Emergent Faithfulness to Proper Nouns in Novel English Blends

Rachel Broad, Brandon Prickett, Elliott Moreton, Katya Pertsova, and Jennifer L. Smith

1. Introduction

Emergent effects (McCarthy & Prince 1994) are the result of phonological constraints or rankings that only reveal themselves in a specific context. That is, they have no discernable effect in the regular phonology of a language but become apparent when speakers perform particular tasks. Crucially, they reveal knowledge that was not learned directly from ambient language data. Emergent effects have been found in second language and interlanguage studies (e.g., Broselow, Chen, & Wang 1998; Zhang 2013; Jesney 2014), lab production and perception experiments (Davidson 2001; Berent et al. 2007; but cf. Davidson 2010), and language games (Moreton, Feng, & Smith 2008).

Recent studies have shown that *lexical blends* can be used as an environment in which emergent effects arise (Shaw 2013; Shaw et al. 2014; Moreton et al. submitted). Lexical blends are intentional combinations of words that involve truncation and/or overlap (e.g. *sp*<u>ork</u> from *spoon* and <u>fork</u>). The loss of material from blends makes them useful for testing emergent faithfulness effects. In the case of novel blends, speakers can be forced into choosing between blends that preserve more input from one of the source words.

Building on the results of Shaw (2013, Shaw et al. 2014), this study uses lexical blends to demonstrate emergent effects of faithfulness constraints indexed to the category *proper nouns*. Our results from two experiments with English speakers not only suggest that proper nouns are a category that is relevant to the phonological grammar, but also that proper noun faithfulness constraints are universally available.

2. Proper noun faithfulness and lexical blends

Various studies have shown that the phonology of a language can be sensitive to certain morphological categories. For example, in some languages morphological heads are more faithful to the underlying representation than non-heads, i.e., they are less likely to exhibit alternations (Revithiadou 1999). Similarly, it has been shown that certain lexical categories are more faithful than others, creating a faithfulness hierarchy N > A > V (Smith, 2011). While in any given language there may not be overt evidence for these faithfulness effects from ambient data, recent studies demonstrated the emergence of these effects in the process of blend formation. For example, Shaw (2013) found segmental faithfulness effects to semantic heads. Additionally, recent research has confirmed her results, finding segmental and stress faithfulness to both semantic heads and to nouns (Moreton et al. submitted).

Looking further at the lexical category of nouns, proper nouns have been shown to have distinct phonological patterns from common nouns. In some cases, proper nouns have stronger faithfulness effects than common nouns, as is true for Canadian French (Walker 1984: 96) and Jordanian Arabic (Jaber 2011). An example of this effect is shown in (1) below.

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 Proceedings of the 33rd West Coast Conference on Formal Linguistics, ed. Kyeong-min Kim et al., 77-87. Somerville, MA: Cascadilla Proceedings Project.

(1) Proper noun faithfulness in Jordanian Arabic (Jaber 2011)

a. /**si**'haam/→ ['**s**haam] "arrow" (common noun)

b. /**si**'haam/→ [**si**.'haam] "Arrow" (proper noun)

In Jordanian Arabic, short high vowels undergo syncope in open syllables. This process consistently occurs in common nouns as shown in (1a). However, proper nouns display stronger faithfulness than common nouns, because they are not subject to this process. In fact, when the same word is used as a proper noun as opposed to a common noun, as in (1b), the vowel is not deleted[1].

Formally, this special faithfulness to categories can be implemented in Optimality Theory (Prince & Smolensky 1993/2004) by using indexed constraints (see Ito & Mester 1999, 2001 and Pater 2010). This implementation makes proper noun faithfulness a subtype of positional faithfulness (Beckman 1999). The relevant constraints utilized in this paper are listed below.

(2) Proper noun faithfulness constraints

a. MAXSEG(PrN)[2] Assign one * to each input segment in a PrN that has no output correspondent (= No segment deletion from PrN)

b. MAXSTRESS(PrN) Assign one * to each input stress in a PrN that has no output correspondent (= No stress deletion from PrN)

The constraints in (2) are indexed to the category of proper noun, and therefore only words of this category can violate them. Common nouns will always vacuously satisfy these constraints. An example of these constraints at work within Jordanian Arabic is given in the tableaux below. The constraint in (3) is the markedness constraint driving syncope.

(3) *Wk-HV: No short high vowels in open syllables (Jaber 2011)

(4) Syncope in common nouns

/si'haam/ 'arrow'	MAXSEG(PrN)	*WK-HV
☞a. 'shaam	*(vacuous)*	
b. si.'haam	*(vacuous)*	*! W

(5) No syncope in proper nouns

/si'haam/ 'Arrow'	MAXSEG(PrN)	*WK-HV
a. 'shaam	*! W	L
☞b. si.'haam		*

As the tableau in (4) demonstrates, a common noun will vacuously satisfy the MAXSEG(PrN) constraint and therefore the candidate that satisfies *WK-HV will be the winner. On the other hand, a candidate which deletes segments from a proper noun, as in (5a), will result in a violation of the MAXSEG(PrN) constraint and cause the faithful candidate to be the winner.

While evidence that proper nouns have different phonological patterns than common nouns exists in other languages, is there any evidence for this in English? In Moreton et al. (submitted) we replicated the investigation done by Jaber (2011) and searched for any pattern suggesting special faithfulness to proper nouns in English. This included a search of the CELEX lexical database of British English (Baayen and Piepenbrock 1993) for any pairs of words that differed orthographically only in the capitalization of their initial letter but had different pronunciations. Only five proper nouns were found to have different pronunciations than their common noun counterparts and none of these differences suggested special faithfulness to the proper noun. Thus, we find that there is no evidence for proper noun-specific patterns in the regular phonology of English.

However, lexical blending provides a way to test for emergent faithfulness effects. Blending is a complex word formation process involving truncation and/or overlapping of source words and several recent studies have investigated the relative contributions of these source words (Bat-El & Cohen 2012; Kubozono 1990; Arndt-Lappe & Plag 2012). Blends are especially useful in testing for faithfulness effects since speakers can be forced to make decisions about what material to preserve based on the lexical category of the source words. Since evidence for proper noun faithfulness does not exist in the

[1] Although the number of known cases of proper nouns being more faithful than common nouns is small, a number of other patterns in which proper nouns display distinct phonology from other nouns has been documented. In Turkish, proper nouns and other categories can be subject to different default patterns (Sezer 1981) and in Japanese, proper nouns are subject to markedness requirements that do not affect other categories (Sugawara 2012).

[2] First proposed in Jaber (2011) as MAX-PN. On MAX constraints, see McCarthy and Prince (1999).

ambient language data of English, if speakers are shown to exhibit this faithfulness in blend formation then it would provide evidence that this is an emergent effect. In this paper we present two experiments testing for proper noun faithfulness in novel English blends.

3. Blend experiments: design, methodology, and participants

In order to test for proper noun faithfulness effects, we conducted two experiments; the first tested for segmental faithfulness and the second tested for stress faithfulness. The experimental methodology was modeled after experiments pioneered by Shaw (2013) and replicated in recent research (Moreton et al. submitted). In this section, we describe the stimuli design, the participants involved in the study, and the experimental procedure and predictions.

3.1. Stimulus Design

The stimuli for each experiment consisted of nine different source-word pairs. The first criterion for these pairs was that source word 1 was ambiguous between a proper noun and a common noun. For example, the word "SOPRANO" could either denote a type of singer or the name of a family on the TV show "The Sopranos" (HBO 1999-2007). This ambiguity ensured that the blends created from these source words could be interpreted as a member of either of the two lexical classes. For the remainder of this paper, source word 1 and the blends are shown in small capitals to indicate ambiguity while source word 2 is shown in lower case to indicate that there is no ambiguity.

The pairs used in this experiment were also "ambiblendable" in the sense of Shaw (2013) and could be combined to create two different blends. The ways in which these words could be blended differed by experiment. For the segmental experiment, each source word pair was chosen such that there were two possible switchpoints[3] that surrounded the main stress vowel. The two blends created by these source words were identical except for which main stress vowel they preserved. All chosen source words were morphologically simplex. An example item is given in (6) below.

(6) Construction of a blend from the segmental experiment

SOPRANO:	s ʌ <u>**p ɹ**</u> æ <u>**n**</u> o	
	| |	→ **SOPRAN**ING or **SOPR**EENING
preening:	<u>**p ɹ**</u> i <u>**n**</u> i ŋ	

From the two source words 'SOPRANO' and 'preening', two possible blends could be created: **SOPRAN**ING and **SOPR**EENING. In the former blend (**SOPRAN**ING), more segmental material from "SOPRANO" is preserved (represented in the blend by bolded letters). In the latter blend (**SOPR**EENING), more segmental material from "preening" is preserved (represented in the blend with the letters that are not bolded).

For the stress experiment, source word 1 always had initial stress and source word 2 always had final stress. The source words shared a single switchpoint that followed the primary stress in source word 1 and preceded it in source word 2. Thus, when the two words were blended, it resulted in two blends that were segmentally identical and differed only in stress placement. Again, each source word was morphologically simple. An example is given in (7) below.

(7) Construction of a blend from the stress experiment

TURKEY:	t ʌ́ ɹ <u>**k**</u> i	
	|	→ **TÚRC**OON or **TURC**ÓON
tycoon:	t aj <u>**k**</u> ú n	

In this example, the two possible blends that could be created from the pair 'TURKEY' and 'tycoon' were **TÚRC**OON and **TURC**ÓON. While these are segmentally identical, the former blend preserves the stress of "TURKEY" and the latter blend preserves the stress of "tycoon".

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[3] We define "switchpoint" as the segment or segments that are shared by the source words of a blend. For example, the switchpoint in the blend **l***iger* (**lion** + *tiger*) would be the [aj]. Blends like **br***unch* (**breakfast** + *lunch*), with no overlap, would not have a switchpoint. This differs from the definition used by some other researchers (see, for instance, Arndt-Lappe and Plag 2013).

In addition to the source word pairs, two definitions were also provided for each item. One of the definitions used the proper noun meaning of the first source word, and the other used the common noun meaning. Each pair was created so that extraneous factors such as the length of the definition or explicit use of source words were held constant as far as possible. Examples of these definitions are given in (8) below. A full list of blends and definitions can be found in the Appendix.

(8) Example definitions

SOPRANO + preening	PrN + N	preening by New Jersey mobsters on HBO
	N + N	preening by female opera singers on stage
TURKEY + tycoon	PrN + N	someone who made a lot of money in Turkey
	N + N	someone who made a lot of money in turkey

3.2. Predictions

The task for this experiment was to match each blend with a definition. For these experiments, we predicted that if participants utilized proper noun faithfulness, then they would choose to match the blend that was more faithful to the first source word with the definition that used that source word as a proper noun[4]. The theoretical rationale for these predictions is demonstrated in the tableaux below with proper nouns indicated by a capitalized first letter. Head faithfulness constraints (defined in (9)) are included in the tableaux because Shaw (2013) has demonstrated emergent effects of these constraints in English blend formation as well.

(9) Additional Constraints

a.	MAXSEG(Hd)	Assign one * to each input segment from a Hd that has no output correspondent (= No segment deletion from Hd)
b.	MAXSTRESS(Hd)	Assign one * to each input stress from a Hd that has no output correspondent (= No stress deletion from Hd)

The tableaux in (10) and (11) each contain two candidate pairs, (a) and (b), representing the two possible blend and definition matchings. As shown in (a)(i) in each tableau, when the definition that makes the first word a proper noun is matched with the blend that preserves *more* of that word, MAXSEG(PrN) is violated less. Its counterpart in (ii) vacuously satisfies this constraint since the first word is a common noun. However, the opposite matching in (b) results in three violations of MAXSEG(PrN) since the definition making the first word a proper noun is matched with the blend that preserves *less* of that word.

(10) Exp 1: Prediction for MAXSEG(PrN)[5]

		MAXSEG(PrN)	MAXSEG(Hd)
► (a)	i. **Soprano** + preening → **SOPRAN**ING	[oʊ]	[p, ɹ, i]
	ii. **soprano** + preening → **SOPR**EENING	*(vacuous)*	*(faithful)*
(b)	i. **Soprano** + preening → **SOPR**EENING	[æ, n, oʊ]!	*(faithful)*
	ii. **soprano** + preening → **SOPRAN**ING	*(vacuous)*	[p, ɹ, i]

[4] It is important to note that the somewhat complicated definition matching task used in these experiments was necessary for detecting a proper noun faithfulness effect. An alternative task such as generating the appropriate blend for a given definition might have masked the effect as participants could have produced the same blend for multiple definitions based on some phonotactic preference.

[5] We do not include candidates where the switchpoint segments within a blend are not shared by both source words as output (since these would be harmonically bounded by the candidates that are already considered). For example, the [n] in "**SOPRAN**ING" (in (10a)) satisfies both MaxSeg(PrN) and MaxSeg(Hd) because it is an output corresponding to the /n/ in the input of both source words. See Piñeros (2004) for a similar input-output relationship in blend phonology.

(11) Exp 2: Prediction for MaxStress(PrN)

		MaxStress(PrN)	MaxStress(Hd)
► (a)	i. **Túrkey** + tycóon → **TÚRC**OON	*(faithful)*	*
	ii. **túrkey** + tycóon → **TURC**ÓON	*(vacuous)*	*(faithful)*
(b)	i. **Túrkey** + tycóon → **TURC**ÓON	*!	*
	ii. **túrkey** + tycóon → **TÚRC**OON	*(vacuous)*	*

3.3. Experiment Procedure

The experiments were run over the web using a modified version of the Experigen software (Becker 2014) following the methodology of Shaw (2013). Our experiments differed from Shaw's methodology in that we used a drag and drop interface that allowed participants to drag a blend to a definition they deemed appropriate for the blend. On each trial, participants were presented with a pair of blends and a pair of definitions. Each pair of blends differed in either stress or segmental properties (depending on the experiment), and the definitions presented with these blends differed in their correspondence to the blends' proper and common noun definitions (as described in §3.1).

The segmental experiment presented blends orthographically. Both source words as well as the blends were written in all capital letters to avoid subjects associating the ambiguous source word with either its proper noun or common noun definition based on capitalization. Figure 1 shows a screenshot from a page of the segmental experiment.

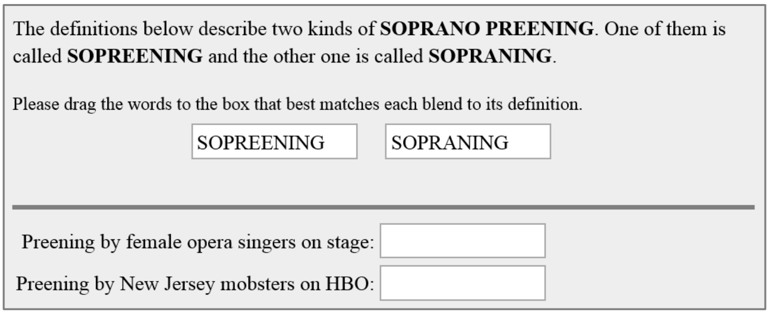


Figure 1. A screenshot from the segmental experiment. Blends were presented in the upper portion of the window and were dragged down to the definitions in the lower portion of the window.

The stress experiment presented blends orthographically and with an audio clip demonstrating how each blend ought to be pronounced. The audio clips did not play automatically, but participants could play them by clicking a button above the blend. In the orthographic representation, the stress of each word was indicated by accent marks and underlining and source words and blends were shown in all capital letters (as in the segmental experiment). This experiment also included a stress pre-test asking participants to judge the stress in the words óbject (the noun) and objéct (the verb) in order to determine how well they understood our stress notation. Figure 2 shows a screenshot from the stress experiment.

Each trial (containing two blends and two definitions) could appear in four possible ways, depending on the order that each blend and definition was presented in. In order to control for these different possibilities, the presentation order of the blends and definitions was counterbalanced across participants. In addition to this, the sequence in which the trials appeared was randomized for each person.

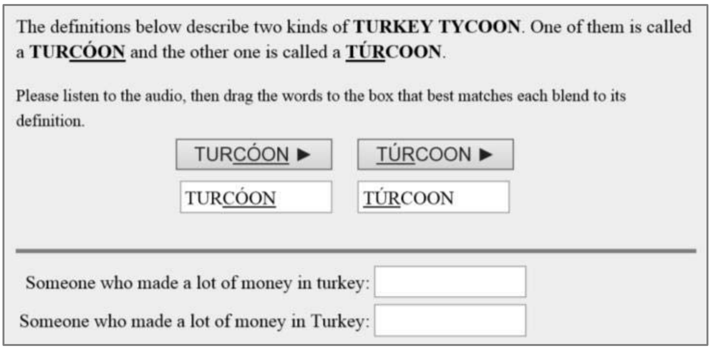


Figure 2. A screenshot from the stress experiment. Blends were presented in the upper portion of the window and were dragged down to the definitions in the lower portion of the window. By clicking on the button above the blend, the participant could listen to an audio recording of the blend.

Some additional information was also collected. On each page, there was a question that asked how difficult it was to match those particular blends with their definitions. Participants rated this difficulty on a scale of 1 (very easy) to 5 (very hard). There was also a post-survey questionnaire that asked for any strategies that the participants might have employed, any blend pairs that were particularly difficult, as well as basic demographic information (first language, handedness, gender, etc.). None of the factors surveyed in the questionnaire seemed to have any effect on the experimental results.

3.4. Participant Information

Participants for the experiment were recruited using Amazon's Mechanical Turk, a service that provides easy access to large numbers of potential participants and has proven reliable in past linguistics studies (Sprouse 2011; Prickett 2014). There are particular subject criteria that can be set on Mechanical Turk, and for these we required that participants were in the United States and that they had a certain approval rating on Mechanical Turk (95% or better and at least 100 prior approved tasks).

A total of 300 participants took our survey—out of these, data from 270 were used in our analysis. Criteria for exclusion were incomplete surveys (5), incomplete demographics questionnaires (5), participants whose first language was not English (12), and participants who failed the stress pre-test discussed in §3.3 (11). Out of the 270 people whose data was used, 113 were male and 157 were female—a fairly even gender distribution. There was also a wide range of ages: the segmental experiment had participants aged 19-73 with a median age of 32, and the stress experiment had participants aged 18-65 with a median age of 34.

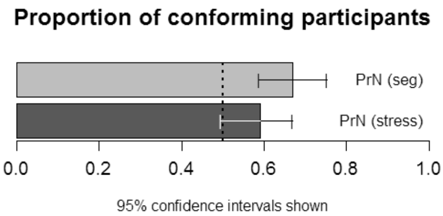
4. Results

Recall that if proper noun faithfulness influences blend formation, then we predict that participants will choose to match the blend that preserves more of the first source word to the definition that uses that source word as a proper noun. Therefore, if our hypothesis is correct, the result should be that the percentage of responses conforming to that prediction is larger than chance (50%). Following the precedent set by Shaw (2013), the results for these experiments were analyzed in two different ways as discussed in the following two sections.

4.1. Analysis by participants

First, we analyzed the data by participant and treated each participant as majority conforming to our hypothesis or not. Since there were nine items for each experiment, a subject with 5 or more conforming responses was coded as a (1) and otherwise coded as a (0). A graph displaying this proportion for both experiments is given in (12) below with the 95% confidence intervals generated from a binomial distribution included as well. Chance distribution was 50% conformity.

(12) Proportion of participants with a majority of proper noun faith responses



As this graph shows, the number of participants with a majority conforming responses for the segmental experiment easily exceeded chance with 67% of responders giving 5 or more conforming responses. The lower 95% confidence interval also exceeds chance. For the stress experiment, this proportion is still over 50%, however the lower 95% confidence interval just barely dips below chance.

For a slightly more in-depth look at these results, the numerical values for this analysis are reported below in (13). The table provides a breakdown of the number of participants that gave between 0 and 9 conforming responses. For example, in the segmental experiment there were 2 people with 9 conforming responses (completely conforming) and 36 participants with 5 conforming responses. The observed proportion of conforming participants was compared to the chance level of 0.5 using a one-sided exact binomial test (*binom.test* in the stats package of the statistical software R; R Core Team 2014) and the *p* values are given below.

(13) Numerical results and statistical analysis: responses by participant

	# participants with *n* PrN Faith responses									total # participants	# with 5+ PrN Faith	Significantly ≠ 50%?*
	1	2	3	4	**5**	**6**	**7**	**8**	**9**			
Segments	1	1	15	27	**36**	**29**	**20**	**4**	**2**	135	91 (67%)	*p*=0.0001 ***
Stress	3	8	20	25	**32**	**17**	**22**	**5**	**3**	135	80 (59%)	*p*=0.05789

*Significance Levels: 0.05: * 0.01: **: 0.001: ***

As this table shows, the results for the segmental experiment by participant were highly significant (p=0.0001). However, the stress experiment just missed significance by the conventional 0.05 level. By this analysis the results for the segmental experiment support our hypothesis for proper noun faithfulness.

4.2. Analysis by responses

Next, we analyzed the results by response and investigated how many of the individual responses conformed to the predictions. Conforming responses (those which preserved proper noun faithfulness) were coded as (1) and non-conforming as (0). A mixed logistic-regression model was fit to the data using the *lmer* method in the *lme4* package of the statistical software R (Bates, Maechler, & Bolker 2011). The model had a single fixed term, the intercept, with random intercepts for each participant and each of the nine items. A summary of the proportion of faithful responses by experiment and the values from the statistical model are given in (14) below.

(14) Statistical analysis: individual responses across participants

	# conforming	# non-conforming	Estimate	Std. Error	*z* value	*p*
Segments	700 (57.7%)	515 (42.3%)	0.3115	0.1137	2.74	0.00615 **
Stress	662 (54.5%)	553 (45.5%)	0.19090	0.09409	2.029	0.0425 *

*Significance Levels: 0.05: * 0.01: **: 0.001: ***

As this table shows, the proportion of conforming responses for each experiment was over 50% with the proportion from the segmental experiment being slightly higher than that from the stress experiment. By this analysis, both experiments were statistically significantly better than chance with the segmental experiment being very significant (p=0.00615) and the stress experiment being significant (p=0.0425).

4.3. Discussion

In summary, these results suggest that the privileged status of proper nouns emerges in English when the experimental task makes it relevant. In the analysis by responses, both the segmental and stress proper noun faith effects were statistically significant although the effect was fairly small. Also, in the analysis by participants the segmental effect was highly significant and the stress effect just missed significance. By both analyses the stress effect was slightly weaker than the segmental effect.

5. Conclusions and implications

Based on these results, it seems that the phonological grammar is able to reference the category *proper noun*. The table in (15) compares results from the experiments presented in this paper to four other experiments that have been part of our current research (Moreton et al. submitted). We first tested this methodology on noun and head faithfulness, two categories that have strong typological evidence for being relevant to phonology. We then extended the methodology to proper nouns to see if there would be similar faithfulness effects in this less typologically supported category.

(15) Proportions of conforming responses[6]
(Noun and head experiments from Moreton et al. submitted)

Experiment	Min	Estimate	Max	*p*-value
Proper Noun (segment)	**0.549289**	**0.577251**	**0.604727**	**0.00615**
Proper Noun (stress)	**0.524181**	**0.547581**	**0.570772**	**0.0425**
Noun (segment)	0.49555	0.558999	0.620577	0.352
Noun (stress)	0.533699	0.552085	0.570331	0.0476
Head (segment)	0.584749	0.604894	0.624689	<0.001
Head (stress)	0.554508	0.5752	0.595633	<0.001

Each of these categories was found to have special faithfulness in at least one of the ways tested. This suggests that there is a number of strong positions or categories that show special faithfulness effects, and that *proper noun* is one of such categories (since proper nouns showed faithfulness in a similar way to the other, more typologically attested categories). This faithfulness was demonstrated by participants matching proper noun definitions with blends that were more faithful to proper noun source words (as described in §3). Both stress and segmental faithfulness had significant effects, despite the two being different domains of phonology.

These results also seem to suggest the existence of universal aspects of the phonological grammar. In §2, the lack of evidence in English for special faithfulness to proper nouns was discussed (and is discussed more thoroughly in Moreton et al. submitted). This fact, combined with the emergent faithfulness effects demonstrated by English speakers in these experiments, suggests that proper noun faithfulness constraints are universally available. These findings complement results that suggest universal faithfulness to heads (Shaw 2013; Shaw et al. 2014; and shown above in 15) and to nouns (shown above in 15).

But what makes proper nouns (or nouns, or heads) a more faithful category at all? These emergent effects could suggest a “hierarchy of phonological privilege” (Smith 2014) where categories of words license more phonological contrasts depending on where they rank relative to others. Proper nouns could be at the top of the hierarchy, with common nouns and verbs ranking, respectively, below them. There is some neuropsychological evidence that suggests that proper nouns are processed differently than common nouns (see Jaber 2011 for a review), which could support this idea.

Since the methodology used in our experiments forces speakers to make a choice between novel blends that differ only in the amount of material preserved from each of the source words, our results

[6]Confidence intervals were obtained by using the intercept estimate and the standard error from a logistic-regression model to derive 95% confidence intervals for the intercept. Logits were then converted to proportions.

are not likely affected by extralinguistic factors such as channel bias (Ohala 1993; Hansson 2008; Moreton 2008). Proper noun faithfulness shows a significant effect in our experiments but is not well attested in the typology, where factors outside of the grammar could also influence language structure. This methodology (or one similar to it) could be used to distinguish positional effects like proper noun faithfulness that are intrinsic to speakers' phonology from those that arise due to other factors.

Appendix

This appendix contains a list of the stimuli used in each experiment. Refer to section §3.1 for typographic conventions. As noted in §3.3, participants saw each source word and blend in all capital letters.

Segmental Experiment Stimuli

Source Words		Blends	Definition
BOHEMIAN	hummus	**BOHEM**MUS	(N+n) Dip made by a native Bohemian from the Czech Republic.
		BOHUMMUS	(n+n) Dip made by an artsy bohemian in Greenwich Village.
SOPRANO	preening	**SOPRAN**ING	(N+n) Preening by New Jersey mobsters on HBO.
		SOPREENING	(n+n) Preening by female opera singers on stage.
COLOGNE	linen	**COLOGN**EN	(N+n) Linen made in Cologne, Germany.
		COLINEN	(n+n) Linen scented with cologne.
CANARY	nursery	**CANAR**SERY	(N+n) A nursery in the Canary Islands.
		CANURSERY	(n+n) A nursery for canary breeding.
CHIHUAHUA	werewolf	**CHIHUAW**OLF	(N+n) A werewolf who is from Chihuahua, Mexico.
		CHIWEREWOLF	(n+n) A werewolf who, in wolf form, resembles a chihuahua.
SUPERIOR	parrot	**SUPERR**OT	(N+n) A talking bird native to the shores of Lake Superior.
		SUPARROT	(n+n) An employee who will mindlessly mimic their superior.
INDEPENDENCE	pundit	**INDEPEND**IT	(N+n) A pundit who lives in Independence, Missouri.
		INDEPUNDIT	(n+n) A pundit who speaks out in support of independence.
CRUSADE	soda	**CRUSAD**A	(N+n) A bubbly drink brought back to Europe from the Fourth Crusade.
		CRUSODA	(n+n) A sugar-free drink promoted during a health crusade.
NARCISSUS	saucer	**NARCISS**ER	(N+n) A saucer with a picture of Narcissus admiring himself.
		NARSAUCER	(n+n) A saucer with a picture of a narcissus plant in bloom.

Stress Experiment Stimuli

Source Words		Blends	Definitions
TURKEY	tycoon	**TÚR**COON	(N+n) Someone who made a lot of money in Turkey.
		TURCÓON	(n+n) Someone who made a lot of money in turkey.
JERSEY	physique	**JÉRS**IQUE	(N+n) A physique that looks right for New Jersey.
		JERSÍQUE	(n+n) A physique that looks right for a jersey.
SPARROW	terrain	**SPÁRR**AIN	(N+n) Terrain where you're likely to encounter Captain Jack Sparrow.
		SPARRÁIN	(n+n) Terrain where you're likely to encounter a swamp sparrow.
BUFFALO	affair	**BÚFF**AIR	(N+n) A mysterious affair involving Buffalo, New York.
		BUFFÁIR	(n+n) A mysterious affair involving a buffalo herd.
CHINA	canal	**CHÍN**AL	(N+n) A canal constructed for transport in China.
		CHINÁL	(n+n) A canal constructed for the transport of china.
HAMLET	delay	**HÁML**AY	(N+n) A delay caused by agonizing indecision, like in Hamlet.
		HAMLÁY	(n+n) A delay caused by the slow pace of life in a rural hamlet.
POTTER	cartel	**PÓTT**EL	(N+n) A monopoly controlling the right to works about Harry Potter.
		POTTÉL	(n+n) A monopoly controlling the right to work as a potter.
BOULDER	sedan	**BÓULD**AN	(N+n) A kind of sedan made in Boulder, Colorado.
		BOULDÁN	(n+n) A kind of sedan made to climb over boulders.
HOMER	dismay	**HÓM**AY	(N+n) Dismay when you're assigned to read Homer again.
		HOMÁY	(n+n) Dismay when the other team's batter hits a homer again.

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Proceedings of the 33rd West Coast Conference on Formal Linguistics

edited by
Kyeong-min Kim, Pocholo Umbal,
Trevor Block, Queenie Chan,
Tanie Cheng, Kelli Finney, Mara Katz,
Sophie Nickel-Thompson, and Lisa Shorten

Cascadilla Proceedings Project   Somerville, MA   2016

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ISBN 978-1-57473-469-0 library binding

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This paper can be cited as:

Broad, Rachel, Brandon Prickett, Elliott Moreton, Katya Pertsova, and Jennifer L. Smith. 2016. Emergent Faithfulness to Proper Nouns in Novel English Blends. In *Proceedings of the 33rd West Coast Conference on Formal Linguistics*, ed. Kyeong-min Kim et al., 77-87. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #3227.