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The Most Apt Experimental Investigation of English Comparative and Superlative Formation

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1 Introduction

Adjective gradation is the process by which comparative and superlative adjectives are created from their root (also called "positive") forms. In English this process occurs in one of two ways. The synthetic (i.e., morphological or inflected) form involves adding *–er* or *–est* to the root adjective to produce the comparative (e.g., *bolder*) and superlative (*boldest*). The analytic (or periphrastic) graded adjective is generated by preceding the adjectival stem with *more* or *most* (*more beautiful, most beautiful*). Early corpus-based literature on this phenomenon in English identified the number of root syllables as the primary determinant of which form an adjective takes when undergoing gradation (Quirk et al. 1985). The authors state that "monosyllabic adjectives normally form their comparison by inflection" and "trisyllabic or longer adjectives can only take periphrastic forms" (1985:461). Although that work alludes to possible variation in monosyllabic adjectives, disyllabic adjectives are seen as the main locus for variation: all disyllabic adjectives have the analytic form available to them, but many can also take the synthetic form. However, the list of those that most readily accept the synthetic form (which is not to say they necessarily prefer it) is narrowly encompassed by the subset that ends in an unstressed vowel (/o/ and /i/, but not /li/), /l̩/, or /ɚ/ (Quirk et al. 1985:462). Thus, *blatant* will likely become *more blatant*, whereas *happy* could become either *more happy* or *happier*.

More recent corpus linguistic approaches have confirmed the effect of number of root syllables using statistical measures (Hilpert 2008, LaFave and Guy 2011) and revealed additional features that influence the form that comparatives take. For a fairly exhaustive list of features see Hilpert 2008, though it is important to note that superlatives were largely excluded prior to LaFave and Guy's 2011 investigation of comparatives and superlatives in speech and Computer-Mediated Communication corpora. Some of the other relevant findings on comparative formation are that stress on the final syllable of the root adjective biases gradation toward the analytic form (Leech and Culpeper 1997, Hilpert 2008) and stress on the initial syllable of the right collocate (word immediately following the adjective) (Mondorf 2003, 2009) favors the synthetic form. These trends suggest that the final-stress adjective *polite* should be more likely to become *more polite* than initial-stress *private* is to become *more private* and, due to initial stress on the right collocate, *happier camper* is more likely than *more happy camper*. However, *happy coincidence*, which does not have initial stress on the right collocate, will favor *more happy coincidence.* Specific root-final phonological elements including those suggested by Quirk et al. (1985) have been examined in polysyllabic roots, with final /l/, /r/, and /li/—in addition to final consonant clusters, generally—favoring the analytic form (Hilpert 2008, Mondorf 2009), while final /i/ favors the synthetic form (Hilpert 2008, though see Lindquist 1998, 2000). Attributive syntax (*a feebler attempt*) has been shown to favor the synthetic form, while predicative syntax (*that attempt was more feeble*) favors the analytic form (Leech and Culpeper 1997, Hilpert 2008). Lexical frequency (as measured in several different ways) has been recognized as another important factor in adjective gradation. Hilpert (2008) and LaFave and Guy (2011), among others, present evidence that a measure of the lexical frequency of the adjectival root is statistically significant in models of gradation, with high frequency root adjectives very strongly favoring synthetic form and low frequency adjectives disfavoring it.

Finally, as far as I have been able to determine, the earliest consideration of social variables in the body of work on adjective gradation is LaFave and Guy 2011, who investigated the effects of age, sex, ethnicity, and education level. Higher education level was shown to influence greater use of the analytic form. The present research also considers several social factors including age, sex, ethnicity, and acquisition of or exposure to a language other than English. However, as these vari-

∗I would like to thank John Victor Singler, Gregory Guy, Gillian Gallagher, Maria Gouskova, and members of the NYU Sociolinguistics Lab for their contributions to various versions of this project.

ables were determined to not have a direct significant effect upon adjective gradation here, social factors will not be explored in further depth.

Although there have been numerous empirical inquiries into the phenomenon of adjective gradation, this paper reports the findings of some of the first experimental research to address factors influencing variation (though Boyd 2007 used comparatives to assess processing difficulties). The strategy of these experiments involves asking native English speakers to rate the naturalness of different graded forms of a broad range of adjectival roots. Their responses indicate the factors that the speakers deemed influential in choosing between analytic and synthetic forms.

Section 2 describes the first study: its experimental design, participants, and results. Section 3 presents the results from the second study. Section 4 includes further discussion of the findings and summarizes concluding thoughts regarding the two experiments and future research on adjective gradation.

2 Study 1: English Monosyllabic and Disyllabic Comparatives

Study 1 involved a rating task that was administered online. Native speakers of English (n=101) were recruited through Amazon Mechanical Turk (www.mturk.com), and were compensated for completing the study and an accompanying demographic questionnaire.

Participants were asked to judge the naturalness of graded adjectives on a scale of one ("very bad") to seven ("excellent"). The stimulus set included 30 monosyllabic and 26 disyllabic adjectives selected from lists of gradable English adjectives culled from the Corpus of Contemporary American English (COCA) (Davies 2008–) and CELEX database (Baayen, Piepenbrock, and Gulikers 1995).[1] For each adjective, both the analytic and synthetic forms were included in the study. For example, the adjective *high* yielded the analytic form *more high* and synthetic *higher*. The stimuli are representative of a very broad spectrum of lexical frequencies, which were obtained for each adjective from COCA. The stimuli were chosen in order to address three phonological factors: number of syllables, stress, and the final phonological element. Whereas corpus linguists have found an effect of consonant clusters generally, in examining the behavior of vowels and single consonants they have typically focused on specific, individual root-final segments rather than the two classes more generally (see Section 1). The work here seeks to investigate potential broader effects of root-final consonants, vowels, and clusters on gradation. However, it was not possible to balance the phonological factors completely while simultaneously keeping the experiment short. Both monosyllabic and disyllabic root adjectives were included in the stimulus set. The disyllabic stimuli included adjectives with initial or final stress; all monosyllabic stimuli were considered to have stress. The final phonological elements for the monosyllables were a vowel, a single consonant, or a consonant cluster. Disyllables with initial stress ended either in a single consonant or a consonant cluster, while disyllables with final stress only had a single consonant as their final element. No vowel-final disyllables (words like *nervy*, *angry*, and *shallow*) were included in the dataset due to the aforementioned limitations on study length. All adjectives ending in /r/ were excluded from the dataset since the online study recruitment could and did include participants from non-rhotic as well as rhotic dialect regions in the United States.

Depending on the origin or source language of a root, it was categorized as either Latinate (from Latin, Old French, Middle French, or modern French), such as *vast* and *lucid*, or non-Latinate. Most non-Latinate words were of Germanic origin (*grave, handsome*), though a few were coined (*blatant*) or of an unknown or obscure origin (*brash, snide*). Children and adults have been shown to display asymmetries in how they treat etymologically Latinate and non-Latinate verbs with respect to dative alternation (Gropen et al. 1989), so it seems reasonable to expect that this variable plays a role in other types of variation where speakers are able to choose between morphosyntactic alternatives. As priority was given to balancing the phonological factors over the source language of the root, a much greater number of the disyllables were of Latinate origin (n=22) than of non-Latinate origin (n=4).

[1]While trisyllabic analytic forms are possible for some speakers, they are relatively rare. Therefore, I have omitted them in order to concentrate on the factors that affect monosyllabic and disyllabic forms.

A total of 56 tokens comprise the stimulus set of the resultant six types related to the number of root syllables, stress and phonological final element (each type is a separate column in Tables 1–2): ten tokens for each monosyllable type and eight or nine tokens for each disyllable type.

Vowel		**Singleton**		**Cluster**	
coy	[ɔɪ]	base	[s]	apt	[pt]
free	[i]	brash	[ʃ]	bald	[ld]
gray	[eɪ]	frail	[l]	bland	[nd]
high	[aɪ]	grave	[v]	blank	[ŋk]
key	[i]	huge	[ʤ]	blind	[nd]
low	[oʊ]	meek	[k]	brusque	[sk]
slow	[oʊ]	mute	[t]	deft	[ft]
stray	[eɪ]	red	[d]	lax	[ks]
true	[u]	snide	[d]	quaint	[nt]
wry	[aɪ]	trim	[m]	vast	[st]

Table 1: Monosyllable stimuli and their final phonological elements: V#/C#/CC#.

Initial Stress				**Final Stress**	
Singleton		**Cluster**		**Singleton**	
acrid	[d]	ancient	[nt]	banal	[l]
darling	[ŋ]	blatant	[nt]	concise	[s]
docile	[l]	fecund	[nd]	distraught	[t]
handsome	[m]	nascent	[nt]	effete	[t]
lucid	[d]	piebald	[ld]	elite	[t]
porous	[s]	pliant	[nt]	oblique	[k]
private	[t]	pregnant	[nt]	obtuse	[s]
vapid	[d]	trenchant	[nt]	ornate	[t]
vernal	[l]			polite	[t]

Table 2: Disyllable stimuli and their final phonological elements: initial stress (C#/CC#), final stress (C#).

Over the course of the study, participants were shown a random selection of six tokens (three analytic, three synthetic) for each of the six types (Tables 1–2). Consequently, each participant saw and rated 18 synthetic and 18 analytic comparative forms of adjectives, out of the 56 total adjectives, in addition to 10 fillers. All filler items were chosen as an actual rating study of regular and irregular past tense verb formation. The entire list of possible filler items for the experiment included 13 pairs of regular and irregular forms of past tense verbs presented in simple SVO sentences (*the boy singed a song*, *the boy sang a song*).

All critical items were presented in carrier phrases: determiner phrases consisting of a definite article, the synthetic or analytic form of the graded adjective, and a noun (see Figure 1). Each root adjective appeared as a modifier for two separate nouns (e.g., *the balder lie, the more bald lie; the balder man, the more bald man*) in the dataset. Only monosyllabic nouns (a total of 94) were used in the carrier phrases, to eliminate potential effects from variation in stress on the right collocate of the stimulus (as mentioned in Section 1). One noun (*man*) appeared with five separate root adjectives; however, most nouns occurred only with a single adjective. The set of nouns was selected on an adjective-by-adjective basis in order to present participants with a noun phrase in which adjective gradation might plausibly occur. For example, *pregnant* appeared with the nouns *wife* and *dog*, but not with *star* or *hill*.

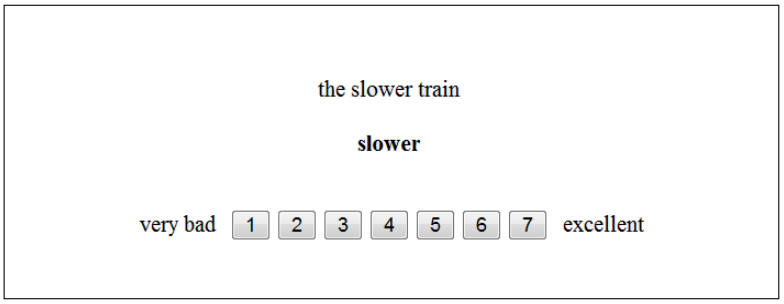

Figure 1: Example carrier phrase and graded adjective stimulus.

2.1 Study 1 Results

A mixed effects regression model was fitted in R, using the *lmer()* function of the *lme4* package, with normalized participant *rating* as the dependent variable and with the predictors listed in Table 3 as fixed effects. An additional factor group, *trialnumber*, was included in order to see if the presentation order of the stimuli played a role in shaping speakers' responses. A version of these results originally appeared as a poster at NWAV 41 (LaFave 2012).

Factor Group	Type	Description of Factor Levels
form	binary	contrasts analytic and synthetic comparatives
syllables	binary	contrasts monosyllables and disyllables
logfrequency	continuous	log-transformed stimulus lexical frequencies
final_element	ternary	contrasts single consonant-, cluster- and vowel-final adjectives
stress	binary	contrasts initial- and final-stress roots
source_language	binary	contrasts Latinate and non-Latinate adjectives
trialnumber	continuous	order of stimulus presentation

Table 3: Factor groups included in regression model.

The initial, full model also included interactions between the graded adjective's form and each other factor group, as well as by-item and by-participant random effects.[2] Table 4 includes all interactions and factor groups that were selected as significant (at $p<0.05$) using step-down model comparison, as well as any factor groups that were members of a significant interaction (regardless of whether they are independently significant). When interpreting the results displayed in the regression model (such as in Table 4), the crucial components are any significant interactions between the graded form (*form*) and some other variable listed in Table 3. These interactions indicate the factors that are integral in determining the form that adjective gradation takes for the comparatives in this study. The R syntax for the regression model in Table 4 is shown in (1).

(1) study1model = rating ~ form:syllables + form:source_language + form:trialnumber + form + syllables + source_language + trialnumber + (1 + form + source_language | subject) + (1 + form | stimulus)

In the best fit model of the data from the first study, interactions between graded form and three other variables were determined to be significant: number of syllables, source language, and trial number. The direction of the effect for the last of these, the interaction between the graded form and the order in which the stimulus was presented, is such that participants rated all stimuli more favorably as the study progressed; however, this increase was more dramatic among the synthetic graded adjectives than among the analytic graded adjectives. The other two interactions bear directly on the central hypotheses of the present study and will now be discussed at greater length.

[2]Random effects include the maximum number of random slopes that allow model convergence (for these models the limit is typically two or three, as may be seen in the syntax for each model).

	Estimate	SE	*t*	*p*
(Intercept)	.50	.16	4.13	< .001
form:syllables	1.24	.17	7.43	< .001
form:source_language	.55	.17	3.18	< .01
form:trialnumber	-.004	.002	-2.27	< .05
syllables	-.42	.12	-4.66	< .001
source_language	-.17	.12	-1.49	n.s.
trialnumber	.01	.001	4.25	< .001
form	-1.19	.14	-8.75	< .001

Table 4: Regression model for comparative ratings (crucial interactions highlighted).

Figure 2 depicts the interaction between graded form and the number of syllables in the root for the first study. Figure 2 and other figures like it are bean plots, which are similar to box plots in that they display the range of data points along the y-axis (in this case, participants' ratings of individual stimuli) and a line indicating the overall average value. However, bean plots differ by providing the density of data points at a given value: the wider the bean at a given point on the rating scale, the greater the number of data points which have that numerical rating. In comparing means, differences smaller than 0.5 will be interpreted as essentially overlapping ratings for the two variables (e.g., the difference between mean ratings for analytic and synthetic monosyllables in Figure 2); differences ranging from 0.5 to 1.0 reflect moderately distinct ratings, and those greater than 1.0 are meaningful differences. The beans that I produce in this figure and subsequently are symmetrical about the vertical axis.

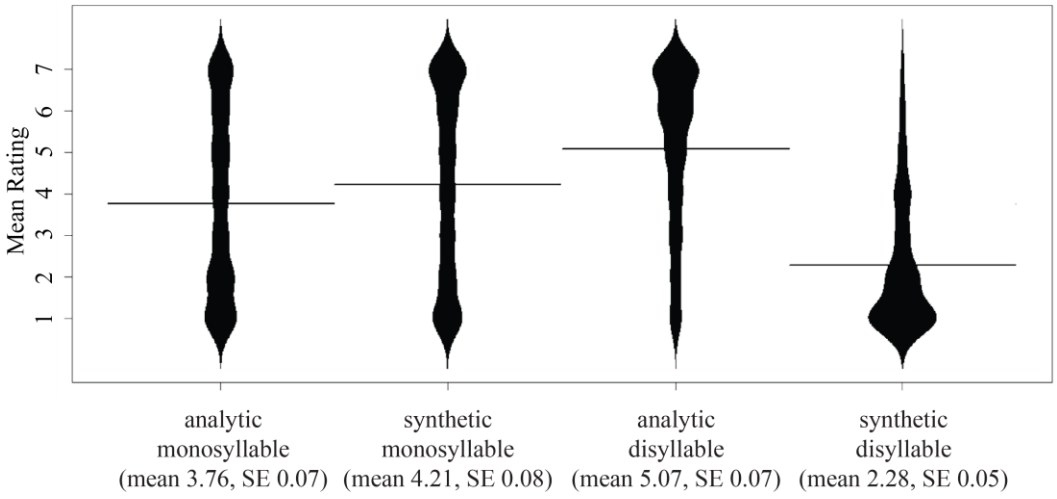

Figure 2: Density plots for rating of comparatives by form and syllable count.

As was the case in the corpus research discussed in the literature (summarized in Section 1), the number of syllables in an adjective's root had a significant influence on its comparative form. Participants judged analytic disyllabic adjectives (mean rating 5.07), such as *more ancient,* favorably and showed a clear dispreference for the disyllabic adjectives using the synthetic form (2.28), such as *ancienter*. Consider that vowel-final disyllabic roots (a set that includes disyllables ending in /i/ and /li/) were not included in this study. Thus, the consonant- and cluster-final disyllables listed in Table 2 strongly favor the analytic form over the synthetic form.

The most important result illustrated in Figure 2, however, has to do with the monosyllables—namely the striking similarity in participant ratings of the analytic (3.76) and synthetic (4.21) forms. Recall that the literature (Quirk et al. 1985) states that monosyllabic comparatives overwhelmingly take the synthetic form (*colder, higher*). In fact, a number of studies of different English corpora have found that monosyllabic comparatives have a "nearly uniform tendency to form

only one variant", i.e., the synthetic form (Hilpert 2008:399, cf. Leech and Culpeper 1997, Kytö and Romaine 1997). This distribution leads to the prediction that monosyllabic adjectives will have much higher ratings for the synthetic form than for the analytic form, essentially the opposite pattern of that found for the disyllables in Study 1 (an average difference of 2.79). Instead, the data presented in Figure 2 reveal very similar ratings for the two monosyllabic forms (an average difference of only 0.45). The similarity in ratings for these roots problematizes the claim that monosyllabic roots take the synthetic form when forming comparatives.

The second significant interaction in Table 4 is between the graded form (analytic, synthetic) and the source language (Latinate, non-Latinate), which provides evidence that the language of origin of a root adjective is a significant factor in determining its comparative form.

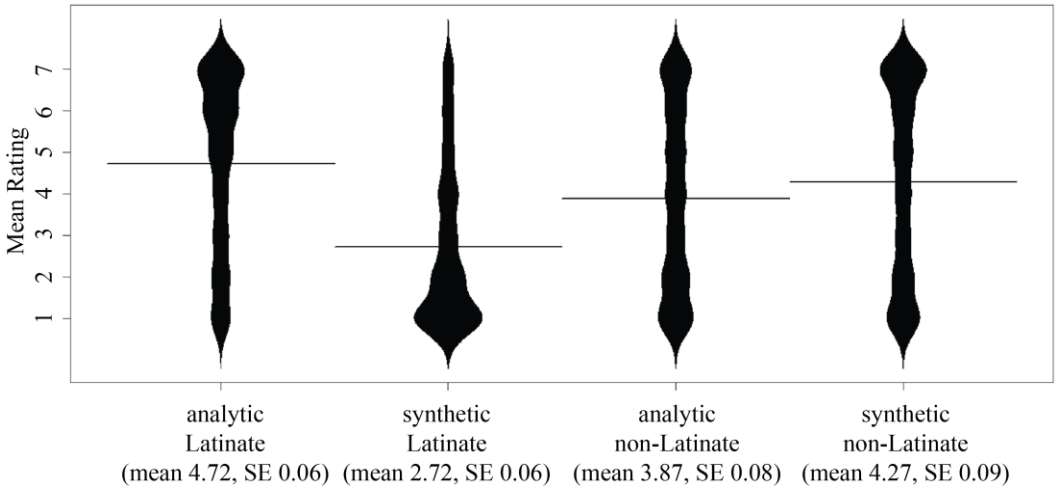

Figure 3: Density plots for rating of comparatives by form and source language.

The analytic Latinate adjectives (mean rating 4.72) are rated much higher than the synthetic Latinate ones (2.72). In fact, the majority the synthetic Latinate stimuli (the second bean from the left in Figure 3) are rated on the bottom of the scale.

In the study, about half of the Latinate adjectives entered English from Old French, Middle French, or modern French (n= 17; e.g., *coy, quaint, banal, trenchant*) and were subject to analytic gradation in French during the period in which they entered English (Bauer and Slocum 2014). The other half of the Latinate adjectives came to English from Latin (n=18; *apt, lax, private, vapid*) and their comparative forms in Latin would have involved synthetic gradation (ibid). However, in the present study the roots originating in Latin (analytic mean rating 4.90, synthetic 2.35) favor the analytic form and disfavor the synthetic form even more than those from analytic languages like Old French (analytic mean rating 4.59, synthetic 2.98). Therefore, for the purposes of analysis these two types of Latinate adjectives are grouped together in a single category in opposition to non-Latinate adjectives. The non-Latinate roots pattern quite differently from the Latinate ones. The preference for analytic forms and the sharp difference in evaluation of analytic and synthetic forms are both absent from the evaluation of the non-Latinate forms: for non-Latinate adjectives, synthetic forms are preferred, but the size of the difference between the analytic and synthetic is minimal (analytic mean rating 3.87, synthetic 4.27).

Beyond the classification of different types of English roots, an additional, important consideration in interpreting results in the present study which involve the source language of the root is the potential effect of the number of syllables. While the monosyllabic adjectives are fairly well-balanced for the source language factor group (13 Latinate, 17 non-Latinate), the disyllabic roots are largely Latinate in origin (22 Latinate, 4 non-Latinate). With 22 out of 35 Latinate roots (63%) as disyllables, the high rating of analytic Latinates and low rating of synthetic Latinates in Figure 3 above could be directly influenced by the number of root syllables (as described earlier in Section 2). Study 2 eliminates effects from the number of syllables by limiting the dataset to monosyllables.

3 Study 2: English Monosyllabic Comparatives and Superlatives

An additional 100 participants were recruited through Mechanical Turk for a second rating experiment. The experimental design was very similar for both Study 1 and Study 2: the main differences between the two lay in the stimulus sets that were employed. Whereas Study 1 solely investigated ratings of comparative adjectives, Study 2 included both comparative and superlative gradation. Superlatives have largely been ignored in the previous empirical research on factors motivating the form of adjective gradation. An exception is the work of LaFave and Guy (2011), who found in their analysis of several speech corpora that superlatives favored the synthetic form (*easiest*), whereas comparatives favored the analytic form (*more easy*). Furthermore, only the monosyllabic roots from the first study (Table 1) were included in the second study. This change in the study design permits the investigation of the other factor groups when participants are presented with stimuli that do not vary with respect to their number of syllables. All of the factor groups listed in Table 3 for the first study were included in Study 2, with the exception that the number of syllables (now uniformly monosyllabic) was removed and degree of comparison (comparative, superlative) inserted.

3.1 Study 2 Results

The best fit model of the data from the second study is shown below (Table 5), preceded by the corresponding R syntax in (2).

(2) study2model = rating ~ form:source_language + form:logfrequency + form + degree + logfrequency + source_language + (1 + form + degree + source_language | subject) + (1 | stimulus)

	Estimate	SE	*t*	*p*
(Intercept)	.34	.22	1.53	n.s.
form:source_language	.39	.16	2.45	< .05
form:logfrequency	.11	.04	2.88	< .01
source_language	-.08	.12	-0.68	n.s.
logfrequency	-.08	.03	-3.11	< .01
degree	.28	.07	3.84	< .001
form	-.62	.31	-2.01	< .05

Table 5: Best fit regression model of graded adjective ratings (crucial interactions highlighted).

With the number of syllables removed as a variable in this experiment, two factor groups were found to have significant interactions with the form of adjective gradation. First, participant ratings of the analytic and synthetic forms were significantly different when considering Latinate and non-Latinate adjectives (Figure 4). Unlike in the first study, the analytic Latinate adjectives (mean rating 3.98) did not show substantially different ratings from their synthetic Latinate counterparts (4.46). However, the synthetic non-Latinate monosyllables (5.19), such as *graver*, were rated substantially higher than analytic non-Latinates (3.63), such as *more grave*. In Study 2, the pattern of the non-Latinate stimuli, which were almost exclusively comprised of Germanic roots, reflects the cross-linguistic typology of adjectives in Germanic languages taking synthetic gradation (English's use of both forms is an exceptional case) (Mitchell 1985). In fact, this pattern also obtains when a post-hoc analysis of the monosyllabic roots in Study 1 is performed. It is possible that the effect of source language is different for monosyllables than it is for disyllables, with monosyllables showing dichotic ratings for non-Latinate roots and disyllables showing the opposite pattern for Latinate ones. That differences among the non-Latinate graded forms exist for the monosyllables has been shown in Study 2 and is supported by post-hoc analysis of monosyllables in Study 1. However, the degree of collinearity between source language and number of syllables for Study 1 dictates that caution should be exercised in drawing conclusions about the language of origin from the disyllabic roots.

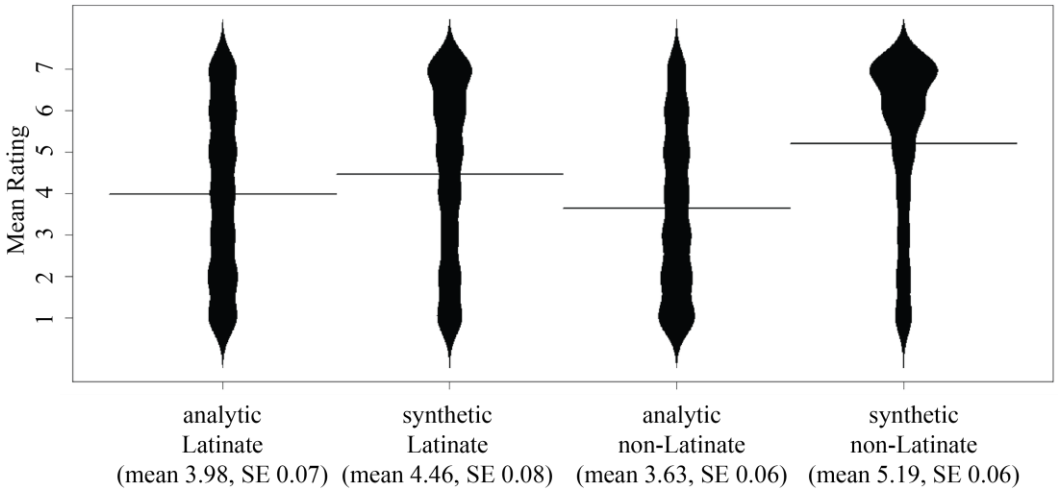

Figure 4: Rating of monosyllabic comparatives and superlatives by form and source language.

Along with the source language of the adjectival root, the log-transformed lexical frequency of the root (logfrequency) was determined to influence the rating of the analytic and synthetic forms of graded adjectives in the second study. In Figure 5 below, each rating of an analytic form (marked with a square) along the x-axis (the log-transformed frequency of the root adjective, ranging here from 3.30 to 12.16) has a rating for the corresponding synthetic form (triangle) for the same root adjective above or below it on the y-axis. For example, the rightmost square is the analytic form of the adjective *high* (thus, *more high* combined with *most high*); the corresponding rating for the synthetic form of *high* (*higher*, *highest*) is the rightmost triangle. The sole exception is for the adjectives *stray* and *frail*, both of which have a logfrequency of 7.54; consequently there are four stimulus ratings on the y-axis for that point on the x-axis (the higher pair of values is for *frail*).

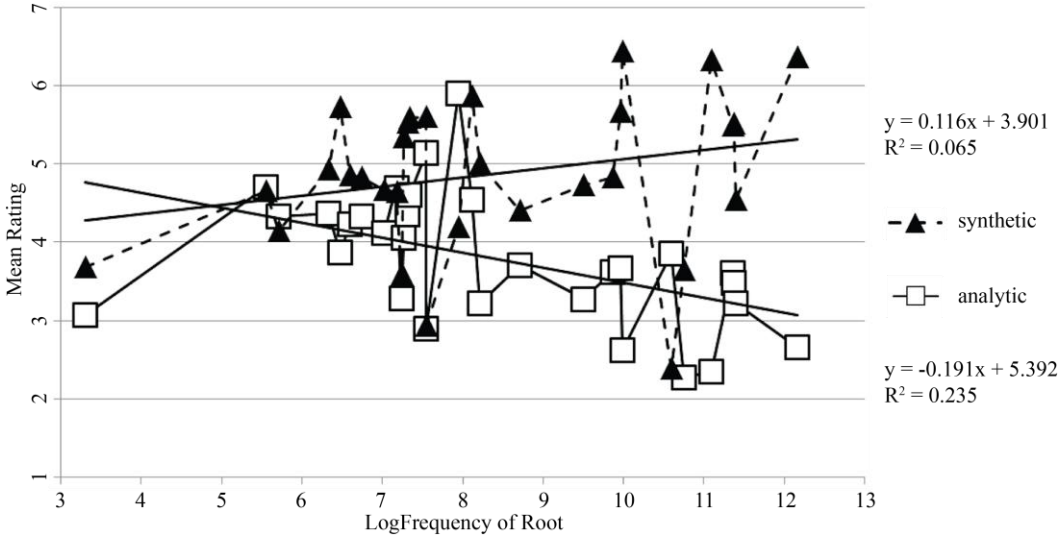

Figure 5: Rating of monosyllable comparatives and superlatives by form and logfrequency of root.

Figure 5 illustrates the trend wherein participants strongly favor the synthetic form of high frequency adjectives and disfavor their analytic forms. This finding supports previous corpus linguistics research which found a similar pattern (Hilpert 2008, LaFave and Guy 2011). However, what the data in Figure 5 also reveal is that, while there is a clear dichotomy between ratings for the two forms of higher frequency adjectives (those that are roughly ≥8 on this scale), the two

forms of nearly all of the lower frequency roots (<8) are not appreciably different in rating. These data suggest that the effect of root frequency is limited to frequently occurring roots, for which the synthetic form (*lower, lowest*) is favored over the analytic form (*more low, most low*).

4 Discussion

The primary findings from the two studies presented in Sections 2–3 are as follows:

(i) Analytic (e.g., *more apt*) and synthetic (*apter*) graded forms of monosyllabic adjectives were rated very similarly, contra predictions based on overwhelmingly synthetic productions of monosyllables in corpus research.
(ii) Both studies present evidence for the source language of the root as a predictor of variation in graded form. In particular, non-Latinate (largely Germanic) monosyllabic roots were rated more highly in the synthetic form (*defter*) than the analytic form (*more deft*).
(iii) Study 2 showed that greater lexical frequency favored the synthetic form; however, the effect obtains only for high frequency roots (i.e., high frequency *slower* is rated much higher than *more slow*, but low frequency *brusquer* and *more brusque* are rated similarly).

The data presented here suggest that native English speakers judge monosyllables as much less monolithic in form than previously imagined. That is, the participant ratings in the first study do not contrast analytic and synthetic monosyllabic adjectives, as would be the case if speakers were only willing to allow synthetic gradation of monosyllables. The fact that the two graded forms of monosyllabic adjectives are rated similarly suggests the number of syllables is not the overriding factor in determining the variability among these roots. In the second experiment, with the number of syllables eliminated as a potential contributor to variation, another group of participants showed substantial differences in their ratings of monosyllabic comparatives and superlatives with respect to the source language and lexical frequency of the root.

Despite the differences in the datasets of Study 1 and Study 2, there are two pairs of rankings that are consistent with respect to the interaction between the graded form and the source language of the root (Figures 3–4): analytic Latinate > analytic non-Latinate, and synthetic non-Latinate > synthetic Latinate. These rankings reflect the pattern in Germanic languages other than English to employ synthetic gradation, and are particularly compelling when combined with the ranking found in Study 2 (and in the monosyllabic subset of Study 1): synthetic non-Latinate > analytic non-Latinate. The rankings also mirror the fact that Old French, Middle French, and modern French use analytic gradation. The fact that Latin employs synthetic adjective gradation, however, is not captured by the results of these studies, in which the English roots from Latin favor analytic gradation. A possible explanation is that as more and more words from French have entered English over time, the older Latin roots in English have been treated as though they, too, had entered English via French and hence pattern with the words that had done so, by showing a tendency towards analytic gradation. Although it can be difficult to tease apart the impact of a root's source language from other variables such as number of syllables (source language is far from the only factor group for which collinearity causes methodological obstacles), the results presented here make it clear that the etymological origin of adjectives needs to be included in future investigations into gradation.

Regarding degree of comparison, the data patterned in a similar manner to the findings of LaFave and Guy (2011): synthetic superlatives (*meekest*) were rated more favorably than analytic superlatives (*most meek*), and analytic comparatives (*more meek*) were favored over synthetic comparatives (*meeker*). However, this interaction was not selected as significant in the regression analysis. It is also worth noting that no effect of phonological final element (vowel, single consonant, cluster) was found in these analyses of either experiment. Vowel-final roots favored the synthetic form (*freer, grayest*) in Study 1 and Study 2, but this factor was not selected as significant in the present regression analysis. Cluster-final roots behaved like consonant-final roots in the two studies, favoring analytic form in Study 1 and synthetic form in Study 2.

Lastly, the list of features influencing adjective gradation in Section 1 contained several others of relevance to the two studies here. Among these is the syntax of the comparison, with attributive use favoring the synthetic form. The current studies held the type of comparison constant:

participants were presented only with attributive adjectives. A related consideration is that all carrier phrases were determiner phrases (*the warmer smile/the more warm smile*) in which the attributive adjective always modified a monosyllabic noun. The presence of initial stress on the right collocate also favors the synthetic form (though not as much as attributive syntax, according to Hilpert 2008:407). It is important to be mindful when interpreting the results of any experiment on adjective gradation that there are a large number of variables that could play a role, and not all of them can be included or examined simultaneously. To this end, a great deal of experimental work remains to be done on this phenomenon.

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