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An Investigation of Consonant Inventory Development in East Frisian Low German Utilizing Optimality Theory

Introduction¹

Traditionally, research on language change in German-American speech enclaves has been a post-mortem activity, focused on isolated changes that are often complete or in the final stages of completion. Recent scholarship in German-American dialectology, however, has shifted its primary focus to linguistic change in real-time. These real-time studies highlight and analyze the different types of sociolinguistic change involving these speech islands, namely: reduction of dialectal variety, maintenance of dialectal variety and expansion of dialectal variety. Contemporary studies in the field are beginning to shift their focus to real-time analyses, and accompanying this shift in focus is an increase in the implementation of theoretical linguistic frameworks to account for and interpret collected natural data from German-American speech enclaves (cf. Louden 1988, 1997, Fuller 1997, Salmons & Geiger 2001 among others). Generative studies concentrating primarily on German-American dialects investigate the phenomena in these speech enclaves and help associate these with other similar phenomena in typologically distant languages, thus opening the door to a deeper understanding of shifts underway in German-American dialects while improving our understanding of natural linguistic change across the board.

The purpose of this study is to provide an analysis of specific elements of the phonological inventory of East Frisian Low German (hereafter, EFLG) currently spoken in Grundy County, Iowa within the framework of Optimality Theory (OT).² The baseline for this study is the dissertation of Jan Bender (1970), which compares EFLG spoken in continental Europe and southeastern Nebraska. These data illustrate the highly constrained nature of the importing of new phonemes into a language via lexical borrowing, and are represented within the framework of OT. Furthermore, this study probes to what extent alveo-palatal fricatives exist in modern EFLG speech islands.

East Frisian Low German (EFLG)

The particular variant of Low German researched in this project is East Frisian Low German (EFLG). EFLG finds its geographic origin in East Frisia, a peninsula in the northwestern corner of Germany, bordering on the Netherlands. Politically,

East Frisia is part of Lower Saxony and enjoys a population of ca. 450,000. The dominant language of this region has undergone many changes throughout the course of the last 800 years. Until the fourteenth century the language of the region was Frisian. Most written records in Frisian are legal documents, dating from between 1276 and 1450, but there are indications that Frisian continued to be spoken up until the sixteenth century, albeit by a minority in the region.

During the fourteenth century, however, power struggles emerged among the influential landowners or *Hovetlings*. After a century of civil war, the Hanseatic League decided to intervene. "Their main reason for intervention was Frisian collaboration with pirates, who had become a threat to North Sea trade, and were offered shelter by some of the Frisian chieftains in exchange for a share of their loot. The Low German-speaking pirates who found shelter in large numbers in East Frisia may have been the first group of speakers to introduce Low German into the area, though even earlier Low German had begun to play an important role as the language of trade and a *lingua franca* for communication outside of the region. Between 1408 and 1453 fleets of Hanseatic war ships occupied East Frisia three times. Between 1433 and 1453 a Hanseatic force occupied the city of Emden, the economic and political center of the region" (Matras and Reershemius 2-3).

The subsequent linguistic developments in the region that ensued after the Hanseatic occupation of Emden indicate a shift in the dominant language from Frisian to Middle Low German. Foerste (1957) claims that Emden's middle class were among the first to adopt Low German, the Hanseatic *lingua franca*, not just as a written but also as a spoken language. Matras and Reershemius (2-4) argue that structural differences between EFLG and the surrounding Low German varieties - such as the plural concord marker *-n* in EFLG and *-t* in the neighboring regions - indicate that East Frisia imported Hanseatic Middle Low German. Given the aforementioned complex linguistic history of the region, it is not unreasonable to assume that the existence of a Frisian substratum might have effected the formation and acquisition of EFLG. By the nineteenth century yet another alteration in language usage enveloped this area: the shift to Standard German. The suppression of Low German initially occurred in the upper and middle classes of society. The sociolinguistic impact of this shift to Standard German associated Low German speakers with lower social classes and rural areas. The two groups analyzed in this paper belonged to these perceived 'lower' social classes and occupied rural areas of East Frisia (near Krümmhorn). The dialect of both the Nebraska and Iowa EFLG speakers displays no effects of this nineteenth century suppression of Low German.

The Settlement History of EFLG Speakers in North Central Iowa and South Eastern Nebraska

In the middle of 1850s news of cheaper farmland in Central and North Central Iowa (Butler, Hardin and Grundy Counties) came to the attention of East Frisians in the German Valley colony in Northern Illinois. Grundy County today still holds the largest concentration of East Frisians West of the Mississippi River. The area was originally settled by East Frisians in Northern Illinois in 1854 and Lutheran and Reformed adherents who came directly from East Frisia (Krümmhorn) in 1867. Immigration

directly from East Frisia to North Central Iowa continued until 1952. Most of these European immigrants and daughter colony settlers were in search of a better way of life. This dream was realized in North Central Iowa's cheap, yet prosperous farmland.

The settlement history of the Hanover community in Southeastern Nebraska shows a strong resemblance to the settlement patterns in North Central Iowa. Already in the early 1850's immigrants from East Frisia and other mother colonies in the US began to arrive in Nebraska. Most of the immigrants that came directly from East Frisia sought a better way of life after the failed Revolution of 1848. Bender explains that the settlement of Nebraska by East Frisians reached its height in the beginning of the 1880s. The travel of these late arrivers was eased considerably due to the large number of East Frisian settlers who had already established communities there 20-30 years ago: "Auch dadurch, dass es im damaligen 'Hanover township' in Nebraska schon eine ostfriesische Gemeinde gab, wurde den Vorfahren jener Leute der Entschluss zur Einwanderung nach Nebraska erleichtert. Sie kamen zu ihren Verwandten und Landsleuten, die ihnen oft das Reisegeld vorgestreckt hatten und die sie jetzt aufnahmen" (Bender 18).

Methodology and Demographic Background of Informants

For this study we implemented a simplified version of the wordlist developed by Bender (217-29) in her dissertation. Using Bender's dissertation materials as a point of departure afforded us the opportunity of comparing the forms that we obtained in Grundy Center with EFLG speech islands in southeastern Nebraska. Provided the similar geographical origins of these two groups, another benefit of integrating Bender's wordlist into our corpus of study is the diachronic comparisons that we can make between Bender's data and our data gained through this study. Bender's study, which was conducted in the late 1960s and completed in 1970, makes descriptive linguistic data available to us that are 30 years older than the data that we acquired in Iowa. Surprisingly, as will be observed in this project, the Grundy County EFLG speakers exhibit forms and behaviors that are more restrictive and conservative than their Nebraska counterparts.

The Grundy Center EFLG speakers interviewed for this project were all senior citizens, with the youngest speaker at age 68. In total, a group of 12 people were interviewed, consisting of 7 men and 5 women. Two separate sets of interviews were conducted. For the first round of interviews in Grundy County, the entire group of 12 informants sat around a table as wordlists were distributed to them. The format of the first interview consisted of one of the researchers reading a lexical item from the wordlist out loud and then having the individuals in the group successively repeat the lexical item in their variant of EFLG. Although most forms were identical among all speakers of the group, occasionally discussion would ensue regarding the proper pronunciation of particular forms. The second set of interviews was conducted on an individual basis, i.e., between the interviewers and individual informants. The two sets of interviews proved to be providential in eliciting some of the lexical borrowings exhibiting targeted features. The nexus of EFLG in and around Grundy Center extends into many smaller communities; therefore, it was deemed necessary to investigate what individual differences existed as well as to see if there were any overarching features that prevailed in the speech patterns of inter-community communication. Admittedly, distinct lexical and phonological differences between

these communities are worthy of further study; however, a detailed analysis extends beyond the scope of this current endeavor. In the round of individual interviews, all of the speakers produced the lexeme 'kitchen' without the alveo-palatal fricative [tʃ]. In the group interview, only one of the speakers produced the form with the homorganic palatalized alveolar affricate [tsʃ]; all others said *Kucke* [ku:kə]. In the group interview individuals expressed that this latter lexeme exists in EFLG as it is spoken today in continental German-speaking Europe. The interviewed group as a whole—affiliated with the Ostfrisian Heritage Society—seeks to re-establish its linguistic identity with contemporary Low German as spoken in East Frisia; however, it is clear that these lexical similarities with modern European Low German are simply lexical borrowings and therefore not relevant for the examination of the historical development of the consonant inventory of the investigated speaker group.

Although the Grundy County EFLG speakers were the target for our elicitation, the data represented in Bender's (1970) observations of the Nebraska EFLG group are equally important for our present study in which we compare differences in the development of consonant inventory in related speech communities. Therefore, the disparity in time between Bender's data collection and our own becomes a concern. To minimally address this concern, four speakers from the Beatrice, Nebraska area were interviewed in person, and the fricative inventory of Nebraska EFLG as recorded by Bender remains the same.

Brief Introduction to Optimality Theory (OT)

Following is a brief guide to Optimality Theory (hereafter OT) and its application to the phonological data being examined in this paper. OT offers an alternative methodology to traditional, rule-based phonology. Rule-based phonology employs the ordering of phonological rules in a rigid sequence with each rule having either no effect or producing an intermediary form, which in turn is acted upon by following rules. A principle point of departure for OT from rule-based phonology is the absence of these intermediary forms, as the theory is solely concerned with input-output relationships. Phonological change is modeled within the theory not through rules acting upon intermediary forms but through a hierarchy of constraints eliminating potential outputs from a single input, resulting in the selection of the "optimal" candidate. A crucial assertion is that these constraints are universal in nature, meaning, that they are present in all languages. Constraints exist as either *faithfulness* constraints or *markedness* constraints. Faithfulness constraints seek to preserve features of the input form intact in the output. Markedness constraints enforce phonologically prohibited features, i.e. "marked" forms, from surfacing intact from the input to the output.³ These two principles are inherently conflicting, and it is the ranked hierarchy of these two types of constraints that selects a single, optimal candidate by eliminating competing forms. Considering that each constraint is universal, variation across languages results from the differences in ranking these markedness and faithfulness constraints.

In order to aid in the introduction of this theory and to facilitate the understanding of its application to the data throughout this work, below we present a simple model grammar, or "toy" grammar, with examples of basic constraints and their application. Two basic examples of constraints are **ONSET** and ***CODA**. These are both markedness constraints, the former indicating that there is a tendency

for languages to have onsets for syllables. Thus, an onset-less syllable would be considered a “marked” form. Likewise, *CODA signifies the universal markedness of syllables with codas. The diacritic * indicates a prohibition for the feature it precedes, here “CODA” is disallowed. The aforementioned markedness constraints illustrate a tendency for language to be [ba.ba.ba.ba. . .]. However, we realize that the complexity of individual languages far exceeds this general tendency. This is due to the other force at work here, represented by constraints which seek to preserve segments, features, etc. in the output form, or surface form (SF), as they are in the input, or underlying representation (UR). These are faithfulness constraints, of which an example is MAX(C), which indicates the preservation of all consonants (C) present in the UR into the SF. Another faithfulness constraint used in the ranking below (Constraint ranking 1) is DEP(V), which restricts the addition of vowels (V) to the SF that are not present in the UR. Below is an example of these constraints ranked within a hierarchy to elicit an optimal output for the example grammar.

Constraint ranking 1: *CODA, DEP(V) >> MAX(C)

-This is to be read as: No Coda (markedness) and a ban on the epenthesis of vowels (faithfulness) *outranks* preservation of consonants in the UR.

These constraints are fed into a *tableau*, that also incorporates an infinite number of potential output forms⁴, called *candidates*. These are created by a process referred to as *GEN*. An infinite number of candidates is necessary, because OT predicts that every possible *rival candidate* is eliminated by the constraint ranking, leaving only the *winner*, indicated in the tableaux by the symbol σ . Here is one such tableau, using the aforementioned constraint ranking:

Tableau 1:

The first two constraints, *CODA and DEP(V) are equally ranked, or said to be

/bat/	*CODA	DEP(V)	MAX(C)
σ ba			*
bat	*!		
ba.ta		*!	

on the same *stratum* (indicated by the broken line), so any violation of either, marked by “*”, carries the same weight. MAX(C) is ranked lower, so any violation of it is only considered after violations of those constraints ranked higher. In effect, these tableaux are read left to right, and the violations are evaluated in this manner. Any constraint that is violated by a candidate before a constraint is violated by the winner is considered a *fatal violation*, eliminating that candidate from further consideration. Fatal violations are indicated by “!”, and the following columns for that candidate’s row are grayed out in the tableau, as that candidate is no longer being considered.

Not all violations are fatal, however, as even the winner experiences violations, as seen in Tableau 1, with the Optimal Candidate violating **MAX(C)**. This is a facet of the *violability* of constraints, due to the conflicting nature of markedness and faithfulness.

This type of ranking reflects natural languages that have only coda-less syllables. Subsequently, such languages would deal with incorporating a new or foreign UR, via lexical borrowing, with a syllable that has a coda by deletion of this final consonant(s), due to the lowly ranked faithfulness constraint for preserving such consonants. Also, epenthesis of a final vowel to resolve this illegal form is not favored, due to the highly ranked faithfulness constraint against adding vowels to the SF that are not present in the UR.

The preceding tableau demonstrates the constraint ranking that would produce a SF of [ba] from a UR of /bat/. However, by simply altering the ranking of these same constraints they produce a different SF from the same UR. This illustrates the universality of constraints and that it is the differences in rankings that produce parametric variation across languages.

Constraint ranking 2: MAX(C), DEP(V) >> *CODA

-This is to be read as: Preservation of consonants from the UR and No epenthesis of vowels outranks No coda.

Tableau 2:

The winner using constraint ranking 2 from a UR of /bat/ is [bat]. One final adjustment of the constraints yields yet another SF from /bat/

/bat/	MAX(C)	DEP(V)	*CODA
bat			*
ba	*!		
ba.ta		*!	

This type of ranking illustrates types of natural language that place a premium on preserving all consonants present in the UR, despite the natural, universal tendency of languages not favoring consonants that produce a coda. Also, these languages prefer to preserve the existence or absence of vowels in the UR over not having codas.

Constraint ranking 3: MAX(C) >> *CODA >> DEP (V)

-This is to be read as: Preservation of consonants from the UR outranks No coda, which outranks Epenthesis of vowels.

Tableau 3:

/bat/	MAX(C)	*CODA	DEP(V)
ba.ta			*
ba	*!		
bat		*!	

This ranking of the same constraints exemplifies types of natural languages that do not favor the existence of codas, yet wish to preserve all consonants in the UR, and are able to accomplish both through tolerating the epenthesis of vowels not present in the UR.

Data Analysis Utilizing OT

The data elicited from EFLG speakers in Grundy Center, Iowa exhibit several features that depart from the data collected by Bender in the EFLG speech island found in southeastern Nebraska. Both of these communities display features of Low German that are more traditional—such as the overall presence of unshifted voiceless plosives in all environments—than the features of EFLG in continental Europe, which is undergoing assimilation caused by the socio-linguistic pressure from the superstratum of Standard German (Wagener 283; Bender 217-29).

One of the first things that caught our attention at the onset of this comparative evaluation was the alternation found in Bender's data between the continental European speakers of EFLG producing [lʊf] and the EFLG speakers in Nebraska producing [lʊ] for *Luft* 'air.' An initial analysis incorporating only these two forms might lead to the interpretation that the speakers in Nebraska have simply lost the final, voiceless fricative consonant through apocope from the UR /lʊf/ to form /lʊ/. However, once we encountered the form [lux] produced by the EFLG speakers in Grundy Center, the process underlying the shift from a final [f] to [x] was opaque. As pointed out by an anonymous reviewer, the /f/ - /x/ allophony has long plagued investigations of continental West Germanic dialects. Accordingly, it is difficult to assume that the underlying form exhibits either [f] or [x]. However, this led us to consult the *Digitaler Wenker Atlas (DiWA)* hosted by Philipps-University in Marburg for the historical form for Low German *Luft*. We discovered that the historical form in the Emden area is predominantly [lux(t)], which alters and simplifies our analysis. The apocope of the final stop [t] is grounded in perceptual salience: elements in an inventory tend to be maximally distinct from each other perceptually, and contrast between them tends to be neutralized in contexts where its perceptibility is reduced. Whereas fricatives have frication noise and sonorants have formant structure, plosives lack internal perceptual cues altogether; therefore, they are perceptually weak and are cross-linguistically shown to have a higher tendency of deletion (cf. Côte 2004, Steriade 1999a, 1999b, 2001). Consonants in coda position produce very weak phonetic cues. As for the /f/ - /x/ allophony, the distinction between these two fricatives in coda position is often difficult to recognize on the basis of spectral energy distribution (cf. Vaux 1998). Norman (1988) shows place neutralization of final [f] and [x] in Mandarin Chinese. This same neutralization has been observed in other German-American dialects; for

example, Keel, Putnam and Weiss (2005) provide a spectral analysis of final syllabic fricatives—based largely on Johnson's (1994) dissertation—in Volga German dialects located in Western Kansas that also display this neutralization of these fricatives. Therefore, it is reasonable to assume that the continental European EFLG variant [ʌʃ] is the result of borrowing of the Standard German [ʌʃt]. Both American EFLG dialects were imported prior to this borrowing with the UR /ʌx/ intact.

The different surface representations in the two American EFLG dialects can both be elicited from the UR /ʌx/ through an OT analysis. Due to highly ranked faithfulness constraints, the Grundy Center dialect speakers produce the SF [ʌx] that is unchanged from the UR. In the Grundy Center dialect, the faithfulness constraints are at least more highly ranked than the particular markedness constraint that outranks them in the Nebraska EFLG dialect, which motivates the loss of this final consonant, as a marked form. The question that remains pertinent to these data is: what is the marked form that is motivating the change? Part of the answer appears in another section of the data elicited from the Grundy Center speakers that differs from the Nebraska speakers in a similar way. For the word *Säge* 'saw,' the Nebraska speakers produce [sə:ə] and the Grundy Center speakers produce [sə:əʃ]. The UR here would appear to be /sə:əʃ/, with the Nebraska speakers losing the final consonant in the same way they lose the final consonant for *Luft*. The similarity between the two consonants being lost in word final position is clear: they are the voiced and voiceless variants of the velar fricative.

The loss of underlying word final velar fricatives can be illustrated in OT by means of a highly ranked markedness constraint. This constraint will be *x / _ #, hereafter abbreviated *x, and is to be read: No velar fricative (either voiced or voiceless) in word final position. Simply re-ranking this markedness constraint does not in and of itself constitute a phonological change in either EFLG dialect (cf. McMahon 2000). As pointed out by Gess (2003), the re-ranking of phonological constraints is the result, and not the cause, of change. Gess proposes a three-tier system of how phonological change takes place and can be represented in a re-ranking of OT-constraints. Gess (2003:72) argues that phonological changes enter the grammar at the post-lexical level, at the register-dependent level. Phonetic cues and acoustic parameters (i.e., periodicity, spectral shape and fundamental frequency) are regarded as the rationale behind the change, and sociolinguistic factors promote the spreading of a given change. Due to the universal nature of constraints, this constraint has to be present in the constraint rankings of both American dialects of EFLG, but their different surface forms are the result of the different place *x occupies within the respective rankings.

Constraint ranking 4 - Nebraska EFLG: *x, DEP(V) >> MAX(C)

Tableau 4:

/lʊx/	*x	DEP(V)	MAX(C)
☞ lʊ			*
lʊx	*!		
lʊ.xə		*!	

Here, [lʊ] violates the faithfulness constraint **MAX(C)**. However, the other two candidates violate *x, a markedness constraint, and **DEP(V)**, a faithfulness constraint, which are both on a higher stratum than **MAX(C)**, thus eliminating the rivals and leaving [lʊ] as the winner.

Constraint ranking 5 - Grundy Center EFLG: **MAX(C), DEP(V) >> *x**

Tableau 5:

/lʊx/	MAX(C)	DEP(V)	*x
☞ lʊx			*
lʊ	*!		
lʊ.xə		*!	

Here, [lʊx] violates the markedness constraint *x. However, the other two constraints violate the faithfulness constraints **MAX(C)** and **DEP(V)**, which are on a more highly ranked stratum, thus eliminating these rival candidates and leaving [lʊx] as the winner. The same two rankings produce the correct tableaux for the two dialectal variants of *Säge*.

Nebraska EFLG (Constraint ranking 4 applies):

Tableau 6:

/sɔ:oy/	*x	DEP(V)	MAX(C)
☞ sɔ:oy			*
sɔ:o	*!		
sɔ:oyə		*!	

Grundy Center EFLG (Constraint ranking 5 applies):

Tableau 7:

/sɔ:oy/	MAX(C)	DEP(V)	*x
☞ sɔ:oy			*
sɔ:o	*!		
sɔ:oyə		*!	

Another observed difference between the two American EFLG dialects involving a loan word from English can be examined in a similar way. Crucially, this difference was observed in other English loan words as well as EFLG words used in continental Europe; however for the scope of this study, we decided to focus on one particular example of this phenomenon. The loan word in question is “kitchen” or [kɪ.tʃən], which is produced as [kɪ.tʃən] in the Nebraska dialect and as [kɪ.tʃən] in the Grundy Center dialect. Both these forms display a feature common to Low German to not include the alveo-palatal affricate [tʃ] in their phonological inventory. This segment is included in the EFLG inventory presented by Matras and Reershemius, but it is distinguished by parentheses (12). Clearly, there is an aversion to these palatal phonemes, as the data indicate. The EFLG speakers we interviewed in Grundy Center are bilingual, but with English serving as their primary language. Presumably, the Nebraska informants interviewed by Bender possessed a similar level of bilingualism. Therefore, a safe assumption would be that all the speakers in both groups are fully capable of producing the segment [tʃ] while speaking English, but apparently do not do so while speaking EFLG, even when producing a word that has been borrowed from English.

The phonological integration of loanwords, in cases of relatively light to moderate contact, tend to be adapted in terms of the phonology and morphology of the recipient language thus becoming, according to Winford, “essentially indistinguishable from native terms” (46-47). Phonological borrowing, even under heavy lexical borrowing, appears to be quite rare and subject to strong constraints. Based on Thomason’s *borrowing scale* (70-71), the EFLG speakers in both Grundy Center and southeastern Nebraska incorporated such lexemes as “kitchen” into their vernacular at a time in their linguistic development when few bilingual speakers existed in the community. The borrowing of phonological features has been attested in many cases of relatively intense contact. One of the conditions under which this tends to occur is the substantial importation of foreign lexical items along with foreign phones or phonemic distinctions. An example of this phenomenon is found in the massive lexical borrowing from French into Middle English. This intense borrowing had some influence on Middle English phonology. For example, the introduction of French loans with initial [v ð z] led to the development of separate phonemes of former allophonic variants such as [f] and [v], [θ] and [ð], and [s] and [z]. The phonemicization of voiced fricatives and

affricates in opposition to their respective voiceless counterparts in Middle English, is classified by Winford under the following constraint on phonological borrowing:

The existence of gaps in the phonemic inventory of the recipient language facilitates the importation of new phonemes or phonemic oppositions that fill such gaps (55).

The abovementioned constraint postulated by Winford does not account for the length of time during which both languages exist in a heavy-borrowing nexus. The period of time between the Norman Invasion of 1066 and the production of written texts in Middle English consists of roughly three centuries. Obviously, both the Grundy Center and southeastern Nebraska EFLG-speaking communities have existed in the Midwest for approximately 150 years, with some speakers coming to America as late as the early 1950s. Although the linguistic borrowing, be it lexical, phonological, etc., between EFLG and English is continually on the rise, this example, namely, the variant pronunciations of the borrowing "kitchen", clearly show that although both groups of speakers can and *do* pronounce this lexeme with a medial alveo-palatal affricate [tʃ] when speaking English, this phoneme does not appear in EFLG. The current pronunciations of "kitchen" in both EFLG-speaking communities still reflect the phonemic inventories at the time of incorporation of these forms into the individual EFLG dialects.

The differences in the phonology of the two American EFLG dialects, as exhibited in the variant borrowings of "kitchen", are examined below utilizing OT. First, the three segments involved, [tʃ], [ts], and [tsʰ], need to be analyzed with respect to their phonological features.

[tʃ] - [+coronal, -anterior, +distributed]

[ts] - [+coronal, +anterior, -distributed]

[tsʰ] - [+coronal, +anterior, -distributed; +dorsal]

[+dorsal] = [+high, -back]

This breakdown does not assist in illustrating the intuition here; that [tsʰ] is a "closer" approximation of original [tʃ] than [ts], because [tsʰ] incorporates the palatal nature of the alveo-palatal affricate into the more favorable, homorganic, alveolar affricate. The reason why the Nebraska dialect favors [ts] rather than [tsʰ] has to involve the markedness of this particular complex articulation ranking higher than the faithfulness.

As shown in the feature representation of the segments above, there is no simple way to show the preference for [tsʰ] over [ts] and vice versa in the Grundy Center and Nebraska dialects, respectively, making use of only these features. To make use of the above stated intuition about [tsʰ] being "closer" to [tʃ] for the Nebraska speakers we need to incorporate constraints regarding the faithfulness to the place of articulation of the segment in relation to the UR. Since [tsʰ] partially preserves the palatal nature of underlying [tʃ] through the complex articulation,

we will label this as a violation of **IDENTITY(place) -1** (hereafter **IDENTITY** will be abbreviated to **IDENT**). The feature, place of articulation, in the SF is not entirely faithful to the same feature as it is in the UR, but this is quantified as a “-1” violation for the purpose of comparison with the same violation in [ts]. The palatal nature of the underlying place of articulation, as present in [tʃ], is completely lost in [ts], therefore we label this a violation of **IDENT(place) -2**.

Now that constraints have been postulated to distinguish between the selection of either [tsʰ] or [ts], we next need to identify the other constraints involved in tableaux 8 and 9 below. There is a clear selection against the segment [tʃ] in both dialects, designating this as a marked form, which in turn means there is a markedness constraint against this, indicated by *tʃ. The other marked form is the homorganic affricate with complex articulation, [tsʰ]. The constraint selecting against this is represented by *[+coronal, +dorsal]. With these two additional constraints, we can now set up the variant constraint rankings of the two dialects that produce the two distinct SF.

Constraint ranking 8 - Nebraska EFLG:

*tʃ >> *[+coronal, +dorsal] >> IDENT(place) -2 >> IDENT(place) -1

Tableau 8:

/kɪ.tʃən/	*tʃ	*[+coronal, +dorsal]	IDENT (place) -2	IDENT (place) -1
☞kɪ.tʃən			*	*
kɪ.tʃən	*!			
kɪ.tsʰən		*!		*

The Nebraska dialect of EFLG has the constraint denoting [tʃ] as marked as the highest ranked constraint in this tableau. Therefore, the candidate that produces the borrowing identical to the UR and English representation, and thus includes this marked segment, [tʃ], is eliminated by this constraint. The candidate that uses the homorganic affricate with complex articulation, [tsʰ], is eliminated by the constraint that selects against this type of complex articulation, [+coronal, +dorsal]. The winner violates both faithfulness constraints dealing with place of articulation, but due to the low position of these constraints within the ranking, motivates this form, [kɪ.tʃən] to be the winner. This is a case of violations of faithfulness being selected over violations of markedness.

Constraint ranking 9 - Grundy Center EFLG:

*tʃ >> IDENT(place) -2 >> *[+coronal, +dorsal] >> IDENT(place) -1

Tableau 9:

/ kɪ.tʃən/	* tʃ	IDENT (place) -2	*[+coronal, +dorsal]	IDENT (place) -1
☞ kɪ.tsʲən			*	*
kɪ.tʃən	* !			
kɪ.tsən		* !		*

In the Grundy Center dialect, the alveo-palatal affricate is also selected against by the highly ranked markedness constraint * tʃ. However, the rankings illustrate that a “2 interval” violation of **IDENT(place)** is more egregious than using the marked form that includes the features [+coronal, +dorsal], [tsʲ].

This tendency to not favor alveo-palatal fricative articulations is further evidenced by the diachronic example in the Germanic consonant clusters /sk/ and those similar to it. This consonant cluster experienced palatalization in the High German dialects, and most of the modern Low German dialects now exhibit these forms as alveo-palatal fricatives (Wagener 283). Some Low German dialects, such as West Phalian and East Frisian Low German, however, still retain the Germanic consonant cluster /sk/. Schirmunski (362-63) confirms that even in the late nineteenth and early twentieth century the oldest generation of Low German speakers in Hamburg and Oldenburg produced the alveolar fricative [s] rather than the alveo-palatal fricative [ʃ] in lexemes such as *Busch* “bush”, *Fisch* “fish” and *fischen* “to fish”. Grundy Center EFLG speakers also produce these forms with alveolar fricatives [s] serving as the coda. This phenomenon strengthens the hypothesis that EFLG speakers do not favor alveo-palatal fricative articulations, and that such features may not exist in their phonemic inventory.

Conclusion

This study has illustrated how differences in modern German-American dialects can be presented and analyzed within the framework of OT. The constraints that shape the phonological inventory are present in all the dialects, indeed in all languages, yet it is the variant constraint hierarchies that produce the differences in phonological inventories and SF. In both Midwestern EFLG-speaking communities we observed a tendency to ‘maintain the dialect variety’ in regards to its phonological inventory (Wagener 254). This analysis has revealed that both the Grundy Center and Hanover Nebraska EFLG dialects have not participated in the phonemicization of alveo-palatal fricatives/affricates. The fact that these phonemes are present in their pronunciation of English indicate that lexical borrowings including these segments from English into EFLG occurred at a time when very few bilingual speakers existed in these communities (Thomason 70-71). Although this research shows promise, we caution against the postulation of broad generalizations given

the limit corpus of data analyzed in this study. However, based on our findings to date, we expect to elicit more forms to support the hypotheses rendered in this study.

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Notes

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² For those unfamiliar with the theory employed in this article, Section 4 serves as a condensed account of the theory. For a more detailed treatment of OT, we suggest the reader consult Kager (1999).

³ We wish to clarify that it is the phonology that determines the constraint ranking, not the constraints determining the phonology.

⁴ While OT states that an infinite number of candidates are generated, by the process GEN, to be evaluated, by EVAL, the following tableaux, as for any OT tableau, are required for practicality to include only a limited number of *relevant* forms, as the majority of the infinite number of possible candidates will incur extravagant violations, and need not be considered in the model.

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