Variation in English possessives

Factors for the choice between prepositional *of* and genitive *'s*

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Content

1 INTRODUCTION

The present essay is inspired by the work of Anttila & Fong (2004), who deal with variation and ambiguity of English possessives. Variation can be understood as the possibility of mapping one concept (e.g. 'the man owns the hat') to one of its imaginable linguistic realisations (*the man's hat* vs. *the hat of the man*). Ambiguity, on the opposite, is the mapping of one linguistic realisation to one cognitive concept (e.g. *the performance of Aida* could be interpreted as 'Aida performed something' or 'someone performed Aida') (cf. Anttila & Fong, 2004, p. 1253).

On the basis of universal prominence scales and by applying an Optimality Theoretic Approach, Anttila & Fong (2004) derive patterns of ambiguity and variation which they claim to be predictive for the choice of the competing concepts or linguistic realisations.

This essay, deals with the issue from a somewhat different angle. In a small corpus study, carried out with the help of Sketch Engine and the British National Corpus, it examines the statistical distribution of the two constructions involved in variation: *'s*-genitive and *of*-construction (cf. section 2.1). Unfortunately, because of the very complex and time-consuming task of corpus analysis and due to a lack of appropriate semantic annotation, the scope of this essay is limited to variation. Ambiguity could not be considered.

In section 2.2 some traditionally assumed factors for the choice of construction for the linguistic realisation of a particular concept are presented. In the following, there will be assumptions on additional factors and a very basic introduction to the British National Corpus and its use in Sketch Engine (section 3).

The results of the initial, basic corpus study are the topic of section 4. Unfortunately, it was not possible to consider all of the factors for variation, which will be explained in the corresponding sections. However, the fundamental quantitative method of corpus analysis for the examination of variation patterns will be demonstrated.

Section 5 will draw a final conclusion on the corpus study of variation in English possessives, and certain problems which occurred during the course of the essay will be mentioned.

2 VARIATION

2.1 The phenomenon

Variation in *'s*-genitive and *of*-constructions is meant to describe the phenomenon of a "one-to-many mapping between meaning and form, e.g. *my parents' house ~ the house of my parents* ('the house of my parents')" (Anttila & Fong, 2004, p. 1253). In the case of these constructions a one-to-two mapping can be attested. i.e. in a large amount of cases it is possible to realise one particular concept by either one of the two constructions of (1) *'s*-genitive (including pronominal genitives), and (2) the prepositional *of*-phrase. However, this variation is not arbitrary. There are cases in which there is no choice, in which a different choice can result in a different meaning, or in which there is a clear preference for one of the constructions (cf. Anttila & Fong, 2004, p. 1265):

(a1) the rest of the days	(a2) *the days' rest
(b1) a man of honor	(b2) *honor's man
(c1) ?the face of me/mine	(c2) my face
(d1) forces of law	(d2) ?law's forces

The factors which play a role in the decision for the one or the other variant will be reviewed in the following sections.

The constituents involved in the relational constructions in this essay are defined as N_1 and N_2. Hence, the *'s*-genitive has the pattern "N_1's N_2" and the *of*-construction the pattern "N_2 of N_1". There are accounts which define N_1 as the modifier of the more or less complex noun phrase N_2 (the head) (e.g. Hawkins, 1981). However, in this essay the N_1/N_2 distinction of Kreyer (2003, p. 170), who tries to examine the phenomenon without any a priori connotations for the participating constituents, is adopted .

2.2 Traditional factors in variation

This section will present some of the factors which have been identified by various authors to be (at least partly) responsible for the choice between *'s* and *of-*construction.

The most prominent factor for variation can be claimed to be **animacy**. It seems to be a commonplace that the use of the genitive *'s* strongly correlates with the degree of personality of the modifier (cf. Kreyer, 2003, p. 172). With reference to a gender scale postulated by Quirk (1985) and slight modifications on the basis of the findings of Dahl (1971), Kreyer (2003, p. 175) creates a personality scale along which the distribution of the use of *'s-* and *of-*constructions could be explained: the higher the N_1 (modifier) on the scale, the more probable is the use of the *'s-*genitive:
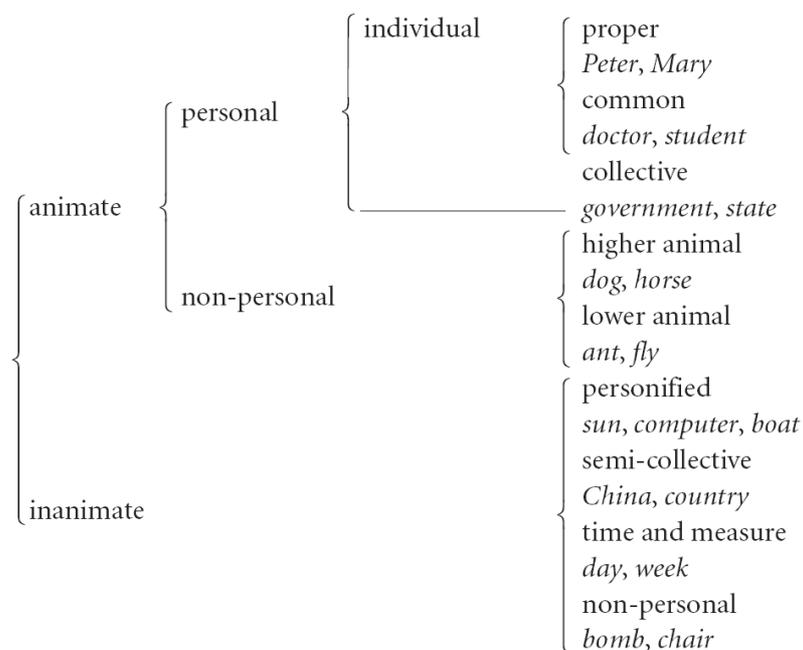

Figure 1: The personality scale (Kreyer, 2003, p. 175)

Instead of concentrating solely on the categorisation of the N_1, Hawkins (1981, pp. 254ff.) states that both N_1 and N_2 play a role in the selection of construction. He postulates the following hierarchy:

$$[\text{HUMAN} < [\text{HUMAN ATTRIBUTE}]] < \begin{bmatrix} \text{NON-HUMAN} \\ \text{ANIMATE} \end{bmatrix} < \begin{bmatrix} \text{NON-HUMAN} \\ \text{INANIMATE} \end{bmatrix}$$
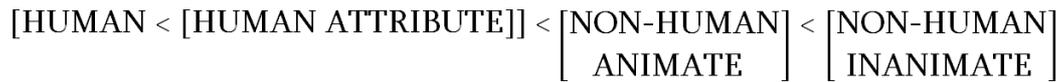
Figure 2: Animacy hierarchy (Hawkins, 1981, p. 260)

In section 4, it will be examined if these findings can be confirmed by a small corpus study. A closely related factor is the instantiation of N_1 or N_2 as **pronouns or non-pronouns**. Since pronouns can be seen as strongly tending to have reference to animate/human entities, an instance of N_1 as pronoun should prefer the *'s*-genitive, while a non-pronoun generally should prefer this construction less often, while the actual realisation of course depends on further factors.

Besides animacy, Kreyer (2003) regards the **semantic relationship** between N_1 and N_2 as a factor for the choice between *of*-construction and genitive-*'s*:

---

1. X is kin to Y (Kinship)
    Peter's father – Peter is kin to his father

2. X has (a/..) Y (Possessive)
    Peter's car – Peter has a car

3. Y is part of X (Partitive)
    Hazel's head – the head is a part of Hazel

4. X Verb(Y) (Subjective)
    Her parents' consent – her parents consented

5. so. Verb(Y) X (Objective)
    The boy's release – so. released the boy

6. X has Y at their disposal, X makes use of Y (Disposal)
    Peter's doctor – Peter has the doctor at his disposal

7. (the) Y in X, (the Y for X), ... (Time & Space)
    Detroit's cold streets – the cold streets in Detroit
    Tomorrow's weather – the weather for tomorrow

8. X is Adj(Y) (Attribute)
    The victim's courage – the victim is courageous

9. X produces/tells/writes ... Y (Origin)
    The general's letter - the general wrote a letter

Figure 3: Semantic relations by Kreyer (2003, p. 178)

According to the findings of Kreyer (2003), the semantic relationships kinship, possessive, and disposal significantly tend to be expressed by N_1's N_2, whereas partitive, subjective, objective, and attribute relations favour N_2 of N_1 (Kreyer, 2003, pp. 186ff). A similar conclusion is drawn by Anschutz (1997), who states clear tendencies for genitive (possessive) relations to be realised by *'s*-genitive (67%) and partitive relations to be realised by the prepositional *of*-construction (96%). Unfortunately, these results could not be reconsidered in the corpus study associated with this essay, because of a lack of semantic information of the constituents. Therefore, the focus was on examining the influence of more superficial (morphological) factors not considered in the underlying traditional studies.

However, some other factors, which will not be examined in more detail later on, are worth to mentioned. By the distinction of the **informational status** of possessor and possession in possessive relations, Anschutz (1997) finds that the combination New Possessor/Old Possession is realised by N_2 of N_1 in 100% of cases, whereas Old Possessor/New Possession is not as significantly represented by N_1's N_2 in 59%.

Another factor is identified by Kreyer (2003, pp. 178ff) in the **weigths** of postmodification of N_1 (e.g. by PPs, finite, or infinite clauses) and premodification of N_2 (e.g. by complex AdjPs). In his point of view, heavily postmodified instances for N_1 like *the man that is walking to you* could rather be realised by *of*-constructions. On the opposite, a premodified N_2 like *the beautiful but nasty 19-year old daughter* would tend to prefer the *'s*-genitive. This could be captured under the concept of a "proximity principle, i.e. related constituents [N_1 and N_2] should be in the proximity of one another" (Kreyer, 2003, p. 179).

2.3   Additional factors?

There could be some factors which were not considered in the previously mentioned studies. Firstly, it is imaginable that **words ending on the phoneme /s/** are rather difficult to be instantiated as the N_1 in N_1's N_2, because of the competition of the ending /s/ with the genitive-*'s* morpheme. It would be interesting to see if any indication for such a principle could be found in a corpus study.

Additionally, a basic analysis will examine if the number of N_1 and/or N_2 plays a role in the preference for a particular construction (cf. section 4.4). It could be possible that for example a N_1 in singular in relation with a N_2 in singular is more often matched to the *'s*-construction than to *of*. This hypothesis could be captured by a pattern like this: $N_{1\,sing}$'s $N_{2\,pl}$ > $N_{2\,pl}$ of $N_{1\,sing}$ (with > meaning "is preferred to").

In the following section a sample corpus study will be presented that tries to examine the extent of the influence of some of the above-named factors, which is reflected by the British National Corpus. Because of the complexity of this very time-consuming task, only the two last factors and animacy are regarded in the study of the BNC.

3 CORPUS STUDY WITH SKETCH ENGINE AND THE BNC

3.1 Use of the British National Corpus

The British National Corpus (BNC) is a monolingual (Modern British English), synchronic (English from the late 20th century), general (different styles and varieties), and sampling corpus (each text contains maximally 45,000 tokens) (cf. Burnard, 2009).

The version of the BNC used in Sketch Engine includes 112,181,850 tokens, of which approximately 10% come from documents of transcribed speech, and the remaining 90% from written texts (cf. ibid.). All tokens are automatically annotated with respect to parts-of-speech, which constitutes an important resource for the study of varying possessive constructions. Unfortunately, there is no elaborate syntactic information. Therefore, there are some problematic instances of prepositional constructions which can not be seen as possessive constructions, but also cannot be ruled out in the analysis:
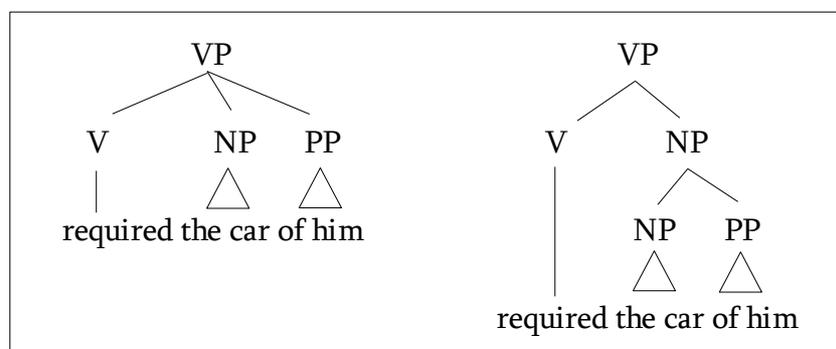
Figure 4: Ambiguous verb phrase

Each of these readings would be represented morphologically (in terms of parts-of-speech) in the same way in Sketch Engine, namely by a past tense verb, followed by a determiner, followed by a singular common noun, followed by the preposition *of*, followed by a personal pronoun: `VVD DT0 NN1 PRF PNP`. It is clear that the two derivations differ in their semantics ('wants that he gives the car' vs. 'wants to get the car he owns'). This becomes evident if one changes the superficial appearance of the noun phrase in the second tree. Saying *required his*

car would equally well express the idea behind the second derivation, but this does not work for the first one.

Despite these limits, the BNC constitutes a good basis for a fundamental analysis of distributions of the varying constructions. The analytical method will be presented in the following section.

3.2   Tagset and sample queries

The set of part-of-speech tags in the BNC includes 76 tags, which are defined for querying the BNC (https://trac.sketchengine.co.uk/wiki/tagsets/bnc). Only 9 of them were used for the examination of *'s*-genitive and *of*-construction in this essay:

<div style="border:1px solid;padding:1em">

AJ0:   adjective (general or positive), e.g. good, old

AT0:   article, e.g. the, a, an, no

DPS: possessive determiner form, e.g. your, their, historical

DT0:   general determiner

NN0:   common noun, neutral for number, e.g. aircraft, data, committee

NN1:   singular common noun, e.g. pencil, goose, time, revelation

NN2:   plural common noun, e.g. pencils, geese, times, revelations

NP0:   proper noun, e.g. London, Michael, Mars, IBM.

POS: the possessive or genitive marker 's or '

PRF: the preposition of

</div>

Figure 5: Tags for queries

The tags were used to create queries with the help of the Corpus Query Language (CQL) which was developed by the Corpora and Lexicons group, IMS, University of Stuttgart (cf. IMS Stuttgart, 1998) and can be used in Sketch Engine.

The following query was formulated on the basis of the CQL specification and is meant to return all sequences of a token which is annotated as singular common noun (NN1), associated with a possessive marker (POS) followed by another singular common noun, e.g. *year's (hard)* work* :

```
[tag="NN1"] [tag="POS"] [tag="AJ0"]* [tag="NN1"]
```

This is the schema used for querying several combinations of different types of nouns and/or pronouns which are related by a genitive marker (plus optional modification of the N_2). In a similar way, *of-*constructions were identified:

```
[tag="NN1"] [tag="PRF"] [tag="DT0"|tag="AT0"]? [tag="AJ0"]* [tag="NN1"]
```

In this query, there are some additional possible types of words. In order, to additionally regard some slightly more complex constructions, it was defined that the N_1 in 'N_2 of N_1' can be specified by an optional determiner and arbitrarily many adjectives. If this option would have been disregarded, only constructions with bare nouns like *kind of help* would have been included in the statistical analysis. By the above definition it is also possible to capture constructions like *spread of this terrible disease*. The N_2 was not associated with additional information, since the preceding tokens of the N_2 were not assumed to be important for the underlying factors.

Apparently, by this method only relatively simple noun phrases were regarded as possible constituents of the involved constructions. However, for the sake of simplification, modifiers like relative clauses or more complex adjective phrases are not regarded in the study, although they are definitely claimed to have influence on the choice of construction (cf. section 2.2).

4 RESULTS

4.1 Overview

First of all, it was tested if there is any influence of text type on the distribution of *'s-* and *of-* constructions. The BNC includes texts from written as well as documents transcribed from spoken language. By comparing the overall distribution of the constructions for both kind of texts, it can be shown that there is no significant difference (cf. Appendix A.1). Therefore, the subsequent studies were carried out without regard to text types. The overall distribution of common nouns (NN0, NN1, NN2) and proper nouns (NP0) involved in *'s-* and *of-*constructions can be seen in the following table:

N1 \ N2	of						's						#
	ALL		NP0		(NN0|NN1|NN2)		ALL		NP0		(NN0|NN1|NN2)		
ALL	1964243	82,36%	15853	0,81%	1948390	99,19%	420722	17,64%	17211	4,09%	403511	95,91%	2384965
NP0	452586	68,65%	10757	2,38%	235168	51,96%	206661	31,35%	13113	6,35%	193548	93,65%	659247
(NN0|NN1|NN2)	1932379	90,03%	5096	0,26%	1713222	88,66%	214061	9,97%	4098	1,91%	209963	98,09%	2146440

Table 1: Distribution of 's -genitive and of-construction

While it is obvious that the construction *common noun of common noun* is the most frequent combination, it must be mentioned that the total frequency of common nouns in the corpus with 662,628 occurrences is approximately 7 times higher than the one of proper nouns with 92,418 occurrences in total. Therefore the values in the above table should be regarded relative to the overall occurrences of the distinct noun types. Accordingly, the 193548 instances of the construction *proper noun's common noun* represent a much higher relative frequency than *common noun's common noun* if weighted by the total frequency of the noun types. The N_1's N_2 construction (with N_1 = proper noun, and N_2 = common noun) would represent about 80% of the *'s-*constructions if proper nouns and common nouns occurred equally often. Furthermore, there is a clear tendency of proper nouns to be the head of an *'s-*genitive more often than common nouns, which in N_1 position prefer the *of-*construction by a percentage of about 90%.

Another distinction of constructions can be made on the basis of pronouns vs. non-pronouns. In summary, pronouns in N_1 position to a great extent prefer the *'s-*genitive (i.e. the equivalent

possessive pronoun instance) over the prepositional variant (the complete table can be found in Appendix A.2, page 20):

N2 / N1	of		's		#
	N2 = (NN0|NN1|NN2)		N2 = AJ0* (NN0|NN1|NN2)		
ALL	16264	2,49%	636317	97,51%	652581
1st singular, N1 = (me/my)	813	0,71%	113078	99,29%	113891
2nd sing/pl, N1 = (you/your)	1003	0,89%	112023	99,11%	113026
3rd singular, N1 = (it/its)	9750	7,09%	127830	92,91%	137580
1st plural, N1 = (us/our)	1078	1,46%	72533	98,54%	73611
3rd plural, N1 = (them/their)	3620	1,69%	210853	98,31%	214473

Table 2: Variants for pronouns in N1 position

In most cases, *of*-constructions with a pronoun in N_1 position make only a fraction of all instances (~0.7–1.7%). In contrast, there is a completely different image for variation with common nouns in N_1 position (complete table in Appendix A.2, page 20):

N2 / N1	of		's		#
	ALL		ALL		
ALL	798877	79,36%	207833	20,64%	1006710
N1 = NN0	28161	81,71%	6302	18,29%	34463
N1 = NN1	561101	78,33%	155273	21,67%	716374
N1 = NN2	209615	81,92%	46258	18,08%	255873

Table 3: Variants for common nouns in N1 position

Unfortunately, the differing distributions do not show which factors lead to this situation. It would be imaginable that it is the involved semantic relation that pronouns in N_1 position bring with them – there certainly is some motivation in calling them possessive pronouns! Correspondingly, it could be possible that this is a phenomenon different from the underlying variation of *'s* and *of*-construction. Nevertheless, there is another interesting indication in the above table 2: the 3rd person singular pronouns are much more in use as N1 in the *of*-construction than the other pronouns (*N_2 of it*). Since 1st and 2nd person pronouns generally refer to animate/human entities, and 3rd person singular pronouns can refer to animate entities, but most probably much more often refer to inanimate ones, this observation could be seen as an evidence for the animacy hypothesis (cf. section 2.2, p. 5).

4.2 The factor animacy

Despite the characteristic distribution of $1^{st}/2^{nd}$ person pronouns in comparison to 3rd person pronouns, an application of the personality scale (cf. Figure 1, p. 5) by Kreyer (2003) brings further evidence for the role of animacy in *'s*-genitive/*of*-construction variation.

		of		's		#	
		(AT0|DT0)? AJ0* ALL		AJ0* ALL			
proper (no St./St)	N1 = Peter	159	33,76%	312	66,24%	471	100,00%
proper	N1 = Peter	349	42,25%	477	57,75%	826	100,00%
common	N1 = doctor	516	37,72%	852	62,28%	1368	100,00%
collective	N1 = government	7820	60,51%	5104	39,49%	12924	100,00%
higher animal	N1 = dog	625	61,58%	390	38,42%	1015	100,00%
lower animal	N1 = ant	74	62,71%	44	37,29%	118	100,00%
personified	N1 = sun	976	61,46%	612	38,54%	1588	100,00%
semi-collective	N1 = country	4979	64,72%	2714	35,28%	7693	100,00%
time and measure	N1 = week	2113	53,82%	1813	46,18%	3926	100,00%
non-personal	N1 = couch	31	83,78%	6	16,22%	37	100,00%

Table 4: Examples from the personality scale

In the above table (a more detailed version can be found in the appendix on page 21) the abbreviation ALL refers to the parts-of-speech NN0, NN1, NN2, NP0, and PNP. For the proper noun *Peter* two cases were distinguished: (1) all occurrences of *Peter*, (2) occurrences without the modifying *St.* or *St* (this should rule out place names which obviously have inanimate character). The table nearly depicts a parallel to the personality scale: the more animate/personal the N_1 the more often the *'s*-genitive is preferred. At the two extremes there are the preferred variants *Peter's N_2* vs. *N_2 of the couch*.

Though these results confirm the findings of Kreyer (2003) and Anschutz (1997) with respect to the involvement of animacy in variant choice, it is obvious that animacy and/or personality of the N_1 cannot be the only factor. As mentioned above, the limited scope of this essay did not allow for similar studies of the other traditionally considered factors for variation. Instead, the following section will deal with the factors considered to be important in section 2.3 on page 5.

4.3   Words ending with /s/

The leading hypothesis of this part of the study is that words which have an /s/ phoneme at their very end, as N_1 tend to be part of an *of*-construction rather than of an *'s*-genitive. On the basis of three very small samples from different noun types (planets, higher animals, and country names), the BNC was queried, with the following result:

		of		's		#	
		(AT0|DT0)? AJ0*	ALL	AJ0*	ALL		
[lemma="Mars"] = 585	N1 = Mars	67	95,71%	3	4,29%	70	100,00%
[lemma="Venus"] = 519	N1 = Venus	117	90,70%	12	9,30%	129	100,00%
[lemma="Jupiter"] = 332	N1 = Jupiter	76	83,52%	15	16,48%	91	100,00%
[lemma="Saturn"] = 120	N1 = Saturn	13	68,42%	6	31,58%	19	100,00%
[lemma="dog"] = 12316	N1 = dog	625	61,64%	389	38,36%	1014	100,00%
[lemma="horse"] = 12267	N1 = horse	889	62,56%	532	37,44%	1421	100,00%
[lemma="cat"] = 5384	N1 = cat	322	56,99%	243	43,01%	565	100,00%
[lemma="England"] = 22907	N1 = England	4964	81,67%	1114	18,33%	6078	100,00%
[lemma="Germany"] = 10266	N1 = Germany	687	49,93%	689	50,07%	1376	100,00%
[lemma="France"] = 12144	N1 = France	1419	73,26%	518	26,74%	1937	100,00%
[lemma="Ireland"] = 9565	N1 = Ireland	1185	75,72%	380	24,28%	1565	100,00%
[lemma="Italy"] = 5071	N1 = Italy	415	59,37%	284	40,63%	699	100,00%
[lemma="Spain"] = 4432	N1 = Spain	456	67,66%	218	32,34%	674	100,00%
[lemma="Cyprus"] = 691	N1 = Cyprus	94	93,07%	7	6,93%	101	100,00%
[lemma="Barbados"} = 264	N1 = Barbados	23	100,00%	0	0,00%	23	100,00%
[lemma="Honduras"] = 211	N1 = Honduras	24	82,76%	5	17,24%	29	100,00%

Table 5: Words ending on /s/

For the planet names there is a minor tendency for Mars and Venus to be more often involved in *of*-constructions. However, the difference between the these planet names and the names not ending with /s/ is not very big. Additionally, the higher animal category shows no difference in the distribution of the individual instances. This, in combination with the heterogeneous distribution for country names, speaks against such a factor. It might well be the case that there are other factors at play, which have an impact on the appearance of the variants. *England* for example is relatively often involved in an *of*-construction. This could be due to the existence of phrases like *Queen of England*, *King of England*, or the *Church of England*. These three phrases occur 900 times in the corpus, i.e. approximately 18% of the N_2 *of England* constructions. At the moment, there is no explanation for the special status of *Germany*, but it

might have to do with the fact that Germany does not have as many institutions like the above-named English ones.

Although there is a tendency for country names ending on /s/ as N_1 to be rather part of prepositional constructions, because of the diverse results it can be stated that the initial hypothesis seems to be invalid in this context.

4.4 Number

The following distribution could be derived from the BNC with regard to variation in singular and plural N_1 and N_2. regarding common nouns and pronouns (only for N_1) of 1st and 3rd person:

N1	N2	of									's									#
		ALL			NN1 (singular)			NN2 (plural)			ALL			NN1 (singular)			NN2 (plural)			
		#	%	weighted	#	%	weighted	#	%	weighted	#	%	weighted	#	%	weighted	#	%	weighted	
singular	ALL	1271697	57,75%	57,75%	1001150	78,73%	61,33%	270547	21,27%	38,67%	930249	42,25%	42,25%	731253	78,61%	61,16%	198996	21,39%	38,84%	2201946
	NN1	1245980	88,90%	88,90%	979137	78,58%	61,13%	266843	21,42%	38,87%	155547	11,10%	11,10%	126784	81,51%	65,39%	28763	18,49%	34,61%	1401527
	1st pers pronoun	111	0,10%	0,10%	38	34,23%	18,24%	73	65,77%	81,76%	115862	99,90%	99,90%	95456	82,39%	66,72%	20406	17,61%	33,28%	115973
	3rd pers pronoun	25606	3,74%	3,74%	21975	85,82%	72,17%	3631	14,18%	27,83%	658840	96,26%	96,26%	509013	77,26%	59,28%	149827	22,74%	40,72%	684446
plural	ALL	395917	53,48%	53,48%	315111	79,59%	62,56%	80806	20,41%	37,44%	344417	46,52%	46,52%	204565	59,39%	38,53%	139852	40,61%	61,47%	740334
	NN2	391396	89,40%	89,40%	311178	79,50%	62,44%	80218	20,50%	37,56%	46406	10,60%	10,60%	30702	66,16%	45,59%	15704	33,84%	54,41%	437802
	1st pers pronoun	1123	1,49%	1,49%	1027	91,45%	82,09%	96	8,55%	17,91%	74181	98,51%	98,51%	47993	64,70%	43,99%	26188	35,30%	56,01%	75304
	3rd pers pronoun	3398	1,50%	1,50%	2906	85,52%	71,68%	492	14,48%	28,32%	223830	98,50%	98,50%	125870	56,23%	35,51%	97960	43,77%	64,49%	227228

Table 6: Distribution of singular vs. plural

Because of the overall distribution of common nouns and pronouns in the corpus of 70% against 30%, a weighted percentage was calculated, which assumes a theoretical distribution of 50/50. Besides the fact that the table displays some information on the distribution of common nouns and pronouns involved in *'s*-genitive and *of*-construction (this was already examined above), there are some interesting details to be found regarding the number issue.

For the common noun combinations "$N_{2\ sing}$ of $N_{1\ sing}$" and "$N_{2\ sing}$ of $N_{1\ pl}$" it can be seen that in the weighted percentage there is a homogeneous distribution of N_1 having the number singular (the only exception being N_1 = 1st person pronoun, i.e. *my* seems to prefer to modify singular common nouns). This, naturally, does not contribute to any pattern of preference for the competing constructions in variation.

However, a tendency can be found that $N_{1\ pl}$'s $N_{2\ pl}$ is preferred to $N_{2\ pl}$ of $N_{1\ pl}$. Despite this, there is not much indication for an influence of number on the choice of *'s*-genitive vs. *of*-construction. Having a glance at the table shows a widely homogeneous distribution for the normal and

the weighted percentage. On the basis of these findings, it can be summarised that number cannot be claimed to have a significant influence.

5 CONCLUSION

The essay started by giving a brief overview of the phenomenon of variation on *'s*-genitive and *of*-construction. It was stated that there are certain factors responsible for the choice of one of the two constructions. Some traditional of these factors were presented in section 2.2. Two additional possible factors were presented in section 2.3.

After a basic introduction to the corpus tool Sketch Engine and the British National Corpus, a small corpus study was carried out with the aim of demonstrating a method of examination for factors in variation. In this context, the factors animacy, pronouns vs. non-pronouns, words ending with /s/, and the number value of the participating constituents were examined by corpus queries. Finally, the traditional factor animacy could be confirmed by the study, whereas the newly considered factors /s/-ending and number were not reflected by the empirical data.

The underlying corpus study can be seen as a purely quantitative approach to variation patterns. This leads to serious problems for the analysis, as due to a lack of semantic information, misinterpretations of the data like those presented in section 3.1 may occur. To a certain extent these can be captured by syntactic constraints, but generally they can cause heavy problems for the validity of the data analysis. Therefore, for future studies a mixture of quantitative and qualitative methods would be preferred, because of the crucial role of semantics in variation of *'s*-genitive and *of*-construction.

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7 LISTS OF FIGURES AND TABLES

APPENDIX

A.1 Text types

Written-to-be-spoken

N1	of												's												#
	ALL		NN0		NN1		NN2		NP0		PNP		ALL		NN0		NN1		NN2		NP0		DPS		
ALL	8992	33,32%	295	3,28%	6838	76,05%	1736	19,31%	120	1,33%	3	0,03%	17996	66,68%	187	1,04%	13352	74,19%	3944	21,92%	513	2,85%	0	0,00%	26988
.* NN0	268	2,98%	4	1,49%	210	78,36%	54	20,15%	0	0,00%	0	0,00%	48	13,99%	0	0,00%	25	52,08%	23	47,92%	0	0,00%	0	0,00%	343
.* NN1	4380	48,71%	63	1,44%	3297	75,27%	998	22,79%	22	0,50%	0	0,00%	1889	21,65%	34	1,80%	1486	78,67%	307	16,25%	62	3,28%	0	0,00%	8727
.* NN2	1785	19,85%	141	7,90%	1363	76,36%	281	15,74%	0	0,00%	0	0,00%	428	19,78%	1	0,23%	320	74,77%	99	23,13%	8	1,87%	0	0,00%	2164
.* NP0	2416	26,87%	87	3,60%	1845	76,37%	385	15,94%	97	4,01%	2	0,08%	2539	95,49%	15	0,59%	1914	75,38%	355	13,98%	255	10,04%	0	0,00%	2659
.* PNP/.* DPS	143	1,59%	0	0,00%	123	86,01%	18	12,59%	1	0,70%	1	0,70%	13092	99,98%	137	1,05%	9607	73,38%	3160	24,14%	188	1,44%	0	0,00%	13095

Written books and periodicals

N1	of												's												#
	ALL		NN0		NN1		NN2		NP0		PNP		ALL		NN0		NN1		NN2		NP0		DPS		
ALL	869240	41,98%	17956	2,07%	661143	76,06%	178892	20,58%	10542	1,21%	707	0,08%	1201550	58,02%	8619	0,72%	880729	73,30%	289285	24,08%	22879	1,90%	38	0,00%	2070790
.* NN0	22606	2,60%	524	2,32%	16887	74,70%	5119	22,64%	64	0,28%	12	0,05%	4803	21,10%	26	0,54%	2793	58,15%	1917	39,91%	67	1,39%	0	0,00%	22759
.* NN1	479999	55,22%	6658	1,39%	361287	75,27%	110769	23,08%	1018	0,21%	267	0,06%	115205	14,84%	1015	0,88%	91840	79,72%	19373	16,82%	2976	2,58%	1	0,00%	776348
.* NN2	176305	20,28%	7836	4,44%	136775	77,58%	31299	17,75%	285	0,16%	110	0,06%	36194	16,83%	168	0,46%	23414	64,69%	12241	33,82%	368	1,02%	3	0,01%	215086
.* NP0	173372	19,95%	2535	1,46%	131706	75,97%	29786	17,18%	9148	5,28%	197	0,11%	150132	93,44%	1223	0,81%	115021	76,61%	23219	15,47%	10663	7,10%	6	0,00%	160674
.* PNP/.* DPS	16958	1,95%	403	2,38%	14488	85,43%	1919	11,32%	27	0,16%	121	0,71%	895216	99,92%	6187	0,69%	647661	72,35%	232535	25,98%	8805	0,98%	28	0,00%	895923

A.2 Pronouns vs. common nouns

Variants for pronouns in N_1 position

N2 / N1	of								's								#
	N2 = (NN0|NN1|NN2)		N2 = NN0		N2 = NN1		N2 = NN2		N2 = AJ0* (NN0|NN1|NN2)		N2 = AJ0* NN0		N2 = AJ0* NN1		N2 = AJ0* NN2		
ALL	16264	2,49%	464	2,85%	13974	85,92%	1826	11,23%	636317	97,51%	5797	0,91%	437719	68,79%	192801	30,30%	652581
1st singular, N1 = (me/my)	813	0,71%	2	0,25%	739	90,90%	72	8,86%	113078	99,29%	510	0,45%	92831	82,09%	19737	17,45%	113891
2nd sing/pl, N1 = (you/your)	1003	0,89%	68	6,78%	818	81,56%	117	11,67%	112023	99,11%	787	0,70%	88322	78,84%	22914	20,45%	113026
3rd singular, N1 = (it/its)	9750	7,09%	82	0,84%	8618	88,39%	1050	10,77%	127830	92,91%	1635	1,28%	92687	72,51%	33508	26,21%	137580
1st plural, N1 = (us/our)	1078	1,46%	28	2,60%	954	88,50%	96	8,91%	72533	98,54%	1198	1,65%	46160	63,64%	25175	34,71%	73611
3rd plural, N1 = (them/their)	3620	1,69%	284	7,85%	2845	78,59%	491	13,56%	210853	98,31%	1667	0,79%	117719	55,83%	91467	43,38%	214473

Variants for common nouns in N_1 position

N2 / N1	of								's								#
	ALL		NN0		NN1		NN2		ALL		AJ0* NN0		AJ0* NN1		AJ0* NN2		
ALL	798877	79,36%	17087	2,14%	611407	76,53%	170383	21,33%	207833	20,64%	1655	0,80%	159830	76,90%	46348	22,30%	1006710
N1 = NN0	28161	81,71%	620	2,20%	21380	75,92%	6161	21,88%	6302	18,29%	32	0,51%	3705	58,79%	2565	40,70%	34463
N1 = NN1	561101	78,33%	7428	1,32%	426300	75,98%	127373	22,70%	155273	21,67%	1401	0,90%	125639	80,91%	28233	18,18%	716374
N1 = NN2	209615	81,92%	9039	4,31%	163727	78,11%	36849	17,58%	46258	18,08%	222	0,48%	30486	65,90%	15550	33,62%	255873

Appendix

A.3 Animacy

Personality scale

N1 (category)	N1	(AT0|DT0)? AJ0* ALL	%	(AT0|DT0)? AJ0* NN0	%	(AT0|DT0)? AJ0* NN1	%	(AT0|DT0)? AJ0* NN2	%	(AT0|DT0)? AJ0* NP0	%	(AT0|DT0)? AJ0* PNP	%	AJ0* ALL	%	AJ0* NN0	%	AJ0* NN1	%	AJ0* NN2	%	AJ0* NP0	%	AJ0* DPS	%	#	%
proper (no St./St)	N1 = Peter	159	33,76%	1	0,63%	131	82,39%	24	15,09%	1	0,63%	2	1,26%	312	66,24%	6	1,92%	242	77,56%	59	18,91%	5	1,60%	0	0,00%	471	100,00%
proper	N1 = Peter	349	42,25%	1	0,29%	279	79,94%	66	18,91%	0	0,00%	3	0,86%	477	57,75%	6	1,26%	372	77,99%	64	13,42%	34	7,13%	1	0,21%	826	100,00%
common	N1 = doctor	516	37,72%	12	2,33%	413	80,04%	88	17,05%	3	0,58%	0	0,00%	852	62,28%	0	0,00%	621	72,89%	227	26,64%	4	0,47%	0	0,00%	1368	100,00%
collective	N1 = government	7820	60,51%	75	0,96%	5764	73,71%	1958	25,04%	17	0,22%	6	0,08%	5104	39,49%	28	0,55%	4039	79,13%	997	19,53%	40	0,78%	0	0,00%	12924	100,00%
higher animal	N1 = dog	625	61,58%	10	1,60%	478	76,48%	133	21,28%	0	0,00%	4	0,64%	390	38,42%	1	0,26%	305	78,21%	82	21,03%	2	0,51%	0	0,00%	1015	100,00%
lower animal	N1 = ant	74	62,71%	8	10,81%	45	60,81%	21	28,38%	0	0,00%	0	0,00%	44	37,29%	0	0,00%	29	65,91%	14	31,82%	1	2,27%	0	0,00%	118	100,00%
personified	N1 = sun	976	61,46%	18	1,84%	761	77,97%	184	18,85%	11	1,13%	2	0,20%	612	38,54%	9	1,47%	408	66,67%	133	21,73%	62	10,13%	0	0,00%	1588	100,00%
semi-collective	N1 = country	4979	64,72%	204	4,10%	3090	62,06%	1678	33,70%	5	0,10%	2	0,04%	2714	35,28%	27	0,99%	1897	69,90%	780	28,74%	10	0,37%	0	0,00%	7693	100,00%
time and measure	N1 = week	2113	53,82%	8	0,38%	1914	90,58%	151	7,15%	40	1,89%	0	0,00%	1813	46,18%	12	0,66%	1498	82,63%	195	10,76%	105	5,79%	3	0,17%	3926	100,00%
non-personal	N1 = couch	31	83,78%	2	6,45%	27	87,10%	2	6,45%	0	0,00%	0	0,00%	6	16,22%	0	0,00%	6	100,00%	0	0,00%	0	0,00%	0	0,00%	37	100,00%

A.4 Words ending with /s/

N1 (lemma)	N1	(AT0|DT0)? AJ0* ALL	%	(AT0|DT0)? AJ0* NN0	%	(AT0|DT0)? AJ0* NN1	%	(AT0|DT0)? AJ0* NN2	%	(AT0|DT0)? AJ0* NP0	%	(AT0|DT0)? AJ0* PNP	%	AJ0* ALL	%	AJ0* NN0	%	AJ0* NN1	%	AJ0* NN2	%	AJ0* NP0	%	AJ0* DPS	%	#	%
[lemma="Mars"] = 585	N1 = Mars	67	95,71%	0	0,00%	50	74,63%	15	22,39%	2	2,99%	0	0,00%	3	4,29%	0	0,00%	2	66,67%	1	33,33%	0	0,00%	0	0,00%	70	100,00%
[lemma="Venus"] = 519	N1 = Venus	117	90,70%	0	0,00%	90	76,92%	26	22,22%	1	0,85%	0	0,00%	12	9,30%	0	0,00%	12	100,00%	0	0,00%	0	0,00%	0	0,00%	129	100,00%
[lemma="Jupiter"] = 332	N1 = Jupiter	76	83,52%	1	1,32%	54	71,05%	21	27,63%	0	0,00%	0	0,00%	15	16,48%	0	0,00%	10	66,67%	5	33,33%	0	0,00%	0	0,00%	91	100,00%
[lemma="Saturn"] = 120	N1 = Saturn	13	68,42%	0	0,00%	9	69,23%	4	30,77%	0	0,00%	0	0,00%	6	31,58%	0	0,00%	2	33,33%	4	66,67%	0	0,00%	0	0,00%	19	100,00%
[lemma="dog"] = 12316	N1 = dog	625	61,64%	10	1,60%	478	76,48%	133	21,28%	0	0,00%	4	0,64%	389	38,36%	1	0,26%	304	78,15%	82	21,08%	2	0,51%	0	0,00%	1014	100,00%
[lemma="horse"] = 12267	N1 = horse	889	62,56%	20	2,25%	701	78,85%	164	18,45%	3	0,34%	1	0,11%	532	37,44%	0	0,00%	357	67,11%	174	32,71%	1	0,19%	0	0,00%	1421	100,00%
[lemma="cat"] = 5384	N1 = cat	322	56,99%	7	2,17%	242	75,16%	68	21,12%	4	1,24%	1	0,31%	243	43,01%	0	0,00%	186	76,54%	57	23,46%	0	0,00%	0	0,00%	565	100,00%
[lemma="trainer"] =1791	N1 = trainer	93	68,38%	30	32,26%	57	61,29%	6	6,45%	0	0,00%	0	0,00%	43	31,62%	0	0,00%	33	76,74%	9	20,93%	1	2,33%	0	0,00%	136	100,00%
[lemma="coach"] = 4644	N1 = coach	202	86,32%	2	0,99%	175	86,63%	23	11,39%	2	0,99%	0	0,00%	32	13,68%	0	0,00%	26	81,25%	6	18,75%	0	0,00%	0	0,00%	234	100,00%
[lemma="England"] = 22907	N1 = England	4964	81,67%	39	0,79%	4260	85,82%	603	12,15%	62	1,25%	0	0,00%	1114	18,33%	17	1,53%	746	66,97%	243	21,81%	108	9,69%	0	0,00%	6078	100,00%
[lemma="Germany"] = 10266	N1 = Germany	687	49,93%	5	0,73%	542	78,89%	116	16,89%	24	3,49%	0	0,00%	689	50,07%	3	0,44%	474	68,80%	128	18,58%	84	12,19%	0	0,00%	1376	100,00%
[lemma="France"] = 12144	N1 = France	1419	73,26%	9	0,63%	1005	70,82%	294	20,72%	109	7,68%	2	0,14%	518	26,74%	4	0,77%	359	69,31%	83	16,02%	72	13,90%	0	0,00%	1937	100,00%
[lemma="Ireland"] = 9565	N1 = Ireland	1185	75,72%	20	1,69%	1033	87,17%	119	10,04%	13	1,10%	0	0,00%	380	24,28%	2	0,53%	244	64,21%	82	21,58%	52	13,68%	0	0,00%	1565	100,00%
[lemma="Italy"] = 5071	N1 = Italy	415	59,37%	6	1,45%	301	72,53%	96	23,13%	12	2,89%	0	0,00%	284	40,63%	2	0,70%	173	60,92%	62	21,83%	47	16,55%	0	0,00%	699	100,00%
[lemma="Spain"] = 4432	N1 = Spain	456	67,66%	11	2,41%	294	64,47%	76	16,67%	74	16,23%	1	0,22%	218	32,34%	2	0,92%	140	64,22%	35	16,06%	41	18,81%	0	0,00%	674	100,00%
[lemma="Cyprus"] = 691	N1 = Cyprus	94	93,07%	3	3,19%	77	81,91%	11	11,70%	3	3,19%	0	0,00%	7	6,93%	0	0,00%	5	71,43%	1	14,29%	1	14,29%	0	0,00%	101	100,00%
[lemma="Barbados"] = 264	N1 = Barbados	23	100,00%	1	4,35%	13	56,52%	6	26,09%	3	13,04%	0	0,00%	0	0,00%	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	23	100,00%
[lemma="Honduras"] = 211	N1 = Honduras	24	82,76%	0	0,00%	19	79,17%	2	8,33%	3	12,50%	0	0,00%	5	17,24%	0	0,00%	3	60,00%	2	40,00%	0	0,00%	0	0,00%	29	100,00%