

Animacy and Alienability
A Reconsideration of English Possession

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Abstract

Current scholarship on English possessive constructions, the s-genitive and the of-construction, largely ignores the possessive relationships inherent in certain English compound nouns. Scholars agree that, in general, an animate possessor predicts the s-genitive while an inanimate possessor predicts the *of*-construction. However, the current literature rarely discusses noun compounds, such as *the table leg*, which also express possessive relationships. However, pragmatically and syntactically, a compound cannot be considered as a true possessive construction. Thus, this paper will examine why some compounds still display possessive semantics epiphenomenally. The noun compounds that imply possession seem to exhibit relationships prototypical of inalienable possession such as body part, part whole, and spatial relationships. Additionally, the juxtaposition of the possessor and possessum in the compound construction is reminiscent of inalienable possession in other languages. Therefore, this paper proposes that inalienability, a phenomenon not thought to be relevant in English, actually imbues noun compounds whose components exhibit an inalienable relationship with possessive semantics.

Animacy and Alienability

A Reconsideration of English Possession

Cross-linguistically, possessive constructions are a prototypical example of the complexity of language. A possessive noun phrase generally includes relationships of legal ownership (*John's sweater*), kinship (*Mary's father*), and body parts (*the girl's arm*) (Koptjevskaja-Tamm, 2002, p. 141). However, possessive constructions can extend to include a wider semantic range of relationships such as part-whole relationships. Many of the world's languages employ more than one strategy for the construction of possessive noun phrases. This phenomenon is referred to as split possession. For example, English utilizes both the s-genitive (*David's car*) and also the *of*-construction (*the leg of the table*). The s-genitive and *of*-construction in English are both examples of adnominal possession, meaning that the possessor is modifying the possessum. Adnominal possession is the primary focus of this paper, but languages also use predicative and external possession. Predicative possession uses the predicate of a sentence to identify the possessive relationship, as in *John has a car*, or *the car belongs to John* (Koptjevskaja-Tamm, 2002, p. 141). Secondly, in the external possessive construction, the possessor is not a part of the modified noun phrase but is an external constituent. This construction is less pervasive in English than in other languages, but it can be found in sentences such as "*I looked him in the eye*" (Koptjevskaja-Tamm, 2002, p. 141).

Though split possession is extremely common, languages differ in their reasons for choosing one construction over another (Nichols & Bickel, 2013). Languages with split possession can generally fall into one of two categories. First, the possessive construction may be dependent on the semantic properties of the possessor or owner. For

instance, it is traditionally thought that English makes the distinction between the s-genitive and *of*-construction largely based on the characteristics of the possessor, but is also influenced by other factors (Nichols & Bickel, 2013). In general, the rule is that animate possessors use the s-genitive and inanimate possessors use the *of*-construction, but this is an oversimplification. Secondly, many times the variation depends on the lexical classification of the possessed noun, or possessum, and its relationship with the possessor, which is known as the alienable/inalienable split (Nichols & Bickel, 2013).

Inalienable possession involves two entities with an inseparable semantic relationship. Conversely, in alienable possession, the possessor and the possessum carry a separable semantic relationship. For example, *Jane's mother* illustrates an inalienable construction because the relationship between Jane and her mother is inherent. On the other hand, *Jane's bag* represents an alienable structure, for Jane and the bag have an extrinsic relationship (Gebregziabher, 2012, p. 161). The set of inalienable nouns is usually smaller and more restricted than that of alienable nouns, so the alienable structure is generally considered the default structure. Prototypical inalienable possession includes kinship terms, body parts, spatial, and part-whole relationships (Nichols & Bickel, 2013).

As mentioned, English also has multiple ways to express possession. While the literature overwhelmingly focuses on the s-genitive and the *of*-construction, there may be a third option for expressing possession- the noun compound. Noun compounds occasionally express the same relationships as possessive constructions as in *the chair leg* versus *the leg of the chair* or *the chair's leg*. Even though they are rarely found in the literature on English possession, compounds must be analyzed as they convey semantically related concepts. Thus, this thesis will examine the s-genitive, the *of*-

construction, and noun compounds to see if they are in alternation with one another.

Then, the question of why noun compounds are able to display possessive meanings will be investigated.

English Possessive Constructions

As mentioned, speakers of English have the option between using the 's attached to the possessor (*John's hat*) or the preposition *of* (*the seat of the chair*) to denote possession. These are known as the s-genitive and the *of*-construction, respectively. The choice between these two possessive constructions is known as the genitive variation (Rosenbach, 2014, p. 215). The major difference between these two constructions is the order of the possessor and possessum. In the s-genitive, the order is possessor-possessum while it is possessum-possessor in the *of*-construction. The basic syntactic structure of these constructions can be seen in figure 1.

Figure 1.



In figure 1.a., an s-genitive, the possessor (*girl*) comes before the possessum (*father*). The diagram shown is the deep structure, and the 's is added later. The syntactic status of the 's is actually still debated, but that is beyond the scope of this paper. In figure 1.b, an *of*-construction, the possessor comes after the possessum as part of prepositional phrase (PP). In 1.a., the possessor noun phrase (NP) is assigned the genitive case as it modifies a

noun. However, in 1.b., the possessor NP is assigned oblique or accusative case since it is the object of a preposition.

The S-Genitive

Before analyzing the genitive variation, it is important to more thoroughly examine the two different possessive constructions. First is the s-genitive, in which the possessor functions as a determiner of the entire noun phrase. Therefore, in *the girl's father*, *the girl's* is its own NP serving as the determiner of the full NP (*the girl's father*). As stated, *the girl* takes the genitive case because of its role of modification of a noun. However, the entire possessive construction can occur in any position in the sentence and thus will be assigned case from its role (i.e. nominative, accusative, etc.). Also, possessors are by definition definite as they are in reference to a specific entity (Huddleston & Pullum, 2002, p. 467). If the genitive NP has a dependent following the head, the 's attaches to the right-most word instead of to the head. For example, it would be *the president of the university's speech* instead of **the president's of the university speech*. Additionally, this construction is recursive, which means phrases such as *Allison's mother's purse* are acceptable (p. 468).

Furthermore, Huddleston and Pullum distinguish between the determiner genitive constructions and attributive genitives. Attributive genitives are also 's constructions, though their semantic function is different than a determiner's function. Attributive genitives can be further classified into descriptive genitives and measure genitives. An example of a descriptive genitive would be *a women's magazine*, or "*a summer's day*" (Huddleston & Pullum, 2002, p. 470). Measure genitives include phrases indicating value

or length of time (not of distance or weight). Common examples would include “*an hour’s delay*” or “*two dollar’s worth*” (p. 470).

The *Of*-Construction

Secondly, there is the *of*-construction, which takes the form *possessum + of + possessor NP*. Thus, the possessor NP is now the object of the prepositional phrase with *of* as the head. The traditional definition says that a preposition is “a word that governs, and normally precedes, a noun or pronoun and which expresses the latter’s relation to another word” (Huddleston & Pullum, 2002, p. 598). To govern in this situation means to assign case to the object of the preposition (p. 598). In possessive *of*-constructions, the case would be genitive. Huddleston and Pullum also propose their own, more general definition, saying that prepositions are a closed class of words mainly used to indicate spatial relations or to mark syntactic and semantic roles (2002, p. 603). Two characteristics that distinguish prepositions are their ability to take NP complements and their ability to function as the head of a PP in a non-predicative adjunct position (p. 603). Many prepositions have become grammaticalized, which means that the preposition no longer has a meaning on its own; it is used to indicate a grammatical function, and cannot be replaced by a different preposition (Huddleston & Pullum, 2002, p. 601). *Of* is one such preposition and is actually the most grammaticalized preposition. In general, nouns do not take NPs as complements. Thus, in possessive constructions, the subordinate NP, the possessor, has to be related the head, the possessum, by either the genitive case (*'s*) or by the preposition *of* (p. 658).

The *of*-construction is an oblique construction because the possessor is “related to the head noun... obliquely, via the preposition *of*, rather than immediately” (Huddleston

and Pullum, 2002, p. 468). In this construction, the prepositional phrase is a postnominal dependent. In the oblique possessive, the determiner position is left empty to be filled by any kind of determiner, though a true determiner s-genitive is always a definite NP. For this reason, the two are only interchangeable if the oblique genitive has *the* as a determiner (p. 469). Furthermore, while the s-genitive and the *of*-construction are often interchangeable, the *of*-construction is able to code for a wider range of semantic relationships between the possessor and the possessum (p. 658). However, as discussed below, the constructions that are not interchangeable are not included in the analysis of the genitive variation. Additionally, when the object of the preposition *of* is a genitive noun such as *Peter's* in *a sister of Peter's*, the *of*-construction is known as the oblique genitive. Huddleston and Pullum distinguish the oblique genitive (*a child of John's*) and the non-genitive *of* phrase (*a child of John*), since the non-genitive, though indicating possession, is not actually in the genitive case. For the purpose of this paper, however, the distinction is not necessary.

The Genitive Variation

As mentioned, the choice between the s-genitive and *of*-construction is known as the genitive variation. However, it is important to note that all 's and *of*-constructions do not mark strictly possessive relationships and thus cannot be included in the analysis since they are not interchangeable. For example, some 's constructions (descriptive genitives) have a classifying rather than a specifying function and thus do not alternate with the *of*-construction. For example, to say *a children's toy*, is not equivalent to *a toy of children*, but rather, would alternate with a different structure such as *a toy for children* (Rosenbach, 2014, p.223). Additionally, the possessor in the *of*-construction sometimes

functions as a modifier rather than a complement, denoting a characteristic or property of the possessum, as in *a man of valor* (Rosenbach, 2003, p. 3). Therefore, that construction would not alternate with **a valor's man*, but rather with an adjective as in *a valorous man* (Rosenbach, 2014, p. 223). Furthermore, the partitive genitive, “where the possessum narrows down the referent of the possessive NP,” only utilizes the *of*-construction (ex. *a few of the students*) (Rosenbach, 2003, p. 5). Because possessive relationships are specific and thus definite, *of*-constructions that are preceded by determiners other than *the* cannot be considered. To demonstrate, *some worries of new parents* is not the same as *some new parents' worries* (Rosenbach, 2014, p. 224). Genitives that have been conventionalized, thus making them no longer interchangeable are also excluded. These are phrases such as *the University of Virginia*, and *Murphy's Law*. Other examples not included in the genitive variation would be possessors without a possessum following, titles of works that are pre-modified by the creator, measure genitives, and *of*-constructions denoting measures (Hinrichs & Szmrecsanyi, 2007, p. 451). Finally, when it is not necessary to explicitly name the possessor, possessive pronouns can also show possession (*his shoe*). However, they are overwhelmingly placed before the possessed noun and are thus usually excluded from analysis on the genitive variation (Rosenbach, 2014, p. 222).

Native English speakers almost always prefer one construct to the other, even if the other is not technically ungrammatical. Endley points out that the acceptability of a certain form is more the result of speaker preference than from a grammar rule (2010, p. 34). Thus, analysis is necessary to discover what determines the preferred choice.

Animacy is considered to be the key factor in genitive variation. However, many other factors come into play such as topicality, end-weight, thematicity, prototypicality, persistence, definiteness, and the phonological environment. Regional and genre varieties also exert some influence. Rosenbach reminds the reader that the genitive chosen in a given context is a result of all of the factors exerting their individual interest (2014, p. 231). According to Hinrichs and Szmrecsanyi, the factors fall into one of four categories: “(i) semantic and pragmatic factors, (ii) phonological factors, (iii) factors related to processing and parsing, and (iv) economy-related factors” (2007, p. 455).

First, the semantic and pragmatic factors would include the animacy and thematicity of the possessor as well as information status (Hinrichs & Szmrecsanyi, 2007, p. 455). Animacy is widely considered to be the most important factor in predicting which genitive will be chosen, and scholars also agree that it is the animacy of the possessor rather than possessum that is significant (Rosenbach, 2014, p. 226). According to Rosenbach, animacy in language is not based simply on whether a thing is living or not. Instead, speakers think of nouns in terms of their similarity or dissimilarity to a human. Thus, Rosenbach proposes an animacy hierarchy: “human > animal > collective > inanimate” (2006, p. 105). A collective noun refers to a group or organization such as a *family*, *church*, *university*, etc. In general, if the possessor is animate it prefers the s-genitive, and if it is inanimate, the *of*-construction is preferred. Thus, the more animate a possessor, the more likely it is to take the s-genitive. For example, *Kristen’s cat* would be chosen over *the cat of Kristen* because Kristen is a human and thus a highly animate possessor (Gries & Wulff, 2013, p. 331). Additionally, some inanimate possessors, such as geographical and temporal terms, will also prefer the s-genitive. For instance, it is

common to hear phrases such as “*London’s weather*” (Rosenbach, 2003, p. 9). Kreyer explains that collective nouns and geographical nouns are often treated as animate because they make one think of the people associated with them (2003, p. 173). For example, saying *the university’s decision*, implies that it was the decision of the leaders of the university. Likewise, one would be more likely to say “*China’s economy*” than “*China’s map*” because the former is used in a sociological sense while the latter is merely geographical (Kreyer, 2003, p. 173). Thus, it would be more natural to say *China’s economy* but *the map of China*.

In regard to pragmatics, the thematicity of the possessor can affect the chances of the s-genitive. According to Rosenbach, if a possessor is the topic/theme of a discussion or text, it is more likely to be used in the s-genitive. For example, in a book about wine, one would be more likely to see *the wine’s color* than if the book were about houses or another topic (Rosenbach, 2014, p. 232). Hinrichs and Szmrecsanyi confirm this finding, demonstrating that the possessor in an s-genitive, on average, has a much higher text frequency than the possessor in an *of*-construction (2007, p.458). On a similar note, the information status of the possessor is also significant. This means that if the possessor has recently been given in the text, s-genitive is more likely to be used. According to Hinrichs and Szmrecsanyi, in their data, 26.9% of possessors in the s-genitives had been mentioned within the last 44 words, while only 17.6% of the *of*-genitive possessors had been (2007, p. 459). The reason is that the s-genitive has the possessor in front of the head, placing the given information first. All of the findings thus far coincide with psycholinguistic research, which states, “concepts are processed and then serialised in the

order in which they become available to the mind... [for] animates and topics have been shown to be highly accessible and to occur early in utterances (Rosenbach, 2003, p. 10).

Furthermore, several phonological environments exert influence over the choice of the possessive construction. English is a stress-timed language, so it follows naturally that rhythm plays a part, however small. According to Gries and Wulff, alternating patterns of stressed and unstressed syllables are preferred. Thus, “*students’ voices*” could be used over “*the voices of the students*” because the *of*-construction option has three unstressed syllables in a row (*ces of the*) (Gries & Wulff, 2013, p. 334). Conversely, “*the laws of God*” would be used over “*God’s laws*” to avoid two stressed syllables next to one another (Rosenbach 2014, p. 232). Secondly, words ending in a sibilant are more likely to avoid the s-genitive as to avoid the two sibilant sounds next to one another (i.e. *the neighborhoods of Paris* over *Paris’s neighborhoods*). Hence, studies have shown that irregular plural nouns use the s-genitive more frequently than regular plurals (Gries & Wulff, 2013, pp. 334-5). Finally, Griess and Wulff found that an alternating CV syllable structure across word segments was preferred. In other words, this would predict that the *museums of Atlanta* would be favored over *Atlanta’s museums*, as to avoid consecutive consonants (2013, p. 335).

The third category of factors includes those that affect ‘processing and parsing,’ such as end-weight, persistence, and nested genitives. Though animacy is a strong factor in genitive variation, it is always interacting with other factors. One item that is most likely to overrule the animacy principle is syntactic/end weight. Essentially, shorter (mainly animate) possessors are more likely to take the s-genitive than longer possessors. Rosenbach’s study found that when a possessor becomes four words or longer, the *of*-

genitive is most likely to be used (2014, p. 231). For example, *the outfit of the stylish and classy girl* would be preferred to *the stylish and classy girl's outfit*. This principle does not say that *of*-constructions prefer long possessors. Instead, it shows that they are more likely to take long possessors so that the shorter possessum can come first. Conversely, longer possessums will use the s-genitive more often. For example, “*the nest of the squirrel that was hiding all the nuts below the tree* is preferred over *the squirrel that was hiding all the nuts below the tree's nest*” (Gries & Wulff, 2013, p. 333). This phenomenon also has underlying reasons in psycholinguistics, for end weight most likely assists in “processability” and “parsing efficiency” (p. 333).

Secondly, the principle of persistence dictates that if a genitive was recently used, there is an increased likelihood of that same form being used again (Rosenbach, 2014, p. 232). Psycholinguists have proven that speakers largely prefer to reuse material that they have either already heard or have used themselves (Hinrichs & Szmrecsanyi, 2007, p. 464). Thus, if the s-genitive was just used, it is more likely to be used again the next time. Finally, speakers tend to avoid using two of the same possessive constructions in one NP. Because of recursivity, nested genitives (two genitives in one NP) are allowable, but if both are the same type of construction, it is more difficult to parse. Thus, *the girl's father's new job* would be more difficult and less favored than *the new job of the girl's father* (pp. 465-66).

The final category involves factors that are guided by the principle of economy. The idea is that, since the s-genitive is generally more compact than the *of*-construction, it may be used more frequently in texts where there is a need to convey a lot of information in a small space, such as in newspaper articles (Hinrichs & Szmrecsanyi, 2007, p. 467).

Therefore, this rule applies more to written language, though some believe that the increased use of the s-genitive in press language has led to the increased use of the s-genitive with inanimate possessors in the spoken language (Rosenbach, 2014, p. 236).

For the factors considered in their study, Hinrichs and Szmrecsanyi created a hierarchy based on the importance of each type of factor, with animacy and end weight being the most significant: “semantics/pragmatics ~ processing/parsing > phonology > economy” (2007, p. 464). Though animacy and end weight are the most significant, they point out that phonology and economy are strong enough to come into play when end-weight and animacy predict different results (p. 464).

Rosenbach also proposes a similar hierarchy: animacy > topicality > possessive relationship (Rosenbach, 2003, p. 21). In effect, her proposal is a subhierarchy of the Hinrichs and Szmrecsanyi hierarchy. Essentially, as predicted by Hinrichs and Szmrecsanyi, the more animate and thematic a possessor is, the more likely it is to take the s-genitive (Rosenbach, 2003, p. 10). However, Rosenbach also suggests the relationship between the possessor and possessum can offer predictive power. More prototypical possessive relationships, in which the conceptual distance between the possessor and the possessum is small, are more likely to take the s-genitive. Rosenbach considers the most prototypical relationships to be body parts, kin terms, legal ownership, and part-whole relationships. Since the s-genitive is a more tightly bound construction, it follows that it would be utilized by a more tightly bound relationship (p. 12).

Interestingly, the prototypical possessive relationships that she cites (except for legal ownership) are also the prototypical inalienable relationships mentioned earlier. However, Rosenbach does not try to claim that English codes for inalienability. Instead,

she asserts that the alienability split, while not directly marked, can predict patterns in the genitive variation (2003, p. 11). First, according to Rosenbach, to demonstrate there is no productive distinction, one must note that English uses the same form in all the following instances: *John's arm*, *John's mom*, *John's notebook*, *John's coat*, *John's fever*, *John's feelings*, and *John's neighbor*. The choice of the genitive is largely determined by the fact that *John* is animate rather than the inalienability of the possessive relationship. Still, as aforementioned, kinship terms and body parts are seen as some of the most prototypical possessive relations, and they are also the most attested members of the inalienable class across languages (2003, p. 11). Thus, the claim is that there is not an exact alienability divide in English, but inalienable relationships are more likely to use the s-genitive.

Noun Compounds

Though research on the English genitive variation overwhelmingly focuses on the s-genitive and the *of-genitive*, there is a third type of construction that can also indicate possessive relationship- noun + noun construction—which this paper will classify as noun compounds. The process of compounding involves creating a new word by combining two or more words (Trask, 1993). Words of various parts of speech can be combined to form compounds, such as adjective + adjective as in *dark-blue*, adjective + noun as in *blue collar*, noun + adjective, “*bulletproof*,” noun + preposition, “*breakup*,” noun + noun, *bus stop*, and more (Nakov, 2013, p. 293). The most common category of compounds is the noun compound, in which a series of nouns form one single noun (Nakov, p. 294). These constructions consist of two adjacent nouns in which the first noun either serves to “classify, qualify, or identify,” the head noun (Rosenbach, 2009, p. 1). For example, in *dog food*, *dog*, the noun modifier, would be classifying the type of

food in question. Rosenbach asserts that the formal status of the noun modifier, the first noun is not important for the discussion, but it will be shown that this is not the case.

Noun Compounds and Possessive Semantics

Possessors often function as anchors or reference point entities. In other words, the possessor is given to help the listener identify the possessum (Koptjevskaja-Tamm, 2002, p. 147). For example, in *Amy's paper*, knowledge of Amy enables listeners to know which paper is being mentioned. Rosenbach (2009) says, the “optimal referential anchor is a human proper noun” (p. 8), but still, inanimate nouns can also serve as anchors, especially in part-whole possessive constructions (“*mountain's top*”) (Koptjevskaja-Tamm, p. 147). However, this example can also be given as a compound (*the mountaintop*), and the compound structure is actually more natural. It can also be expressed with the *of*-construction, as in *the top of the mountain*. Many other compound nouns also exhibit relationships prototypical of possessive constructions such as part-whole (*the table leg*), spatial (*the table top*), and even body part in specific contexts (*the frog legs*). All of these relationships could also be rendered as the s-genitive or the *of*-construction as well (i.e. *the table's leg*, *the leg of the table*). Furthermore, in more recent years, even animate nouns have begun to be used as noun modifiers as in *the Bush Administration*, which could alternate with *Bush's Administration*, or even *the Administration of Bush* (Rosenbach).

Rosenbach provides further evidence that the compound nouns are semantically similar to the possessive constructions, citing cases where both options are used in the same text:

Cut an ordinary photograph snipping a leg off the chair pictured. Then the **chair leg** is no longer visible. It is no longer part of the photographic image. Now snip off a comparably sized piece from a diffraction image hologram containing the same chair information. When this mutilated hologram is illuminated by the reference beam the whole real space image appears - albeit dimmer and fuzzier. The **chair's leg** is preserved. In fact it can't be removed from the hologram by cutting! That is because any part of the hologram relates to the whole of the real space image. (http://www.physics.ucla.edu/~chester/_CES/october/, emphasis added) (2009, p. 18)

In another example out J. Franzen's *The Corrections*, "*the motel's architect*" and "*the motel management*" are used in consecutive sentences (Rosenbach, 2009, p. 17). Of course, these two constructions are not the same, but they do have the same possessor-the typical determiner of which genitive is used. Finally, Rosenbach points out that, historically, the s-genitive has increased in use with inanimate possessor and the identifying compound nouns have increased in use with animate possessors (i.e. *the Bush Administration, the Harper House, the Vanderbilt House*). Therefore, they continue to be used to express semantically similar concepts and thus alternate even more (Rosenbach, 2009).

The Syntactic Status of Noun + Noun Constructions

Semantically, it seems that compound nouns could be considered as another construction in the genitive variation. Rosenbach (2009) even argues that the noun modifier phrase is in variation with the s-genitive. As mentioned, though, she never claims that these constructions are actually noun compounds. However, for reasons

discussed later, if they are compounds they cannot be considered to be true possessive constructions. The question must first be answered, then, as to whether or not the noun + noun constructions are true compound nouns and not noun modifier phrases as Rosenbach refers to them.

First, one can use phonological criteria to determine whether words form a compound or not. The general rule is that in a compound, the first word receives the primary stress (Nakov, 2013, p. 296). Thus, in *driveway*, for example, *drive* is more stressed than *way*. Furthermore, in *blackboard*, *black* is more greatly stressed than *board*, but in *black board*, i.e. a board that is black, they receive equal stress. Another example would be *Chinese teacher*. If the primary stress is on *Chinese*, then the person teaches the subject Chinese. However, if *Chinese* and *teacher* are equally stressed, it means the teacher is Chinese (Nakov). Using this criterion, then, constructions such as *car door*, *table leg*, *mountaintop*, *frog leg*, etc., should be considered compounds, as the primary stress is always on the first word.

Secondly, one can use morphological criteria. If a compound noun is to be treated as a single noun, then it should not be able to be inflected internally (Nakov, 2013, p. 297). For example, when making the compound plural, the entire compound must be inflected rather than one of the parts. In other words, one cannot say **cars door*, but must instead say *car doors*. Likewise, constructions such as **chairs leg*, *tables top*, *chickens wings*, *trees roots* and so on, are all ungrammatical. Furthermore, the parts of the compound cannot be modified separately. For instance, one could say *the large tree trunk*, but not **the tree large trunk*. As noted, part-whole compounds are unable to inflect internally and thus can be considered compounds phonologically and morphologically.

Finally, a construction must be treated as a single unit syntactically in order to be considered a compound. One way to test this is to see if a pronoun replaces the parts of the compound or the compound as a whole (Bauer, 2006). It seems clear that pronouns will replace the entire compound: *Can you open the car door? It is stuck.* On the other hand, it seems ungrammatical to say something like, **Can you open the car door and the house one?* or **I inspected the chicken legs- not the frog ones.* Thus, based on all three criteria, noun + noun constructions indicating certain possessive relationships can and should be classified as noun compounds.

On Noun Compounds as Possessive Constructions

Though these constructions can be considered noun compounds, can they be considered possessive constructions? To answer this question, one must decide whether or not it is the purpose of compound nouns to express possession. As mentioned, compounding is a method of creating new words in English (as well as other languages) by combining two or more already existing words. For instance, as new technology is developed, oftentimes items are named using compounding rather than generating an entire new word. Take *dishwasher*, for example. A *dish* was a known word and a *washer* was a known word, so the two were put together to describe a machine used for washing dishes. According to Ó Séaghdha and Copestake (2013), around three or four percent of the words in texts in English are actually noun compounds (p. 331). Thus, this is a very productive method of creating words in English. Many compounds are very common and have become lexicalized in the language. However, people are also able to create new compounds that are easily understood by others (Ó Séaghdha & Copestake). For example, one could say a sentence like, *Those are my thinking pajamas*, and the listener

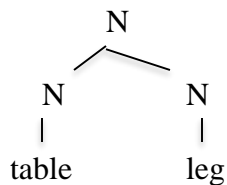
would understand that the speaker wears those pajamas whenever he or she has to think about something important. Because the purpose of compounding, then, is to create nouns, the purpose of a noun compound is the same as any other noun- to name a person, place, thing, or idea. The primary purpose of compound cannot be to indicate possession between two nouns but rather to simply identify one noun.

Furthermore, if noun compounds really were intended to convey possessive relationships, then one would assume that one construction could be rendered as the other kind while maintaining the same meaning. However, this is clearly not the case (Kay & Zimmer, 1976). First of all, if a possessor is animate, then a corresponding compound construction is not very likely to be formed. For example, one would not say *the John arm*, unless there is a very special circumstance. For instance, maybe this was a phrase coined to refer to John's very impressive pitching arm. However, in general, one would never say *the David book* or *the Allison sweater* to refer to just a normal book or sweater that a person possesses. As kinship terms always require animate possessors, these are also unable to be conveyed via a noun compound with the same meaning. For example, *the boy cousin*, while possible, does not carry the same meaning as *the boy's cousin*. On the other hand, certainly not all compounds can be paraphrased as a possessive construction. For instance, *a butter knife* is not equivalent to *the butter's knife* or *the knife of the butter*. Rather, it means a knife that is used for cutting and spreading butter.

Thus, if noun + noun constructions displaying possessive semantic relationships are actually compounds, pragmatically they cannot also be true possessive constructions. Syntactically, considering noun compounds as possessive constructions would also pose problems to the understanding of traditional possessive constructions. The reason is that

the so-called possessor and possessum in a compound noun, again, are actually two nouns combined to make one single noun rather than the possessor being a noun phrase embedded within another noun phrase. There are no true possessors and possessums in compound nouns. The compound is one single words and thus there cannot exist both a possessor NP and a possessum. As the tree diagram demonstrates (see figure 2), a compound noun is simply that—a noun, and thus should not be considered a possessive phrase.

Figure 2



As mentioned, possessors function as referential anchors, helping the listener/reader to be able to identify the possessum. However, this function does not exist if the possessor and the possessum are actually the same noun. Additionally, in a true possessive construction, as mentioned, the possessor renders the phrase definite. However, in a compound, definiteness can only come from a definite article as in *the table leg* vs. *table leg*. *Table* cannot make the compound definite, for it cannot be separated from *leg*. Again, *table leg* is a single noun. One cannot say **the table beautiful leg*, while one could say *the table's beautiful leg* or *the beautiful leg of the table*. Therefore, it seems that possessive semantics are actually only an epiphenomenal effect of compound nouns. Compound nouns are not in themselves possessive constructions.

The Origin of the Possessive Semantics of Noun Compounds

If then, the noun compound is not a possessive construction nor is its primary function to express possession, then how can the seemingly possessive semantics of some compounds be explained? First, the possessive relationship is an epiphenomenal effect of the compound. According to Ó Séaghdha and Copestake (2013), in order to properly interpret a compound, one must understand the lexical, relational, and contextual information about the compound (p.333). The lexical information is the meanings of the individual words that compose the compound. The relational information describes the typical interaction of the parts of the compound, and the contextual information provides the needed background and context needed to correctly interpret the compound (Ó Séaghdha & Copestake, p. 333). The possessive meaning of the compounds, then, is derived largely from the relational information. That leaves the question as to which possessive relationships can be exhibited by compounds.

Many scholars, mostly for the purposes of computational linguistics, have tried to categorize the semantic relations of compounds, and each proposal differs greatly from the others. Theoretical linguists have largely concluded that the range of semantic relationships in compounds is so wide that it could never be adequately described. However, for the purposes of this paper, Lauer's hypothesis will be used. He proposed that compounds should be categorized based on what preposition they use: "of, for, in, at, on, from, with, and about" (Nakov, 2013, p. 311). This theory does have flaws, but all compounds implying possessive relationships should be able to be paraphrased using the preposition *of*. Examples of compounds that could be defined using each of the pronouns can be seen in Table 1.

Table 1.

Preposition	Compounds
of	<i>frog leg, car door, hotel lobby, mountaintop, dog tail, university mascot, meatball</i>
for	<i>coffee mug, butter knife, dog leash, battleship</i>
in	<i>stomachache, spaceship, field mouse, earthworm</i>
at	<i>homework, campfire</i>
on	<i>wallpaper, bed sheet</i>
from	<i>olive oil, apple pie, snowball</i>
with	<i>wheelchair, milk carton</i>
about	<i>war story, English book</i>

Table 1 demonstrates that, as predicted, the only kinds of compounds that imply possession are the *of*-compounds. However, not all *of*-compounds show possession. Some *of*-compounds could indicate material. For example, *meatball* means a ball made out of meat rather than the ball's meat. Furthermore, this could have been assigned to the *from* category as was *snowball*—ball made from snow (some compounds can be paraphrased with more than one of the prepositions). Additionally, only some possessive relationships are found in compounds: body part, part-whole, spatial, and metaphorical extensions of those relationships. Incidentally, these are the same relationships that are prototypical of inalienable possession. Therefore, the pseudo-possessive quality of certain compound nouns comes from the inalienable relationships that they imply.

Noun Compounds and Inalienable Possession

Within the languages that do mark for the alienability split, not all consider the same relationships to be inalienable. However, there are strong tendencies. As previously mentioned, kinship and body part relationships are the most common inalienable relationships cross-linguistically. Essentially all languages with the split mark at least one of the two as inalienable. However, not all consider both to be inalienable. Nichols proposed an implicational hierarchy to account for the cross-linguistic data: “kin terms and/or body parts < part-whole and/or spatial relations < culturally basic possessed items (such as arrows)” (1988, p. 600). In other words, if a language considers a cultural item to be inalienably possessed, then they also consider part-whole and/or spatial relations as inalienable and also kinship terms and/or body parts. Also, plant parts are considered in the same category as body parts, for they are “analogs to body parts for inanimate beings” (Nichols, 1988, p. 573). Many languages actually violate this hierarchy, so it should be seen more as a description of cross-linguistic patterns than an implicational hierarchy.

Since kinship and body part possessive relationships are the prototypical members of inalienable possession, it would follow that, if English compounds indicate inalienable possession, that they would be used with kin terms and body parts. However, at first glance, this does not seem to be the case. These relationships are almost exclusively conveyed through the s-genitive. For instance, one would say *Jane's father*, but not *the Jane father*. Additionally, one would not say *the boy leg* but would say *the boy's leg*. There does not seem to be any examples of compounding used to convey a kinship relationship, unless one counts patronymics such as *Johnson*, *Carlson*, *Peterson*, etc., which translate literally to *John's son*, *Carl's son*, and *Peter's son*, respectively. With

regard to body parts, these relationships are conveyed by the s-genitive: *Allison's head*, *the student's hand*, *the player's elbow*, etc.

Animal body parts also seem to be given with the s-genitive. For example, *the horse's leg*, *the dog's tail*, and *the cat's whiskers* would all be preferred to *the horse leg*, *the dog tail*, and *the cat whiskers*, when referring to a specific, living animal. However, significantly, all of those compounds are possible compounds. On further examination, though, compound constructions can be used with animal body parts, but primarily if the body part is separated from the animal/ the animal is no longer living. For example, at a museum, one might say "*The dinosaur head is enormous*" rather than "*The dinosaur's head is enormous*" because there is not a live dinosaur to which they are referring. Conversely, speakers cannot use *the dinosaur head* if the head is a part of a living dinosaur. This pattern can be found with most animal parts: *the frog tails*, *the pig brains*, *the cow tongue*, etc. These compounds are being used to identify the particular body part. However, since the relationship between the two parts of the compound is a body part relationship, the inalienable possession is inherent. Furthermore, English uses the compound construction to identify plant parts, which, according to Nichols, are to be counted in the same category as body parts (1988). For example, it is common to say *the tree trunk*, *the flower petal*, *the tree roots*, *the cactus spines*, or *the flower bud*. Thus, two nouns whose normal interaction is an inalienable relationship are able to form a compound identifying a single plant part while also indicating inalienable possession.

Additional evidence that English compounds code for inalienability is that many of the identifying compounds convey part-whole or spatial relationships, which are second on Nichols's hierarchy (1988, p. 600). Examples of spatial relationships would be

phrases such as *the tabletop*, *the mountaintop*, *the storefront*, or *the cage top*, *the stovetop*, and *the ocean bottom*. Now, there are examples of other spatial relationships that do not form compounds. For instance, it would be more natural to say *the bottom of the pile*, than to say *the pile bottom*. However, this could potentially be explained by the fact that this is a less permanent relationship than the others listed and is thus is not as inherent.

The same is true of part-whole relationships. In fact, this may even be the most common relationship of compounds with possessive semantics. Common examples would be *the table leg*, *the car door*, *the hotel lobby*, *the lampshade*, and *the elevator door*. While these compounds are functioning as single nouns, they are able to also indicate possession because of the inherent, inalienable relationship between the two parts of the compound. For example, *the table leg* could also be said as *the table's leg* or *the leg of the table*, though *the table leg* could describe a leg not attached to a table while the other two constructions could not. Again, compounds are not true possessive constructions, but instead possession is an epiphenomenal effect of the inherent relationship between the nouns in the noun compound.

Some compounds can imply possessive relationships that do not immediately seem to be inalienable, such as *the university mascot* or *the university logo*. However, these can still be considered to be part-whole relationships in a metaphorical sense. Those items represent the university and thus are inseparably related to it. Furthermore, *the university library* is also a part of the campus as a whole. Thus, compounds such that are not clearly inalienable still imply an inseparable relationship between the two parts of the

compound. Remember also, that Nichols puts cultural items on the hierarchy, which are items that are more inseparable in an emotional way (1988).

Clearly compounds can convey inalienable relationships. However, if that is a true factor, then they should not imply alienable relationships. One piece of evidence can be found in the example where “*the motel’s architect*” and “*the motel management*” are used in consecutive sentences in J. Franzen’s *The Corrections* (Rosenbach, 2009, p. 17). The s-genitive is used with the architect and the compound is used with management because the motel and its management most likely have a tighter connection than the motel and its architect. The management is a part of the motel, of its daily business. The architect, on the other hand, is uninvolved once the structure has been built. Consider, for instance, the difference in *the dog tail* and *the dog leash*. The relationship between *dog and tail* is inalienable and thus a possessive idea can be construed from *the dog tail*. However, *the dog leash* is only naming a leash that is used for dogs. It is not *the dog’s leash*. *Dog leash* can never be equivalent with *the dog’s leash* because the dog and its leash have an alienable relationship- the dog could easily be given a new leash. The dog and its tail, on the other hand, have an inalienable relationship, as the tail is an inseparable part of the dog.

English Noun Compounds and Inalienable Possessive Constructions Cross-Linguistically

Other evidence to support the significance of inalienability in *of*-compounds is their structure. Cross-linguistically, languages that mark for the alienability split indicate inalienable possession via simple juxtaposition of the possessor and possessum (Epps, 2008, p. 224). In fact, there is a language universal that states, “if a language has an

adnominal alienability split, and one of the constructions is overtly coded while the other one is zero-coded, it is always the inalienable construction that is zero-coded, while the alienable construction is overtly coded” (Haspelmath, 2006, p. 2). Furthermore, in a study of 20 languages from 15 different language families, inalienable possession was expressed via juxtaposition or compounding in nearly every language (Koptjevskaja-Tamm, 2002, p. 157). For example, in Mandarin Chinese, the associative marker *de* is more likely to be deleted in inalienable possession. Thus, $NPI_{possessor} + de + NP2_{possessum}$ becomes $NPI_{possessor} + NP2_{possessum}$ (Kliffner, 1996, p. 59). Thus, in Mandarin the structures would be as follows in Figure 3 (Lin, 2007, p. 4):

Figure 3. a. wo didi *inalienable*
 I brother
 ‘my brother’
 b. wo **de** quianbi *alienable*
 I ASSOC. pencil
 ‘my pencil’

Thus, English compounds coding for inalienability would be following the cross-linguistic pattern.

Some scholars credit the tight structure of inalienable possessive constructions to iconic motivation. According to the Iconicity Hypothesis, linguistic difference reflects conceptual distance (Haiman, 1983, p. 782). According to Haiman, this is reflected in possession because the distance between possessor and possessum is almost always greater in alienable than in inalienable possessive constructions (1983, p. 791). In other words, “inalienable nouns display closer, less morphosyntactically complex links to their possessor than do alienables, because inalienability entails a closer possessum-possessor link” (Kliffner, 1996, p. 54). Inalienable possession is generally thought to reflect an intrinsic possessive relationship. For example, it is taken for granted that a mother is the

mother *of* somebody, and a daughter is the daughter *of* her parents. Thus, this hypothesis is asserting that inalienable possession is a way of linguistically reflecting the inherent relationship that people cognitively understand to exist. This is generally done by linking the possessum more closely to its possessor alienable constructions. In light of this evidence, it would seem that; first, compounds show possession because of the inalienable relationship of the two nouns. Secondly, the two nouns are able to form a compound because of their inalienable relationship, while nouns in alienable possessive constructions cannot be rendered as a single noun- their relationship is not that tight.

Conclusion

Humans cognitively conceptualize the world in certain ways and then find linguistic means to convey their perceptions. Cross-linguistically, possession is an excellent example of this phenomenon. People generally express possession based on either their perception of the possessor or of the relationship between the possessor and the possessum (Nichols & Bickel, 2013). It is believed that English chooses the possessive construction in light of the animacy of the possessor (i.e. the similitude of the possessor to the speaker) (Rosenbach, 2006). However, it seems that native English speakers do subconsciously perceive a difference in alienable and inalienable relationships and reflect that in the language. Only two nouns that are in an inalienable possessive relationship are able to form a compound and still retain some of the possessive semantics. A noun compound cannot imply an alienable possessive relationship. It is important to remember, though, that compounds are not used to show possession but rather are made to show possession by the relational information of their components.

This thesis has argued that inalienable possession can be expressed epiphenomenally as a kind of subcategorization of noun compounds. However, further research is needed to refine and revise this hypothesis. How strong is the influence of inalienability? What all relationships can be considered inalienable in English? Furthermore, it would be interesting to research more deeply the distribution of inalienable noun compounds versus true possessive constructions. Are the two different constructions ever able to express semantically identical concepts? What factors are at play causing the true possessive construction (i.e. *the leg of the table*) to be chosen versus the compound (*the table leg*)? Additionally, what does it mean that compounds are beginning to be formed with some proper (and thus highly animate) nouns as in *the Reagan Administration*? Does this shift indicate that noun compounds are becoming closer semantically to true possessive constructions? A cross-linguistic analysis of possession and noun compounds would also help yield more insight to this topic. Finally, this paper mentioned that the formal status of the 's is still in question. That topic is beyond the scope of this paper, but is still an interesting subject for further research. In conclusion, there is still much to be learned about true English possessive constructions, noun compounds, and the relation between the two, but hopefully this thesis has aided in understanding the underlying principles behind them both.

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