

- Tsay, Jane. 1994. Phonological pitch. Doctoral dissertation, University of Arizona, Tucson.
- Tsay, Jane, and James Meyers. 1996. Taiwanese tone sandhi as allomorph selection. In *Proceedings of the Twenty-second Meeting of the Berkeley Linguistics Society*, 394–405. Berkeley Linguistics Society, University of California, Berkeley.
- Wang, S.-Y. William. 1967. Phonological features of tone. *International Journal of American Linguistics* 33:93–105.
- Woo, Nancy. 1969. Prosody and phonology. Doctoral dissertation, MIT, Cambridge, Mass.
- Yip, Moira. 1980. The tonal phonology of Chinese. Doctoral dissertation, MIT, Cambridge, Mass.
- Yip, Moira. 1989. Contour tones. *Phonology* 6:149–174.
- Yip, Moira. 1992. The spreading of tonal nodes and tonal features in Chinese dialects. In *Proceedings of the Eighteenth Meeting of the Berkeley Linguistics Society (Special Session)*, 157–166. Berkeley Linguistics Society, University of California, Berkeley.
- Yip, Moira. 1995. Tone in Asian languages. In *The handbook of phonological theory*, ed. John Goldsmith, 476–494. Oxford: Blackwell.
- Yuan, Jiahua et al. 1989. *Hanyu fangyan gaiyao* (An introduction to Chinese dialects). Beijing: Language Reform Press.

BARE SINGULAR EFFECTS IN
GENITIVE CONSTRUCTIONS

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Number agreement facts in genitive constructions argue that the numeral and genitive in cases like (1) form a constituent, as indicated by the bracketing.

- (1) a. [One woman's] keys fell on the floor.
b. *[One women's] keys fell on the floor.

Our intuitions about the contrast in (2) suggest a possible further agreement relationship between a plural numeral like *two* and the head noun. In other words, with *two*, not only the genitive, but also the head noun, must be plural. If the agreement internal to the bracketing were sufficient, both of the examples in (2) should be grammatical.

- (2) a. *[Two women's] key fell on the floor.
b. [Two women's] keys fell on the floor.

These types of facts have been noted by Barker (1995:35–36) and Crisma (1997:156), although no account has been offered for the contrasts.¹

This research was funded in part by a grant to the third author from the National Science Foundation (SBR-9421542). Thanks to Paola Crisma, Kyle Johnson, Richard Kayne, Alan Munn, Carme Picallo, Cristina Schmitt, and two anonymous reviewers for helpful comments. Thanks also to our lab assistants Sadie Fowler and Nancy Richards.

¹ Although Crisma (1997:154–157) does not offer a syntactic explanation for these facts, she does provide an interesting feature-based approach to (null)

In this squib we report on an experimental survey we conducted to test these intuitions about examples like (2a) and (2b), as well as about the status of other relevant data.² The findings confirm the perceived contrast between examples like (2a) and (2b). Furthermore, our results demonstrate that what accounts for the unacceptability of (2a) cannot be merely absence of agreement between the numeral and head noun or absence of a shared-ownership interpretation. We suggest, instead, that the contrast here reduces to the familiar one between bare (count) singulars, which are prohibited in English, and bare plurals, which are permitted.

1 Experiment

To test these intuitions with respect to the contrast between (2a) and (2b), we appealed to an experimental method described in Cowart 1997 (see also Schutze 1996 for relevant background). We collected acceptability data from 94 individuals in a series of six experiments via a rating scale procedure. The materials presented to informants were counterbalanced to ensure that each informant saw only one version of each sentence, and they included filler sentences unrelated to the experimental materials.³ The results confirmed our intuitions about the relatively degraded status of examples like (2a), $p < .001$.⁴

We also examined the possibility of a relationship between the singularity/plurality of the numeral and the number specification of the head noun, as suggested by the data in (2). We tested experimental materials designed to address this question. Consider the examples in (3).

- (3) a. The two women's key fell on the floor.
 b. The two women's keys fell on the floor.

To us, (3a) is significantly better than (2a), though apart from the addition of the definite article, (3a) and (3b) are structurally parallel to (2a) and (2b). These intuitions were supported by the experimental data. Examples like (3a) are significantly better than examples like (2a), $p < .05$.⁵ Although there was a reliable effect of plurality of the head overall and in examples like those in (2), $p < .05$, the effect was

articles and nouns, exploiting the features [+/- singular count], in addition to [+/- definite].

² Our informal fieldwork yielded some variation in judgments on the status of examples like (2a). Therefore, we conducted an experiment to test our basic intuitions.

³ All of the genitives included in our experimental sentences were formed from nouns exhibiting irregular plural forms (e.g., *woman's*, *women's*). This avoids possible confusion between the singular and plural genitive forms (e.g., *girl's*, *girls'*).

⁴ For the relevant pairwise comparison, $F(1, 49) = 71.4$.

⁵ In a pairwise comparison, $F(1, 15) = 7.48$. There was also a main effect of the presence of the determiner, $F(1, 15) = 8.67$, $p \leq .01$.

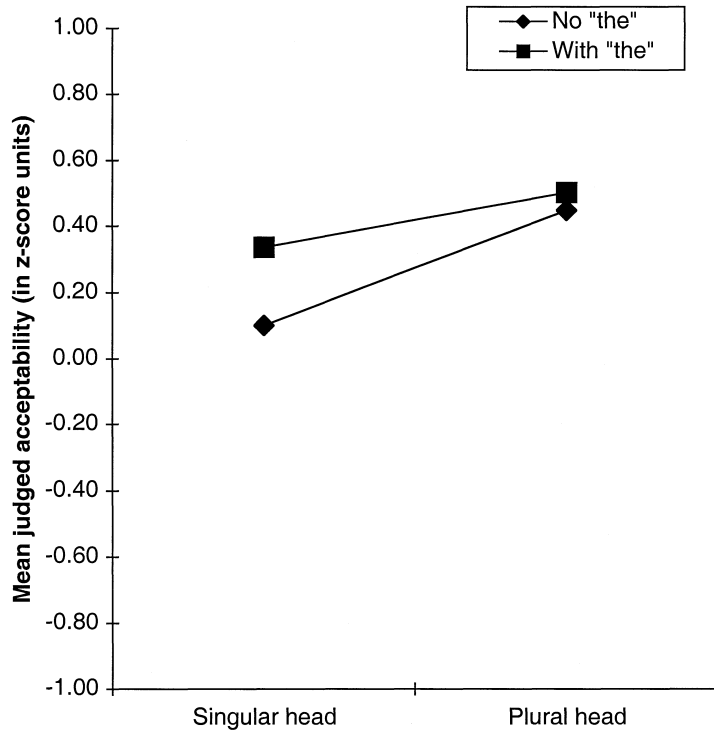


Figure 1

Differences in judged acceptability for singular and plural head nouns depending upon the presence or

not reliable in the examples in (3), $p > .1$.⁶ The overall results of the two sets of experimental sentences are shown in figure 1.

These experimental results, in addition to confirming our own intuitions, make two important points. First, the relative acceptability of (3a) demonstrates that singularity/plurality of the pregenitive quantifier has no direct effect on the plurality requirements of the head noun, as one might have otherwise conjectured on the basis of the contrast in (2) alone. Second, it might be thought that the relative ungrammaticality of (2a) stems from an inability to obtain a shared-ownership interpretation between a plural genitive and a singular head noun. However, the relative unacceptability of (2a) cannot result from the lack of such an interpretation, since this interpretation is readily available in the examples in (3), which differ only in the addition of the definite article.

⁶ For the main effect of the plurality of the head, $F(1, 15) = 10.8$, $p < .01$. The pairwise comparison between (2a) and (2b) was reliable, $F(1, 15) = 7.53$, $p < .05$, but the pairwise comparison between (3a) and (3b) was not, $F(1, 15) = 3.50$, $p < .1$.

2 An Account

In this section we sketch a preliminary account of the contrasts found between the sentences in (2) and (3).

We suggest that the explanation for the contrast in (2) reduces to the contrast between bare singular (count) nouns, as in (4a), and bare plurals, as in (4b).

- (4) a. *Key fell on the floor.
 (cf. Clothing fell on the floor.)
 b. Keys fell on the floor.

In other words, the sentential subjects in (4) would be parallel to the ones underlying the examples in (2).⁷ Various proposals have been put forth to account for the impossibility of bare singulars in English. Longobardi's (1996:41; see also Longobardi 1994) universal principle, for example, states that singular count nouns may not be selected by lexically empty determiners.⁸ Alternatively, Schmitt (1996:258) suggests that number features are necessary to license empty determiners and that it is precisely the absence of these features with bare singulars that rules them out in English. For present purposes, either type of approach will serve to exclude examples like (4a) (see also Delfitto and Schrotten 1991).

The general structure we assume for examples like (4) may be represented schematically as in (5), where we leave open (indicated by '...') the precise characterization of functional projections intervening between determiner phrase (DP) and noun phrase (NP) (see Abney 1987).

- (5) [[DP] ... [NP key(s)]] fell on the floor

Bare singular *key* (in (4a)) will be ruled out by the lexically empty, and presumably unlicensed, determiner (D) associated with the bare singular. The lexically empty D cooccurring with the bare plural (in

⁷ We made a rough experimental comparison between the advantage of (2b) over (2a) and the advantage of (4b) over (4a). One group of informants responded to materials of both types within a single experimental session. This test showed that the contrast in (4) is reliably larger than the contrast in (2), $F(1, 18) = 15.2, p < .01$. Nevertheless, this interaction effect was much smaller than the main plurality effect, the overall contrast between the (a) and (b) cases. The plurality effect accounted for nearly 70% of the variance in the results; the interaction effect accounted for only a little more than 6%. This test demonstrates that the plurality effect is more than strong enough to account for the difference in acceptability between the cases in (2). The plurality effect in the cases in (4) is likely greater because the materials representing this condition were shorter and less complex than those representing the cases in (2). Our impression is that syntactic contrasts that lead to sharp differences in judged acceptability tend to be most clearly revealed in the shortest and least complex materials.

⁸ This restriction would only apply in languages with overt indefinite articles.

(4b)) will be interpreted at LF as a default indefinite operator in a Longobardi-style approach.

In a parallel fashion, we suggest that the numeral plus genitive in (2) are generated below DP in the specifier position of the functional X⁰ containing genitive 's.

- (6) [_{DP}] [_{XP}[two women] [_{X'}'s] . . . [_{NP} key(s)]] fell on the floor

The structure assumed here follows Kayne's (1994:26) approach (based on Szabolcsi's (1983) work on Hungarian) to possessive constructions with proper names (see Schmitt 1996:326–328 for a compatible idea). That the quantifier and genitive form a constituent is supported by the intuition that *two* modifies *women*, and not *keys* (cf. *the women's two keys*).⁹ In other words, there is no interpretive support for an approach where *two* modifies material outside of the genitive constituent. Furthermore, modification of the singular noun *key* by the plural numeral *two* in (2a) would result in a number clash. We argue instead that such an example is ruled out by the prohibition against bare singular count nouns. When the noun is plural (as in (2b)), the lexically empty D receives the default existential interpretation. In this way, the approach that we adopted for the bare singulars and plurals in (4) accounts for the examples in (2) as well.

We turn next to the examples in (3), which contain the definite article. The question we must address is, How exactly does the presence of the definite article affect the status of what would otherwise be a bare singular count noun? To begin, we assume the underlying representation of the examples in (3) to be essentially parallel to the one in (6). Consider (7).

- (7) [_{DP} [_{XP}[the two women] [_{X'}'s] . . . [_{NP} key(s)]]] fell on the floor

We take the definite article to be generated in a D position internal to [Spec, XP] and to raise to the upper D head, as illustrated in (8a), thereby taking scope over the entire DP subject. The interpretation of examples like (3a), which contain the singular form of the head, supports this account. In (3a) both the quantified phrase (i.e., *two women*) and the noun are definite. The raising of the determiner also transforms a potentially illicit bare singular noun into a legitimate definite DP.

- (8) a. [_{DP} the_i [_{XP}[t_i two women] [_{X'}'s] . . . [_{NP} key]]] fell on the floor
 b. [_{DP} () [_{XP}[the two women] [_{X'}'s] . . . [_{NP} keys]]] fell on the floor

We tentatively assume that features of the upper D (e.g., definiteness features), which require it to have lexical content in order to be li-

⁹ Other recent work (see, e.g., Munn 1995, Mandelbaum Seymour 1995) has focused primarily on the relationship between the genitive and the head noun.

censed, force raising of the definite article. We leave open the question of whether this movement is overt or covert (but see section 3). In the case where the upper D is generated without such definiteness features, the result would be illicit because of the bare singular noun.¹⁰

The interpretation of (3b) also comports with our account. Example (3b) is actually ambiguous, one interpretation corresponding to a definite quantified genitive (i.e., *the two women's*) with bare plural head noun (i.e., *keys*), and the other to a definite plural head noun (i.e., *the keys*). We derive these two interpretations as follows. When only the genitive is definite, the definite article does not raise to the upper D position, whose lexically empty D will therefore be interpreted as a default indefinite operator. When the head noun is interpreted as definite, the definite article is presumed to have raised to the upper D position, taking scope over the entire DP. These two possible derivations for (3b) are represented schematically in (8b). The raising analysis we are assuming is consistent with the intuition that the definite article may do “double duty,” allowing the realization of definite interpretations for both *two women's* and *key(s)* in examples like (3).

3 Further Examples

Our basic approach also accommodates genitive constructions formed with the indefinite article and either a singular or a plural head noun. Consider (9).

(9) [_{DP} [_{XP}[a woman] [_{X'}'s] . . . [_{NP} key(s)]]] fell on the floor

We maintain the idea that the English indefinite article (as a reduced form of the numeral *one*; see Perlmutter 1970) initially forms a constituent with the genitive.¹¹ Furthermore, this constituent is generated in

¹⁰ We assume that the upper D in such constructions is prohibited from having base-generated lexical content, an assumption supported by data in section 3. Although we have no explanation for why that would be, the condition correctly excludes examples that would involve spelling out lexical content of both Ds (e.g., **a the*, **the the*).

¹¹ Although we do not address such examples here, there are cases such as (i) in which the indefinite article neither modifies nor agrees in number with an apparent genitive. Also note that the genitive modifier does not have to agree with the head noun.

- (i) a. a men's store
- b. a children's book

Barker (1995:37–39) claims that these types of examples involve compound nouns (see also Woisetschlaeger 1983). Munn (1995) distinguishes between true idiomatic or compound possessives (e.g., *men's room*) and what he labels “modificationally” possessives (e.g., *men's hats*). The important point for our analysis is that neither of these types of possessive forms would be generated in what we have labeled [Spec, XP]; rather, they would be generated lower, probably in [Spec, NP] (see Barker's and Munn's work for details). Therefore, it is reasonable for us to assume that the indefinite article, generated in (the

the specifier of genitive 's (recall (6)). In (10) we compare the derivations associated with singular and plural head nouns, respectively.

- (10) a. [_{DP} a_i [_{XP}[t_i woman] [_{X'}'s] . . . [_{NP} key]]] fell on the floor
 b. [_{DP} [_{XP}[a woman] [_{X'}'s] . . . [_{NP} keys]]] fell on the floor

In (10a) the potentially ungrammatical bare singular *key* is ‘rescued’ by movement of the indefinite article in D (recall (8a)), yielding the indefinite (specific or nonspecific) interpretation of *a key*. Movement of *a* to D in the case of the plural noun in (10b) would result in a number clash between the article and the noun (i.e., **a keys*) and would additionally violate the requirement that D be lexically empty with existential bare plurals. That *keys* in (10b) receives an existential bare plural interpretation (recall (2b)) supports the analysis we have proposed.

An anonymous reviewer points out the relevance of examples with demonstratives, as in (11), and remarks that there is some variation in judgments regarding (11a).

- (11) a. [These/Those two women's] key fell on the floor.
 b. [These/Those two women's] keys fell on the floor.

At first glance, the grammaticality of (11a) would appear to pose a problem for our account, because the raising of the demonstrative necessary to rescue the bare singular noun would result in a number clash between the plural demonstrative and the head noun (i.e., **these/those key*). However, we believe the facts to be more complex, and we begin by teasing out two distinct readings for this type of example.

For us, there are two different interpretations available with demonstratives, one yielding the deictic [+definite] interpretation, and another yielding what we label a [–definite] interpretation (Bernstein 1997:95–97). This second interpretation may be paraphrased with the indefinite article when the demonstrative is singular, and furthermore may appear in *there*-insertion contexts. The two interpretations are illustrated in (12).

only) D, would modify the possessive-plus-head-noun constituent directly in the examples in (i).

In the examples in (ii), the indefinite article, generated in a D position internal to [Spec, XP], would form a constituent with the true genitive *teacher's* (in (iia)) or *lawyer's* (in (iib)), but not with the idiomatic possessive *children's* (in (iia)) or modification possessive *men's* (in (iib)).

- (ii) a. [a teacher's] children's book(s)
 b. [a lawyer's] men's hats

In the case of a singular head noun, the indefinite article could then raise to the upper D. This is in accord with the claims made here.

- (12) a. This woman right here . . . [+ definite]
 = this woman
 b. (There was) this woman from Paris . . . [– definite]
 = a woman

On the [– definite] interpretation of the demonstrative, we find the example in (11a) to be ungrammatical, on a par with (2a). In other words, the problem with this example again reduces to the illicit bare singular *key*. As in example (2a) with the numeral *two*, raising of the [– definite] demonstrative would result in a number clash between the plural demonstrative and the singular head noun. This account is also consistent with the intuition that the interpretation of *key* in (11a) is neither deictic nor definite.

In contrast to its ungrammaticality with a [– definite] demonstrative, we find (11a) to improve significantly when the demonstrative is interpreted as a [+ definite] deictic (a reading facilitated by stress on the demonstrative or by pointing). Interestingly, we find the interpretation of the noun to be definite in such examples, yielding an interpretation roughly like ‘the key of these two women’. How do we account for this [+ definite], yet nondeictic, interpretation of *key*? The interpretation tells us that the demonstrative itself does not raise to the upper D. Furthermore, such raising would result in a clash between the plural demonstrative and the singular head noun. Instead, we suggest that this morphologically complex element, which expresses (at least) definiteness, number, and deixis (see (13)), may contribute just one of its components, the [+ definite] piece, to the upper D. Recall that we have proposed that definite Ds require lexical content in order to be licensed.

- (13) *the*_[+def] + number + deixis → *this, that* (sg.); *these, those* (pl.)

In this way, the derivation of (11a) is now parallel to the one in (8a); in both cases an element corresponding to the definite article and unspecified for number raises to the upper D. This approach to the [+ definite] demonstrative of (11a) now accounts for the intuition that, although the genitive is deictic, the singular count head noun receives a [+ definite] nondeictic interpretation. This analysis provides some evidence that the movement is covert.

The example in (11b) with plural head noun works as expected. When the demonstrative is interpreted as [– definite], nothing raises to the upper D and the plural head noun *keys* is interpreted as a plural indefinite, recalling examples (2b) and (6). As a [+ definite] deictic, the demonstrative may or may not contribute its [+ definite] piece to the upper D, yielding a definite reading of *keys* when it does and an indefinite one when it does not. This is exactly the pattern we found with the true definite article in (8b).

Finally, we briefly sketch how some quantifier elements may be accommodated in our account. In particular, how is a bare singular count noun ‘rescued’ in examples like those in (14)?

- (14) a. [Every woman's] key fell on the floor.
 b. [Each woman's] key fell on the floor.

Note that, although licit, the head noun *key* is not interpreted as being modified by the quantifier directly. In other words, *every woman's key* does not entail *every key*. Instead, the interpretation of *key* may be characterized as one of uniqueness (Barker 1995:78), which may be paraphrased with the definite article (see also the discussion of these facts in Szabolcsi 1997:336). We believe that the account of these examples is parallel to the one with articles that we have proposed. Recall that in the earlier examples we claimed that a singular upper DP is licensed by lexical content, achieved via raising of the article (portion) from the lower DP associated with the genitive. In the examples in (14) covert movement of the [quantifier + genitive] to the upper DP, probably [Spec, DP] (see Hornstein 1995:120, Barker 1995:34–36), serves to license the DP projection. From this position the quantifier would still not c-command the head noun directly, accounting for the absence of a direct effect on the interpretation of this noun.¹² Although the upper D is not filled with lexical content, the lexical material in [Spec, DP] serves to license the DP projection and allows for an interpretation of the empty D, which we have characterized as “unique.” An approach along these lines has been pursued for DP genitives with proper names (e.g., *John's key*) by Kayne (1994: 85, based on Szabolcsi's work). We note that the uniqueness reading of *key* is obtained in these examples as well. We differ from Kayne, however, in suggesting that *John* raises from its generated [Spec, XP] position to [Spec, DP].

References

- Abney, Steven. 1987. The English noun phrase in its sentential aspect. Doctoral dissertation, MIT, Cambridge, Mass.
 Barker, Chris. 1995. *Possessive descriptions*. Stanford, Calif.: CSLI Publications. [Distributed by Cambridge University Press.]
 Bernstein, Judy B. 1997. Demonstratives and reinforcers in Romance and Germanic languages. *Lingua* 102:87–113.
 Cowart, Wayne. 1997. *Experimental syntax: Applying objective methods to sentence judgments*. Thousand Oaks, Calif.: Sage Publications.

¹² A reviewer points out the contrast between (ia) and (ib).

- (i) a. More than one woman's key fell on the floor.
 b. *More than two women's key fell on the floor.

Assuming that the *more than one/two* phrase raises, the grammaticality of (ia) is problematic since *more than one woman* should clash with *key* in number. As the reviewer suggests, this may have to do with an apparently independent property of *more than one* that allows it to behave like a singular in some ways, such as its ability to bind a singular variable.

- Crisma, Paola. 1997. L'Articolo nella prosa inglese antica e la teoria degli articoli nulli (The article in Old English prose and the theory of null articles). Doctoral dissertation, Università degli Studi di Padova.
- Delfitto, Denis, and Jan Schroten. 1991. Bare plurals and the number affix in DP. *Probus* 3:155–185.
- Hornstein, Norbert. 1995. *Logical Form*. Oxford: Blackwell.
- Kayne, Richard S. 1994. *The antisymmetry of syntax*. Cambridge, Mass.: MIT Press.
- Longobardi, Giuseppe. 1994. Reference and proper names: A theory of N-movement in syntax and Logical Form. *Linguistic Inquiry* 25:609–665.
- Longobardi, Giuseppe. 1996. The syntax of N-raising: A minimalist theory. Ms., Università di Venezia.
- Mandelbaum Seymour, Deborah. 1995. New women's suitcases: The possessive-adjective switch. Paper presented at the annual meeting of the Linguistic Society of America, New Orleans, January 1995.
- Munn, Alan. 1995. Modificational possession. In *ESCOL '94: Proceedings of the Eastern States Conference on Linguistics*, 222–233. CLC Publications, Cornell University, Ithaca, N.Y.
- Perlmutter, David. 1970. On the article in English. In *Progress in linguistics*, ed. Manfred Bierwisch and Karl E. Heidolph, 233–248. The Hague: Mouton.
- Schmitt, Cristina. 1996. Aspect and the syntax of noun phrases. Doctoral dissertation, University of Maryland, College Park.
- Schutze, Carson. 1996. *The empirical base of linguistics: Grammaticality judgments and linguistic methodology*. Chicago: University of Chicago Press.
- Szabolcsi, Anna. 1983. The possessor that ran away from home. *The Linguistic Review* 3:89–102.
- Szabolcsi, Anna. 1997. Quantifiers in pair-list readings. In *Ways of scope taking*, ed. Anna Szabolcsi, 311–347. Dordrecht: Kluwer.
- Woisetschlaeger, Erich. 1983. On the question of definiteness in 'an old man's book'. *Linguistic Inquiry* 14:137–154.

PROCESSING AGENTIVE

BY-PHRASES IN COMPLEX EVENT
AND NONEVENT NOMINALS
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1 Introduction

Grimshaw (1991) proposes that complex event and nonevent nominals, as in (1a–b), differ in their argument-taking properties. Event nominals lexically select arguments, and nonevent nominals do not.

- (1) a. *Event nominal*
The frequent announcement of the prices . . .
b. *Nonevent nominal*
The various announcements of the prices . . .