 'The most intelligent of my former students is called Henri.'
- b. *La plus intelligente de mes anciennes étudiantes s'appelle*
 the.F most intelligent.F of my former.F.PL student.F.PL is.called
Françoise.
 Françoise
 'The most intelligent of my former students is called Françoise.'

These control sentences were included for part of the 13 nouns tested. Table 5 indicates the distribution of our test nouns over the different conditions, as well as the distribution of control sentences.

Tab. 5: Distribution of nouns in the task

Partitive type	Noun class	Noun	Grammatical agreement (sentence number in task)	Semantic agreement (sentence number in task)	Control sentence (sentence number in task)	Feminine control sentence (sentence number in task)	Total number of sentences
Quantified	B	chanteur	34	17	44	59	4
		étudiant	19	26	75	32	4
		policier	65	11	x	x	2
		recteur	1	9	x	x	2
	C	collègue	29	63	x	x	2
		guide	74	53	60	22	4
		ministre	79	13	50	55	4
		professeur	70	5	x	x	2
	D	génie (M)	15	71	47	n/a	3
		personnage (M)	64	48	43	n/a	3
		personne (F)	68	37	3	n/a	3
		sentinelle (F)	24	73	56	n/a	3
		victime (F)	51	78	66	n/a	3
Total No.			13	13	9	4	39
Superlative	B	chanteur	54	49	2	62	4
		étudiant	67	35	4	40	4
		policier	52	18	x	x	2
		recteur	25	38	x	x	2
	C	collègue	57	12	x	x	2
		guide	41	69	46	6	4
		ministre	21	72	28	45	4
		professeur	77	31	36	14	4
	D	génie (M)	20	8	61	n/a	3
		personnage (M)	10	33	58	n/a	3
		personne (F)	30	42	76	n/a	3
		sentinelle (F)	39	80	16	n/a	3
		victime (F)	23	27	7	n/a	3
Total No.			13	13	10	5	41

The test sentences were presented to the participants in a randomised order (identical for all participants), assuring that a noun never reappeared in the next sentence. At this point, a caveat is in order. We decided not to include any fillers, because adding these to our 80 test sentences would have made the task too long. We were aware that this might be a drawback. Apart from assuring that a participant uses all points on the judgement scale, fillers are meant to distract the participant from the actual object of study. In this case, we judged that the different partitive types, the different sentence types, including the controls, the noun types and the various contexts were distinct enough to hide our object of study away from our participants.

All test results were collected in a spreadsheet. The results were statistically analysed in multiple ways. First, we computed a mixed-effects model, because a mixed-effects model provides us with a more profound insight into possible influences of our predictors partitive type, agreement type and noun class on the participants' acceptability rates on the test sentences. We computed a linear mixed-effects model, using the `lmer` function from the `lmerTest` package (Kuznetsova et al. 2017) in the R environment (R Development Core Team 2018). Our dependent variable was the acceptability rate of each test sentence, measured on a five-point scale. Agreement type (syntactic or semantic), partitive type (quantified or partitive) and noun class (class B, C or D) were our fixed factors, as well as possible interactions between these factors. For the ternary factor noun class, we specified orthogonal sum-to-zero contrasts: (i) class D nouns (coded as $-2/3$) were compared to class B and C nouns (both coded as $+1/3$) and (ii) class B nouns (coded as $-1/2$) opposed to class C nouns (coded as $+1/2$). We specified participant as a random factor. Second, we carried out Two Related Samples T-Tests in SPSS to check for each noun class and for each individual noun in both partitive constructions whether the difference between the sentence with syntactic and the one with semantic agreement was significant. In a next step, we also carried out correlation tests between the test noun's lemma frequency and the acceptability scores to control for the influence of noun frequency on the results.

4 Results

In the following sections, the results of the grammaticality judgement task will be reported. First, we present the results that answer research questions (i-ii), investigating the influence of partitive type and noun class on the acceptability of semantic agreement in partitives. We will show that these results are compatible with those of Sleeman & Ihsane's study and confirm our hypotheses listed above.

In a next step, we take a closer look at the individual nouns of the different noun classes investigated, including a possible relation of their frequency on the results, addressing research question (iii). Finally, we discuss the influence of the metalinguistic variables sex and age on the acceptance of semantic agreement in partitives, answering research question (iv).

4.1 The influence of partitive type and noun class

First, we investigate whether the type of partitive constructions (quantified or superlative partitive) influences the acceptability of semantic agreement. Figure 1 visualises the average judgements for the test sentences with grammatical and semantic agreement for both partitive types.¹²

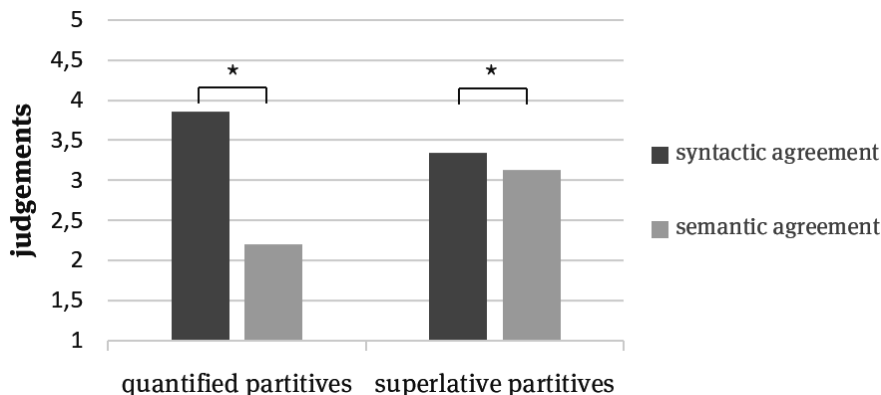


Fig. 1: Partitive types

Figure 1 shows that our participants judge syntactic agreement to be significantly more acceptable than semantic agreement in quantified partitives ($p < 0.001$). For superlative partitives, semantic agreement receives a significantly higher acceptability score than syntactic agreement too ($p = 0.013$), even though the difference is considerably smaller than for the quantified partitives. If we compare both partitive types, we observe that grammatical agreement is judged significantly better in quantified than in superlative partitives ($p < 0.001$), whereas semantic agreement receives a significantly higher acceptability score in superlative than in

¹² Significant differences ($p < 0.05$) are marked in the Figures by means of the * sign.

quantified partitives ($p < 0.001$). This latter point is confirmed by the results of our mixed-effects model, which show that there is a significant effect of partitive type on the acceptability of semantic agreement (estimated difference in judgement = 1.44; 95% confidence interval = 1.17 ... 1.71; $p < 0.001$), indicating that native speakers of French judge semantic agreement to be significantly more acceptable in superlative than in quantified partitives. This answers research question (i). As we will see in what follows, however, noun class differences play an important role in the acceptance of semantic agreement in superlative partitives.

Next, we look at the influence of noun class on the acceptability of semantic agreement, addressing research question (ii). Figures 2 and 3 show the average acceptability rates of the different noun classes in quantified and in superlative partitives in sentences with either syntactic or semantic agreement (class B = suffix alternation, affixation, e.g. *un chanteur – une chanteuse*; class C = one stem that can trigger both feminine and masculine agreement, e.g. *un/une ministre*; class D = fixed-gender nouns, e.g. *une sentinelle*). In the figures below significant differences are marked with an *, as computed using Two Related Samples T-Tests in SPSS. The figures do not include the judgements on the control sentences.

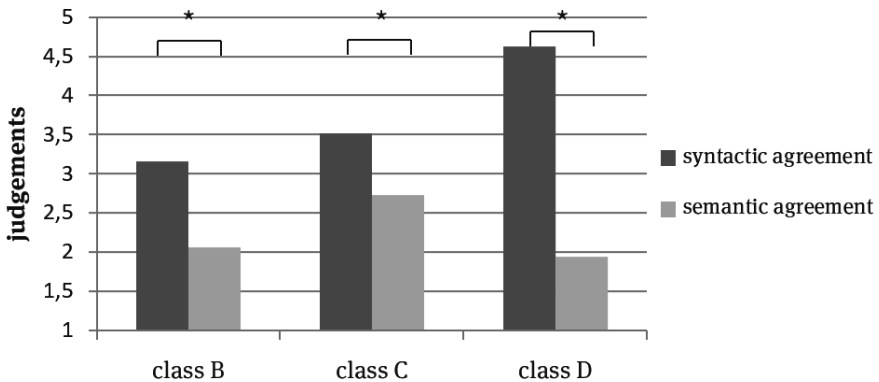


Fig. 2: Quantified partitives noun classes

With quantified partitives, sentences with syntactic agreement are judged to be considerably more acceptable than sentences with semantic agreement for all three noun classes. The differences in average judgement of syntactic versus semantic agreement are all significant ($p < 0.001$ for all noun classes), but the difference looks more pronounced for class D nouns. According to our participants,

quantified partitives with syntactic agreement are highly acceptable with class D nouns. With class B and class C nouns, on the other hand, the overall judgement for the sentences with syntactic agreement is considerably lower than for class D nouns, although the sentences with syntactic agreement are significantly preferred over those with semantic agreement.

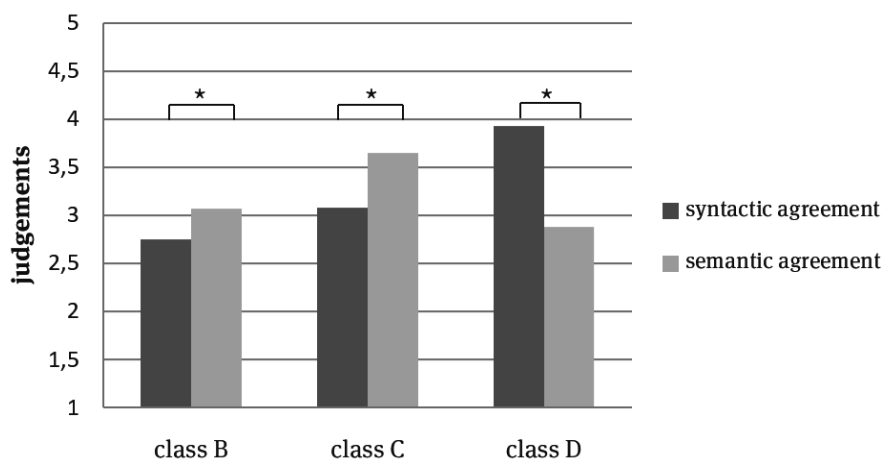


Fig. 3: Superlative partitives noun classes

In superlative partitives, semantic agreement is judged more acceptable than syntactic agreement with class B ($p = 0.020$) and class C nouns ($p < 0.001$), whereas the class D nouns show the opposite pattern (class D, $p < 0.001$). However, the difference in judgement of the sentences with either syntactic or semantic agreement is smaller with class B nouns than with class C nouns. This indicates a stronger competition between syntactic and semantic agreement for class B nouns.

The results of the mixed-effects model, comparing noun classes B and C to noun class D, show that there is a significant effect of noun class on the acceptability of semantic agreement between class B and C nouns on the one hand and class D nouns on the other hand (estimated difference in judgement = 1.78; 95% confidence interval = 1.52 ... 2.04; $p < 0.001$), showing that native speakers of French judge semantic agreement to be significantly more acceptable with class B and C nouns than with class D nouns. If we only look at class B and class C nouns, we observe a significant effect of noun class on the acceptability of semantic agreement too (estimated difference in judgement = 0.27; 95% confidence

interval = 0.04 ... 0.50; $p = 0.018$), indicating that native speakers of French judge semantic agreement to be significantly more acceptable with class C nouns than with class B nouns.

Interestingly, our participants judge sentences with class C nouns in which the subset is a female and the set is referred to by a default masculine plural noun, as more acceptable than similar sentences with class B nouns for both partitive types. The examples with a superlative partitive below illustrate this for the class C noun *ministre* (22) and for the class B noun *chanteur* (24). Still, these sentences with semantic agreement are preferred over those with syntactic agreement, as shown in (23) for *ministre* and (25) for *chanteur*, respectively. The numbers between square brackets indicate the participants' average judgements.

(22) *La plus intelligente des nouveaux ministres est Madame*
 the.F most intelligent.F of.the new.M.PL minister.PL is Mrs.
Ranquière.
 Ranquière
 'The most intelligent of the new ministers is Mrs. Ranquière.' [3,99]

(23) *Le plus intelligent des nouveaux ministres est Madame*
 the.M most intelligent.M of.the new.M.PL minister.PL is Mrs.
Ranquière.
 Ranquière
 'The most intelligent of the new ministers is Mrs. Ranquière.' [3,29]

(24) *La plus jeune des chanteurs présents est Françoise Hardy.*
 the.F most young of.the singer.M.PL present.M.PL is Françoise Hardy
 'The youngest of the singers present is Françoise Hardy.' [2,63]

(25) *Le plus jeune des chanteurs présents est Françoise Hardy.*
 the.M most young of.the singer.M.PL present.M.PL is Françoise Hardy
 'The youngest of the singers present is Françoise Hardy.' [2,33]

As we can conclude from the contrasts in judgements between the examples involving the class C noun *ministre* (22-23) on the one hand, and the examples with the class B noun *chanteur* (24-25), on the other hand, the sentences with the class

C noun turn out to have higher acceptability scores than those involving the class B noun.

In fact, with class B nouns, the participants prefer the presence of a feminine set noun if the subset is a female, as suggested by the results on the control sentences. The example in (26) below shows the control sentence with the feminine set noun *chanteuses*, which can be compared to the examples above involving semantic (24) and syntactic agreement (25).

- (26) *La plus jeune des chanteuses présentes est Françoise Hardy.*
 the.F most young of.the singer.F.PL present.F.PL is Françoise Hardy
 ‘The youngest of the singers present is Françoise Hardy.’ [4,97]

Whereas sentence (26), with the feminine set noun *chanteuses*, is unsurprisingly judged as fully acceptable by nearly all participants, the sentences (24-25), with the default masculine set noun *chanteurs*, are judged to be far less acceptable, both with syntactic (25) and semantic agreement (24). Both differences (i.e. (25 vs. 26) and (24 vs. 26)) are significant ($p < 0,001$).

Class C nouns generally show the same pattern: the control sentences with a feminine set noun, as exemplified in (27) for the noun *ministre*, receive higher judgements than the mismatch sentences with semantic (22) or syntactic agreement (23).

- (27) *La plus intelligente des nouvelles ministres est Madame*
 the.F most intelligent.F of.the new.F.PL minister.F.PL is Mrs.
Ranquière.
 Ranquière
 ‘The most intelligent of the new ministers is Mrs. Ranquière.’ [4,71]

As we can observe, the difference in judgement for the class C noun *ministre* between the sentence with the feminine set phrase *nouvelles ministres* in (27) and the sentences in (22–23) is smaller than for the class B noun *chanteur*. Still, both differences are significant for *ministre* too ($p < 0.001$ for (23 vs. 27), $p = 0.001$ for (22 vs. 27)).

Surprisingly, however, with the class C noun *professeur* ‘teacher’ this pattern does not hold, as the examples (28-30) show.

(28) *Le plus intelligent des nouveaux professeurs est Madame*
 the.M most intelligent.M of.the new.M.PL teacher.PL is Mrs.
Arbelette.

Arbelette

‘The most intelligent of the new teachers is Mrs. Arbelette.’ [3,59]

(29) *La plus intelligente des nouveaux professeurs est Madame*
 the.F most intelligent.F of.the new.M.PL teacher.PL is Mrs.
Arbelette.

Arbelette

‘The most intelligent of the new teachers is Mrs. Arbelette.’ [3,87]

(30) *La plus intelligente des nouvelles professeurs est Madame*
 the.F most intelligent.F of.the new.F.PL teacher.F.PL is Mrs.
Arbelette.

Arbelette

‘The most intelligent of the new teachers is Mrs. Arbelette.’ [2,89]

As the judgements indicate, the feminine control sentence (30) is judged to be less acceptable than the sentences with and without a gender mismatch (28-29), whereas in general the control sentences are judged more acceptable than the actual test sentences. The difference between (29) and (30) is significant ($p = 0.001$), as well as the difference between (28) and (30) ($p = 0.049$), but than in the other direction, the sentence with syntactic agreement and a masculine group noun (28) or with a gender mismatch (29) being significantly preferred over the control sentences with a feminine group noun (30). Why would this be the case? We will return to this point in the discussion.

4.2 Further insight

Apart from research questions (i-ii), aiming at checking the findings of Sleeman & Ihsane’s study, we raised two additional research questions, asking about differences between individual nouns (iii) and about the influence of the participants’ sex and age on the acceptability rates (iv). The results related to these questions are presented in this section. First, we will take a closer look at the judgements on the individual nouns of each noun class, answering research question (iii). We start with the class B nouns. Figure 4 reports the results of quantified partitives, while Figure 5 represents superlative partitives.

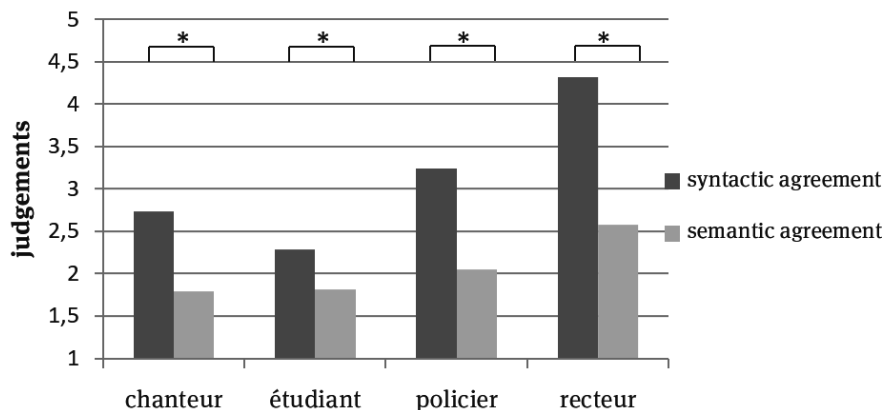


Fig. 4: Quantified partitives individual class B nouns

As Figure 4 shows, the sentences with syntactic agreement are judged significantly better than those with semantic agreement for all class B nouns in quantified partitives. However, we can observe some differences in that the overall judgements for the nouns *chanteur*, *étudiant* and *policier* are lower than for the noun *recteur*. In contrast, when comparing both suffix change class B nouns *chanteur* and *recteur* to the affixation nouns *étudiant* and *policier*, we cannot observe a clear difference between these two types. Rather, the suffix change noun *chanteur* seems to pattern with both affixation nouns *étudiant* and *policier*, whereas the other suffix change noun *recteur* behaves somewhat differently.

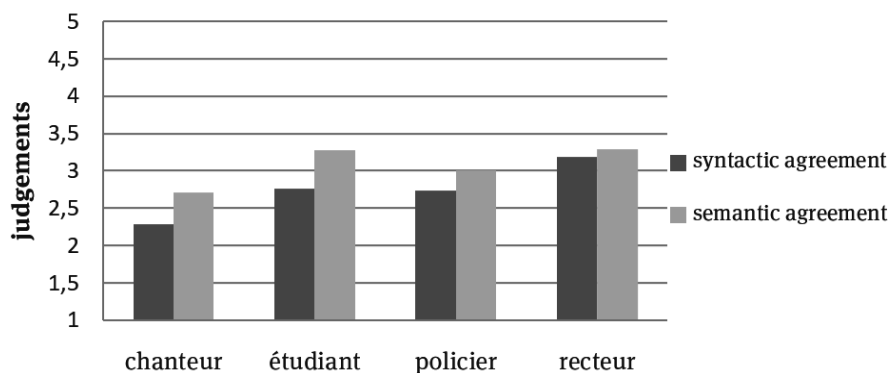


Fig. 5: Superlative partitives individual class B nouns

As for superlative partitives, Figure 5 shows that semantic agreement is judged to be more acceptable than syntactic agreement with the nouns *étudiant* and *chanteur* and to a lesser extent also with *policier*, although the differences are not significant. For the noun *recteur*, on the other hand, there is only a very small difference in judgement between the sentences with syntactic and semantic agreement. Again, we do not see differences between the suffix change and affixation class B nouns. It is again the suffix change noun *recteur* that behaves differently from the other suffix change noun *chanteur*, which in turn appears to pattern with both affixation nouns *étudiant* and *policier*. Besides, note that the overall judgements for the noun *chanteur* are quite low compared to the other three class B nouns. We will come back to this in the discussion.

The results for the individual class C nouns are visualised in Figure 6 for the quantified and in Figure 7 for the superlative partitives.

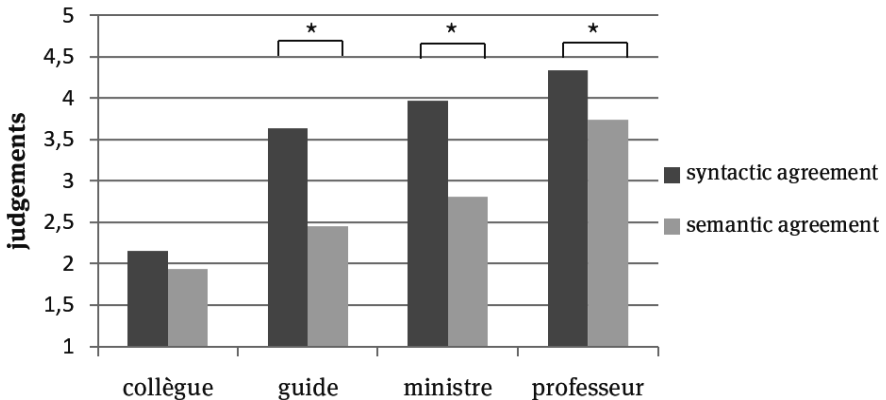


Fig. 6: Quantified partitives individual class C nouns

As we can see from this graph, the noun *collègue* falls apart, since both the sentences with syntactic and semantic agreement are judged to be rather unacceptable, whereas for the other class C nouns, at least the sentences with syntactic agreement are accepted by our participants. This pattern is confirmed by the fact that the differences in judgement between the sentences with syntactic and semantic agreement are significant with the nouns *professeur* ($p = 0.020$), *guide* ($p < 0.001$) and *ministre* ($p < 0.001$), but not with the noun *collègue* ($p = 0.368$). Furthermore, for the noun *professeur*, the sentence with semantic agreement is judged to be quite acceptable too; to a lesser extent this also holds for the noun *ministre*.

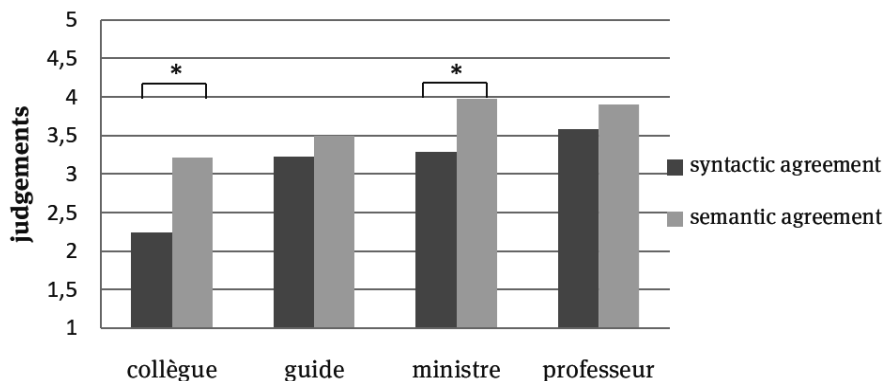


Fig. 7: Superlative partitives individual class C nouns

For all class C nouns semantic agreement is judged to be more acceptable than syntactic agreement in superlative partitives, although the differences are only significant with the nouns *ministre* ($p = 0.013$) and *collègue* ($p = 0.001$), but not with the nouns *professeur* ($p = 0.126$) and *guide* ($p = 0.303$). Again, the noun *collègue* behaves differently, since for this noun the sentence with syntactic agreement is judged to be rather unacceptable, whereas this is not the case with the other class C nouns.

Finally, the results for the class D nouns are presented in Figure 8 for quantified partitives and in Figure 9 for superlative partitives.

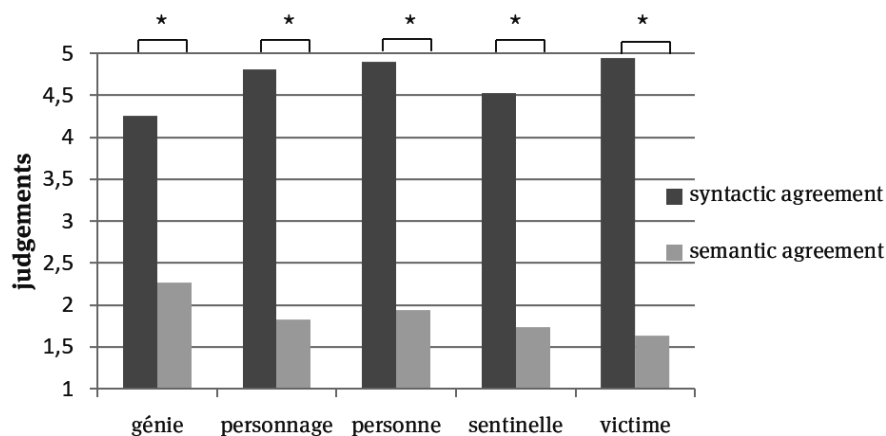


Fig. 8: Quantified partitives individual class D nouns

In quantified partitives, with class D nouns the sentences with syntactic agreement are judged to be significantly more acceptable than the sentences with semantic agreement ($p < 0.001$ for all nouns).

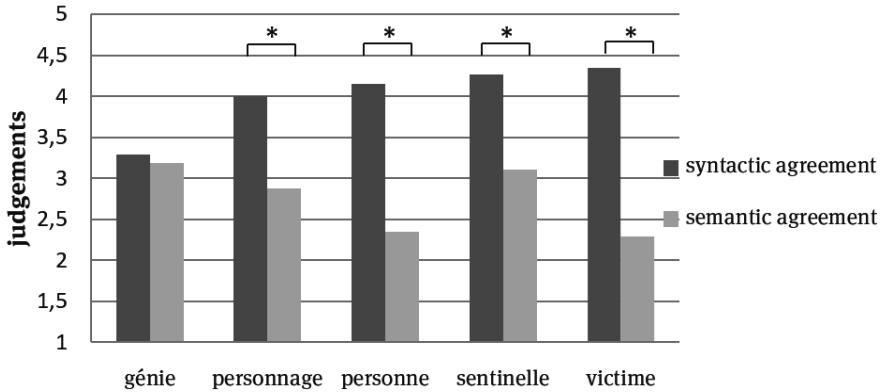


Fig. 9: Superlative partitives individual class D nouns

With all class D nouns, syntactic agreement is judged to be more acceptable than semantic agreement in superlative partitives. However, for the noun *génie* the difference between the sentences with semantic and those with syntactic agreement is not significant ($p = 0.653$). This contrasts with the nouns *personne* ($p < 0.001$), *victime* ($p < 0.001$), *sentinelle* ($p = 0.002$) and *personnage* ($p = 0.001$). The overall judgement of the sentences with the noun *génie* is lower too. For *sentinelle*, as opposed to both other feminine class D nouns *personne* and *victime*, the sentence with semantic agreement appears to be more acceptable, which is comparable to the judgements on the masculine class D nouns *génie* and *personnage*.

As we mentioned earlier, the noun class internal differences may depend on the relative frequency of the different nouns. Therefore, we checked the lemma frequency of our 13 test nouns in the online *Lexique* corpus (New & Pallier 2019) (see Table 3).

In a next step, we carried out separate correlation tests for each noun class between the lemma frequencies in the corpus and our participants' judgements on the test sentences with semantic and those with syntactic agreement. The correlation coefficients and p-values are reported in Table 6.

Tab. 6: Correlation coefficients

Noun class	Class B		Class C		Class D	
	semantic agreement	syntactic agreement	semantic agreement	syntactic agreement	semantic agreement	syntactic agreement
Correlation coefficient	-0.092*	-0.253*	0.238*	0.233*	-0.061	0.060
p-value	0.042	< 0.001	< 0.001	< 0.001	0.131	0.134

As we can observe from the correlation coefficients, there are only weak – though significant – correlations for classes B and C. For class D, the correlations are very weak, but not significant. This suggests that the lemma frequency of a noun does not significantly influence our participants' judgements on the test sentences with either semantic or syntactic agreement. However, it should be noted that we only investigated a limited number of nouns for each noun class, which were all carefully selected based on a dictionary search (see section 3).

A final point to mention is the variation across participants that follows from our results. Whereas some participants judge partitive constructions in general to be unacceptable, either with syntactic or semantic agreement, other participants almost always consider these constructions to be acceptable, irrespective of semantic or syntactic agreement. Likewise, some participants judge sentences with semantic agreement acceptable with some nouns of a noun class, whilst others accept them with all nouns of the same class. We included two metalinguistic factors, sex and age, to investigate whether these factors influence the acceptability rates of individual participants. Using an Independent Samples T-Test in SPSS, we established that there are no significant differences between males and females on the one hand ($p = 0.726$), and between our five age groups (see Table 2) of participants on the other hand ($p = 0.696$). We therefore conclude that sex and age do not seem to influence the acceptability rates, answering research question (iv). We will discuss an alternative explanation for the participant variation in section 5.3.

5 Discussion

The goal of the present study was to further explore gender agreement in partitive constructions in French, building on Sleeman & Ihsane (2016), who investigated this phenomenon and proposed a theoretical analysis of gender agreement, based on a limited number of informants' judgements and sentences. We carried out a Grammaticality Judgement Task with native speakers of French to answer the following questions: (i) Do superlative and quantified partitives differ significantly with respect to the acceptance of semantic agreement, as Sleeman & Ihsane's results suggest? (ii) Do class B, class C and class D nouns differ significantly with respect to the acceptance of semantic agreement in superlative partitives? (iii) Is there a significant difference in the acceptability of semantic agreement between individual nouns? (iv) Is there a significant difference in the acceptance of semantic agreement between younger and older and between female and male participants? Based on Sleeman & Ihsane's study, in section 3 we formulated hypotheses for the first two research questions: (a) In superlative partitives, semantic agreement is judged to be significantly more acceptable than in quantified partitives. (b) In superlative partitives, the acceptance of semantic agreement depends on the type of animate noun: semantic agreement is judged significantly more acceptable with class C and then with class B nouns, whereas syntactic agreement is judged significantly more acceptable with class D nouns. In the next section, we will address research questions (i–ii) and compare our results with Sleeman & Ihsane's findings to check whether our hypotheses are borne out. Subsequently, we will further discuss our results and return to research questions (iii–iv) as well.

5.1 Comparing our results to Sleeman & Ihsane's findings

The results of both studies, separated for the different conditions (partitive type, noun class and agreement type), are summarised in Table 7.

Tab. 7: Comparison of results

Partitive type	Noun class	Agreement type	Sleeman & Ihsane (2016)	Present study
Quantified partitives	class B	syntactic	not tested	accepted
		semantic	not accepted	not accepted
	class C	syntactic	not tested	accepted
		semantic	not accepted	not accepted
	class D	syntactic	not tested	accepted
		semantic	not tested	not accepted
Superlative partitives	class B	syntactic	not tested	in general accepted
		semantic	in general accepted (participant variation)	accepted (but less than with class C)
	class C	syntactic	not tested	in general accepted
		semantic	accepted	accepted
	class D	syntactic	not tested	accepted
		semantic	not tested	not accepted

Sleeman & Ihsane did not investigate the acceptability of syntactic agreement in partitives. They also did not test sentences with class D nouns, because they expected gender mismatches not to occur with these nouns. Our results confirm this assumption, since the participants in our study judged the sentences with syntactic agreement to be more acceptable than those with semantic agreement for class D nouns.

With respect to research questions (i–ii), aiming at verifying the results of Sleeman & Ihsane’s study based on a larger sample of speakers, we can conclude the following: Indeed, quantified partitives readily allow syntactic agreement, which is judged to be significantly more acceptable than semantic agreement. As our results show, the acceptance of semantic agreement in superlative partitives depends on the class of the animate nouns. Whereas with class C nouns, the sentences with semantic agreement are judged to be significantly more acceptable than those with syntactic agreement, the class D nouns show the opposite pattern. With class B nouns, superlative partitives seem to be more acceptable with semantic than with syntactic agreement, but this difference is not significant, indicating that our participants judge semantic agreement to be more acceptable

with class C nouns than with class B nouns. We can conclude that our hypotheses on the first two research questions are borne out. The results of our study are largely compatible with those of Sleeman & Ihsane, but they also give further insights into gender agreement in partitives.

Considering the theoretical analysis of gender agreement in partitives, we can conclude that our findings do not invalidate Sleeman & Ihsane's analysis. The difference in acceptability of semantic agreement in quantified and superlative partitives could be explained if we adopt their claim that these partitive types are structurally different, in that the structure of superlative partitives contains a second Gender Phrase in the outer DP, allowing for later insertion of semantic gender, contrary to quantified partitives, whose structure only contains a Gender Phrase in the inner DP. Next, we could also adopt their analysis to account for the differences between the noun classes: Whereas grammatical gender is marked in the mental lexicon on class D nouns, it is unmarked for class C nouns, in the latter case giving the opportunity to let semantic gender play a role. If a speaker accepts semantic agreement with a class B noun, this noun is unmarked for grammatical gender in the speaker's mental lexicon, as is the case for class C nouns; if, on the contrary, a speaker does not accept semantic agreement with a class B or a class C noun, this noun is marked for grammatical gender, just like class D nouns. It should be noted, however, that other accounts of gender agreement may also explain our observations in a convincing manner, just as Sleeman & Ihsane's account adopted here. A thorough discussion of such alternative accounts exceeds the scope of this paper and will be left for future work.

5.2 Class B versus class C nouns

Although we cannot conclude from our results that there is a significant difference in acceptability of semantic agreement between class B and class C nouns, we observe differences between these noun classes in terms of the participants' overall judgements. As Figures 2 and 3 show, the sentences with class B nouns are judged to be slightly less acceptable than the sentences with class C nouns in both quantified and superlative partitives. The class C noun *collègue* constitutes an exception to this pattern, because the sentences with this noun are judged less acceptable overall than the other class C nouns. We do not have an explanation for this unexpected result yet, although it might be the case that the participants rejected the sentences with *collègue* for other reasons than agreement issues.

If we look at the control sentences for the class B and class C nouns, we cannot observe the difference reported above. This indicates that the lower overall acceptability of sentences with a class B noun is not due to the use of these nouns

in a partitive construction, but rather seems to be related to the presence of a default masculine group noun in combination with a female subset. The participants seem to judge a sentence containing a default masculine group noun and a female subset to be less acceptable with class B nouns than with class C nouns, as a comparison of examples (22) and (24) shows. A possible explanation for this observation might be the fact that for class B nouns, there exist two distinct forms for the feminine and the masculine (e.g. *la rectrice* ‘the rector.F’ – *le recteur* ‘the rector.M’), whereas this is not the case for class C nouns (e.g. *la/le ministre* ‘the.F/.M minister’). Thus, there seems to be a blocking effect: If two distinct forms exist, participants seem to prefer the use of the feminine form for female and of the masculine form for male referents. The preference for the use of a feminine group noun when referring to a female in the subset is already reported by Sleeman & Ihsane.

The differences between class B and class C nouns could thus be related to morphology, as for the class B nouns, two distinct forms exist, whereas for class C nouns, there is only one form for both masculine and feminine. The existence of a distinct feminine form might influence a speaker’s acceptance of semantic agreement. But how? Recall that according to Sleeman & Ihsane’s analysis, the noun of the outer DP is a copy of the noun of the inner DP. In (31), we have a partitive construction with the class B set noun *étudiants* in the default masculine plural form – the result of Failed Agree due to the absence of a semantic gender value in the inner DP’s Gender Phrase. A copy of this noun is then transferred onto the outer DP, but remains unpronounced. This unpronounced copy *étudiant* is also in the default masculine (singular) form.

(31) [_{DP} *la/le* [_{DEGP} *plus jeune* [_{GendP} _ [_{FP} *étudiant* [_{PP} *des* [_{GendP} _ [_{NP} *anciens étudiants*]]]]]]]]]

The outer DP’s Gender Phrase is not valued yet, so we can add a semantic gender value to it. If the outer DP refers to a female subset, we could value the gender feature as feminine, resulting in feminine agreement on the determiner *la* in the outer DP and in a gender mismatch between the inner DP (default masculine) and the outer DP (feminine), as in (32).

(32) [_{DP} *la* [_{DEGP} *plus jeune* [_{GendP} F [_{FP} *étudiant* [_{PP} *des* [_{GendP} _ [_{NP} *anciens étudiants*]]]]]]]]]]]

However, in the outer DP we still have the unpronounced copy of the noun in the masculine default form *étudiant* and not in the feminine form *étudiante*. With a

class C noun such as *ministre*, on the other hand, there would not be such a difference, since both masculine and feminine genders correspond to a single morphological form (*ministre*), with the only element visibly indicating gender being the determiner – although underlying grammatical gender is present, of course. So, with a class C noun, there would not be an overt clash in the outer DP between the unpronounced copy of the noun in the masculine default form and the inserted feminine semantic gender value. In this way we can explain why gender mismatches are less acceptable with class B nouns than with class C nouns: with class B nouns the existence of a distinct feminine form causes the participants to prefer the presence of this feminine form when the sentence refers to a female, as the judgements on the feminine control sentences show, even if this feminine form remains unpronounced in the outer DP. With class C nouns, on the other hand, there are no distinct forms, so no blocking effect can occur.

A related issue to discuss concerns the low acceptability rate of the feminine control sentence with the class C noun *professeur*, as opposed to the judgements for the other feminine control sentences, as we already pointed out in section 4.1. A possible explanation for this low judgement might be that our participants do not consider the noun *professeur* to be a class C noun, as we did, but rather classify this noun as a class B noun. As a class B noun, the feminine form of *professeur* would not be *la professeur*, but *la professeure*. In that case, the feminine control sentence would not be (30), as included in the test, but rather (33).

- (33) *La plus intelligente des nouvelles professeures est Madame*
 the.F most intelligent.F of.the new.F.PL teacher.F.PL is Mrs.
Arbelette.
 Arbelette
 ‘The most intelligent of the new teachers is Mrs. Arbelette.’

On the other hand, the overall judgements of the noun *professeur* are more consistent with the overall judgements of class C nouns than with the overall judgements of class B nouns, as we can take from the comparison of Figures 4–7. This supports our choice for classing the noun *professeur* as a class C noun. Since it is this default masculine plural form that is present in our task, this would not make a difference. The only visible difference would concern the feminine control sentence. Still, when repeating the test in future, it would be interesting to include both possible control sentences (30) and (33), in order to investigate which version is preferred.

5.3 Variation

Compared to Sleeman & Ihsane’s study, our test involved more different nouns for each of the noun classes and was filled in by a larger number of participants. Accordingly, we observed a lot of variation in our results. First, the results show variation with regards to the different noun classes tested, not only across, but also within the different noun classes. It is, however, worth noting that our data contain no nouns that seem to display a completely distinct agreement pattern than all other nouns within the same noun class. Second, there is variation between individual participants. We will come back to the latter type of variation later on, but let us focus on the most intriguing cases of noun class internal variation first, addressing research question (iii). Although we do not observe contradictory patterns with one noun class, there are still slight differences between nouns in the same class. We investigated the lemma frequency of our test nouns in the online *Lexique* corpus (New & Pallier 2019) and checked for correlations between a test noun’s lemma frequency in the corpus and the acceptability rates on the test sentences with either semantic or syntactic agreement containing this noun. The correlation tests revealed only (very) weak correlations between noun frequency and acceptability rate for class B, class C and class D nouns, suggesting that a noun’s lemma frequency did not significantly influence our participants’ judgements. However, our results show inter group differences, which we will briefly discuss below.

In the group of class D nouns, the masculine noun *génie* shows slightly different acceptability rates in superlative partitives as opposed to the other nouns. Whereas the sentences with syntactic agreement are generally judged to be more acceptable than those with semantic agreement, with the noun *génie* the difference in judgement between the superlative partitives with syntactic and semantic agreement is smaller than for the other class D nouns. This indicates a greater likelihood of semantic agreement, possibly due to the fact that *génie*, traditionally a masculine fixed-gender noun, could become an epicene noun in the future, allowing for both a masculine and a feminine use, following processes that have affected traditionally masculine animate nouns such as *le ministre* ‘the.M minister’, of which the feminine form *la ministre* ‘the.F minister’ has become common over the last decades. The possibility of such a change is supported by the comparable, originally masculine fixed-gender noun *témoin* ‘witness’, of which the feminine form *la témoin* ‘the.F witness’ is indicated in a recent version (2016) of the French *Le Petit Robert* dictionary (Rey-Debove & Rey 2016).

Within the group of class B nouns, we did not observe any clear differences between the suffix alternation (i.e. *chanteur* and *recteur*) and the affixation

(*étudiant* and *policier*) nouns. For the class B noun *recteur*, the results of the superlative partitives show only a very small difference in judgement between the sentence with semantic and the one with syntactic agreement, whereas for all the other class B (and class C) nouns, the differences in judgement between the sentences with semantic and syntactic agreement are more prominent. Probably, the title of *recteur* is seen as generally attributed to men, in which case the use of the default masculine would be more suitable than with a noun like *chanteur*, for which it is more likely to have an equal number of *chanteuses* ‘female singers’ and *chanteurs* ‘male singers’. Accordingly, the masculine form *recteur* would thus be more frequent than the feminine form *rectrice*, which could also be related to the number of female rectors.

With respect to research question (iv), we did not observe an influence of the participant’s age and/or sex on the acceptance of semantic agreement. Age and sex thus not seem to explain the variation present in our results. We think that the variation could be partially related to the way in which a specific noun is stored and classified in a person’s mental lexicon, an explanation also suggested by Ihsane & Sleeman (2016), to account for the observation that gender mismatches with class B nouns are not accepted by all their informants. For one speaker, a specific noun could be marked with feminine grammatical gender in the mental lexicon, whereas for another speaker, this same noun might be unmarked for grammatical gender, thus resulting in different agreement situations: for the first speaker, the entire sentence would have to show agreement with the noun’s feminine grammatical gender; for the second speaker, in the absence of a grammatical gender value on the noun, semantic gender can play a role in agreement. Further exploring this intriguing variation between participants goes beyond the scope of the present study, but we hope to return to this issue in future work.

5.4 Final remarks

With regard to methodology, the present study involves some potential drawbacks which we mentioned in the methodology section: the absence of filler sentences in the grammaticality judgement task, the length and monotonicity of the task and the online distribution of the questionnaire. Another improvement would be to check the lemma frequency of the test items in advance, rather than after having submitted the questionnaire to the participants. It might also be worthwhile to think about a different type of test, that does not only address passive knowledge, as did our grammaticality judgement task, but would also test

actual language use, although the constructions investigated are quite rarely used.

In addition, the investigation of gender agreement in partitive constructions in other languages than French might also help to shed more light on native speakers' intuitions. In future work, we at least plan to investigate gender agreement in partitive constructions in a Germanic language, German. Compared to French, German presents an interesting case to investigate gender agreement, since German has three different genders – masculine, feminine and neuter – instead of two, but gender agreement in partitive constructions presents the same challenges as in French. A comparison of both languages might therefore provide us with additional insights into the mechanisms at stake.

6 Conclusion

The goal of this paper was to provide a more thorough investigation of gender agreement in partitive constructions in French, building on an explorative study by Sleeman & Ihsane (2016). Sleeman & Ihsane concluded that the acceptability of semantic gender agreement in French depends on the type of partitive construction and on the type of noun. In quantified partitives, semantic agreement is not accepted. In superlative partitives, semantic agreement is accepted with class B and even more with class C nouns, but not with class D nouns. By means of a grammaticality judgement task, the results of the present study, while generally compatible with the patterns reported by Sleeman & Ihsane, displayed a lot of variation on different levels. We observed variation between individual nouns within the same noun class and across participants. We suggested that both types of variation could be accounted for by assuming differences in the encoding of grammatical gender on specific nouns in the mental lexicon of a language user. However, more research is needed to further explore potential sources of the variation, which may provide more insights into the mechanisms behind gender agreement in situations that present a competition between syntactic and semantic agreement.

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