



A Comparative Corpus-Based Study of Genitive Variation in Written Native and Non-Native Speakers' Narratives

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Abstract

This study investigates statistically significant factors impacting the choice between 's-genitive and of-genitive constructions and examines the interactions between these factors. Employing a mixed-method approach, we delve into whether native versus non-native speakers' preferences motivate these influences. The analysis of the corpus aligns with previous studies, emphasizing different ways of indicating possession in language. Particularly, possessor animacy emerges as a significant factor influencing the choice between genitive variations, with animate possessors showing a bias towards the 's-genitive construction. Additionally, native speakers exhibit a higher preference for the 's-genitive in their narratives compared to non-native speakers. Structural weight and the concreteness or abstract nature of possessors also play a role in determining genitive form choice, with heavy possessors favouring the of-genitive construction and lighter possessors opting for the 's-genitive form. These findings hold true across both native and non-native speakers, indicating stability in genitive variation across first and second-language varieties of English. The study further uncovers differences between native and non-native speakers regarding the preference for concrete and abstract possessors in genitive constructions. Native speakers tend to favour abstract possessors in the 's-genitive, whereas non-native speakers lean towards concrete possessors, adding complexity to our understanding of genitive choice.

1. INTRODUCTION

The English genitive variation, one of the researched areas of grammatical variations, provides a particularly good testing ground for assessing some contentious issues on the factors influencing the choice of the 's-genitive or the of-genitive constructions, particularly from native and non-native English speakers. Research on genitive variations in terms of the factors that influence the choice is not a novel one. Previous studies have looked into a number of elements that influence the choice between the 's-genitive and the of-genitive constructions across language and registers. Some studies (e.g., Börjars, Denison, Krajewski, and Scott, 2013; Hwang, 2022) concentrated on the morphological factors while others such as Rosenbach (2002b, 2005, 2008 and 2014) and Shazia (2017) concentrated on the cognitive and psychological factors. The choice has also been premised on several factors including semantic factors (see Rosenbach 2005, 2008; Grafmiller, 2014; Breban, Kolkman, and Payne, 2019; Ackermann, 2021; Puhach, 2022), syntactic factors (see Lyons, 1986; Heller, Szmrecsanyi, and Grafmiller, 2017; Biber, Szmrecsanyi, Reppen, & Larsson, 2023; Pleshak, 2023) and

phonological factors (see Grafmiller, 2014; Shih *et al.*, 2015; Ondar, 2022). Others have been on register variation (Biber *et al.*, 1999; Rosenbach, 2002b; Gries, Heller, and Funke, 2020; Biber, Szmrecsanyi, Reppen, and Larsson, 2023) and first language (L1) transfer (see Shazia, 2017; Azaz, 2019; Monakhov, 2020). Yet, other researchers have looked at key language groups such as Asian languages (Heller, Bernaisch, and Gries, 2017; Monakhov, 2020) and European languages (Shazia, 2017; Lobascio, 2020; Pickl, 2020). These researches have revealed that there are frequently diverse ways of showing possession in these many languages.

According to Grafmiller (2014), no one semantic feature influences genitive choice more than possessor animacy. Animate, and particularly human possessors substantially occur with the 's-genitive construction, in certain circumstances almost categorically (Rosenbach, 2005, 2008; Jaimee, 2016). Other well-known factors include the length of the possessor and the nature of the possessum phrases, possessor topicality or 'thematicity', and the semantic relation between the possessor and possessum (Rosenbach, 2014; Lars Bülow, Vergeiner, and Elspaß, 2021). Hinrichs and Szmrecsanyi (2007, p. 455) classify all of these factors into four categories: (i) "semantic and pragmatic factors," (ii) "phonological factors," (iii) "factors related to processing and parsing," and (iv) "economy-related factors".

In terms of register variations, Biber *et al.* (1999) analysed the occurrence of the two possessive constructions in four registers i.e. conversation, fiction, news and academic prose. Their findings revealed that s-genitives out-numbered of-genitives in all the registers. Conversation had the lowest frequency of both the s-genitives and the of-genitives. They add that the distribution of the two is best seen in news and academic prose. News had the highest frequency of the s-genitive whereas academic prose had the highest frequency of the of-phrase (Biber *et al.* 1999, p. 302). Similarly, Gries, Heller, and Funke (2020) analysed the genitive alternation in British and Sri Lankan English, specifically examining how gender influences syntactic choices in these varieties. Additionally, Gries, Heller, and Funke (2020) explore how other linguistic predictors, such as possessor animacy and the final phoneme of the possessor, interact with register variations to influence genitive choice. The researchers found that, in terms of register variations, there are differences in genitive choice between spoken and written texts. They argue that spoken texts tend to have a higher proportion of 's-genitives compared to written texts.

For Shazia (2017), the concept of L1 transfer demonstrates a pattern of deviation from native English speakers in their choice of genitive constructions. This deviation is attributed to the typological differences between the learners' L1 and the target language. The study specifically demonstrates that there is an absence of animacy and prototypical characteristics in possessive constructions in the L2 Greek speakers of the English language because, in the learners' L1 language, there are no such alternations. Therefore, the learners' L1 affects their choice of L2 genitive constructions in English. Shazia (2017) further argues that the influence of L1 transfer on the choice of genitive constructions underscores the impact of language-specific constraints and cognitive factors on L2 acquisition and language production.

Regardless of the number of scholars in the field of genitive variations across the globe, much attention has not been given to literary texts, especially between native and non-native language speakers' narratives. The current study therefore seeks to investigate the factors that influence genitive variations in narratives of native and non-native speakers of the English language. Specifically, the study seeks to identify factors that are statistically significant in influencing the choice between the two genitive constructions as well as determine the

interactions between the factors for the choice of the genitive constructions. The study also examines to which extent these factors are motivated by native and non-native language speakers' preferences. The study therefore sets out to answer the following questions:

1. What factors significantly influence the choice of genitive constructions in native and non-native narratives?
2. What are the various interactions that influence the choice of the genitive construction in native and non-native narratives?
3. To what extent are the factors influencing the choice motivated by native and non-native language speakers' preferences?

In this study, narratives from Emily Brontë, who is a native speaker of English and Ama Ata Aidoo, who is a second-language speaker of English, are examined. Ama Ata Aidoo has Akan as her first language. Unlike the language-specific constraint of the Greek language (Shazia, 2017), and other European languages, the Akan language is similar to the English language in many ways, including the structure of possessive constructions (Bombi, 2018; Abunya, Owusu, and Naapane, 2021). For instance, in both languages, possession is used to indicate ownership or a relationship between the possessor and the possessed object. The possessive markers or pronouns are also placed before the possessed noun to show ownership. For example:

Table 1: Possessive markers in English and Akan

Possessor		Genitive marker	Possessum
Akan	<i>ɔdan</i>	<i>n'</i>	<i>enkyensin</i>
English	building	's	roof

The present study will use data from Emily Brontë's *Wuthering Heights* and Ama Ata Aidoo's *Changes: A Love Story* to determine the factors that influence the choice between 's-genitive and of-genitive constructions.

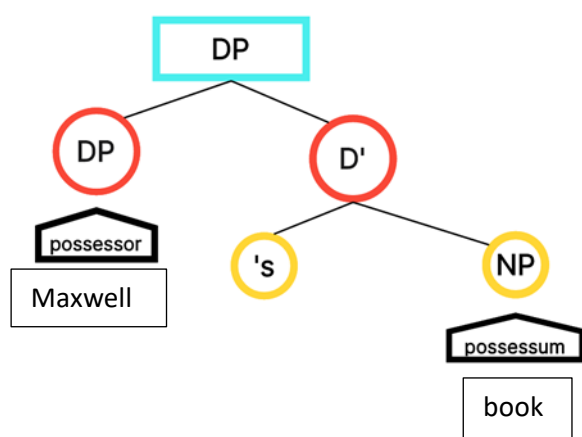
2. THEORETICAL CONSIDERATIONS AND RELATED LITERATURE

In English, the genitive construction is a grammatical case that typically indicates possession, ownership, or association. However, aside from the genitive case, there are other ways to indicate possession. These include the use of possessive pronouns (*his, hers, its, ours, theirs*, etc.) and compound nouns (*the mountain top, bed sheet, Geography book*, etc.). In English, the genitive case is often marked by the addition of ('s) to the possessor noun, indicating possession or association (e.g., "Daniel's car") or by the use of the preposition "of" to express possession or association between the possessor and the possessum (e.g., "the car of Daniel") to show possession or association. The genitive construction also indicates a wide range of relationships beyond simple possession, such as part-whole relationships, origin, and composition (Žan Jovišič and Zala, 2014). The genitive construction is a key aspect of the analysis of possessive constructions and their variations in English.

According to Jaimee (2016), these two forms of genitives provide different ways to express genitive relationships in English, and their usage can be influenced by various factors such as animacy, weight, phonological environments, and syntactic considerations. One difference between the 's-genitive and the of-construction is in relation to the order of the possessor and possessum. In the 's-genitive, the order is possessor-possessed, as in "*Maxwell's hat*". This indicates that the possessor precedes the entity that is being possessed. Conversely, in the of-construction, the order is possessum-possessor, as in "*the hat of Maxwell*". Secondly, the 's-genitive is often used with animate possessors (see Rosenbach, 2005, 2008; Azaz, 2019)

while the of-construction is more commonly used with inanimate possessors. Puhach, (2022) and Ondar (2022) contend that the of-genitive construction is able to code for a wider range of semantic relationships between the possessor and the possessum compared to the 's-genitive. According to Carnie (20106), the most important function of the genitive is to specify the reference of the noun phrase of which it is a part. In this way, the 's-genitive is similar to determiners because it is in complementary distribution with determiners (Carnie 2006, p. 198). Although the possessive construction in the 's-genitive is generally recognised as a determiner, the possessive structure in the of-genitive is often perceived as a modifier and is neutral in relation to definiteness (Rosenbach 2002b, p. 13. 20). Carnie uses the X-bar theory to justify the determiner function of the 's-genitive as he argues that determiners like 'the' and 's are different tokens of the same types. This is illustrated by the Determiner Phrase (DP) hypothesis as shown in the diagram below.

Figure 1: DP-hypothesis (Source: DP-hypothesis in Carnie (2006, p. 197))



From the diagram, it is evident that the noun phrase to which the genitive ('s) is attached is typically a definite noun phrase with a specific reference, thereby conferring a specific reference to the superordinate noun phrase. When the genitive phrase is replaced by a post-modifying prepositional phrase, known as the of-phrase, the head of the noun phrase necessitates the use of the definite article. (Carnie, 2006, p. 197).

Structure of the 's-genitive:

([Determiner]+[modifier]+**possessor**+**Gen-marker**+ [Determiner]+[modifier]+**possessum**)

Structure of the of-genitive:

([Determiner]+[modifier]+**possessum**+**of**+ ([Determiner]+[modifier]+**possessor**)

(Rosenbach 2002a).

In the frame, linguistic units in the square brackets are optional items while those in bold are obligatory items.

2.1.Factors influencing the choice of the genitive constructions

Scholars have established that animacy is an important factor that influences the choice between different genitive forms. Animacy of the possessor and possessum are taken into account when determining genitive choice. The more animate a possessor, the more likely it is to take the 's-genitive in English, while inanimate possessors are more likely to use the of-construction (Jaimee, 2016, p. 11). According to Rosenbach (2014), animacy is a grammatical and semantic feature that distinguishes between living and non-living entities. For Shazia (2017), animacy refers to the degree of liveliness or agency associated with a noun or pronoun.

Animacy distinguishes between entities that are animate (e.g., humans, animals and parts of animate entities) and those that are inanimate (e.g., objects, abstract concepts). Animacy, according to Jaimee (2016), is not based solely on whether a thing is living or not. Instead, speakers think of nouns in terms of their similarity or dissimilarity to a human.

In more recent times, other scholars have argued that animacy is not always the sole factor influencing genitive choice. They contend that factors such as the final phoneme of the possessor (Hwang, 2022; Ondar, 2022), register variations (Biber, Szmrecsanyi, Reppen, and Larsson, 2023), and gender differences (Gries, Heller, and Funke, 2020) are factors that account for genitive variations. Gries, Heller, and Funke (2020) opine that female speakers in certain varieties showed stronger inclinations towards using the s-genitive, possibly influenced by the transfer of structures from their native languages. Other factors include abstract/concreteness, structural weight, and the definite/indefinite reference of the possessor and the alienable/inalienable relation between the possessor and possessum. According to Nichols, (1988), the variation of the lexical classification of the possessed noun, or possessum in relation to its relationship with the possessor is the alienable/inalienable split. Van Linden (2023) defines alienability as a linguistic concept that categorises nouns based on the nature of their relationship with the possessor. Inalienable nouns, on the other hand, are those that are inherently possessed or considered essential to the possessor, such as body parts, kinship terms, or natural features. According to the author, these nouns are typically not separable from the possessor and are considered integral to their identity. Cristofaro (2023) contends that the alienability/inalienability split influences the morphosyntactic marking, word order, and grammatical structures used to express possession in a language.

Huddleston and Pullum (2002) explain that possessors are by definition definite as they are in reference to a specific entity. Van Linden (2023) further defines definiteness as a noun phrase that refers to a specific entity that is known to the speaker and the listener or can uniquely be identified within a given context. For example, "the book on the table" indicates a particular book that both the speaker and the listener are aware of. For Barker (2000, p. 1), the basic understanding of the definiteness of the possessor is that "for a use of a definite description to be felicitous, its referent must be 'familiar', either because it was mentioned in previous discourse or because it is otherwise salient in the non-linguistic context."

Ortmann (2018) explains that the structural weight of a possessor is the complexity or length of the noun phrase that functions as the possessor in a possessive construction. The author argues that the concept of structural weight of a possessor considers factors such as the number of words, morphemes, or syntactic elements that make up the possessor noun phrase. Lucidly, heavier or more complex possessor may contain modifiers, determiners, adjectives, or relative clauses that provide additional information about the possessor. For instance, the phrase "The beautiful young energetic Olympics athlete" is weightier than "the athlete."

3. METHOD AND DATA

This study employs a mixed method approach, as its goal is to provide a deeper understanding of the influences of the choice of the genitive constructions and whether these influences are motivated by native or non-native language speakers' preferences. Molina-Azorin (2016, p. 37) defines a mixed methods design as "the combination and integration of qualitative and quantitative methods in the same study." The data collection process involves a quantitative approach (corpus-based) whereas the data analysis technique includes both quantitative methods (with respect to the presentation of results in graphical and table formats)

and qualitative ones (involving the discussion of results). Such an approach allows scholars to compile a comprehensive database and interpret the results. Consequently, the current paper aims primarily to analyse the genitive alteration between the 'of' and inflected genitive constructions in written narratives of native and second-language speakers of English. In line with this objective, respective software is used.

3.1. Narratives and the English language

The sample data are composed of the novels; *Wuthering Heights* by Emily Brontë and *Changes: A Love Story* by Ama Ata Aidoo. Emily Brontë is a native of Yorkshire, England. She is an English novelist and poet whose work is distinguished by its dramatic presentation, poetic style, and unique narrative structure. Brontë infused her novel with profound emotions of love and hate, avoiding personal themes and societal conventions. *Wuthering Heights* is a deeply passionate and tumultuous novel set in the wild moorlands of Yorkshire. It tells the story of the love and destructive relationship between Heathcliff and Catherine Earnshaw. Their love transcends social boundaries, which are marred by jealousy, revenge, and a thirst for power. As their lives intertwine with those of their families and descendants, the novel explores themes of love, social class, and the influence of nature on human behaviour. Brontë's masterpiece delves into the dark and turbulent depths of human emotions, portraying the devastating consequences of unchecked passion and the constraints imposed by society.

Ama Ata Aidoo, on the other hand, is known for her influential writings that have made significant contributions to African literature. For example, in her, *The Dilemma of a Ghost* and *Anowa*, she explores the clash between Western and African worldviews. In her novel *Our Sister Killjoy*, Aidoo challenges prevailing African perspectives on sexuality. Many of her protagonists, as seen in *Anowa* and *Changes*, for example, defy traditional women's roles. *Changes: A Love Story*, chronicles the complexities of love and the changing roles of women in post-colonial Ghana. The story follows Esi Sekyi, a modern and independent woman, navigating the challenges of her relationships. As she embarks on an affair with a married man, she grapples with societal expectations, traditional gender roles, and the clash between tradition and modernity. Through Esi's journey, the novel delves into themes of love, marriage, feminism, and the struggle for personal freedom in a changing society. Aidoo's narrative sheds light on the tensions and complexities of love and the evolving roles of women in a rapidly transforming cultural landscape.

These novels were chosen because both authors wrote to reflect on one unified subject – love. The novels also explore the nuances of social and societal expectations of gender; a problem the world has to contend with. This makes both narratives excellent data for the identification of the influences of the choice of genitive constructions and how these factors are motivated by the novelists' preferences.

Yevudey and Agbozo (2019) have indicated that Ghana is a multilingual country with 73 languages spoken, the major ones being Akan, Ewe, Ga, Nzema, Dagaare, and Dagbani. The English language has grown since its introduction through colonialism in the early 16th century and has become the official language of Ghana amidst the rich indigenous linguistic diversities. According to Ghana Statistical Service's (2019) Ghana Living Standard Survey (GLSS7), 80.38% of Ghanaians aged 15 or older can read and write in English or a native language, with 69.8% reading and writing in both. According to Adika (2012), English is utilised for social and community engagement, cross-ethnic communication, and conversations

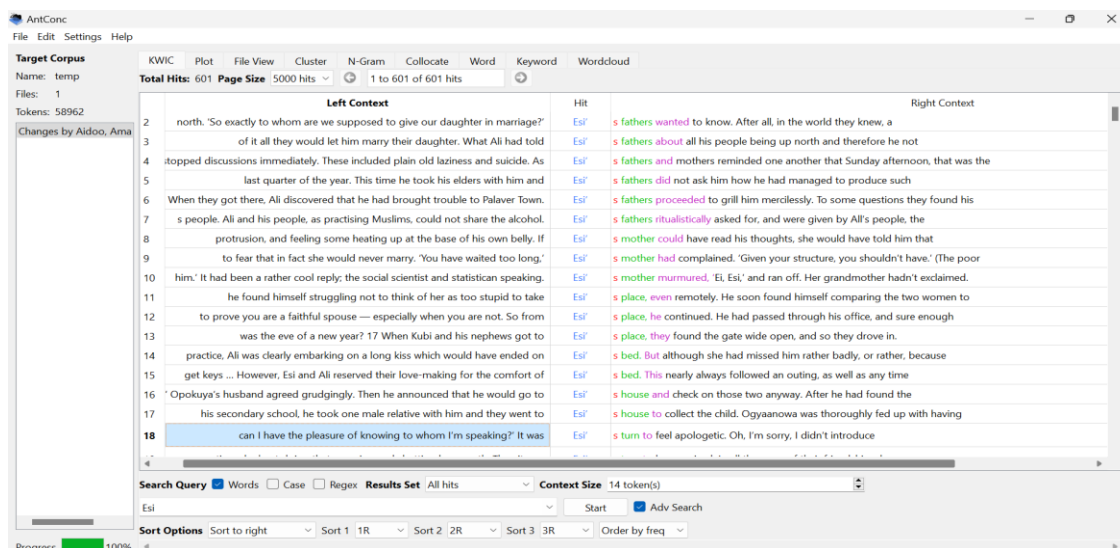
about democratic practice and governance. According to Osei-Tutu (2021), Ghanaian English is a dialect of English influenced by Ghanaian languages. It is spoken by educated Ghanaians and is similar to Standard British English.

Ama Atta Aidoo is a well-educated Ghanaian writer who uses Educated Ghanaian English. Although she is not a native speaker of English, she was born, raised and educated in Abeamzi Kyiakor, near Saltpond, in the Southern part of Ghana. The position of the author is that her novels can be said to have been written in the Educated Ghanaian English variety. Since this variety is not Standard British English, but one close to it, a study of the influence of the genitive variations in the novels will complement each other on the choice of the genitive construction in the English language.

3.2. Mode of analysis

A portable document format (PDF) of the novels was converted into Word documents (docx) where the data were cleaned of all images, notes, cover pages, glossary and other miscellaneous pages, leaving the contents of the stories themselves. The data were then transferred onto a plain text (txt) file for onward analysis in the corpus software as the corpus software accepts only simple text files. The analysis of the corpus was conducted using the LancBox X 3.0.0 (Brezina et al., 2015) for 'Key Word in Context' (KWIC) identification and AntConc 4.2.4 (Anthony, 2015) for concordance lines of the identified keywords. Snowden et al. (2013) define concordance as a means of accessing a corpus of text to show how any given word or phrase in the text is used in the immediate contexts in which it appears. The concordance lines of the noun phrases marking the genitives are helpful to understanding the relations of the genitive with its local linguistic elements (Possessor and Possesum) that will determine the particular genitive marker that is appropriate for the environment. The results of the concordance lines from AntConc 4.2.4 (Anthony, 2015) are cleaned by removing all structures that are not used as possessives and presented in an Excel sheet.

Figure 2: Concordance lines of possessive construction



The data were analysed on the lines of five factors that influence the choice of the genitive construction. These are animate possessor, definite possessor, concrete relations with the possessum, structural weight of the possessor, and alienability relations of the possessum. In all, 1200 sentences were selected for the analysis.

Table 2: Data size in terms of number of sentences in the novels

Possessive type	Wuthering Heights	Changes	Total
Of	300	300	600
-s	300	300	600
Total	600	600	1200

Each of the factors identified in the data was analysed as binary so that factor animacy for instance was analysed by contrasting [+animacy] possessor with [-animacy] possessor. A logistic regression analysis was conducted to determine the significant choice of the genitive alternation based on the structures of the phrases. The data contains around 174,946 words and 17,307 sentences. Further characteristics of the data are given below.

Table 3: Details of the data

Type of data	Word count (Tokens)	Number of sentences
<i>Wuthering Heights</i>	116,842	12,031
<i>Changes: A Love Story</i>	57,946	5,276
Total	174,946	17,307

The KWIC search from its processing of the data through the LancsBox report found 515 instances of the ‘s-genitive construction in the *Wuthering Heights sub-corpus* and 304 in the *Changes: A Love Story sub-corpus*. In terms of the use of the of-genitive, there were more occurrences of the of-genitive for possession in both sub-corpora. 1629 instances of the of-genitive were realised in the *Wuthering Heights sub-corpus*, whereas 818 instances were realised in the *Changes: A Love Story sub-corpus*.

A total sample of 1200 sentences representing 6.93% of the total number of sentences in the data was selected. These are the sentences from which the genitive variations were examined to determine the factors influencing the choice. The researchers chose a sample of 300 sentences each for the genitive alternation in both narratives because they wanted an even representation of all the genitive variations. Since the ‘s-genitive occurred only 304 times in the *Changes: A Love Story sub-corpus*, the researchers had to select a sample that reflected this number, resulting in 300 sentences for the genitive variations in both narratives.

4. RESULTS

The study found out that *Wuthering Heights* used more of the ‘s-genitive than *Changes: A Love Story*. This difference can be attributed to the length of the data respectively. In addition, the finding supports Rosenbach’s (2002b) and Shazia’s (2017) assertion that native speakers prefer the ‘s-genitive for possession. This holds true since *Wuthering Heights* is written by a native speaker of English. The frequency of the factors that influence genitive choice is shown below.

Table 4: Factors influencing the choice of genitive alteration

Interaction between factors determining	L1 vs. L2 narratives	FACTOR INFLUENCING CHOICE (FREQUENCY)									
		Animate possessor		Definite possessor NG		Concrete relations		Heavy possessor		Alienable relation	
		+	-	+	-	+	-	+	-	+	-

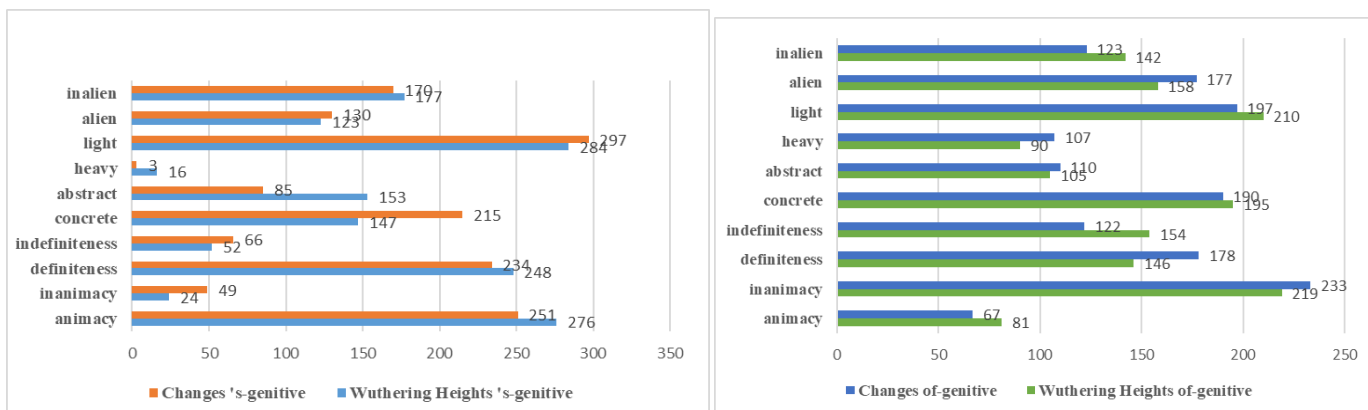
Genitive alternation											
of-genitive	<i>Wuthering Heights</i>	81 27%	219 73%	146 49%	154 51%	195 65%	105 35%	90 30%	210 70%	158 53%	142 47%
	<i>Changes</i>	67 22%	233 78%	178 59%	122 41%	190 63%	110 37%	107 36%	197 64%	177 59%	123 41%
-s' genitive	<i>Wuthering Heights</i>	276 92%	24 08%	248 83%	52 17%	147 49%	153 51%	16 05%	284 95%	123 41%	177 59%
	<i>Changes</i>	251 84%	49 16%	234 78%	66 22%	215 72%	85 28%	03 01%	297 99%	130 43%	170 57%

Table 4 indicates that factor animacy has little to no effect on the choice of the of-genitive, but rather the 's-genitive. In the *Wuthering Heights sub-corpus*, for example, 276 phrases with animate possessor used the 's-genitive, while only 81 sentences used the of-genitive. Similarly, 251 statements in the *Changes: A Love Story sub-corpus* used the 's genitive, compared to 67 phrases in the same sub-corpus using the of-genitive. The results however indicate that inanimate possessors often prefer the of-genitive construction. This is evidenced by 219 and 233 phrases with inanimate possessors from both corpora respectively that chose the of-genitive construction. There were also significant differences in the use of genitive alternations based on the possessor's structural weight (heavy or light). According to the table, heavy possessors favour the of-genitive over the 's-genitive. In the *Changes: A Love Story sub-corpus*, for example, 107 phrases with heavy possessors picked the of-genitive, compared to three (3) sentences with heavy possessors that chose the 's-genitive. This result is consistent with other research such as Grafmiller (2014) and Rosenbach (2014, 2019), which found that light possessors prefer the 's-genitive diachronically and synchronically, while heavy possessors frequently choose the of-genitive construction. The underlined noun phrases are heavy possessors based on the fact that they are compounded (Ortmann, 2018). This explains the reason why the of-genitive is preferred.

1. *This worked out to about ten chapters of the Holy Book* (Changes, line 8).
2. *Breathing like a marathon runner at the end of a particularly grueling race, ...* (Changes, line 11).
3. *... was easing her car into the parking lot of the Department of Urban Statistics* (Changes, line 15).

Despite the fact that both corpora demonstrate similar characteristics in terms of genitive form selections, certain factors are more influential in one corpus than the other. Concreteness, for example, is a factor that distinguishes the *Wuthering Heights* and *Changes: A Love Story sub-corpora*. While concrete possessors influence the choice of the 's-genitive construction in both corpora, it is more pronounced in the *Changes: A Love Story sub-corpus*, with a total hit of 215 possessive noun phrases compared to 147 noun phrases in the *Wuthering Heights sub-corpus*. Based on this study, it is not surprising that the factor abstract possessor is used more in the choice of the 's-genitive construction in the *Wuthering Heights sub-corpus*, with a total of 153 noun phrases compared to 85 noun phrases in the *Changes: A Love Story sub-corpus*. Other differences are minimal. They have been presented below.

Figure 3: Differences in the factors that influence genitive choice



4.1. Significant factors influencing the choice between the 's and of genitive constructions

To further establish the significant factors that influence the choice of the genitive alternations between the 's-genitive and of-genitive constructions in the narratives, the data results were analysed with the logistic regression. The results have been presented below.

Table 5: CLR analysis for factors influencing genitive alternation

A COMPARATIVE LOGISTICS REGRESSION ANALYSIS BETWEEN WUTHERING HEIGHTS AND CHANGES FOR FACTORS THAT INFLUENCE THE CHOICE OF POSSESSIVE CONSTRUCTION

Dependent variable: Possessive type					
Changes: A Love Story			Wuthering Heights		
Factors		p-value	coefficients	p-value	coefficients
Animate (inanimate=0) animate	Possessor	0.000	0.038	0.000	0.021
Definite (Indefinite=0) Definite	Possessor	0.879	1.042	0.090	0.628
Heavy (Light=0) Heavy	Possessor	0.000	71.484	0.000	7.996
Concrete (Abstract=0) Concrete	Possessor	0.043	0.569	0.000	0.157
Alienable (inalienable=0) Alienable	relation	0.001	2.615	0.143	1.440

In the *Changes: A Love Story* sub-corpus, several factors were found to significantly influence the choice of possessive forms. The level of significance is set at 0.05. From the analysis, animate possessors demonstrated a statistically significant association ($p = 0.000$),

with a positive coefficient (0.038), suggesting that sentences with animate possessors are more likely to utilize the ‘s-genitive form. Again, possessors with lighter structural weight exhibited a highly significant association ($p = 0.000$) with a substantial positive coefficient (71.484), indicating a strong likelihood of ‘s-genitive usage in sentences involving light possessors. In addition, concrete possessors and alienable relations also contributed to the choice of ‘s-genitive, with statistically significant coefficients of 0.569 ($p = 0.043$) and 2.615 ($p = 0.001$), respectively. However, the significance of definite possessors was not observed ($p = 0.879$), suggesting that, in this sub-corpus, definite possessors do not have a statistically significant impact on possessive form selection. The results also suggest that, in the *Changes: A Love Story sub-corpus*, the nature of the possessor and the type of relation significantly influence the decision to use ‘s-genitive over ‘of-genitive, except for definite possessors.

In *Wuthering Heights sub corpus* also, similar patterns emerged with respect to the impact of certain factors on possessive form selection. With the same significance level of 0.05, animate possessors demonstrated a significant association ($p = 0.000$) with a positive coefficient of 0.021, indicating a higher likelihood of ‘s-genitive choice. Light possessors, again, demonstrated a highly significant association ($p = 0.000$) with a large positive coefficient (7.996), emphasizing their strong influence on the choice of ‘s-genitives. On the contrary, concrete possessors displayed significance ($p = 0.000$) with a positive coefficient of 0.157, indicating that sentences involving concrete possessors are likely to use the of-genitive while abstract possessors will opt for the ‘s-genitive formation. However, the significance of definite possessors was marginally not observed ($p = 0.090$), suggesting a less decisive impact on possessive form selection. In contrast, alienable relations did not reach statistical significance ($p = 0.143$) in predicting the choice between ‘s-genitive and ‘of-genitive’.

4.2. Interaction of factors influencing the choice between the genitive constructions

Despite the fact that factors such as animate possessors, possessors with light structural weight, concrete possessors, and alienability relations between the possessor and possessum are biased towards ‘s-genitive constructions, the researchers determined the choice of genitives in relation to the interactions of these factors. Eight (8) interactions were included in the analysis. They are:

- (ADL) – Animacy, definiteness, and light;
- (ADH) – Animacy, definiteness, and heavy;
- (AIL) – Animacy, indefiniteness, and light;
- (AIH) – Animacy, indefiniteness, and heavy;
- (ADCI) – Animacy, definiteness, concrete, and inalien;
- (ADCA) – Animacy, definiteness, concrete, and alien;
- (ADAI) – Animacy, definiteness, abstract, inalien;
- (ADAA) – Animacy, definiteness, abstract, and alien.

The table presents findings of the choice of the genitive alternations when factors interact with each other.

Table 6: Interacting of factors influencing genitive choice (a)

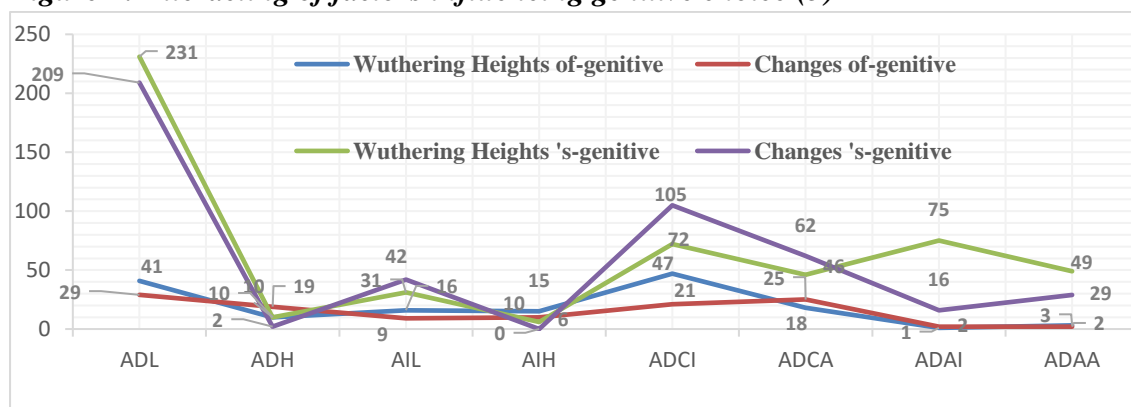
Interaction of factors influencing the choice of the genitive constructions		
	Wuthering Heights	Changes: A Love Story

A Comparative Corpus-Based Study of Genitive Variation in Written Native and Non-Native Speakers' Narratives

Factors	's-genitive	of-genitive	's-genitive	of-genitive
<i>Animacy, definiteness, light</i>	231	41	209	29
<i>Animacy, definiteness, heavy</i>	10	10	2	19
<i>Animacy, indefiniteness, light,</i>	31	16	42	9
<i>Animacy, indefiniteness, heavy</i>	6	15	0	10
<i>Animacy, definiteness, concrete, inalienable</i>	72	47	105	21
<i>Animacy, definiteness, concrete, alien</i>	46	18	62	25
<i>Animacy, definiteness, abstract, inalienable</i>	75	1	16	2
<i>Animacy, definiteness, abstract, alien</i>	49	3	29	2

It is clear from the table that definite possessors do not statistically significantly affect the choice of possessive forms; however, definite possessors that interact with animate and lighter structural weight possessors tend to favour the selection of the 's-genitive construction. The use of the 's-genitive construction in 231 noun phrases in the *Wuthering Heights* sub-corpus and 209 noun phrases in the *Changes: A Love Story* sub-corpus was influenced by the interactions of animacy, definiteness, and light (ADL) as shown in Table 6 above. When an animate possessor interacts with a definite and concrete possessor that has unbreakable ties to the possessum (ADCI), this also influences the choice of the 's-genitive. According to the table, the selection of the 's-genitive construction is influenced by 72 and 105 noun phrases against 47 and 21 phrases respectively for the of-genitive construction. On the other hand, the interaction between animate, indefinite and heavy (AIH) possessors prefer the of-genitive over the 's-genitive construction. From the table, 15 noun phrases from the *Wuthering Heights* sub-corpus and 10 noun phrases from the *Changes: A love story* sub-corpus with the interaction *Animacy, indefiniteness, heavy* chose the of genitive as against 6 and 0 phrases for the same interaction for 's-genitive construction. Other interactions have been presented in the scattered diagram below.

Figure 4: Interacting of factors influencing genitive choice (b)



5. DISCUSSION

The corpus analysis revealed commonalities with prior research that found numerous ways to indicate possession in language. According to researchers (Hinrichs and Szmrecsanyi 2007; Jankowski and Tagliamonte 2014; Linzen 2014; Rosenbach 2017, 2019; Biber, Szmrecsanyi, Reppen, and Larsson, 2023), one notable factor influencing the choice between the genitive variants is the possessor's animate feature. Almost all data indicate that animate possessors are frequently inclined towards the use of the 's-genitive construction. As a

consequence, the current study's corroboration of this notion comes as no surprise. However, this current study reveals further that native speakers often use the 's-genitive construction in their narratives more than non-native speakers. From the corpus, a total of 515 possessive noun phrases opt for the 's-genitive in the native speakers' narrative while 304 noun phrases used the same genitive construction in the non-native narrative. This finding supports Shazia's (2017) and Gries, Heller, and Funke, (2020) assertion that native speakers prefer the 's-genitive for possession.

Other determinants of the choice between the genitive forms include the structural weight (heavy or light) and the concreteness or abstract nature of the possessors. The analysis revealed that structures with heavy possessors often choose the of-genitive construction while lighter possessors often take the 's-genitive form. This finding is similar in both native and non-native speaker's narratives. Similar studies such as (Viti, 2008; Dobrovie-Sorin and Giurgea, 2011; Börjars, Denison, Krajewski, and Scott, 2013; Grafmiller, 2014) point to the same findings. According to Heller, *et al.* (2017), the probabilistic grammar fueling genitive variation is stable between both the first language (L1) and second language (L2) varieties of the English language. In the case of this study, the same conclusion can be drawn because the internal constraints of the non-native speaker's L1 (Akan) do not change the effect direction, but constraints such as possessor animacy, constituent length, final sibilance of the possessor, and the effect of medium (spoken vs. written) as a language-external factor vary in strength between varieties.

In terms of concrete and abstract possessors, the study found that native language speakers prefer abstract possessors for the 's-genitive construction, but non-native speakers prefer concrete possessors. According to the research, the native speaker's narrative used 147 concrete noun phrases against 153 abstract noun phrases for the 's-genitive construction. In contrast, the non-native speaker's narrative was impacted by 215 concrete noun phrases for the 's-genitive, compared to 85 abstract noun phrases. Based on the same factors for choosing the of-genitive construction, the study found that both native and non-native speakers favour concrete noun phrases for the of-genitive construction. According to the analysis, both speakers used 195 and 190 concrete noun phrases, respectively, compared to 105 and 110 abstract noun phrases, for the of-genitive formation.

6. CONCLUSION

The analysis of the corpus in this study has provided valuable insights into the factors influencing the choice of genitive constructions in possession expressions. It sheds light on the similarities with previous research such as (Rosenbach, 2002b, 2005, 2008, 2014, 2017 and 2019; Grafmiller, 2014; Heller, Szmrecsanyi, and Grafmiller, 2017; Azaz, 2019; Breban, Kolkman, and Payne, 2019; Monakhov, 2020; Ackermann, 2021; Puhach, 2022; Hwang, 2022 and Biber, Szmrecsanyi, Reppen, and Larsson, 2023) while also offering some novel findings. The influence of possessor animacy on the preference for the 's-genitive construction aligns with the established literature, emphasizing that animate possessors tend to bias towards this genitive variation. Furthermore, the study has extended this understanding by revealing a notable disparity between native and non-native speakers in the frequency of using the 's-genitive, with native speakers exhibiting a higher preference in their narratives.

The role of structural weight and the concreteness or abstract nature of possessors in determining genitive form choice has also been explored. The finding that heavy possessors often opt for the of-genitive construction while lighter possessors favour the 's-genitive form

is consistent with existing research and holds true for both native and non-native speakers. This stability in genitive variation across first language (L1) and second language (L2) varieties of English, as suggested by Heller *et al.* (2017) and Shazia (2017), underscores the robustness of the probabilistic grammar driving these linguistic choices.

The study's examination of concrete and abstract possessors has unveiled intriguing differences between native and non-native speakers. Native speakers exhibit a preference for abstract possessors in the 's-genitive construction, while non-native speakers lean towards concrete possessors. This new finding adds a layer of complexity to our understanding of genitive choice, suggesting that linguistic variations might be influenced by factors beyond possessor animacy and structural weight.

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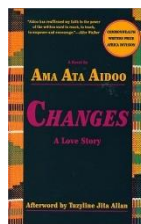
Appendices

Appendix A



[Wuthering Heights](#)

Appendix B



[Changes: A Love Story](#)

Appendix C



[Genitive Alternation Data](#)