

AGREEMENT RESOLUTION IN CONJOINED SUBJECTS IN SETSWANA*

CONSTANZA ACEVES RODRIGUEZ

University of Rochester

Abstract. This paper examines the agreement resolution patterns observed in Setswana conjoined subjects with both equal and conflicting phi features. Previous work identifies a preference for resolutions rules that rely on semantic features when both conjuncts have either human referents or non-human referents. In the case of conjoined subjects with differing human-value referents, speakers resolve the conflict through comitative adjunct constructions. This work tests these claims by modulating the gender and animacy of coordinate subject complexes. The data collected demonstrates an additional available resolution rule that relies on the syntactic values (gender class) of the conjuncts that triggers agreement based on a shared plural gender class. It also suggests that coordination of a human and a non-human conjunct can be allowed when they share the same animacy values and is not restricted to human/non-human.

Keywords. Coordination; Gender resolution; Syntax; Bantu languages

1 Introduction

Coordination work on languages with rich inflectional systems, such as Setswana, has heavily focused on describing and understanding the agreement patterns in coordinate complexes with conjuncts that have conflicting phi features (person, number, gender). These conflicts are resolved through resolution rules that determine what agreement form will be triggered by a coordinate noun phrase. The focus of this research paper is to investigate the agreement resolution strategies available to speakers in coordinated nominal structures and the elements that seem to influence them, whether they be syntactic in nature or semantically-based. These resolution rules are investigated through nominal additive coordination by modulating the gender and animacy of the conjuncts. The paper is organized as follows. Section 1 gives an overview of coordination and any relevant terms. Section 2 gives an overview of coordinator patterns and coordinators in Setswana. Section 3 relates to resolution rules in conjoined subjects and the agreement patterns they follow. Section 4 summarizes previous sections and addresses further avenues for research.

1.1 Coordination

A coordinating construction consists of two or more coordinands (also called coordinated phrases or coordinate complexes). Their coordinated status may be indicated by coordinators, which can be expressed as either particles or affixes. The basic patterns of coordination are the following: asyndetic, which consists of the juxtaposition of the coordinands, monosyndetic, which involves a single coordinator, and bisyndetic coordination, which involves two coordinators (Haspelmath

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et al. 2004). In monosyndetic and bisyndetic coordination, there are four logically possible positions of the coordinators, these are listed in Table 1.

Table 1. Coordination patterns and coordinator positions

Asyndetic	A B	
Monosyndetic	A co-B	(prepositive, on second coordinand)
	A-co B	(postpositive, on first coordinand)
	A B-co	(postpositive, on second coordinand)
	co-A B	(prepositive, on first coordinand)
Bisyndetic	co-A co-B	(prepositive)
	A-co B-co	(postpositive)
	A-co co-B	(mixed)
	co-A B-co	(mixed)

1.2 Language Background

Setswana (ISO 639-3 tsn), or Tswana, is a tonal language spoken in Botswana, South Africa, and Namibia. It belongs to the Bantu language group and Sotho-Tswana family. It is closely related to the Sotho languages, such as Southern Sesotho. Setswana has a rich inflectional system, dominated by an extensive set of noun classes: groups of nouns which share class markers on verbs, adjectives, pronominal forms, and the nouns themselves. The major genders of the language are the following: 1-2 (*mosadi* mò-sádí woman pl. *basadi* bà-sádí), 3-4 (*motse* mò-tsi village pl. *metse* mì-tsi), 5-6 (*lee* lì-í egg pl. *mae* mà-í), 7-8/10 (*selepe* sè-lépé axe pl. *dilepe* dì-lépé), 9-8/10 (*podì* pódí goat pl. *dipodì* dì-pódí), 11-6 (*losea* lè-síá baby pl. *masea* mà-síá), 11-8/10 (*loso* lè-sò spoon pl. *dintsho* dì-ntshò), and 14-6 (*bothata* bò-thátá problem pl. *mathata* mà-thátá) (Creissels 2016).

1.3 Methodology

The Setswana data presented in the following sections are based on elicitation sessions conducted with a native speaker informant over the course of three months as part of a graduate field methods class. The consultant is a 21-year-old from Phitshane Molopo, in southern Botswana. She speaks both Setswana and English at home. In 2022, she moved to the United States to pursue an engineering degree at the University of Rochester in Rochester, New York. The elicitation sessions entail a list of sentences specifically about coordination and focuses mainly on resolution strategies when coordinating coordinands of different noun classes. The elicited constructions vary significantly across the range of relevant coordination patterns: subject agreement, multiple additive nominal coordination, adjectival coordination, comitatives, etc. It was not possible to go in depth into the analysis any of the topics at hand. There is a significant lack of verb phrase and clausal data.

2 Additive Coordination in Setswana

Additive coordination, also known as ‘conjunctive coordination’ or ‘conjunction’, is the most frequently occurring type of coordinate construction. It refers to the construction of a plural referent

individual having the referents of the coordinated NPs as individual parts. Conjunction strategies in Setswana are category-sensitive, meaning that coordinators don't always link any and all syntactic categories: noun phrases, verb phrases, clauses, adjective phrases, prepositional phrases, etc.

2.1 Nominal Additive Coordination

Nominal additive coordinate constructions make use of a single coordinator *lè-* 'and', as seen in (1). Creissels (2016) references the rules of tonal sandhi that 'ensure a clear-cut distinction between word-internal boundaries and boundaries between adjacent words' to identify the coordinator *lè-* as a proclitic. Its status as a proclitic that attaches to the second coordinand demonstrates that Setswana makes use of monosyndetic coordination for nominal additive coordination. Specifically, we see evidence of monosyndetic coordination of the pattern medial prepositive A co-B.

- (1) mò-ńná lí-ńfà bá tsáméilè mò tsèk^wéj̃
 1-man CONJ-9.dog 2.SM travel.PRF.CJ LOC 9.forest
 'The man and the dog traveled the forest.'

2.1.1 Multiple additive coordination

Multiple additive coordination involves constructions with multiple coordinands, i.e. more than two. In the case of multiple nominal additive coordination in Setswana, literature suggests that the coordination structures require the coordinator *lè-* be repeated before each non-initial coordinand (Creissels 2016). However, in examples (2-b) and (3) from the data elicited from our speaker we can observe coordinator omission, where all but the last coordinator are eliminated. These findings differ from Creissels' since, when asked about the acceptability and grammaticality of example (2-a), the speaker deemed the construction grammatical but unnatural given its redundancy.

- (2) a. rì-bòpì dì-táù lí-dì-nárl lí-dí-tǝǝl̥ó:ù
 1PL-see.PRF.CJ 8-lion CONJ-8-buffalo CONJ-8-elephant
 'We saw lions, buffaloes, and elephants.' (Creissels 2016)
- b. rì-bòpì dì-táù dì-nárl lí-dí-tǝǝl̥ó:ù
 1PL-see.PRF.CJ 8-lion 8-buffalo CONJ-8-elephant
 'We saw lions, buffaloes, and elephants.'
- (3) kì-rátá dì-ńfà dì-kátsè lí-dì-kòdù
 1SG-like.CJ 8-dog 8-cat CONJ-8-turtle
 'I like dogs, cats, and turtles.'

2.2 Adjectival Additive Coordination

In regards to attributive adjectives, the general rule is that their coordination constructions are obligatorily introduced by an attributive linker that is determined by noun class and become ungrammatical without it (4-b). One of the possible strategies for adjectival coordination is juxtaposition, as seen in (4-a), meaning that there is no overt conjunction marker. Otherwise, they make use of coordinator *xàpè* 'and' (4-c) and *ibilé* 'as well as' (5-a).

- (4) a. m̀ò-ńńá jó m̀ò-tílélé jó t̀̀l̀l̀é¹
 1-man 1.ATTR 1-tall 1.ATTR strong
 ‘A tall, strong man.’
- b. *m̀ò-ńńá m̀ò-tílélé t̀̀l̀l̀é¹
 1-man 1-tall strong
 ‘A tall, strong man.’
- c. m̀ò-ńńá jó m̀ò-tílélé χápè jó t̀̀l̀l̀é¹
 1-man 1.ATTR 1-tall CONJ 1.ATTR strong
 ‘A tall and strong man.’
- d. *m̀ò-ńńá jó m̀ò-tílélé lí jó t̀̀l̀l̀é¹
 1-man 1.ATTR 1-tall CONJ 1.ATTR strong
 ‘A tall and strong man.’

Elicited data suggests that the adjectival coordinator is sensitive to semantic features (specifically positive attitude or evaluation). If the coordinated adjectives refer to mutually compatible characteristics of the referent of the head, the selected coordinator can be either *χápè*, used in any adjectival construction, or *íbìlé*, used specifically in this case. Creissels (2016), only identifies the coordinator *íbìlé* as an interclausal linker and is not as a coordinator for adjectival constructions, as opposed to these findings observed in (5).

- (5) a. ńfà é t̀̀nà χápè é ńts^hú¹
 9.dog 9.SM 9.big CONJ 9.SM 9.black
 ‘The dog is big and black.’
- b. ńfà é t̀̀nà íbìlé é ńts^hú¹
 9.dog 9.SM 9.big and-in-addition 9.SM 9.black
 ‘The dog is big and black.’

In the case of (5), the adjectives *t̀̀nà* ‘big’ and *ńts^hú¹* ‘black’ both refer to physical properties of the subject, allowing the selection of *íbìlé* as the conjunction marker, as seen in (5-b). Similarly, the adjectives *m̀ò-ńńé* ‘beautiful’ and *m̀ò-tílélé* ‘tall’ in (7-b), both refer to positive physical properties of the referent, whereas the adjectives *m̀ò-ńńé* ‘beautiful’ and *b̀̀t̀̀l̀l̀é¹* ‘smart’, although both positive, refer to different types of characteristics of the referent (intellect vs physical appearance) and therefore cannot make use of the coordinator *íbìlé*, as seen in (6-b).

- (6) a. nàlédí ó m̀ò-ńńé χápè ó b̀̀t̀̀l̀l̀é¹
 Naledi 1.SM 1-beautiful CONJ 1.SM smart
 ‘Naledi is beautiful and smart.’
- b. *nàlédí ó m̀ò-ńńé íbìlé ó b̀̀t̀̀l̀l̀é¹
 Naledi 1.SM 1-beautiful CONJ 1.SM smart
 ‘Naledi is beautiful and smart.’

¹ These adjectives do not overtly show agreement with the nouns they modify since they constitute examples of an emerging word class functionally and syntactically similar to the adjective class inherited from Proto-Bantu, but with different morphological properties (Creissels 2014).

- (7) a. *nàlédí ó mò-ntlé ùbìlé ó mò-tlêlé*
 Naledi 1.SM 1-beautiful CONJ 1.SM 1-tall
 ‘Naledi is beautiful and tall.’
- b. *nàlédí ó mò-ntlé χάπε ό mò-tlêlé*
 Naledi 1.SM 1-beautiful CONJ 1.SM 1-tall
 ‘Naledi is beautiful and tall.’

2.3 VP and Clausal Additive Coordination

The coordination of verb phrases and infinitive or complement clauses makes use of interclausal linkers that express additive coordination. We can again observe both *χάπε* as a coordinator in verbal phrases coordination strategies (8-a) and *li* ‘and’. In addition to coordinator *mmi* ‘and’, which is used in additive VP coordination as well as adversative coordination (9).

Table 2. Setswana additive coordinators for VPs and clauses

Coordinator	VPs	Complement Clauses
<i>lí</i>		(10-b)
<i>χάπε</i>	(8-a)	(10-c)
<i>mmí</i>	(8-b)	

Example (8) demonstrates the possible constructions for VP coordination with both available coordinators.

- (8) a. *kì-rátá t^hés χάπε kì-rátá nálêdì*
 1SG-like.CJ Theo CONJ 1SG-like.CJ Naledi
 ‘I like Theo and Naledi.’
 Lit. ‘I like Theo and I like Naledi.’
- b. *kì-rátá t^hés mmí kì-tótá nálêdì*
 1SG-like.CJ Theo CONJ 1SG-respect.CJ Naledi
 ‘I like Theo and respect Naledi.’
 Lit. ‘I like Theo and I respect Naledi.’

- (9) *kì-rátá t^hés mmí χά kì-rátá nálêdì*
 1SG-like.CJ Theo CONJ NEG 1SG-like.CJ Naledi
 ‘I like Theo but hate Naledi.’
 Lit. ‘I like Theo and I don’t like Naledi.’

The conjunction marker *χάπε* seen in (10-a) and (10-c) is limited to the coordination of verbal phrases pertaining to a single subject. Example (11-b) illustrates a misuse of the conjunction marker since the two clauses have distinct subjects (‘he’ and ‘she’), compare with (11-a) where *lí* is used. Unlike with VP coordination (example (8-a)), the coordinator *χάπε* can only be used in clausal coordination if present with the complementizer *χóri*, as seen in example (11-c).

- (10) a. kì-útsí χóri ó-búá má-àká χápè ó-à-ú:ts^wà
 1SG-know.CJ that 1-tell.CJ 6-lie CONJ 1-DJ-steal
 ‘I know that he lies and steals.’
- b. kì-útsí χóri ó-búá má-àká lí-χóri ó-à-ú:ts^wà
 1SG-know.CJ that 1-tell.CJ 6-lie CONJ-that 1-DJ-steal
 ‘I know that he lies and steals.’
 Lit. ‘I know that he lies and that he steals.’
- c. kì-útsí χóri ó-búá má-àká χápè-χóri ó-à-ú:ts^wà
 1SG-know.CJ that 1-tell.CJ 6-lie CONJ-that 1-DJ-steal
 ‘I know that he lies and steals.’
 Lit. ‘I know that he lies as well as that he steals.’
- d. *kì-útsí χóri ó-búá má-àká lí ó-à-ú:ts^wà
 1SG-know.CJ that 1-tell.CJ 6-lie CONJ 1-DJ-steal
 ‘I know that he lies and steals.’
- (11) a. kì-útsí χóri ó-tùlè¹ lí-χóri énè χά á-tià¹
 1SG-know.CJ that 1-strong CONJ-that she NEG 1-strong
 ‘I know that he is strong and she is weak.’
 Lit. ‘I know that he is strong and that she is weak.’
- b. *kì-útsí χóri ó-tùlè¹ χápè énè χά á-tià¹
 1SG-know.CJ that 1-strong CONJ she NEG 1-strong
 ‘I know that he is strong and she is weak.’
- c. kì-útsí χóri ó-tùlè¹ χápè-χóri énè χά á-tià¹
 1SG-know.CJ that 1-strong CONJ she NEG 1-strong
 ‘I know that he is strong and she is weak.’

3 Subject Agreement with Conjoined NPs

Coordination work on languages with rich inflectional systems, such as Setswana, has heavily focused on describing and understanding the agreement patterns in coordinate complexes with conjuncts that have conflicting phi features (person, number, gender). These conflicts are resolved through resolution rules that determine what agreement form will be triggered by a coordinate noun phrase (Givón 1970). Corbett (1991) identified three general types of resolution patterns that languages may adopt: semantic, syntactic, and agreement with one conjunct. Semantic resolution rules rely on the semantic features of the conjuncts (e.g. natural gender, animacy) and syntactic resolution rules rely on the syntactic features of the conjuncts (e.g. grammatical gender).

In regards to the gender resolution rules for conjoined subjects, Cole (1955) proposes the two following rules that select the target gender class triggered by the conjoined subject on a purely semantic basis:

- if both coordinands have human referents, the conjoined subject governs class 2 agreement (30-a), this is presumably because it is most often used with plural human referents;

- if both coordinands have non-human referents, the conjoined subject governs class 8 agreement (32-a), which can sometimes be referred to as the ‘thing’ class.

These resolution rules hold true regardless of the order of the conjuncts unlike other Bantu languages, such as Ndebele (Moosally 1998) which shows a strong preference for agreement with the closest conjunct. In the following Ndebele example, the conjuncts both have different gender class values (1/2 and 5/6). The 5/6 plural is grammatical as the form in (12-a) where the 5/6 conjunct is closest to the verb, but not in (12-c) where the order of conjuncts is reversed, demonstrating that the linear position of the conjuncts is an important factor in agreement resolution patterns for that language (Moosally 1998).

- (12) a. Aba-lungu lama-bhunu a-yahleka.
1/2pl-white_man CONJ.5/6pl-Afrikaaner 5/6pl-laughing
‘The Englishmen and the Afrikaaners are laughing.’
- b. *Ama-bhunu laba-lungu a-yahleka.
5/6pl-Afrikaaner CONJ.1/2pl-white_man 5/6pl-laughing
‘The Afrikaaners and the Englishmen are laughing.’
- c. Ama-bhunu laba-lungu ba-yahleka.
5/6pl-Afrikaaner CONJ.1/2pl-white_man 1/2pl-laughing
‘The Afrikaaners and the Englishmen are laughing.’ (Moosally 1998)

In contrast, the following two examples illustrate how the resolution rules apply to conjoined subjects in Setswana. Example (13) has coordinands that belong to distinct gender classes, *losia* ‘baby’ (class 11) and *mosadi* ‘woman’ (class 1), but share semantic features such as animacy [+] and humanness [+]. Therefore, when the conjuncts are combined into a coordinate complex they trigger agreement with the ‘human’ class 2. Class 2 remains as the agreement class whether *losia* ‘baby’ is the first (30-a) or the second (31-a) coordinand in the construction. Example (14) demonstrates the same behaviour but with two gender-distinct coordinands that share animacy [-] values. The coordinands *lefelo* ‘broom’ (class 7) and *selepe* ‘axe’ (class 5) trigger ‘thing’ agreement class 8. Again, regardless of the position of either coordinand the agreement class remains as class 8.

- (13) a. lò-síá lí-mò-sádí bá bà-tônà
11-baby CONJ-1-woman 2.SM 2-big
‘The baby and the woman are big.’
- b. mò-sádí lí-lò-síá bá bà-tônà
1-woman CONJ-11-baby 2.SM 2-big
‘The woman and the baby are big.’
- (14) a. lè-féló lí-sè-lépé dí dì-tônà
5-broom CONJ-7-axe 8.SM 8-big
‘The broom and the axe are big.’
- b. sè-lépé lí-lè-féló dí dì-tônà
7-axe CONJ-5-broom 8.SM 8-big
‘The axe and the broom are big.’

The basic generalization for subject position coordinate structures in Setswana is that they must

trigger plural agreement; singular agreement is not acceptable. An example of a grammatical coordinate construction can be observed in example (15-a) and, correspondingly, its ungrammatical counterpart can be observed in example (15-b). Both nouns *ncha* ‘dog’ and *beke* ‘bag’ belong to class 9 which we know forms plurals in class 8 and do not share animacy values (refer to introduction for the full list of genders in Setswana).

- (15) a. *ńfà lí-békè dí né dí látléχìlé m̀-̀tsèk^wê-̀j*
 9.dog CONJ-9.bag 8.SM PST 8.SM lost 18-forest-LOC
 ‘The dog and the bag were lost in the forest.’
- b. **ńfà lí-békè é né é látléχìlé m̀-̀tsèk^wê-̀j*
 9.dog CONJ-9.bag 9.SM PST 9.SM lost 18-forest-LOC
 ‘The dog and the bag were lost in the forest.’

The requirement of plural agreement holds in all cases of conjoined subject coordination, with the notable exception of constructions that are rendered comitatively to express the intended coordinate reading. These comitative constructions will be discussed in Section 3.3 and are limited to constructions with referents that have non-compatible animacy values.

In addition to the aforementioned resolution rules, Cole (1955) addresses an alternative agreement resolution strategy based on syntax rather than semantics. He argues that in the case where coordinands belong to the same class in the plural, the shared plural class can be selected as the agreement gender instead of the ‘human’ class 2 or ‘thing’ class 8 as stated by the default resolution rules. Creissels (2016) verifies this claim but notes that speakers tend to prefer the resolution rules that have a purely semantic basis, regardless of the gender of the coordinands and a shared plural class. He argues that semantic agreement takes precedence over morphological agreement. Given both proposals, the following sections will explore the available resolution rules, syntactic and semantic, by modulating both animacy and gender class of conjuncts in Setswana coordinate complexes.

3.1 Same Class, Same Animacy

As previously stated, the literature identifies semantically-based resolution rules as the default resolution strategy for coordinate complex agreement with conjuncts of the same gender class and animacy value. The question at hand is: does this hold true in every case and every gender class? Are there instances in which syntactically-based resolution rules would be preferred by a speaker? To begin to answer these questions, we look into every possible pair of same class and same animacy conjuncts to identify which agreement gender classes are allowed when acting as a conjoined subject. Table 4 below summarizes the findings by marking which gender agreement is triggered at the intersection of each pair.

Table 3. Agreement gender classes in coordinate complexes with same-class and same-animacy conjuncts

		Gender classes SG(PL) of first coordinand												
		1(2)	2	3(4)	4	5(6)	6	7(8)	8	9(8)	11(6)	11(8)	14(6)	
Gender classes SG(PL) of second coordinand	1(2)	1(2)	2 (16-a)											
	2	*1 (16-b)	2											
	3(4)	*8	2 (17)											
	4			4 (18-b)										
	5(6)			8 (18-a)										
	6			*3 (18-c)	4 (19-b)									
	7(8)				8 (19-a)									
	8					8 (20-a)								
	9(8)					*2 (20-d)								
	11(6)					*6 (20-c)								
	11(8)					*5 (20-b)								
	14(6)						6 (22-b)							
							2 (22-a)							
								8 (23-a)						
							*7 (23-b)							
								8 (24-a)						
									8 (25-a)					
									*9 (25-b)					
										?				
											8 (26-a)			
											*11 (26-b)			
												8 (27-a)		
												*6 (27-c)		
												*14 (27-b)		

Beginning with a pair of class 1 conjuncts, *monna* ‘man’ and *mosadi* ‘woman’, which pluralize into class 2 (Table 4), we observe that they trigger gender class 2 when conjoined and in subject position (16). It is difficult to establish whether this agreement class is selected via semantic or via syntactic means since both patterns would have the same surface structure. Syntactically, class 1 referents do pluralize to class 2. However, conjuncts that share the semantic animacy value of humanness also trigger gender class 2 agreement. In the case of two conjuncts of class 2, such as *banna* ‘men’ and *basadi* ‘women’, we can observe the same pattern. The two conjuncts trigger agreement class 2 when conjoined but can trigger gender agreement via semantic or syntactic means.

Table 4. Nouns in class 1 SG and class 2 PL

singular		agreement class	plural		agreement class
mò-íná	‘man’	1	bà-íná	‘men’	2
mò-sádí	‘woman’	1	bà-sádí	‘women’	2

- (16) a. m̀-íná lí-m̀-śádí bá bà-t̀nà
 1-man CONJ-1-woman 2.SM 2-big
 ‘The man and the woman are big.’
 b. *m̀-íná lí-m̀-śádí ó m̀-t̀nà
 1-man CONJ-1-woman 1.SM 1-big
 ‘The man and the woman are big.’
- (17) bà-íná lí-bà-śádí bá bà-t̀nà
 2-man CONJ-2-woman 2.SM 2-big
 ‘The men and the women are big.’

For the pair of gender class 3 nouns *mosi* ‘smoke’ and *mogale* ‘rope’, that form plurals in class 4 (Table 5) we can observe more flexibility with the accepted resolution strategies. Both conjuncts are inanimate objects, meaning that they will trigger agreement class 8 (18-a) by means of a semantic resolution rule. However, the coordinate complex is also able to trigger agreement class 4 based on the plural class of the conjuncts, as seen in (18-b). This is the only other observed instance, besides (29-b) which involves classes 5 and 11, where two conjuncts in singular form trigger their shared plural gender class, following a syntactic resolution agreement rule. All other recorded examples of a coordinate complex triggering the plural gender class of its conjuncts required the conjuncts to be in their plural form before coordination. An example of this type of construction can be seen in (19-b).

Table 5. Nouns in class 3 SG and class 4 PL

singular	agreement class	plural	agreement class
m̀-śí ‘smoke’	3	m̀-śí ‘smokes’	4
m̀-χálé ‘rope’	3	m̀-χálé ‘ropes’	4

- (18) a. m̀-śí lí-m̀-χálé dí ði-ñts^hò
 3-smoke CONJ-3-rope 8.SM 8-black
 ‘The smoke and the rope are black.’
 b. m̀-śí lí-m̀-χálé é m̀-ñts^hò
 3-smoke CONJ-3-rope 4.SM 4-black
 ‘The smoke and the rope are black.’
 c. *m̀-śí lí-m̀-χálé ó m̀-ñts^hò
 3-smoke CONJ-3-rope 3.SM 3-black
 ‘The smoke and the rope are black.’
- (19) a. m̀-śí lí-m̀-χálé dí ði-ñts^hò
 4-smoke CONJ-4-rope 8.SM 8-black
 ‘The smokes and the ropes are black.’

- b. m̀è-sí lí-m̀è-ɣálé é m̀è-âts^hò
 4-smoke CONJ-4-rope 4.SM 4-black
 ‘The smokes and the ropes are black.’

Moving on to conjuncts with gender class 5 which pluralize to class 6 (Table 6), we can observe pairs that allow syntactic based resolution rules and pairs that do not. As opposed to the class 4 examples discussed above, two class 5 conjuncts, *leswana* ‘spoon’ and *lee* ‘egg’, cannot trigger agreement of their shared plural gender class (class 6) (20-c). The only available resolution strategy for this pair of nouns is the semantic resolution rule that triggers ‘thing’ class agreement 8 (20-a) given that both conjuncts are inanimate entities. This behavior supports the claim that semantic agreement takes precedence over syntactic agreement (Creissels 2016).

Table 6. Nouns in class 5 SG and class 6 PL

singular	agreement class	plural	agreement class
l̀è-s ^w áná ‘spoon’	5	m̀à-s ^w áná ‘spoons’	6
l̀è-é ‘egg’	5	m̀à-é ‘eggs’	6
l̀è-sólé ‘soldier’	5	m̀à-sólé ‘soldiers’	6
l̀è-pódísí ‘policeman’	5	m̀à-pódísí ‘policemen’	6

- (20) a. l̀è-s^wáná lí-l̀è-é dí m̀ò-tàfùlê-ìj
 5-spoon CONJ-5-egg 8.SM 18-table-LOC
 ‘The spoon and the egg are on the table.’
 b. *l̀è-s^wáná lí-l̀è-é lé m̀ò-tàfùlê-ìj
 5-spoon CONJ-5-egg 5.SM 18-table-LOC
 ‘The spoon and the egg are on the table.’
 c. *l̀è-s^wáná lí-l̀è-é á m̀ò-tàfùlê-ìj
 5-spoon CONJ-5-egg 6.SM 18-table-LOC
 ‘The spoon and the egg are on the table.’
 d. *l̀è-s^wáná lí-l̀è-é bá m̀ò-tàfùlê-ìj
 5-spoon CONJ-5-egg 2.SM 18-table-LOC
 ‘The spoon and the egg are on the table.’

For a class 5 conjunct pair with human referents, *lesole* ‘soldier’ and *lepodisi* ‘policeman’, both the semantic and the syntactic resolution rules are available depending on the conjuncts’ number feature. The coordinate complex built from the singular conjuncts, *lesole li lepodisi* ‘the soldier and the policeman’, would only trigger agreement based on the [human/animate] semantic feature of the conjuncts (21-a) and agreement on their shared plural class would be ungrammatical. On the other hand, the coordinate complex that stems from the pluralized form of the conjuncts, *masole li mapodisi* ‘the soldiers and the policemen’, allows the additional syntactic resolution which triggers agreement based on their shared plural class.

- (21) a. lè-sólé lí lè-pódísí bá bà-tônà
 5-soldier and 5-policeman 2.SM 2-big
 ‘The soldier and the policeman are big.’
 b. *lè-sólé lí lè-pódísí á mà-tônà
 5-soldier and 5-policeman 6.SM 6-big
 ‘The soldier and the policeman are big.’
- (22) a. mà-sólé lí mà-pódísí bá bà-tônà
 6-soldier and 6-policeman 2.SM 2-big
 ‘The soldiers and the policemen are big.’
 b. mà-sólé lí mà-pódísí á mà-tônà
 6-soldier and 6-policeman 6.SM 6-big
 ‘The soldiers and the policemen are big.’

For class 7 nouns that pluralize into gender class 8 (Table 7), animacy values become crucial to differentiate between syntactic and semantic resolution strategies, specifically for conjuncts that have animacy [-] values and humanness [-]. This parallels the ambiguity issue encountered with class 1 referents that pluralize into class 2. The difficulty lies in that both class 2 and class 8 are the two designated classes for agreement resolution based on semantic features. Therefore conjuncts that originally pluralize into either of the two classes will render an identical coordinate complex with an identical surface structure regardless of the resolution strategy employed. Taking the pair of class 7 inanimate conjuncts *sekipa* ‘shirt’ and *selepe* ‘axe’, we can observe that the only grammatical coordinate construction shows class 8 agreement (33-d).

Table 7. Nouns in class 7 SG and class 8 PL

singular	agreement class	plural	agreement class
sè-kípá ‘shirt’	7	dì-kípá ‘shirts’	8
sè-lépé ‘axe’	7	dì-lépé ‘axes’	8

- (23) a. sè-kípá lí-sè-lépé dí dì-tônà
 7-shirt CONJ-7-axe 8.SM 8-big
 ‘The shirt and the axe are big.’
 b. *sè-kípá lí-sè-lépé sé sè-tônà
 7-shirt CONJ-7-axe 7.SM 7-big
 ‘The shirt and the axe are big.’
- (24) a. dì-kípá lí-dì-lépé dí dì-tônà
 8-shirt CONJ-8-axe 8.SM 8-big
 ‘The shirt and the axe are big.’
 b. *dì-kípá lí-dì-lépé sé sè-tônà
 8-shirt CONJ-8-axe 7.SM 7-big
 ‘The shirt and the axe are big.’

Just as was mentioned above with class 7 nouns that pluralize into class 8, class 9 nouns that pluralize into class 8 (Table 8) will have an ambiguity issue when analyzing their resolution strategies during conjunction. Since they naturally pluralize into ‘thing’ class 8, any coordinate complex with two class 8 nouns that have animate [-] and humanness [-] values will lead to resolution strategies with the same surface coordinate structure, regardless of syntax and semantics. In any case, we have observed only grammatical constructions that trigger class 8 agreement (25-a).

Table 8. Nouns in class 9 SG and class 8 PL

singular	agreement class	plural	agreement class
ńfà ‘dog’	9	dì-ńfà ‘dogs’	8
kátsè ‘cat’	9	dì-kátsè ‘cats’	8

- (25) a. ńfà lí-kátsè dí dì-tônà
 9.dog CONJ-9.cat 8.SM 8-big
 ‘The dog and the cat are big.’
 b. *ńfà lí-kátsè é tônà
 9-dog CONJ-9-cat 9.SM big
 ‘The dog and the cat are big.’

Since nouns in class 11 pluralize into class 8 (Table 9), we can observe the same ambiguity problem as the aforementioned class 9 nouns. Either resolution strategy, be it syntactic or semantic, would eventually lead to a class 8 agreement for any pair of nouns with an animate [-] and humanness [-] value. Similarly, we have only observed grammatical constructions with class 11 conjoined subjects that trigger class 8 agreement (26-a).

Table 9. Nouns in class 11 SG and class 8 PL

singular	agreement class	plural	agreement class
lò-nálá ‘nail’	11	dì-nálá ‘nails’	8
lò-náó ‘foot’	11	dì-náó ‘feet’	8

- (26) a. lò-nálá lí-lò-náó dí dì-tônà
 11-nail CONJ-11-foot 8.SM 8-big
 ‘The nail and the foot are big.’
 b. *ńfà lí-kátsè ló lò-tônà
 11-nail CONJ-11-foot 11.SM 11-big
 ‘The nail and the foot are big.’

Finally, with pairs of nouns in class 14 that pluralize into gender class 6 (Table 10), we again observe the semantic resolution strategy being the only strategy available if the conjuncts remain in their singular form (27-a). However, if the conjuncts are in their plural form (class 6) they gain

the additional syntactic resolution rule that triggers agreement in that same class. This can be observed with the nouns *borotho* ‘bread (sg)’ and *boroke* ‘pants (sg)’ which, once pluralized into *marotho* ‘bread (pl)’ and *maroke* ‘pants (pl)’, can agree with the appropriate agreement class based on animacy values (27-a) or keep their plural class 6 agreement (27-c).

Table 10. Nouns in class 14 SG and class 6 PL

singular	agreement class	plural	agreement class
bù-rót ^h ó ‘bread’	14	mà-rót ^h ó ‘breads’	6
bù-rók ^w é ‘pants (sg)’	14	mà-rók ^w é ‘pants (pl)’	6

- (27) a. bù-rók^wé lí-bù-rót^hó dí dì-tônà
 14-pants CONJ-14-bread 8.SM 8-big
 ‘The pants (sg) and the bread are big.’
 b. *bù-rók^wé lí-bù-rót^hó bú bù-tônà
 14-pants CONJ-14-bread 14.SM 14-big
 ‘The pants (sg) and the bread are big.’
 c. *bù-rók^wé lí-bù-rót^hó á mà-tônà
 14-pants CONJ-14-bread 6.SM 6-big
 ‘The pants (sg) and the bread are big.’
- (28) a. mà-rók^wé lí-mà-rót^hó dí dì-tônà
 6-pants CONJ-6-bread 8.SM 8-big
 ‘The pants (pl) and the breads are big.’
 b. mà-rók^wé lí-mà-rót^hó á mà-tônà
 6-pants CONJ-6-bread 6.SM 6-big
 ‘The pants (pl) and the breads are big.’

3.2 Different Class, Same Animacy

In the case of coordinate complexes with same-class conjuncts that have different animacy values, it is unclear whether animacy values are sensitive to humanness or not. In example (29-b), we observe an instance of two nouns belonging to different noun classes (*lè-pódísi* ‘policeman’ and *lò-síá* ‘baby’, class 5 and class 6 respectively) having two gender resolution strategies available for coordination constructions while sharing the same animacy value (both are animate and human referents). One acceptable strategy is based on their [human] animacy values (29-a) and the other one is based on their shared plural class (29-b). This supports the claim that, in certain cases, when two coordinands share the same plural class they may trigger that agreement class when coordinated. Moreover, it does not provide evidence to support Creissel’s claim that semantic agreement takes precedence over morphological agreement. If anything, it seems that both are equally relevant in a speaker’s agreement resolution strategies.

Table 11. Nouns with human referents from mixed gender classes and shared plural class

singular		agreement class	plural		agreement class
lè-pódísí	‘policeman’	5	mà-pódísí	‘policemen’	6
lò-síá	‘baby’	11	mà-síá	‘babies’	6

- (29) a. lè-pódísí lí-lò-síá bá bà-tônà
 5-policeman CONJ-11-baby 2.SM 2-big
 ‘The policeman and the baby are big.’
 b. lè-pódísí lí-lò-síá á mà-tônà
 5-policeman CONJ-11-baby 6.SM 6-big
 ‘The policeman and the baby are big.’

In the case of mixed-class coordinands that do not share a plural class, the only acceptable constructions are those which depend on the coordinands’ semantic features. Constructions with either of the nouns’ respective plural classes are not allowed. We can observe this through the coordination of the two nouns with human referents (*lò-síá* ‘baby’ class 11 and *mò-sádí* ‘woman’ class 1) found in Table 12, which do not allow constructions with agreement class 6 (30-c). The only acceptable construction is that which triggers ‘human’ agreement class 2, as seen in examples (30-a) and (31-a).

Table 12. Nouns with human referents from mixed gender classes and no shared plural class

singular		agreement class	plural		agreement class
lò-síá	‘baby’	11	mà-síá	‘babies’	6
mò-sádí	‘woman’	1	bà-sádí	‘women’	2

- (30) a. lò-síá lí-mò-sádí bá bà-tônà
 11-baby CONJ-1-woman 2.SM 2-big
 ‘The baby and the woman are big.’
 b. *lò-síá lí-mò-sádí ó mò-tônà
 11-baby CONJ-1-woman 1.SM 1-big
 ‘The baby and the woman are big.’
 c. *lò-síá lí-mò-sádí á mà-tônà
 11-baby CONJ-1-woman 6.SM 6-big
 ‘The baby and the woman are big.’
 d. *lò-síá lí-mò-sádí lú lù-tônà
 11-baby CONJ-1-woman 11.SM 11-big
 ‘The baby and the woman are big.’

- (31) a. m̀ò-sádí lí-l̀ò-síá bá bà-t̀òná
 1-woman CONJ-11-baby 2.SM 2-big
 ‘The woman and the baby are big.’
 b. *m̀ò-sádí lí-l̀ò-síá ó m̀ò-t̀òná
 1-woman CONJ-11-baby 1.SM 1-big
 ‘The baby and the woman are big.’
 c. *m̀ò-sádí lí-l̀ò-síá á mà-t̀òná
 1-woman CONJ-11-baby 6.SM 6-big
 ‘The baby and the woman are big.’
 d. *m̀ò-sádí lí-l̀ò-síá l̀ó l̀ò-t̀òná
 1-woman CONJ-11-baby 11.SM 11-big
 ‘The baby and the woman are big.’

In the case of mixed-class coordination with non-human referents, we can observe a preference for a semantic resolution rule, the same as as mixed-class coordination with human referents. The acceptable agreement patterns for the coordination of the nouns found in Table 13 (*l̀è-f̀é́l̀ó* ‘broom’ and *s̀è-l̀é́pé* ‘axe’, class 5 and 7 respectively) are listed in examples (32) and (33). Since these two nouns do not share an agreement class in their plural forms, the only acceptable coordination construction is that which triggers the ‘thing’ agreement class 8, as seen in examples (32-a) and (33-a).

Table 13. Nouns with non-human referents from mixed gender classes and no shared plural class

singular	agreement class	plural	agreement class
<i>l̀è-f̀é́l̀ó</i> ‘broom’	5	<i>m̀à-f̀é́l̀ó</i> ‘brooms’	6
<i>s̀è-l̀é́pé</i> ‘axe’	7	<i>d̀ì-l̀é́pé</i> ‘axes’	8

- (32) a. l̀è-f̀é́l̀ó lí-s̀è-l̀é́pé dí d̀ì-t̀òná
 5-broom CONJ-7-axe 8.SM 8-big
 ‘The broom and the axe are big.’
 b. *l̀è-f̀é́l̀ó lí-s̀è-l̀é́pé lé l̀ì-t̀òná
 5-broom CONJ-7-axe 5.SM 5-big
 ‘The broom and the axe are big.’
 c. *l̀è-f̀é́l̀ó lí-s̀è-l̀é́pé á mà-t̀òná
 5-broom CONJ-7-axe 6.SM 6-big
 ‘The broom and the axe are big.’
 d. *l̀è-f̀é́l̀ó lí-s̀è-l̀é́pé sé s̀è-t̀òná
 5-broom CONJ-7-axe 7.SM 7-big
 ‘The broom and the axe are big.’
- (33) a. s̀è-l̀é́pé lí-l̀è-f̀é́l̀ó dí d̀ì-t̀òná
 7-axe CONJ-5-broom 8.SM 8-big
 ‘The axe and the broom are big.’

- b. *sè-lépé lí-lè-féíó lé lì-tônà
 7-axe CONJ-5-broom 5.SM 5-big
 ‘The axe and the broom are big.’
- c. *sè-lépé lí-lè-féíó á mà-tônà
 7-axe CONJ-5-broom 6.SM 6-big
 ‘The axe and the broom are big.’
- d. *sè-lépé lí-lè-féíó sé sè-tônà
 7-axe CONJ-5-broom 7.SM 7-big
 ‘The axe and the broom are big.’

Additionally, we observe that the relative order of the two coordinands has no significance for the agreement resolution strategies available for each constructions. As seen in example (32-a), where the first coordinand is *lefelo* ‘broom’ followed by *selepe* ‘axe’, and example (33-a), where the first coordinand is ‘axe’ followed by ‘broom’.

3.3 Different Class, Different Animacy

Resolution rules based on semantic features specifically describe the expected behavior of a pair of conjuncts that share animacy and humanness values (Cole 1955). It is unclear what resolution strategies are available for pairs with mixed animacy values. Creissels (2016) suggests that coordination constructions with a human coordinand and a non-human coordinand are disallowed, since resolution rules for different animacy coordinate complexes are based solely on the human animacy values of referents (Creissels 2016). He demonstrates how speakers bypass this limitation by rendering the second coordinand as a comitative adjunct. It seems any constructions with a non-human coordinands, regardless of animacy [+] value (e.g. animals, plants), will also be rendered comitatively (34-b).

- (34) a. *mò-íná lí-ńfà bá wè:tsé mò-nòkê-ìj
 1-man CONJ-9-dog 2.SM fall.PRF.CJ 18-river-LOC
 ‘The man and the dog fell into the river.’ (Creissels 2016)
- b. mò-íná ó wè:tsé mò-nòkê-ìj lí-ńfà
 1-man 1.SM fall.PRF.CJ 18-river-LOC COM-9-dog
 ‘The man and the dog fell into the river.’
 Lit. ‘The man fell into the river with the dog.’ (Creissels 2016)

While data from our speaker confirms the need for comitative adjuncts in coordination constructions that involve the union of an inanimate (animacy [-]) and an animate (animacy [+]) conjunct (35-c), our findings differ from those by Creissels (2016), suggesting that coordination restrictions on different animacy constructions are based on general animacy values instead of specific human/humanness animacy values. In other words, constructions [animal/human] are allowed for our speaker. Example (34-a) (Creissels 2016) is deemed ungrammatical by his speaker but is an acceptable construction in our data (35-a).

- (35) a. mò-íná lí-ńfà bá wè:tsé mò-nòkê-ìj
 1-man CONJ-9-dog 2.SM fall.PRF.CJ 18-river-LOC
 ‘The man and the dog fell into the river.’
- b. *mò-íná lí-bé:kè bá wè:tsé mò-nòkê-ìj
 1-man CONJ-9-bag 2.SM fall.PRF.CJ 18-river-LOC
 ‘The man and the bag fell into the river.’
- c. mò-íná ó wè:tsé mò-nòkê-ìj lí-bê:kè
 1-man 1.SM fall.PRF.CJ 18-river-LOC COM-9-bag
 ‘The man and the bag fell into the river.’
 Lit. ‘The man fell into the river with the bag.’

As observed in (35-c), the comitative marker *lí* is the same marker used to express conjunction, as seen in (35-a), making Setswana what Stassen (2000) describes as a ‘WITH-language’. To understand the difference between the conjunctive marker and the comitative marker, Abdoulaye (2004) describes the distinct semantic entailments of the two constructions. In the case where *lí* is used in nominal additive coordination, coordinand A and coordinand B suggests that both A and B are equally in control of the action, but not necessarily simultaneously or in the same place, whereas when *lí* is used in comitative constructions, it suggests that A and B are in the same place and their involvement is simultaneous, but it does not suggest that they are equally in control. Thus, in the case of (35-c) we would deduce that the man and the bag fell into the river at the same time and together. When asked to judge the entailment supposition, the speaker confirmed that it would be impossible to have separate the events of A (the man falling into the river) and B (the bag falling into the river).

4 Conclusion

This paper presented Setswana’s additive coordination strategies and coordinators. Any findings that differed from the literature were noted, such as multiple additive coordination of NPs not requiring the coordinator to be repeated before each conjunct and the use of coordinator *ibile* ‘as well as’ in adjectival coordinate constructions. Regarding agreement resolution strategies, both semantic-based and syntactically-based strategies were tested by modulating the animacy and class of the conjuncts. An important finding from the data is that the syntactic agreement resolution rules seem to appear more frequently in coordinate complexes whose conjuncts are in plural form before being conjoined. Furthermore, we presented evidence that conjoined subjects with different humanness values do not necessarily trigger comitative adjuncts. We illustrated examples in which conjuncts with the same animacy value but differing humanness value (e.g. human-animal) are able to form a coordinate complex. Future avenues for research include eliciting coordinate complexes with conjuncts that share gender class but differ in animacy values, paying particular attention to how sensitive the animacy restrictions seem to be. In addition, gathering acceptability judgments for coordinate complexes that allow for both syntactic and semantic agreement resolutions strategies would shed light on the hierarchies, if any, of said resolution strategies.

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