Phonological constraints on word order in English:

Evidence from a quantitative study of genitive constructions using the Internet as corpus

1.0   Introduction

Anttila & Fong (forthcoming) analyze variation between the *of-* and *s*-genitive constructions as a reflection of three universal prominence scales:

(1) Animacy Hierarchy: Pronoun > Non-pronoun

(2) Argument Hierarchy: External > Internal

(3) Structural Hierarchy: Specifier > Complement

Using harmonic alignment the authors derive a number of markedness constraints, reflecting both syntactic and semantic concerns. For example * S/I militates against specifiers with internal arguments. * S/NonP punishes Specifiers containing non-pronouns. Such an analysis predicts that if A and B are both pronouns, both external arguments and both specifiers, the grammar will treat them similarly, so that if A prefers the *s*-genitive 30% of the time, and the *of-*genitive 70% of the time, we expect similar proportions when B appears in genitive constructions[1].

In this study I test the prediction made by accounts of variation in the genitive construction that rely solely on syntactic and semantic properties. Using the Internet as my corpus, I recorded the relative frequencies of the *of-* and the *s*-genitive for various head-argument pairs. By limiting the arguments involved in the genitive construction to placenames and three head-words *streets/lights/restaurants*, I kept the syntactic and gross semantic properties of the arguments constant. What we find is that considerable variation in choice of genitive construction still exists. In this paper I investigate the role that phonology might play in the systematicity of this variation.

The remainder of section 1 will outline the kind of data involved, the significance of potential findings and the methodology. Section 2 explores evidence of OCP effects in choice of genitive construction, suggesting that phonology constrains word order. Section 3 focuses on the effect of relative number of syllables in the head and the argument of a genitive construction on whether the *of-* or *s*-genitive is chosen. In section

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[1] This is, of course, a simplification, since the input and faithfulness constraints also play a role.

4 we will explore the question of whether word order is sensitive to the phonological word. Section 5 will identify some methodological issues emerging from this study, and point towards areas for future research. Section 6 will conclude.

1.1 The Observation

Table 1 illustrates the kind of variation observed:

Table 1   Initial Observation

Of-genitive	# Google hits	*S*-genitive	# Google hits	% *Of*-genitives	% *S*-genitive
skyline of New York	138	New York's skyline	586	19%	81%
skyline of New York City	626	New York City's skyline	180	78%	22%
skyline of Chicago	368	Chicago's skyline	421	47%	53%

We see that "New York" prefers the s-genitive whereas "New York City" prefers the of-genitive, and "Chicago" seems indifferent, with roughly equal numbers of each. The differences observed could be due to a number of factors:

- Number of syllables in argument relative to those in head
- Number of words in argument (Chicago=1, New York=2, New York City=3)
- Different stress patterns (Nèw /Yórk, Néw /Yòrk /Cí/ty, Chi/cá/go)

In this paper, I will address the first two factors that potentially influence whether an *of*- or an *s*-genitive is used. In the next section, we will explore what it would mean if we found that some of these factors are relevant for the choice of genitive construction.

1.2 Significance

Traditionally, preferences for one syntactic construction over another have been analyzed in terms of syntactic and semantic/discourse principles. However, here we have evidence that suggests that phonology might play a role too. We know that syntax allows optionality, so that, for example, both *skyline of Chicago* and *Chicago's skyline* are grammatical. It seems that the phonology might take the output of the syntactic component and impose further restrictions on it. Zec & Inkelas (1990) demonstrated that

syntax is sensitive to the prosodic hierarchy (see section 3.0 below). By investigating our observation further, we may be able to discover which phonological units word order is sensitive to (syllables, feet, words etc). Ultimately, we would like to ascertain which phonological units word order is most sensitive to, and come up with a theoretical model of this interface area.

1.3   Methodology

Google[2] searches were done for "*streets* **of** placename" and "placename'**s** *streets*", (same for *lights* and *restaurants*) which is the equivalent of an advanced search for the "exact phrase".   Ppreferences were set as follows:

Find results   *With the* **exact phrase**

Language   Return pages written in *any language*

File Format   Return results of the file format *any forma*t

Date   Return web pages updated in the *anytime*

Occurrences   Return results where my terms occur *anywhere in the page*

Domain   Return results from the site or domain *blank*

SafeSearch   *No filtering*

In order to control for duplicates, the number of reported hits is equal in each case to "x" in the following message:

In order to show you the most relevant results, we have omitted some entries very similar to the x already displayed.

All data was collected between 15 and 21 January 2004. Ideally data would be collected in as short a time as possible, as websites are constantly in flux. However, a control for how much of a difference it might make to obtain data a few days apart revealed that differences emerged only for the biggest cities and were minimal.

Placenames were chosen according to two criteria:

(1) Cities/areas large enough to feature on the Internet

(2) Represent range of possibilities in terms of

      a.   number of syllables

      b.   number of words

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[2] www.google.com

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The list of cities for which the New York Times reports temperatures and weather was taken as my starting point. Beyond that, some creativity was called for. Please see Appendix, p23-4, for an alphabetical list of placenames used, with their stress patterns and syllabification.

The head nouns of the genitive construction, *streets*, *lights* and *restaurants*, were chosen because of the frequency of their occurrence on the Internet for moderately large to large cities. This allowed me to gather large amounts of data, so that we can place more weight on the findings. In order to investigate the effect of relative weight of heads and arguments, it was convenient to have heads with different numbers of syllables: monosyllabic (*streets*, *lights*) and trisyllabic (*restaurants*).

A note on how results are reported: In each case, a *Chart* will offer visual illustration of how each condition (relative argument weight, number of words, stress pattern) affects the percentage of *of*-genitives and *s*-genitives used. Note that the percentages reported on the y-axis of the charts in this paper reflect *averages* of hits for the *of-* and *s*-genitive constructions for particular classes of data. A *Summary Table* will show the actual numbers and percentages involved. The result of the chi square test will be reported directly under the summary table, the χ^2 value rounded to the nearest whole number. The actual data used for the Chart X, Summary Table X and the statistical test appear in the Appendix (pages 25-41) as *Data Tables* X(a) and X(b).

2.0 The phonology constrains word order: OCP effects

Let us take a quick look at a case where the choice of genitive construction is quite openly constrained by phonology. The Obligatory Contour Principle (OCP) is a well-known phonological principle, identified by Leben (1973), who observed avoidance of adjacent identical tones in Mende. Since then, OCP effects have been discovered in many other areas of phonology. For example, Berkley (1994) and Frisch et al. (1997) have demonstrated gradient OCP effects, whereby the more alike two consonants are, the further apart the grammar likes to put them. So what happens when a person wants to express the notion of [streets possessed by Dallas]? All other things being equal, would the *s*-genitive have an equal chance of being chosen by the grammar as the *of*-genitive? Chart 1 illustrates how the genitive construction preferences compare between

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placenames that end in /s/ and those that don't end in /s/. (See Data Tables 1(a) and 1(b)
in Appendix.)

Chart1

Phonology constrains word order: OCP Effects
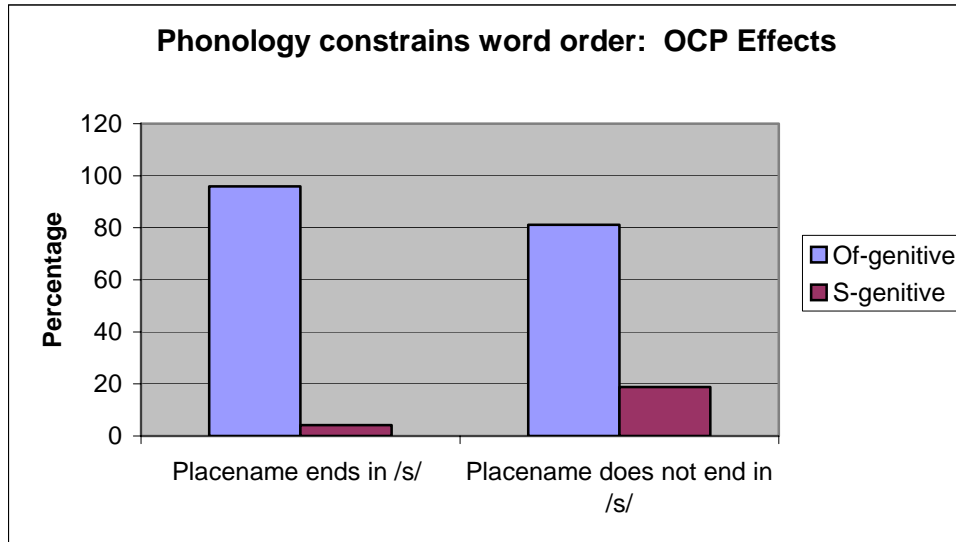
Summary Table 1

	Ends in /s/ (n)	Ends in /s/ (%)	Does not end in /s/ (n)	Does not end in /s/ (%)
Of-genitive	5985	95.8502989	14797	81.1536796
S-genitive	94	4.14970107	2804	18.8462304

χ^2=870, p≤0.001

We can see from the chart and summary table that ending in /s/ significantly reduces the
likelihood of the *s*-genitive being used. This suggests that the particular genitive
construction used is chosen paying heed to phonological concerns, in this case, the OCP.
This finding is perhaps more striking when we consider that our corpus is composed of
written texts (of varying degrees of formality), rather than spoken language. We might
speculate that the OCP effects described above would be even stronger in a corpus of
spoken language.

        We will now move on to explore the possible effect that differing numbers of
syllables in the head and argument might have on the choice of genitive construction.

3.0   Weight

The notion of grammatical weight has received considerable attention in the syntactic literature (Ross 1967, Emonds 1976, Erdmann 1988, Niv 1992, Hawkins 1994, Rickford, Wasow, Mendoza-Denton & Espinoza 1995, Wasow 1997). Zec & Inkelas demonstrated that the weight to which syntax is sensitive is sometimes phonologically defined: "The dislocated NP [in heavy NP shift] is licensed when it contains at least two phonological phrases." (1990:377). This explains why (2) below is grammatical while (1) is not (examples from Zec & Inkelas 1990:377):

(1) *Mark showed to John [some letters]$_\emptyset$[3].

(2) Mark showed to John [some letters]$_\emptyset$ [from Paris] $_\emptyset$.

Let us see whether syntax is sensitive to the relative number of syllables of the head and argument in a genitive construction. If it is, we can expect *Austin's restaurants* to be preferred to *restaurants of Austin*, and *streets of Philadelphia* to be preferred to *Philadelphia's streets*.

3.1   Relative weight of head and argument

I will compare the frequency of constructions where the number of syllables is the same in the head and the argument, e.g. *streets of Rome*, *restaurants of Washington*, to the frequency of constructions where the placename has more syllables than the other argument e.g. *streets of Baltimore*, *Buffalo's streets*. In order to reduce the likelihood of confusing the effect we are investigating with that of another variable, e.g. number of words, the data has been restricted to include only one-word placenames of one, two and three syllables. Chart 2 illustrates the effect of relative argument weight, measured in number of syllables, on the choice of genitive construction (see Data Tables 2(a) and 2(b)):

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[3] Subscripted ø indicates a phonological word.

Chart 2

Effect of Relative Weight of Head and Argument on Choice of Genitive Construction
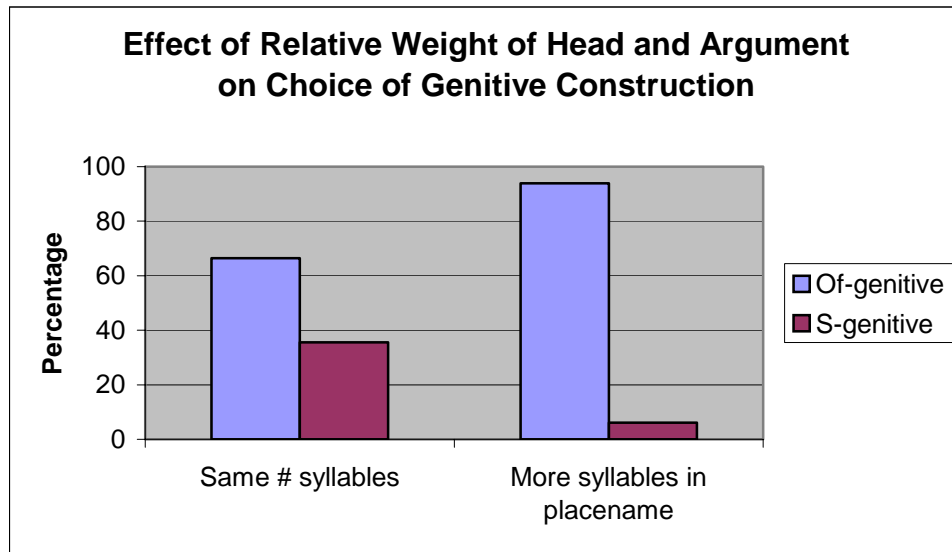
Summary Table 2

	Same # syllables (n)	Same # syllables (%)	More syllables in placename than head (n)	More syllables in placename than head (%)
Of- genitive	1793	64.4421045	18747	93.8943583
S- genitive	485	35.5578955	1781	6.10564168
Total	2278	100	20528	100

$\chi^2 = 365$, $p \le 0.001$

We can see that the *of*-genitive is in general preferred to the *s*-genitive. But we also see that when the placename contains more syllables than the argument, the *of*-genitive is overwhelmingly preferred (*of*-genitive 94% vs. *s*-genitive 6%). When the number of syllables is the same in both arguments, the *s*-genitive is much more frequent (*s*-genitive 35%). These results were subjected to a chi square test to establish whether a consistent relationship exists between relative weight of head and argument and choice of genitive construction. There is a statistically significant relationship, with $\chi^2=365$, $p \le 0.001$.

We would expect a similar effect to exist when we compare frequencies of each genitive construction where head and argument have the same number of syllables e.g.

Rome's streets with those where the placename has fewer syllables than the head, e.g.

Dublin's restaurants. (See Data Tables 3(a) and 3(b) in Appendix.)

Chart 3

Effect of Relative Weight of Head & Argument: Same vs. Fewer Syllables
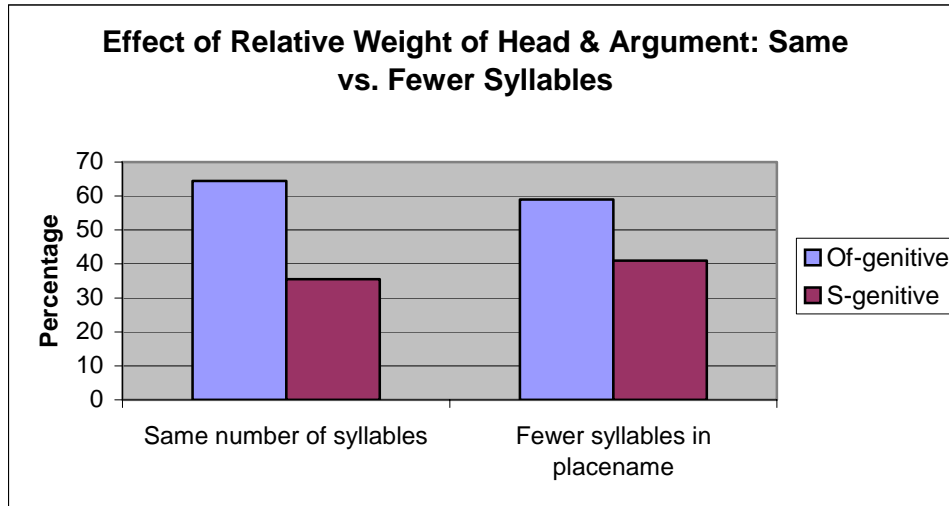
Summary Table 3

	Same # syllables (n)	Same # syllables (%)	Fewer syllables in Placename (n)	Fewer syllables in Placename (%)	Total (n)
Of-genitive	1793	64.4421045	556	58.9996737	2349
S-genitive	485	35.5578955	444	41.0003263	929
Total	2278	100	1000	100	3278

$\chi^2 = 183$, $p \leq 0.001$

We can see from chart 3 that when the placename has fewer syllables than the head, the rates of occurrence of the *of-* and *s-*genitive constructions become even closer (*of-*genitive 59%, *s-*genitive 41%). Again the relationship is highly significant, with $\chi^2 = 183$, $p \leq 0.001$. The following table summarizes the effect of relative head and argument weight on choice of genitive construction:

Summary Table 4   Effect of relative head and argument weight on choice of genitive

construction

Placename has…than head	fewer syllables	same # syllables	more syllables
of-genitive	59%	64%	94%
s-genitive	41%	36%	6%

The information in table 4 can be illustrated in a scatterplot. The scatterplot makes the clear point that a heavy placename belongs in the complement position. It may seem surprising that the lines do not form more of an X-shape, which would mean that the grammar consistently saves the heaviest for last. However, as we will see, the data consistently shows an overall preference for the *of*-genitive over the *s*-genitive. It is likely that discourse and/or semantic constraints, which I do not consider here, play a role. We have evidence that a heavy *head* prefers to be in the complement position, but a heavy *argument* seems to have the option of going into Spec or Comp, with a slight preference for Spec.

Chart 4

Summary of Effect of Relative Head & Argument Weight on Choice of Genitive Construction
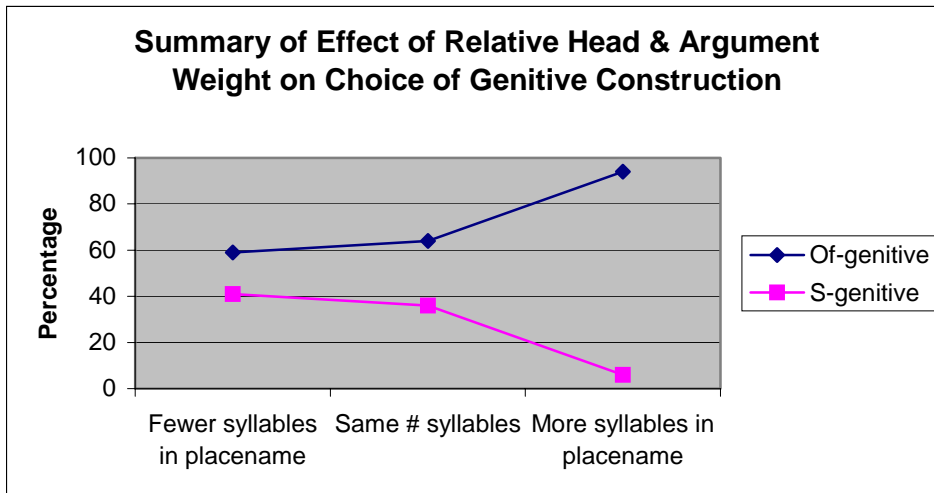
We might ask if the cumulative effect reported above holds when we consider the actual *number of syllables* that differ between arguments. The numbers reported above conflated cases where the placename had one and two syllables more than the other argument. In the next section we will compare what happens when the arguments differ by one and two syllables.

3.2 Cumulativity

Chart 5 illustrates the fact that the use of the *s*-genitive decreases as the possessor (i.e. the placename) becomes larger relative to the head, in terms of number of syllables:

Chart 5
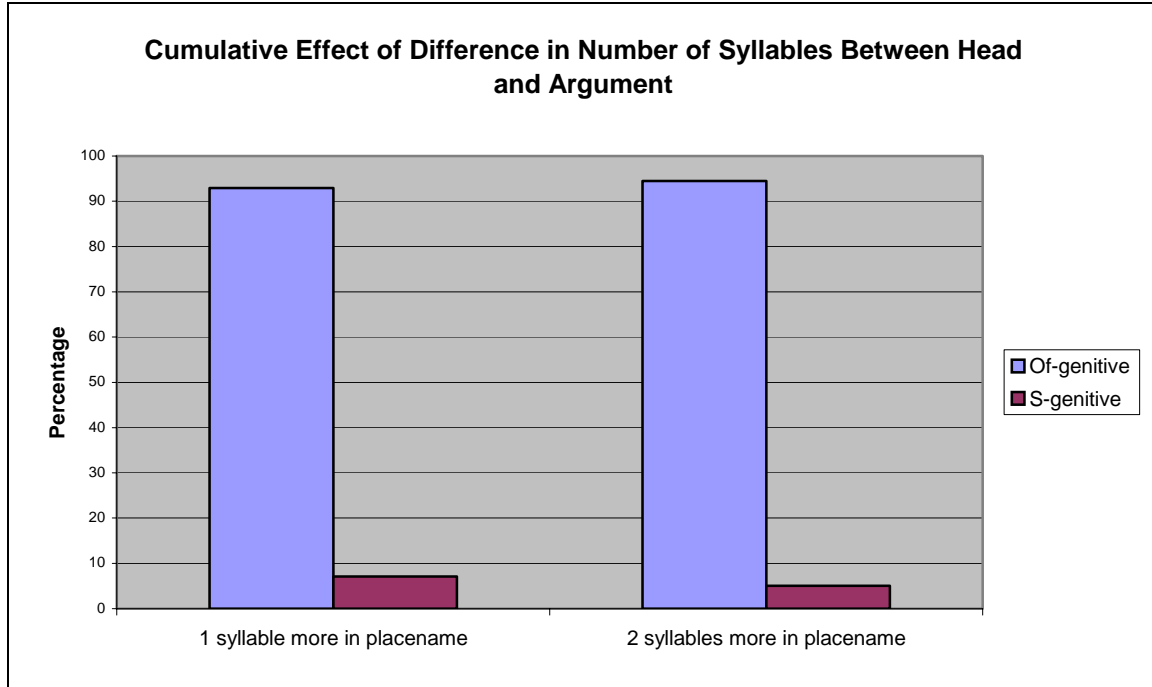
Summary Table 5[4]

Number of syllables in placename	x+1 (n)	x+1 (%)	x+2 (n)	x+2 (%)	Total (n)
Of-genitive	9318	92.9418398	9036	94.4941117	18354
S-genitive	1146	7.05816018	631	5.50588831	1777
Total	10464	100	9667	100	20131

$\chi^2 = 122$, $p \leq 0.001$

Although the relationship is significant, with $\chi^2=122$, $p \leq 0.001$, we can see from the chart and summary table that the difference in percentage is quite slight (*of*-genitive 93% vs. of-genitive 94%). Let us look at the facts for the case where the placename has *three* syllables more than the head, and see whether the apparent cumulative effect bears out:

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[4] x = number of syllables in head (streets, lights, restaurants)

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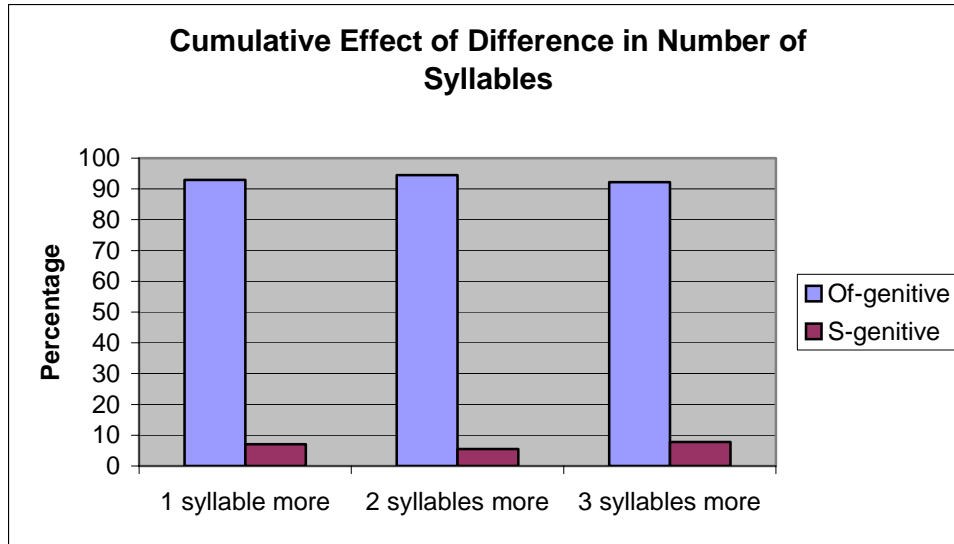
Chart 6

Summary Table 6

	1 syllable more (%)	2 syllables more (%)	3 syllables more (%)
Of-genitive	92.9418398	94.4941117	92.2103888
S-genitive	7.0581602	5.50588831	7.78961124

This chart shows that the tendency to use *s*-genitives less as the difference in number of syllables increases actually *reverses* in direction when we compare cases where the placename has 2 and 3 syllables more than the other argument (*s*-genitive 5.5% vs. 7.8%, $\chi^2 = 4$, $p \le 0.05$). It is possible that the data is simply not adequate to settle this point. Note that we have much less data for the case where the placename has 3 syllables more than the argument (seeData Tables 5(a), 5(b) and 6 in the Appendix, n = total number of Google hits):

> placename has 3 syllables more than argument   n = 1176
>
> placename has 2 syllables more: n = 9667
>
> placename has one syllable more: n = 10464

Ideally we would also look at the data where the placename has fewer syllables than the argument, and divide it according to the number of syllables that differ between head and argument. However, when we look at the data (see Data Table 3(b)in the Appendix), we see that out of 17 placenames, 15 are bisyllabic, hence one syllable

smaller than the head *restaurants*, while just 2 are monosyllabic (*Prague & Rome*), i.e. two syllables smaller than the head. So we do not have enough data to explore the trend as the argument has fewer and fewer syllables than the head.

It may simply be that the grammar cares about *more* and *less*, but not in *how much more* or *how much less*. The grammar seems to be saying something like this:

Generalization 1:   If the argument of a genitive construction contains more syllables than the head, the argument should go into complement position.

Generalization 2:   If the head and argument of a genitive construction contain the same number of syllables, there is a preference for the argument to be in Comp, but it can also go to Spec (Optionality).

Generalization 3:   If the argument of a genitive construction contains fewer syllables than the head, there is a <u>slight</u> preference for the argument to be in Comp, but it can also go to Spec (Optionality).

This is an interesting point for further research. In any case, we have established that there is a principled phonological reason why there are songs titled "Streets of Philadelphia" and "Fields of Athenry" rather than "Philadelphia's Streets" and "Athenry's Fields".

So we know that word order is sensitive to the relative weight of head and argument measured in number of syllables. Might the grammar also be attuned to the number of (phonological) words?

4.0   Number of Words

Many placenames consist of multiple words, e.g. New York, San Francisco. First we'll compare the frequencies of each genitive construction according to whether the placename has one or two words, regardless of number of syllables, using a large data set (see Data Tables 7(a) and (b) in Appendix). Chart 7 illustrates the effect of relative head and argument weight in terms of words, on analogy with chart 2 above, which did the same in terms of syllables.

Chart 7

Effect of argument having 1 word vs. more than 1 word
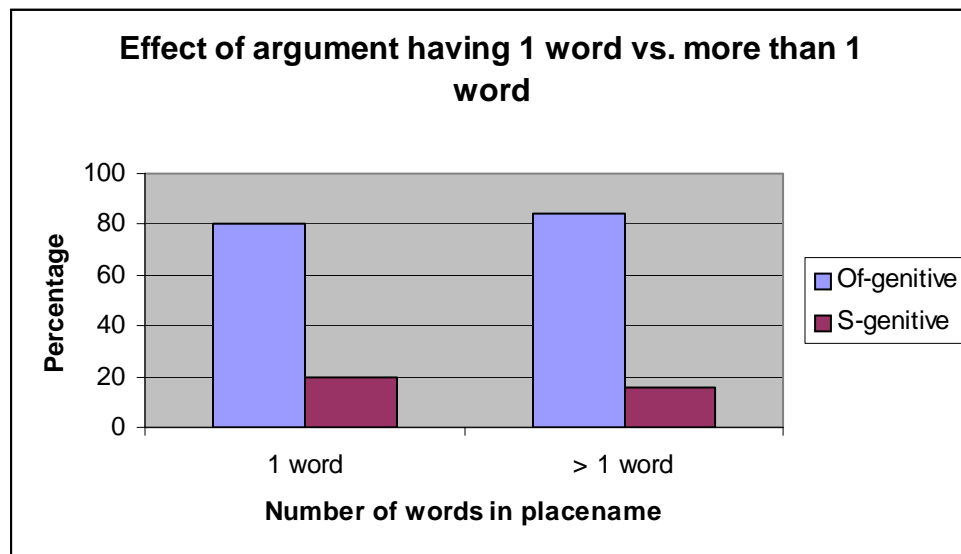
Summary Table 7.2

	1 word (n)	1 word (%)	More than 1 word (n)	More than 1 word (%)	Total (n)
Of-genitive	12774	80.4662	3761	84.1689578	16535
S-genitive	1984	19.5338	969	15.8310422	2953
Total	14758	100	4730	100	19488

$\chi^2 = 138$, $p \le 0.001$

Chart 7 shows that when a placename has more than one word, the *s*-genitive is further dispreferred.

However, we need to take our previous finding (from section 3) into account, since 2-word placenames will, on average, have more syllables than one-word placenames. Let us compare 1- and 2-word bisyllabic placenames like *Boston* vs. *New York* (see Data Table 8.1(a) and (b) in Appendix):

Chart 8.1

Effect of Number of Words: Bisyllables, 1 word vs. 2 words
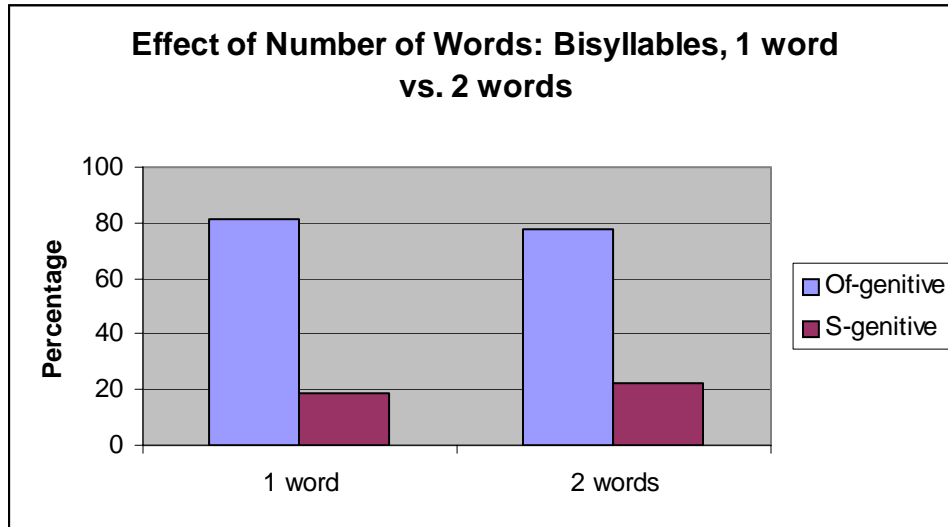
Summary Table 8.1

	1 word (n)	1 word (%)	2 words (n)	2 words (%)	Total (n)
Of-genitive	11131	81.5727091	949	77.9467086	12080
S-genitive	1750	18.4272909	565	22.0532914	2215
Total	12881	100	1414	100	14295

$\chi^2 = 565$, $p \leq 0.001$

Having a two-word argument seems, from Chart 8, to slightly increase the
frequency of the *s*-genitive. This is not what we would expect. Remember that our
finding above was that when the argument had more syllables than the head, the
argument tends to go to Comp. If the grammar is sensitive to the "word", we would
expect a two-word argument to prompt an increase in use of the *of*-genitive. A possible
explanation lies in the fact that the data set used to compile Chart 8.1 and Summary Table
8.1 contained one anomalous piece of data, highlighted in bold in Data Table 8.1(b)
reproduced below:

Data Table 8.1(b) Placename has two syllables, two words

Placename	*Of*-genitive		*S*-genitive		% *Of*-genitive	% *S*-genitive
New York	**streets of New York**	**72**	**New York's streets**	**463**	**13.4579439**	**86.5420561**
New York	lights of New York	295	New York's lights	11	96.4052288	3.59477124
New York	restaurants of New York	367	New York's restaurants	81	81.9196429	18.0803571
San Juan	streets of San Juan	187	San Juan's streets	8	95.8974359	4.1025641
San Juan	lights of San Juan	20	San Juan's lights	0	100	0
San Juan	restaurants of San Juan	8	San Juan's restaurants	2	80	20
Totals n		**949**		**565**		
Average %					77.9467086	22.0532914

Since the only bisyllabic 2-word placenames in the data set were *New York* and *San Juan*, this anomalous datum artificially elevated the frequency of the *s*-genitive. If we exclude *streets of New York* and *New York's streets* from our count, we get results that are more in line with what we saw in Chart 7:

Chart 8.2
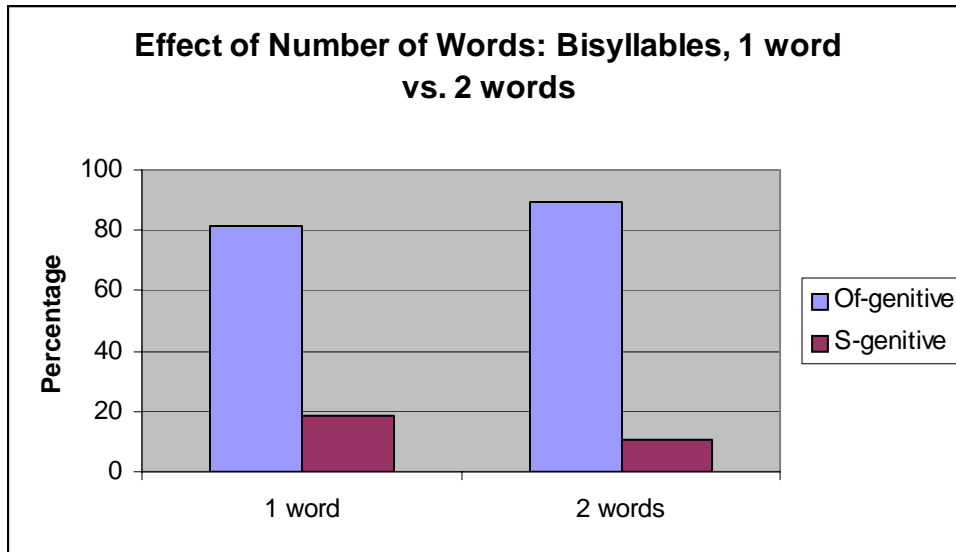
Summary Table 8.2

	1 word (n)	1 word (%)	2 words (n)	2 words (%)	Total (n)
***Of*-genitive**	11131	81.5727091	877	89.5812053	12008
***S*-genitive**	1750	18.4272909	102	10.4187947	1852
Total	12881	100	979	100	13860

$\chi^2 = 8, p \le 0.01$

For quadrisyllabic placenames, the pattern went in the expected direction:

Chart 9

Effect of Number of Words: Quadrisyllables, 1 word vs. 2 words
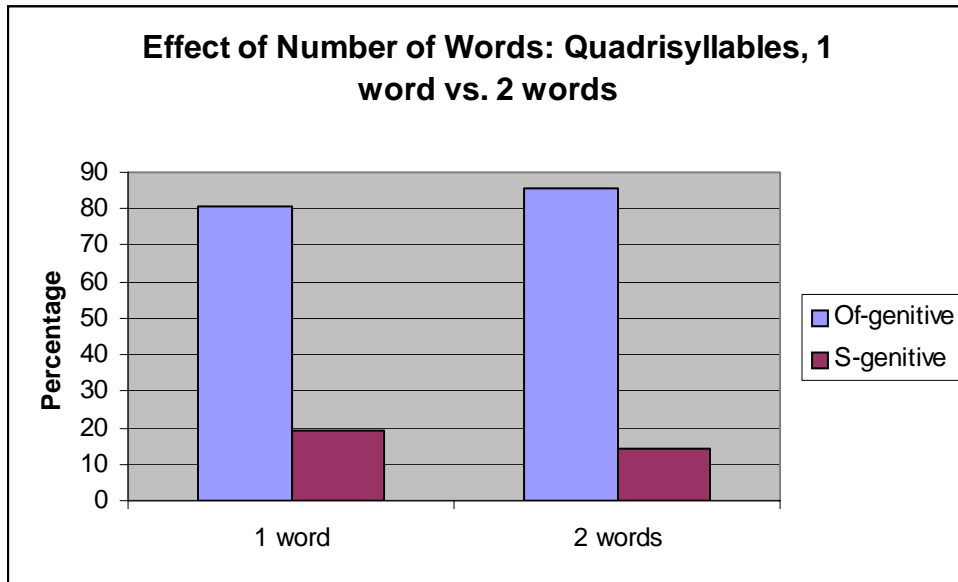
Summary Table 9 Quadrisyllables, 1 word vs. 2 words

	1 word (n)	1 word (%)	2 words (n)	2 words (%)	Total (n)
Of-genitive	1116	80.7033905	1532	85.6666076	2648
S-genitive	122	19.2699095	310	14.333392	432
Total	1238	100	1842	100	3080

$\chi^2 = 30$, $p \leq 0.001$

We see that when the number of syllables is taken into account, having a 2-word argument consistently disfavors use of the *s*-genitive. We can conclude that the grammar is sensitive to "word", as well as to the syllable.

We have seen that the grammar is quite definitely attuned to the relative weight of head and argument measured in syllables, and to the number of words in the argument. In the next section we will discuss some of the methodological issues that have arisen from this pilot study.

5.0 Methodological Concerns: Suggestions for improvement of future research

5.1 Anomalous data & the potential usefulness of standard deviations

The question remains: what do we do with anomalous data, such as that highlighted in Data Table 8(b) above? If we look at Data Table 2(a), reproduced below, we see evidence of a large standard deviation (StDev[5] = 23). Overall, the *of*-genitive is used approximately 64% of the time, but *streets of Prague*, *lights of Rome*, and *restaurants of San Jose* are used over 90% of the time instead of their *s*-genitive counterparts and percentages for *restaurants of Calgary, restaurants of Seattle and restaurants of Winnipeg* are only 29%, 22% and 25% respectively.

Data Table 2(a) Placename has the same number of syllables as the head

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Prague	streets of Prague	685	Prague's streets	52	92.9443691	7.05563094
Rome	streets of Rome	453	Rome's streets	102	81.6216216	18.3783784
Prague	lights of Prague	18	Prague's lights	0	100	0
Rome	lights of Rome	101	Rome's lights	6	94.3925234	5.60747664
Baltimore	restaurants of Baltimore	18	Baltimore's restaurants	25	41.8604651	58.1395349
Buffalo	restaurants of Buffalo	12	Buffalo's restaurants	6	66.6666667	33.3333333
Calgary	restaurants of Calgary	4	Calgary's restaurants	10	28.5714286	71.4285714
Chicago	restaurants of Chicago	81	Chicago's restaurants	57	58.6956522	41.3043478
Edmonton	restaurants of Edmonton	10	Edmonton's restaurants	10	50	50
Geneva	restaurants of Geneva	9	Geneva's restaurants	7	56.25	43.75
Hamilton	restaurants of Hamilton	9	Hamilton's restaurants	9	50	50
Helsinki	restaurants of Helsinki	16	Helsinki's restaurants	7	69.5652174	30.4347826
Jacksonville	restaurants of Jacksonville	5	Jacksonville's restaurants	1	83.3333333	16.6666667
Manhattan	restaurants of Manhattan	36	Manhattan's restaurants	25	59.0163934	40.9836066
Miami	restaurants of Miami	110	Miami's restaurants	15	88	12
San Jose	restaurants of San Jose	11	San Jose's restaurants	1	91.6666667	8.33333333
Seattle	restaurants of Seattle	14	Seattle's restaurants	51	21.5384615	78.4615385
Vancouver	restaurants of Vancouver	138	Vancouver's restaurants	56	71.1340206	28.8659794
Vienna	restaurants of Vienna	16	Vienna's restaurants	11	59.2592593	40.7407407
Washington	restaurants of Washington	44	Washington's restaurants	25	63.7681159	36.2318841
Winnipeg	restaurants of Winnipeg	3	Winnipeg's restaurants	9	25	75
Totals n		1793		485		
Average %					64.4421045	35.5578955

Contrast Data Table 2(a) with Data Table 2(b) (see Appendix), where we see a much smaller deviation from the mean (StDev = 6). If the n's in question are small

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[5] Standard Deviations from the mean are reported to the nearest whole number.

enough, we might choose to include the data and let averaging take care of anomalies. This is the path I have followed, since this is essentially a pilot study, identifying interesting points for future research. In a larger study, it would be important to be rigorously consistent when deciding what value of n is "small enough" to allow anomalous data to be included in the final data set. We could, for example, establish a variance limit. Data falling beyond the maximum variance allowed would be excluded from the analysis.

We saw in Section 8 above that anomalous data should sometimes be removed to avoid obscuring an otherwise robust finding. Ultimately, we would like to provide explanations for these anomalies. Why is *streets of New York* strongly dispreferred, occurring only 13% of the time, while *lights of New York* is strongly preferred, occurring 96% of the time? It is clear that there are many factors influencing such patterns, possibly including syntactic, phonological, semantic and discourse factors, as well as lexical frequency effects. The data collected in this study provides a starting point for the investigation of the different factors that may be involved in preference of one genitive construction over another.

5.2   Weighting system for small vs. large n's

Another shortcoming of my presentation of the data in this paper is that charts were based on averaged rather than weighted percentages. If we look at Data Table , reproduced below, we see that the line shown in bold consists of extremely small n's, and thus unduly influences the average percentage:

Data Table 9(a) Placename has four syllables, one word

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Albuquerque	streets of Albuquerque	115	Albuquerque's streets	19	85.8208955	14.1791045
Albuquerque	lights of Albuquerque	108	Albuquerque's lights	2	98.1818182	1.81818182
Albuquerque	restaurants of Albuquerque	13	Albuquerque's restaurants	9	59.0909091	40.9090909
Cincinnati	streets of Cincinnati	290	Cincinnati's streets	38	88.4146341	11.5853659
Cincinnati	lights of Cincinnati	84	Cincinnati's lights	1	98.8235294	1.17647059
Cincinnati	restaurants of Cincinnati	14	Cincinnati's restaurants	10	58.3333333	41.6666667
Oklahoma	streets of Oklahoma	95	Oklahoma's streets	2	97.9381443	2.06185567
Oklahoma	lights of Oklahoma	8	Oklahoma's lights	2	80	20
Oklahoma	restaurants of Oklahoma	5	Oklahoma's restaurants	1	83.3333333	16.6666667
Sacramento	streets of Sacramento	355	Sacramento's streets	30	92.2077922	7.79220779

Sacramento	lights of Sacramento	26	Sacramento's lights	1	96.2962963	3.7037037
Sacramento	**restaurants of Sacramento**	**3**	**Sacramento's restaurants**	**7**	**30**	**70**
Totals n		1116		122		
Average %					80.7033905	19.2966095

Note that since the chi square test was done using real numbers, the statistics reported *are* reliable. In a future study, it would be desirable to create a weighting system so that illustrations would portray the data more accurately.

6.0   Conclusion

Anttila and Fong's current work on variation in possessor expression tackles the issue of explaining the systematicity of variation between the *of-* and *s*-genitives. Anttila and Fong cite the following as possible determiners of the outcome of variation discussed in the literature[6]: possessor animacy (Rosenbach 2002), relative animacy of the possessor and possessum (Hawkins 1981, Taylor 1996, Anschutz 1997), topicality of the possessor (Deane 1987), possessor weight (Arnold et al. 2000, Wasow 2002), relational semantics of the head noun (Barker & Dowty 1993, Barker 1995). In my study, all but topicality of the possessor are held constant, since all placenames are inanimate, the head in the genitive construction is always one of *streets*, *lights* and *restaurants*, so relative animacy is constant, weight is controlled for and the relational semantics of the head noun are constant. I have shown that at least a portion of the systematicity of variation in possessor expression is phonologically based, rather than being subject to syntactic, discourse, or semantic constraints only, as traditional accounts have asserted. I have presented data statistically significant data, demonstrating that word order in English is sensitive to two phonological units: the syllable and the phonological word. I have shown that the Internet can serve as a valuable resource for empirical linguistic work. The challenges posed by the data reported in this paper show that this is an area ripe for further research.

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[6] Anttila & Fong, class handout, "Differential Possessor Expression in English", Fall 2003.

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Appendix

Alphabetical list of placenames, with their stress patterns and syllabification

   This table is intended as a *Rough Guide* to the stress pattern and syllabification of placenames that I have assumed in this paper, having consulted with numerous native speakers of English. Please note that primary stress will be indicated with the symbol "´", while secondary stress will be symbolized by the accent grave "`". Stress will be indicated on the (first) vowel of the stressed syllable. Note that the second column contains regular orthographic rather than phonetic transcriptions. In the case of some multi-word placenames such as *Kansas City*, I have simply assigned a primary stress to each word, although this may not be accurate. Syllable boundaries are shown with a slash "/".

Placename	Stress Pattern & Syllabification
Albuquerque	Àl/bu/quér/que
Austin	Áus/tin
Baltimore	Bál/ti/mòre[7]
Berlin	Ber/lín
Boston	Bós/ton
Bridgeport	Brídge/port
Buffalo	Bú/ffa/lo
Calgary	Cál/ga/ry
Chicago	Chi/cá/go
Cincinnati	Cìn/ci/nná/ti
Dallas	Dá/llas
Denver	Dén/ver
Detroit	De/tróit
Dublin	Dúb/lin
Edmonton	Éd/mon/ton
Geneva	Ge/né/va
Georgetown	Géorge/town
Hamilton	Há/mil/ton
Helsinki	Hel/sín/ki
Jackson	Jáck/son
Jackson Hole	Jáck/son /Hóle
Jacksonville	Jáck/son/vìlle
Kansas City	Kánsas Cíty
Las Vegas	Las Végas

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[7] As in other words, the secondary stress is not always present in *Baltimore*. For example, *Baltimore County* can sound more like [balmor couni].

London	Lón/don
Los Angeles	Los /Án/ge/les
Madrid	Ma/dríd
Manhattan	Man/há/ttan
Mexico City	Mék/si/co Cíty
Miami	Mi/á/mi
New York	Nèw /Yórk
New York City	Néw /Yòrk /Cí/ty
Nice	Níce
Oklahoma	Ò/kla/hó/ma
Oklahoma City	Ò/kla/hó/ma /Cí/ty
Panama City	Pá/na/ma /Cí/ty
Paris	Pá/ris
Philadelphia	Phì/la/dél/phi/a
Pittsburgh	Pítts/burgh
Portland	Pórt/land
Prague	Prágue
Providence	Pró/vi/dence
Quebec City	Que/béc /Cí/ty
Rome	Róme
Sacramento	Sà/cra/mén/to
San Antonio	Sàn /An/tó/ni/o
San Diego	Sàn /Di/é/go
San Francisco	Sàn /Fran/cís/co
San Jose	Sàn /Jo/sé
Santo Domingo	Sàn/to /Dom/ín/go
Seattle	Se/átt/le
St. Petersburg	Sàint /Pé/ters/burg
Tampa	Tám/pa
Tulsa	Túl/sa
Vancouver	Van/cóu/ver
Vienna	Vi/é/nna
Washington	Wá/shing/ton
Winnipeg	Wí/nni/peg

Data Tables

Data Table 1(a) Placename ends in /s/

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Dallas	streets of Dallas	650	Dallas's streets	0	100	0
	lights of Dallas	53	Dallas's lights	0	100	0
	restaurants of Dallas	119	Dallas's restaurants	6	95.2	4.8
Paris	streets of Paris	758	Paris's streets	25	96.807152	3.19284802
	lights of Paris	478	Paris's lights	3	99.3762994	0.62370062
	restaurants of Paris	430	Paris's restaurants	7	98.3981693	1.60183066
Los Angeles	streets of Los Angeles	735	Los Angeles's streets	10	98.6577181	1.34228188
	lights of Los Angeles	356	Los Angeles's lights	0	100	0
	restaurants of Los Angeles	109	Los Angeles's restaurants	7	93.9655172	6.03448276
Níce	streets of Nice	425	Nice's streets	3	99.2990654	0.70093458
Las Vegas	streets of Las Vegas	665	Las Vegas's streets	3	99.5508982	0.4491018
	lights of Las Vegas	620	Las Vegas's lights	2	99.6784566	0.32154341
	restaurants of Las Vegas	47	Las Vegas's restaurants	16	74.6031746	25.3968254
Providence	streets of Providence	228	Providence's streets	5	97.8540773	2.14592275
	lights of Providence	6	Providence's lights	0	100	0
	restaurants of Providence	15	Providence's restaurants	3	83.3333333	16.6666667
Indianapolis	streets of Indianapolis	175	Indianapolis's streets	1	99.4318182	0.56818182
	lights of Indianapolis	9	Indianapolis's lights	0	100	0
	restaurants of Indianapolis	17	Indianapolis's restaurants	3	85	15
Totals n		5895		94		
Average %					95.8502989	4.14970107

Data Table 1(b) Placename does not end in /s/

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Albuquerque	streets of Albuquerque	115	Albuquerque's streets	19	85.8208955	14.1791045
Albuquerque	lights of Albuquerque	108	Albuquerque's lights	2	98.1818182	1.81818182
Albuquerque	restaurants of Albuquerque	13	Albuquerque's restaurants	9	59.0909091	40.9090909
Austin	streets of Austin	471	Austin's streets	58	89.0359168	10.9640832
Austin	lights of Austin	37	Austin's lights	3	92.5	7.5
Austin	restaurants of Austin	13	Austin's restaurants	21	38.2352941	61.7647059
Berlin	lights of Berlin	34	Berlin's lights	0	100	0
Berlin	streets of Berlin	733	Berlin's streets	82	89.9386503	10.0613497
Berlin	restaurants of Berlin	16	Berlin's restaurants	10	61.5384615	38.4615385
Boston	streets of Boston	689	Boston's streets	53	92.8571429	7.14285714
Boston	lights of Boston	109	Boston's lights	5	95.6140351	4.38596491
Boston	restaurants of Boston	42	Boston's restaurants	52	44.6808511	55.3191489
Bridgeport	streets of Bridgeport	48	Bridgeport's streets	3	94.1176471	5.88235294
Bridgeport	lights of Bridgeport	3	Bridgeport's lights	0	100	0
Bridgeport	restaurants of Bridgeport	2	Bridgeport's restaurants	0	100	0
Cincinnati	streets of Cincinnati	290	Cincinnati's streets	38	88.4146341	11.5853659
Cincinnati	lights of Cincinnati	84	Cincinnati's lights	1	98.8235294	1.17647059
Cincinnati	restaurants of Cincinnati	14	Cincinnati's restaurants	10	58.3333333	41.6666667
Denver	streets of Denver	727	Denver's streets	22	97.0627503	2.93724967
Denver	lights of Denver	134	Denver's lights	8	94.3661972	5.63380282
Denver	restaurants of Denver	11	Denver's restaurants	31	26.1904762	73.8095238
Detroit	streets of Detroit	742	Detroit's streets	22	97.1204188	2.87958115
Detroit	lights of Detroit	44	Detroit's lights	5	89.7959184	10.2040816
Detroit	restaurants of Detroit	27	Detroit's restaurants	7	79.4117647	20.5882353
Dublin	streets of Dublin	782	Dublin's streets	168	82.3157895	17.6842105
Dublin	lights of Dublin	59	Dublin's lights	1	98.3333333	1.66666667
Dublin	restaurants of Dublin	22	Dublin's restaurants	28	44	56
Georgetown	streets of Georgetown	429	Georgetown's streets	23	94.9115044	5.08849558
Georgetown	lights of Georgetown	20	Georgetown's lights	2	90.9090909	9.09090909
Georgetown	restaurants of Georgetown	64	Georgetown's restaurants	11	85.3333333	14.6666667
Jackson	streets of Jackson	193	Jackson's streets	10	95.0738916	4.92610837
Jackson	lights of Jackson	17	Jackson's lights	2	89.4736842	10.5263158
Jackson	restaurants of Jackson	13	Jackson's restaurants	10	56.5217391	43.4782609
London	streets of London	825	London's streets	483	63.0733945	36.9266055
London	lights of London	700	London's lights	29	96.0219479	3.97805213
London	restaurants of London	179	London's restaurants	144	55.4179567	44.5820433
Madrid	streets of Madrid	688	Madrid's streets	35	95.1590595	4.84094053
Madrid	lights of Madrid	250	Madrid's lights	2	99.2063492	0.79365079
Madrid	restaurants of Madrid	29	Madrid's restaurants	15	65.9090909	34.0909091
New York	streets of New York	72	New York's streets	463	13.4579439	86.5420561
New York	lights of New York	295	New York's lights	11	96.4052288	3.59477124
New York	restaurants of New York	367	New York's restaurants	81	81.9196429	18.0803571
New York City	streets of New York City	739	New York City's streets	229	76.3429752	23.6570248
New York City	lights of New York City	385	New York City's lights	11	97.2222222	2.77777778

New York City	restaurants of New York City	42	New York City's restaurants	55	43.2989691	56.7010309
New York City	restaurants of New York City	42	New York City's restaurants	55	43.2989691	56.7010309
Oklahoma	streets of Oklahoma	95	Oklahoma's streets	2	97.9381443	2.06185567
Oklahoma	lights of Oklahoma	8	Oklahoma's lights	2	80	20
Oklahoma	restaurants of Oklahoma	5	Oklahoma's restaurants	1	83.3333333	16.6666667
Pittsburgh	streets of Pittsburgh	423	Pittsburgh's streets	9	97.9166667	2.08333333
Pittsburgh	lights of Pittsburgh	33	Pittsburgh's lights	0	100	0
Pittsburgh	restaurants of Pittsburgh	20	Pittsburgh's restaurants	13	60.6060606	39.3939394
Portland	streets of Portland	711	Portland's streets	90	88.7640449	11.2359551
Portland	lights of Portland	71	Portland's lights	5	93.4210526	6.57894737
Portland	restaurants of Portland	20	Portland's restaurants	38	34.4827586	65.5172414
Prague	streets of Prague	685	Prague's streets	52	92.9443691	7.05563094
Prague	lights of Prague	18	Prague's lights	0	100	0
Prague	restaurants of Prague	19	Prague's restaurants	26	42.2222222	57.7777778
Quebdc Cíty	streets of Quebec City	254	Quebec City's streets	9	96.5779468	3.42205323
Quebdc Cíty	lights of Quebec City	6	Quebec City's lights	0	100	0
Quebdc Cíty	restaurants of Quebec City	2	Quebec City's restaurants	1	66.6666667	33.3333333
Quebéc Cíty	restaurants of Quebec City	2	Quebec City's restaurants	1	66.6666667	33.3333333
Rome	lights of Rome	101	Rome's lights	6	94.3925234	5.60747664
Rome	streets of Rome	453	Rome's streets	102	81.6216216	18.3783784
Rome	restaurants of Rome	48	Rome's restaurants	27	64	36
Sacramento	streets of Sacramento	355	Sacramento's streets	30	92.2077922	7.79220779
Sacramento	lights of Sacramento	26	Sacramento's lights	1	96.2962963	3.7037037
Sacramento	restaurants of Sacramento	3	Sacramento's restaurants	7	30	70
Saint Petersburg	streets of Saint Petersburg	72	Saint Petersburg's streets	4	94.7368421	5.26315789
Saint Petersburg	lights of Saint Petersburg	7	Saint Petersburg's lights	0	100	0
Saint Petersburg	restaurants of Saint Petersburg	25	Saint Petersburg's restaurants	1	96.1538462	3.84615385
Saint Petersburg	restaurants of Saint Petersburg	25	Saint Petersburg's restaurants	1	96.1538462	3.84615385
San Juan	streets of San Juan	187	San Juan's streets	8	95.8974359	4.1025641
San Juan	lights of San Juan	20	San Juan's lights	0	100	0
San Juan	restaurants of San Juan	8	San Juan's restaurants	2	80	20
Tampa	streets of Tampa	214	Tampa's streets	10	95.5357143	4.46428571
Tampa	lights of Tampa	25	Tampa's lights	0	100	0
Tampa	restaurants of Tampa	21	Tampa's restaurants	6	77.7777778	22.2222222
Tulsa	streets of Tulsa	99	Tulsa's streets	15	86.8421053	13.1578947
Tulsa	lights of Tulsa	8	Tulsa's lights	1	88.8888889	11.1111111
Tulsa	restaurants of Tulsa	10	Tulsa's restaurants	5	66.6666667	33.3333333
Totals n		14797		2804		
Average %					81.1536796	18.8463204

Data Table 2(a) Placename has the same number of syllables as the head

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Prague	streets of Prague	685	Prague's streets	52	92.9443691	7.05563094
Rome	streets of Rome	453	Rome's streets	102	81.6216216	18.3783784
Prague	lights of Prague	18	Prague's lights	0	100	0
Rome	lights of Rome	101	Rome's lights	6	94.3925234	5.60747664
Baltimore	restaurants of Baltimore	18	Baltimore's restaurants	25	41.8604651	58.1395349
Buffalo	restaurants of Buffalo	12	Buffalo's restaurants	6	66.6666667	33.3333333
Calgary	restaurants of Calgary	4	Calgary's restaurants	10	28.5714286	71.4285714
Chicago	restaurants of Chicago	81	Chicago's restaurants	57	58.6956522	41.3043478
Edmonton	restaurants of Edmonton	10	Edmonton's restaurants	10	50	50
Geneva	restaurants of Geneva	9	Geneva's restaurants	7	56.25	43.75
Hamilton	restaurants of Hamilton	9	Hamilton's restaurants	9	50	50
Helsinki	restaurants of Helsinki	16	Helsinki's restaurants	7	69.5652174	30.4347826
Jacksonville	restaurants of Jacksonville	5	Jacksonville's restaurants	1	83.3333333	16.6666667
Manhattan	restaurants of Manhattan	36	Manhattan's restaurants	25	59.0163934	40.9836066
Miami	restaurants of Miami	110	Miami's restaurants	15	88	12
San Jose	restaurants of San Jose	11	San Jose's restaurants	1	91.6666667	8.33333333
Seattle	restaurants of Seattle	14	Seattle's restaurants	51	21.5384615	78.4615385
Vancouver	restaurants of Vancouver	138	Vancouver's restaurants	56	71.1340206	28.8659794
Vienna	restaurants of Vienna	16	Vienna's restaurants	11	59.2592593	40.7407407
Washington	restaurants of Washington	44	Washington's restaurants	25	63.7681159	36.2318841
Winnipeg	restaurants of Winnipeg	3	Winnipeg's restaurants	9	25	75
Totals n		1793		485		
Average %					64.4421045	35.5578955

Data Table 2(b) Placename has more syllables than the head

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Austin	streets of Austin	471	Austin's streets	58	89.0359168	10.9640832
Austin	lights of Austin	37	Austin's lights	3	92.5	7.5
Baltimore	streets of Baltimore	762	Baltimore's streets	62	92.4757282	7.52427184
Baltimore	lights of Baltimore	39	Baltimore's lights	2	95.1219512	4.87804878
Berlin	lights of Berlin	34	Berlin's lights	0	100	0
Berlin	streets of Berlin	733	Berlin's streets	82	89.9386503	10.0613497
Boston	streets of Boston	689	Boston's streets	53	92.8571429	7.14285714
Boston	lights of Boston	109	Boston's lights	5	95.6140351	4.38596491
Bridgeport	streets of Bridgeport	48	Bridgeport's streets	3	94.1176471	5.88235294
Bridgeport	lights of Bridgeport	3	Bridgeport's lights	0	100	0
Buffalo	streets of Buffalo	228	Buffalo's streets	6	97.4358974	2.56410256
Buffalo	lights of Buffalo	11	Buffalo's lights	0	100	0
Calgary	streets of Calgary	373	Calgary's streets	28	93.0174564	6.98254364
Calgary	lights of Calgary	30	Calgary's lights	1	96.7741935	3.22580645
Chicago	streets of Chicago	805	Chicago's streets	87	90.2466368	9.75336323
Chicago	lights of Chicago	201	Chicago's lights	15	93.0555556	6.94444444
Denver	streets of Denver	727	Denver's streets	22	97.0627503	2.93724967
Denver	lights of Denver	134	Denver's lights	8	94.3661972	5.63380282
Detroit	streets of Detroit	742	Detroit's streets	22	97.1204188	2.87958115

Detroit	lights of Detroit	44	Detroit's lights	5	89.7959184	10.2040816
Dublin	streets of Dublin	782	Dublin's streets	168	82.3157895	17.6842105
Dublin	lights of Dublin	59	Dublin's lights	1	98.3333333	1.66666667
Edmonton	streets of Edmonton	197	Edmonton's streets	14	93.3649289	6.63507109
Edmonton	lights of Edmonton	12	Edmonton's lights	0	100	0
Geneva	streets of Geneva	288	Geneva's streets	10	96.6442953	3.3557047
Geneva	lights of Geneva	9	Geneva's lights	0	100	0
Georgetown	streets of Georgetown	429	Georgetown's streets	23	94.9115044	5.08849558
Georgetown	lights of Georgetown	20	Georgetown's lights	2	90.9090909	9.09090909
Hamilton	streets of Hamilton	212	Hamilton's streets	12	94.6428571	5.35714286
Hamilton	lights of Hamilton	31	Hamilton's lights	1	96.875	3.125
Helsinki	streets of Helsinki	254	Helsinki's streets	13	95.1310861	4.86891386
Helsinki	lights of Helsinki	11	Helsinki's lights	0	100	0
Jackson	streets of Jackson	193	Jackson's streets	10	95.0738916	4.92610837
Jackson	lights of Jackson	17	Jackson's lights	2	89.4736842	10.5263158
Jacksonville	streets of Jacksonville	127	Jacksonville's streets	4	96.9465649	3.05343511
Jacksonville	lights of Jacksonville	11	Jacksonville's lights	3	78.5714286	21.4285714
London	streets of London	825	London's streets	483	63.0733945	36.9266055
London	lights of London	700	London's lights	29	96.0219479	3.97805213
Madrid	streets of Madrid	688	Madrid's streets	35	95.1590595	4.84094053
Madrid	lights of Madrid	250	Madrid's lights	2	99.2063492	0.79365079
Manhattan	streets of Manhattan	733	Manhattan's streets	83	89.8284314	10.1715686
Manhattan	lights of Manhattan	324	Manhattan's lights	15	95.5752212	4.42477876
Miami	streets of Miami	626	Miami's streets	29	95.5725191	4.42748092
Miami	lights of Miami	135	Miami's lights	2	98.540146	1.45985401
Pittsburgh	streets of Pittsburgh	423	Pittsburgh's streets	9	97.9166667	2.08333333
Pittsburgh	lights of Pittsburgh	33	Pittsburgh's lights	0	100	0
Portland	streets of Portland	711	Portland's streets	90	88.7640449	11.2359551
Portland	lights of Portland	71	Portland's lights	5	93.4210526	6.57894737
San Jose	streets of San Jose	343	San Jose's streets	3	99.132948	0.86705202
San Jose	lights of San Jose	50	San Jose's lights	1	98.0392157	1.96078431
Seattle	streets of Seattle	768	Seattle's streets	54	93.4306569	6.56934307
Seattle	lights of Seattle	115	Seattle's lights	10	92	8
Tampa	streets of Tampa	214	Tampa's streets	10	95.5357143	4.46428571
Tampa	lights of Tampa	25	Tampa's lights	0	100	0
Tulsa	streets of Tulsa	99	Tulsa's streets	15	86.8421053	13.1578947
Tulsa	lights of Tulsa	8	Tulsa's lights	1	88.8888889	11.1111111
Vancouver	streets of Vancouver	773	Vancouver's streets	40	95.0799508	4.9200492
Vancouver	lights of Vancouver	116	Vancouver's lights	27	81.1188811	18.8811189
Vienna	streets of Vienna	667	Vienna's streets	47	93.4173669	6.58263305
Vienna	lights of Vienna	56	Vienna's lights	6	90.3225806	9.67741935
Washington	streets of Washington	746	Washington's streets	50	93.718593	6.28140704
Washington	lights of Washington	89	Washington's lights	2	97.8021978	2.1978022
Winnipeg	streets of Winnipeg	268	Winnipeg's streets	8	97.1014493	2.89855072
Winnipeg	lights of Winnipeg	19	Winnipeg's lights	0	100	0
Totals n		18747		1781		
Average %					93.8943583	5.48204159

Data Table 3(a) Placename has the same number of syllables as the head
See Data Table 2(a)!

Data Table 3(b) Placename has fewer syllables than the head

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Austin	restaurants of Austin	13	Austin's restaurants	21	38.2352941	61.7647059
Berlin	restaurants of Berlin	16	Berlin's restaurants	10	61.5384615	38.4615385
Boston	restaurants of Boston	42	Boston's restaurants	52	44.6808511	55.3191489
Bridgeport	restaurants of Bridgeport	2	Bridgeport's restaurants	0	100	0
Denver	restaurants of Denver	11	Denver's restaurants	31	26.1904762	73.8095238
Detroit	restaurants of Detroit	27	Detroit's restaurants	7	79.4117647	20.5882353
Dublin	restaurants of Dublin	22	Dublin's restaurants	28	44	56
Georgetown	restaurants of Georgetown	64	Georgetown's restaurants	11	85.3333333	14.6666667
Jackson	restaurants of Jackson	13	Jackson's restaurants	10	56.5217391	43.4782609
London	restaurants of London	179	London's restaurants	144	55.4179567	44.5820433
Madrid	restaurants of Madrid	29	Madrid's restaurants	15	65.9090909	34.0909091
Pittsburgh	restaurants of Pittsburgh	20	Pittsburgh's restaurants	13	60.6060606	39.3939394
Portland	restaurants of Portland	20	Portland's restaurants	38	34.4827586	65.5172414
Prague	restaurants of Prague	19	Prague's restaurants	26	42.2222222	57.7777778
Rome	restaurants of Rome	48	Rome's restaurants	27	64	36
Tampa	restaurants of Tampa	21	Tampa's restaurants	6	77.7777778	22.2222222
Tulsa	restaurants of Tulsa	10	Tulsa's restaurants	5	66.6666667	33.3333333
Totals n		556		444		
Average %					58.9996737	41.0003263

Data Table 4
See Data Tables 3(b), 2(a) and 2(b)!

Data Table 5(a) Placename has one syllable more than the head

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Austin	streets of Austin	471	Austin's streets	58	89.0359168	10.9640832
Austin	lights of Austin	37	Austin's lights	3	92.5	7.5
Berlin	lights of Berlin	34	Berlin's lights	0	100	0
Berlin	streets of Berlin	733	Berlin's streets	82	89.9386503	10.0613497
Boston	streets of Boston	689	Boston's streets	53	92.8571429	7.14285714
Boston	lights of Boston	109	Boston's lights	5	95.6140351	4.38596491
Bridgeport	streets of Bridgeport	48	Bridgeport's streets	3	94.1176471	5.88235294
Bridgeport	lights of Bridgeport	3	Bridgeport's lights	0	100	0
Denver	streets of Denver	727	Denver's streets	22	97.0627503	2.93724967
Denver	lights of Denver	134	Denver's lights	8	94.3661972	5.63380282
Detroit	streets of Detroit	742	Detroit's streets	22	97.1204188	2.87958115
Detroit	lights of Detroit	44	Detroit's lights	5	89.7959184	10.2040816
Dublin	streets of Dublin	782	Dublin's streets	168	82.3157895	17.6842105
Dublin	lights of Dublin	59	Dublin's lights	1	98.3333333	1.66666667
Georgetown	streets of Georgetown	429	Georgetown's streets	23	94.9115044	5.08849558
Georgetown	lights of Georgetown	20	Georgetown's lights	2	90.9090909	9.09090909
Jackson	streets of Jackson	193	Jackson's streets	10	95.0738916	4.92610837
Jackson	lights of Jackson	17	Jackson's lights	2	89.4736842	10.5263158
London	streets of London	825	London's streets	483	63.0733945	36.9266055
London	lights of London	700	London's lights	29	96.0219479	3.97805213
Madrid	streets of Madrid	688	Madrid's streets	35	95.1590595	4.84094053
Madrid	lights of Madrid	250	Madrid's lights	2	99.2063492	0.79365079
Pittsburgh	streets of Pittsburgh	423	Pittsburgh's streets	9	97.9166667	2.08333333
Pittsburgh	lights of Pittsburgh	33	Pittsburgh's lights	0	100	0
Portland	streets of Portland	711	Portland's streets	90	88.7640449	11.2359551
Portland	lights of Portland	71	Portland's lights	5	93.4210526	6.57894737
Tampa	streets of Tampa	214	Tampa's streets	10	95.5357143	4.46428571
Tampa	lights of Tampa	25	Tampa's lights	0	100	0
Tulsa	streets of Tulsa	99	Tulsa's streets	15	86.8421053	13.1578947
Tulsa	lights of Tulsa	8	Tulsa's lights	1	88.8888889	11.1111111
Totals n		9318		1146		
Average %					92.9418398	7.05816018

Data Table 5(b) Placename has two syllables more than the head

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Baltimore	streets of Baltimore	762	Baltimore's streets	62	92.4757282	7.52427184
Baltimore	lights of Baltimore	39	Baltimore's lights	2	95.1219512	4.87804878
Buffalo	streets of Buffalo	228	Buffalo's streets	6	97.4358974	2.56410256
Buffalo	lights of Buffalo	11	Buffalo's lights	0	100	0
Calgary	streets of Calgary	373	Calgary's streets	28	93.0174564	6.98254364
Calgary	lights of Calgary	30	Calgary's lights	1	96.7741935	3.22580645
Chicago	streets of Chicago	805	Chicago's streets	87	90.2466368	9.75336323
Chicago	lights of Chicago	201	Chicago's lights	15	93.0555556	6.94444444
Edmonton	streets of Edmonton	197	Edmonton's streets	14	93.3649289	6.63507109
Edmonton	lights of Edmonton	12	Edmonton's lights	0	100	0
Geneva	streets of Geneva	288	Geneva's streets	10	96.6442953	3.3557047
Geneva	lights of Geneva	9	Geneva's lights	0	100	0
Hamilton	streets of Hamilton	212	Hamilton's streets	12	94.6428571	5.35714286
Hamilton	lights of Hamilton	31	Hamilton's lights	1	96.875	3.125
Helsinki	streets of Helsinki	254	Helsinki's streets	13	95.1310861	4.86891386
Helsinki	lights of Helsinki	11	Helsinki's lights	0	100	0
Jacksonville	streets of Jacksonville	127	Jacksonville's streets	4	96.9465649	3.05343511
Jacksonville	lights of Jacksonville	11	Jacksonville's lights	3	78.5714286	21.4285714
Manhattan	streets of Manhattan	733	Manhattan's streets	83	89.8284314	10.1715686
Manhattan	lights of Manhattan	324	Manhattan's lights	15	95.5752212	4.42477876
Miami	streets of Miami	626	Miami's streets	29	95.5725191	4.42748092
Miami	lights of Miami	135	Miami's lights	2	98.540146	1.45985401
Seattle	streets of Seattle	768	Seattle's streets	54	93.4306569	6.56934307
Seattle	lights of Seattle	115	Seattle's lights	10	92	8
Vancouver	streets of Vancouver	773	Vancouver's streets	40	95.0799508	4.9200492
Vancouver	lights of Vancouver	116	Vancouver's lights	27	81.1188811	18.8811189
Vienna	streets of Vienna	667	Vienna's streets	47	93.4173669	6.58263305
Vienna	lights of Vienna	56	Vienna's lights	6	90.3225806	9.67741935
Washington	streets of Washington	746	Washington's streets	50	93.718593	6.28140704
Washington	lights of Washington	89	Washington's lights	2	97.8021978	2.1978022
Winnipeg	streets of Winnipeg	268	Winnipeg's streets	8	97.1014493	2.89855072
Winnipeg	lights of Winnipeg	19	Winnipeg's lights	0	100	0
Totals n		9036		631		
Average %					94.4941117	5.50588831

Data Table 6 Placename has three syllables more than the head
See also Data Tables 5(a) and 5(b)!

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Albuquerque	streets of Albuquerque	115	Albuquerque's streets	19	85.8208955	14.1791045
	lights of Albuquerque	108	Albuquerque's lights	2	98.1818182	1.81818182
Cincinnati	streets of Cincinnati	290	Cincinnati's streets	38	88.4146341	11.5853659
	lights of Cincinnati	84	Cincinnati's lights	1	98.8235294	1.17647059
Oklahoma	streets of Oklahoma	95	Oklahoma's streets	2	97.9381443	2.06185567
	lights of Oklahoma	8	Oklahoma's lights	2	80	20
Sacramento	streets of Sacramento	355	Sacramento's streets	30	92.2077922	7.79220779
	lights of Sacramento	26	Sacramento's lights	1	96.2962963	3.7037037
Totals n		1081		95		
Average %					92.2103888	7.78961124

Data Table 7(a) Placename has one word (regardless of number of syllables)

Placename	of-genitive	# hits	s-genitive	# hits	% of-genitive	% s-genitive
Albuquerque	streets of Albuquerque	115	Albuquerque's streets	19	85.8209	14.1791
Albuquerque	lights of Albuquerque	108	Albuquerque's lights	2	98.18182	1.818182
Albuquerque	restaurants of Albuquerque	13	Albuquerque's restaurants	9	59.09091	40.90909
Austin	streets of Austin	471	Austin's streets	58	89.03592	10.96408
Austin	lights of Austin	37	Austin's lights	3	92.5	7.5
Austin	restaurants of Austin	13	Austin's restaurants	21	38.23529	61.76471
Berlin	streets of Berlin	34	Berlin's streets	0	100	0
Berlin	lights of Berlin	733	Berlin's lights	82	89.93865	10.06135
Berlin	restaurants of Berlin	16	Berlin's restaurants	10	61.53846	38.46154
Boston	streets of Boston	689	Boston's streets	53	92.85714	7.142857
Boston	lights of Boston	109	Boston's lights	5	95.61404	4.385965
Boston	restaurants of Boston	42	Boston's restaurants	52	44.68085	55.31915
Bridgeport	streets of Bridgeport	48	Bridgeport's streets	3	94.11765	5.882353
Bridgeport	lights of Bridgeport	3	Bridgeport's lights	0	100	0
Bridgeport	restaurants of Bridgeport	2	Bridgeport's restaurants	0	100	0
Cincinnati	streets of Cincinnati	290	Cincinnati's streets	38	88.41463	11.58537
Cincinnati	lights of Cincinnati	84	Cincinnati's lights	1	98.82353	1.176471
Cincinnati	restaurants of Cincinnati	14	Cincinnati's restaurants	10	58.33333	41.66667
Denver	streets of Denver	727	Denver's streets	22	97.06275	2.93725
Denver	lights of Denver	134	Denver's lights	8	94.3662	5.633803
Denver	restaurants of Denver	11	Denver's restaurants	31	26.19048	73.80952
Detroit	streets of Detroit	742	Detroit's streets	22	97.12042	2.879581
Detroit	lights of Detroit	44	Detroit's lights	5	89.79592	10.20408
Detroit	restaurants of Detroit	27	Detroit's restaurants	7	79.41176	20.58824
Dublin	streets of Dublin	782	Dublin's streets	168	82.31579	17.68421
Dublin	lights of Dublin	59	Dublin's lights	1	98.33333	1.666667
Dublin	restaurants of Dublin	22	Dublin's restaurants	28	44	56
Georgetown	streets of Georgetown	429	Georgetown's streets	23	94.9115	5.088496
Georgetown	lights of Georgetown	20	Georgetown's lights	2	90.90909	9.090909
Georgetown	restaurants of Georgetown	64	Georgetown's restaurants	11	85.33333	14.66667
Jackson	streets of Jackson	193	Jackson's streets	10	95.07389	4.926108
Jackson	lights of Jackson	17	Jackson's lights	2	89.47368	10.52632
Jackson	restaurants of Jackson	13	Jackson's restaurants	10	56.52174	43.47826
London	streets of London	825	London's streets	483	63.07339	36.92661
London	lights of London	700	London's lights	29	96.02195	3.978052
London	restaurants of London	179	London's restaurants	144	55.41796	44.58204
Madrid	streets of Madrid	688	Madrid's streets	35	95.15906	4.840941
Madrid	lights of Madrid	250	Madrid's lights	2	99.20635	0.793651
Madrid	restaurants of Madrid	29	Madrid's restaurants	15	65.90909	34.09091
Mexico	streets of Mexico	5	Mexico's streets	73	6.410256	93.58974
Mexico	lights of Mexico	29	Mexico's lights	1	96.66667	3.333333
Mexico	restaurants of Mexico	19	Mexico's restaurants	7	73.07692	26.92308
Oklahoma	streets of Albuquerque	95	Albuquerque's streets	2	97.93814	2.061856
Oklahoma	lights of Albuquerque	8	Albuquerque's lights	2	80	20
Oklahoma	restaurants of Albuquerque	5	Albuquerque's restaurants	1	83.33333	16.66667
Panama	streets of Panama	175	Panama's streets	4	97.76536	2.234637
Panama	lights of Panama	37	Panama's lights	0	100	0
Panama	restaurants of Panama	4	Panama's restaurants	5	44.44444	55.55556
Pittsburgh	streets of Pittsburgh	423	Pittsburgh's streets	9	97.91667	2.083333

Pittsburgh	lights of Pittsburgh	33	Pittsburgh's lights	0	100	0
Pittsburgh	restaurants of Pittsburgh	20	Pittsburgh's restaurants	13	60.60606	39.39394
Portland	streets of Portland	711	Portland's streets	90	88.76404	11.23596
Portland	lights of Portland	71	Portland's lights	5	93.42105	6.578947
Portland	restaurants of Portland	20	Portland's restaurants	38	34.48276	65.51724
Prague	streets of Prague	685	Prague's streets	52	92.94437	7.055631
Prague	lights of Prague	18	Prague's lights	0	100	0
Prague	restaurants of Prague	19	Prague's restaurants	26	42.22222	57.77778
Quebec	streets of Quebec	233	Quebec's streets	14	94.33198	5.668016
Quebec	lights of Quebec	12	Quebec's lights	3	80	20
Quebec	restaurants of Quebec	13	Quebec's restaurants	5	72.22222	27.77778
Rome	streets of Rome	101	Rome's streets	6	94.39252	5.607477
Rome	lights of Rome	453	Rome's lights	102	81.62162	18.37838
Rome	restaurants of Rome	48	Rome's restaurants	27	64	36
Sacramento	streets of Sacramento	355	Sacramento's streets	30	92.20779	7.792208
Sacramento	lights of Sacramento	26	Sacramento's lights	1	96.2963	3.703704
Sacramento	restaurants of Sacramento	3	Sacramento's restaurants	7	30	70
Tampa	streets of Tampa	214	Tampa's streets	10	95.53571	4.464286
Tampa	lights of Tampa	25	Tampa's lights	0	100	0
Tampa	restaurants of Tampa	21	Tampa's restaurants	6	77.77778	22.22222
Tulsa	streets of Tulsa	99	Tulsa's streets	15	86.84211	13.15789
Tulsa	lights of Tulsa	8	Tulsa's lights	1	88.88889	11.11111
Tulsa	restaurants of Tulsa	10	Tulsa's restaurants	5	66.66667	33.33333
Totals n		12774		1984		
Average %					80.4662	19.5338

Data Table 7(b) Placename has more than one word (regardless of number of syllables)

Placename	Of-genitive		S-genitive		% Of-genitive	% S-genitive
Atlantic City	streets of Atlantic City	119	Atlantic City's streets	10	92.248062	7.75193798
Atlantic City	lights of Atlantic City	46	Atlantic City's lights	1	97.8723404	2.12765957
Atlantic City	restaurants of Atlantic City	5	Atlantic City's restaurants	4	55.5555556	44.4444444
Mexico Cíty	streets of Mexico City	691	Mexico City's streets	55	92.6273458	7.37265416
Mexico Cíty	lights of Mexico City	15	Mexico City's lights	1	93.75	6.25
Mexico Cíty	restaurants of Mexico City	18	Mexico City's restaurants	5	78.2608696	21.7391304
New York	streets of New York	72	New York's streets	463	13.457944	86.542056
New York	lights of New York	295	New York's lights	11	96.405229	3.5947712
New York	restaurants of New York	367	New York's restaurants	81	81.919643	18.080357
New York City	streets of New York City	739	New York City's streets	229	76.3429752	23.6570248
New York City	lights of New York City	385	New York City's lights	11	97.2222222	2.77777778
New York City	restaurants of New York City	42	New York City's restaurants	55	43.2989691	56.7010309
Oklahoma City	streets of Oklahoma City	6	Oklahoma City's streets	0	100	0
Oklahoma City	lights of Oklahoma City	76	Oklahoma City's lights	3	96.2025316	3.79746835
Oklahoma City	restaurants of Oklahoma City	4	Oklahoma City's restaurants	1	80	20
Panama Cíty	streets of Panama City	131	Panama City's streets	8	94.2446043	5.75539568
Panama Cíty	lights of Panama City	33	Panama City's lights	0	100	0
Panama Cíty	restaurants of Panama City	4	Panama City's restaurants	3	57.1428571	42.8571429
Quebec Cíty	streets of Quebec City	254	Quebec City's streets	9	96.5779468	3.42205323
Quebec Cíty	lights of Quebec City	6	Quebec City's lights	0	100	0
Quebec Cíty	restaurants of Quebec City	2	Quebec City's restaurants	1	66.6666667	33.3333333
St Petersburg	streets of Saint Petersburg	72	Saint Petersburg's streets	4	94.7368421	5.26315789
St Petersburg	lights of Saint Petersburg	7	Saint Petersburg's lights	0	100	0
St Petersburg	restaurants of Saint Petersburg	25	Saint Petersburg's restaurants	1	96.1538462	3.84615385
San Juan	streets of San Juan	187	San Juan's streets	8	95.897436	4.1025641
San Juan	lights of San Juan	20	San Juan's lights	0	100	0
San Juan	restaurants of San Juan	8	San Juan's restaurants	2	80	20
Santo Domingo	streets of Santo Domingo	130	Santo Domingo's streets	2	98.4848485	1.51515152
Santo Domingo	lights of Santo Domingo	1	Santo Domingo's lights	0	100	0
Santo Domingo	restaurants of Santo Domingo	1	Santo Domingo's restaurants	1	50	50
Totals n		3761		969		
Average %					84.1689578	15.8310422

Data Table 8.1(a) Placename has two syllables, one word

Placename	*Of*-genitive	# hits	*S*- genitive	# hits	% *Of*-genitive	% *S*- genitive
Austin	streets of Austin	471	Austin's streets	58	89.0359168	10.9640832
Austin	lights of Austin	37	Austin's lights	3	92.5	7.5
Austin	restaurants of Austin	13	Austin's restaurants	21	38.2352941	61.7647059
Berlin	lights of Berlin	34	Berlin's lights	0	100	0
Berlin	streets of Berlin	733	Berlin's streets	82	89.9386503	10.0613497
Berlin	restaurants of Berlin	16	Berlin's restaurants	10	61.5384615	38.4615385
Boston	streets of Boston	689	Boston's streets	53	92.8571429	7.14285714
Boston	lights of Boston	109	Boston's lights	5	95.6140351	4.38596491
Boston	restaurants of Boston	42	Boston's restaurants	52	44.6808511	55.3191489
Bridgeport	streets of Bridgeport	48	Bridgeport's streets	3	94.1176471	5.88235294
Bridgeport	lights of Bridgeport	3	Bridgeport's lights	0	100	0
Bridgeport	restaurants of Bridgeport	2	Bridgeport's restaurants	0	100	0
Denver	streets of Denver	727	Denver's streets	22	97.0627503	2.93724967
Denver	lights of Denver	134	Denver's lights	8	94.3661972	5.63380282
Denver	restaurants of Denver	11	Denver's restaurants	31	26.1904762	73.8095238
Detroit	streets of Detroit	742	Detroit's streets	22	97.1204188	2.87958115
Detroit	lights of Detroit	44	Detroit's lights	5	89.7959184	10.2040816
Detroit	restaurants of Detroit	27	Detroit's restaurants	7	79.4117647	20.5882353
Dublin	streets of Dublin	782	Dublin's streets	168	82.3157895	17.6842105
Dublin	lights of Dublin	59	Dublin's lights	1	98.3333333	1.66666667
Dublin	restaurants of Dublin	22	Dublin's restaurants	28	44	56
Georgetown	streets of Georgetown	429	Georgetown's streets	23	94.9115044	5.08849558
Georgetown	lights of Georgetown	20	Georgetown's lights	2	90.9090909	9.09090909
Georgetown	restaurants of Georgetown	64	Georgetown's restaurants	11	85.3333333	14.6666667
Jackson	streets of Jackson	193	Jackson's streets	10	95.0738916	4.92610837
Jackson	lights of Jackson	17	Jackson's lights	2	89.4736842	10.5263158
Jackson	restaurants of Jackson	13	Jackson's restaurants	10	56.5217391	43.4782609
London	streets of London	825	London's streets	483	63.0733945	36.9266055
London	lights of London	700	London's lights	29	96.0219479	3.97805213
London	restaurants of London	179	London's restaurants	144	55.4179567	44.5820433
Madrid	streets of Madrid	688	Madrid's streets	35	95.1590595	4.84094053
Madrid	lights of Madrid	250	Madrid's lights	2	99.2063492	0.79365079
Madrid	restaurants of Madrid	29	Madrid's restaurants	15	65.9090909	34.0909091
Pittsburgh	streets of Pittsburgh	423	Pittsburgh's streets	9	97.9166667	2.08333333
Pittsburgh	lights of Pittsburgh	33	Pittsburgh's lights	0	100	0
Pittsburgh	restaurants of Pittsburgh	20	Pittsburgh's restaurants	13	60.6060606	39.3939394
Portland	streets of Portland	711	Portland's streets	90	88.7640449	11.2359551
Portland	lights of Portland	71	Portland's lights	5	93.4210526	6.57894737
Portland	restaurants of Portland	20	Portland's restaurants	38	34.4827586	65.5172414
Prague	streets of Prague	685	Prague's streets	52	92.9443691	7.05563094
Prague	lights of Prague	18	Prague's lights	0	100	0
Prague	restaurants of Prague	19	Prague's restaurants	26	42.2222222	57.7777778
Rome	lights of Rome	101	Rome's lights	6	94.3925234	5.60747664
Rome	streets of Rome	453	Rome's streets	102	81.6216216	18.3783784
Rome	restaurants of Rome	48	Rome's restaurants	27	64	36
Tampa	streets of Tampa	214	Tampa's streets	10	95.5357143	4.46428571

Tampa	lights of Tampa	25	Tampa's lights	0	100	0
Tampa	restaurants of Tampa	21	Tampa's restaurants	6	77.7777778	22.2222222
Tulsa	streets of Tulsa	99	Tulsa's streets	15	86.8421053	13.1578947
Tulsa	lights of Tulsa	8	Tulsa's lights	1	88.8888889	11.1111111
Tulsa	restaurants of Tulsa	10	Tulsa's restaurants	5	66.6666667	33.3333333
Totals n		11131		1750		
Average %					81.5727091	18.4272909

Data Table 8.1(b) Placename has two syllables, two words

Placename	*Of*-genitive		*S*-genitive		% *Of*-genitive	% *S*-genitive
New York	streets of New York	72	New York's streets	463	13.4579439	86.5420561
New York	lights of New York	295	New York's lights	11	96.4052288	3.59477124
New York	restaurants of New York	367	New York's restaurants	81	81.9196429	18.0803571
San Juan	streets of San Juan	187	San Juan's streets	8	95.8974359	4.1025641
San Juan	lights of San Juan	20	San Juan's lights	0	100	0
San Juan	restaurants of San Juan	8	San Juan's restaurants	2	80	20
Totals n		949		565		
Average %					77.9467086	22.0532914

Data Table 8.2(a) Placename has two syllables, one word
See Data Table 8.1(a)

Data Table 8.2(b) Placename has two syllables, two words

Placename	*Of*-genitive		*S*-genitive		% *Of*-genitive	% *S*-genitive
New York	lights of New York	295	New York's lights	11	96.4052288	3.59477124
New York	restaurants of New York	367	New York's restaurants	81	81.9196429	18.0803571
San Juan	streets of San Juan	187	San Juan's streets	8	95.8974359	4.1025641
San Juan	lights of San Juan	20	San Juan's lights	0	100	0
San Juan	restaurants of San Juan	8	San Juan's restaurants	2	80	20
Totals n		877		102		
Average %					89.5812053	10.4187947

Data Table 9(a) Placename has four syllables, one word

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Albuquerque	streets of Albuquerque	115	Albuquerque's streets	19	85.8208955	14.1791045
Albuquerque	lights of Albuquerque	108	Albuquerque's lights	2	98.1818182	1.81818182
Albuquerque	restaurants of Albuquerque	13	Albuquerque's restaurants	9	59.0909091	40.9090909
Cincinnati	streets of Cincinnati	290	Cincinnati's streets	38	88.4146341	11.5853659
Cincinnati	lights of Cincinnati	84	Cincinnati's lights	1	98.8235294	1.17647059
Cincinnati	restaurants of Cincinnati	14	Cincinnati's restaurants	10	58.3333333	41.6666667
Oklahoma	streets of Oklahoma	95	Oklahoma's streets	2	97.9381443	2.06185567
Oklahoma	lights of Oklahoma	8	Oklahoma's lights	2	80	20
Oklahoma	restaurants of Oklahoma	5	Oklahoma's restaurants	1	83.3333333	16.6666667
Sacramento	streets of Sacramento	355	Sacramento's streets	30	92.2077922	7.79220779
Sacramento	lights of Sacramento	26	Sacramento's lights	1	96.2962963	3.7037037
Sacramento	restaurants of Sacramento	3	Sacramento's restaurants	7	30	70
Totals n		1116		122		
Average %					80.7033905	19.2966095

Data Table 9(b) Placename has four syllables, two words

Placename	*of*-genitive	# hits	*s*-genitive	# hits	% *of*-genitive	% *s*-genitive
Quebéc Cíty	streets of Quebec City	254	Quebec City's streets	9	96.5779468	3.42205323
Quebéc Cíty	lights of Quebec City	6	Quebec City's lights	0	100	0
Quebéc Cíty	restaurants of Quebec City	2	Quebec City's restaurants	1	66.6666667	33.3333333
New York City	streets of New York City	739	New York City's streets	229	76.3429752	23.6570248
New York City	lights of New York City	385	New York City's lights	11	97.2222222	2.77777778
New York City	restaurants of New York City	42	New York City's restaurants	55	43.2989691	56.7010309
Saint Petersburg	streets of Saint Petersburg	72	Saint Petersburg's streets	4	94.7368421	5.26315789
Saint Petersburg	lights of Saint Petersburg	7	Saint Petersburg's lights	0	100	0
Saint Petersburg	restaurants of Saint Petersburg	25	Saint Petersburg's restaurants	1	96.1538462	3.84615385
Totals n		1532		310		
Average %					85.6666076	14.3333924