Sibilant Variation and Koinéization in Texas German

Luke Lindemann
Yale University
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Koiné

"a stabilized contact variety which results from the mixing and subsequent leveling of features of varieties which are similar enough to be mutually intelligible, such as regional or social dialects" (Siegel 2001:175).

Introduction

- **Koinéization** is the process by which related dialects brought together into a new area mix together to create a new, stable and homogenous variety

- Examples (from Kerswill 2002):
  - New Zealand English
  - Milton Keynes English
  - Fijian Hindi/Bhojpuri
  - Norwegian New Towns

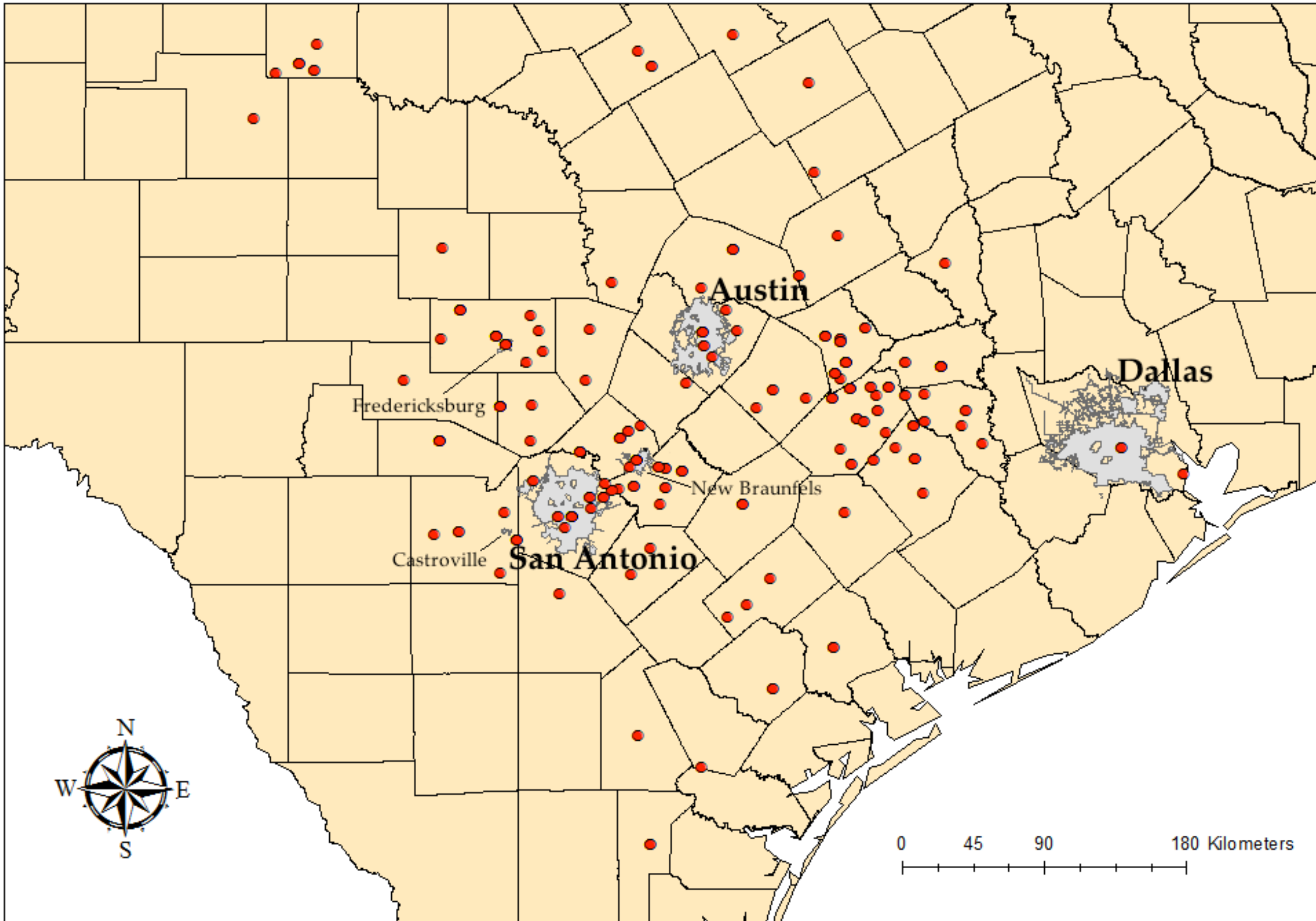
Texas German

- A robust German language enclave in Texas from ~1840 until well into the 20th century
- Immigration from throughout German-speaking Europe
- Establishment of German towns, churches, newspapers, other cultural institutions
- Large-scale language shift in the second half of the 20th century
- Approximately 6,000 remaining speakers

Texas German

- Large-scale Documentation Efforts:
  - Glenn Gilbert's *Linguistic Atlas of Texas German* (1972)
  - Hans Boas' ongoing Texas German Dialect Archive at the University of Texas at Austin
    - Boas (2002, 2009)
    - http://speechislands.org

Recorded Birthplaces of TGDP respondents as of 2017



All Texas maps created with ArcGIS (http://www.arcgis.com)

Introduction

- **Trudgill's (2004, 2011) Model of New Dialect Formation:**
  - Given a homogenous community with no previously established dominant language variety
  - Deterministic outcome based on majority variant in the input donor dialects

- **Three Stages (roughly, generations):**
  - I. Rudimentary leveling between adults
  - II. Extreme Variability and Levelling in native generation
  - III. Focusing, deterministic survival of majority form

Texas German

- Two viewpoints on the status of Texas German:

"The trend is clearly toward a dissolution of the old, fragmented, mutually unintelligible (or at best partially intelligible) dialects, either by outright replacement or by gradual modification to form a new type of speech, which, although far from uniform, **enjoys sufficient common characteristics to merit the generic name, Texas German**."(Gilbert 1972: 4) (emphasis added)

Texas German

- Two viewpoints on the status of Texas German:

"[W]e find a broad spectrum of dialectal mixtures with considerable English admixture. What has traditionally been called **'Texas German' should thus be regarded as a collection of various subvarieties** that share a limited set of linguistic features."(Boas 2009:98). (emphasis added)

Introduction

- Presence of variation in stable and homogenous language varieties:

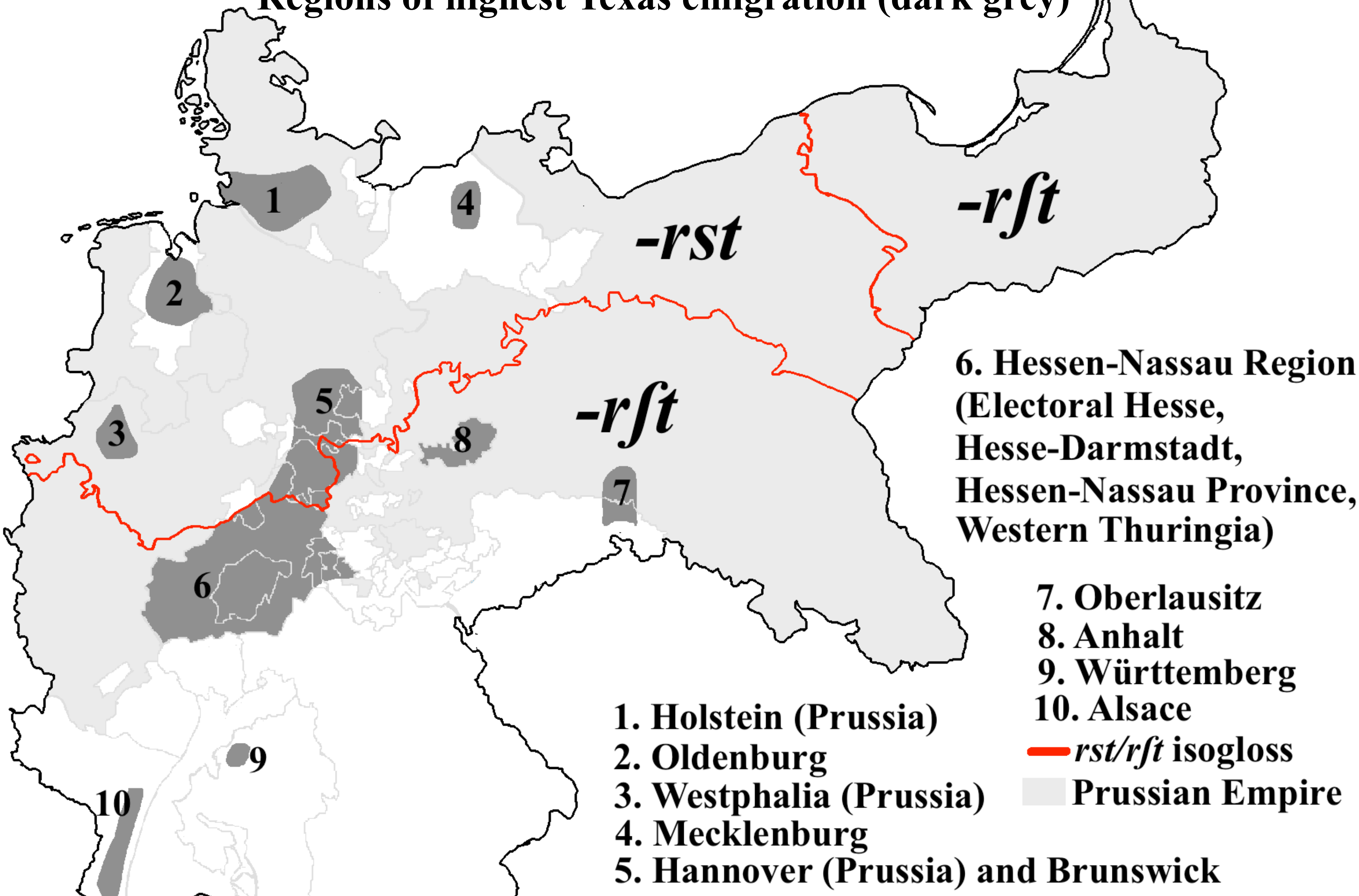
  - American English syntactic variation "in a single room" (Wood et al 2015)
  - Stable variation between speakers and within a single speaker in Dorian's study of East Sutherland Gaelic (Dorian 1994)

- So how can we tell whether a koiné has emerged or not?

Test Case: Sibilant pronunciation in *rst*-clusters

- Gilbert and Boas study multiple phonological, morphological, and syntactic variants in modern Texas German
- Some completely leveled, others remain
- A test case: sibilant pronunciation in *rst*-clusters:
  - Chosen for its availability in both elicitation surveys and open interviews
  - *Donne**rst**ag* (`Thursday'), *Wu**rst*** (`Sausage'), *Haarbü**rst**e* (`Hairbrush')
  - Pronounced as /rst/ in Standard German and /rʃt/ in many of the donor dialects:

1871 isogloss for *Wurst/Wurſt* (red)
Regions of highest Texas emigration (dark grey)



Sources: Schmidt et al (2008), Jordan (1966)

Pronunciation of *Wurst* in Immigrant Donor Dialects

- Complicated by incomplete Census records (Boas 2009, Jordan 1966)
- Roughly 50-75% from areas where ʃ-variant dominated
- Somewhat higher percentage in the Western Texas settlements
- The situation is similar with *Donnerstag, Haarbürste, Durst,* etc.

TGDP Questionnaire Analysis

- 1068 tokens (455 *Wurst*, 264 *Haarbürste*, 255 *Donnerstag*, 95 excluded)
- 486 informants from 45 Texas counties
- Born 1908-1979, median birth year 1933
- Predictor Variables:
  - Word
  - Speaker Gender
  - Speaker Year of Birth
  - Speaker Place of Birth (Latitude, Longitude)
  - Speaker ID Number

Proportion of ʃ-variants

	Wurst	*Donnerstag*	*Haarbürste*	**Total**
Gilbert 1972 (New Braunfels)	87% (n=15)	13% (n=15)	53% (n=15)	51% (n=45)
Boas 2009 (New Braunfels)	94% (n=49)	77% (n=48)	96% (n=25)	88% (n=122)
Current Study (Entire Database)	94% (n=454)	77% (n=255)	94% (n=264)	90% (n=973)

TGDP Analysis Results

- Nested Comparison of Mixed-effect logistic regressions (see appendix):
  - Only significant variable: Word
  - No significant contribution by Age/Gender/Birthplace

- If koiné formation is incomplete, we expect geographically clustered regions of variant usage

TGDP Analysis Results

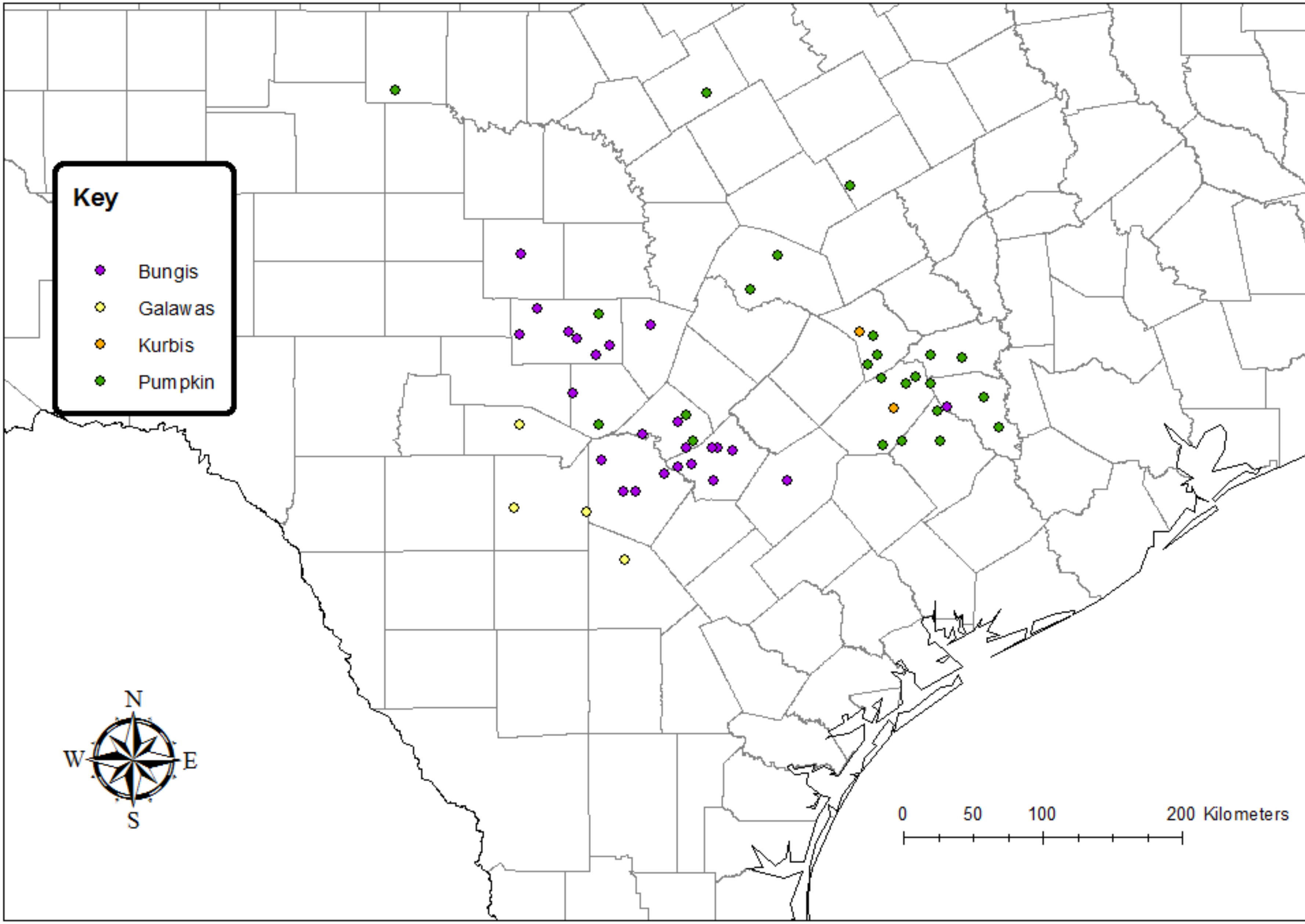
- Grieve et al (2011) present a method for creating statistically verified dialect isoglosses
- Successful implementations:
  - Dutch determiners: Tamminga (2013),
  - American English syntactic variation: Zanuttini et al (2015)
- Methodology:
  - Try to create dialect regions using this method
  - Expected clustering at the level of community or Eastern/Western settlements
  - Lack of clustering indicates koiné formation

A Quick Detour: Pumpkins!

- Some vocabulary items show a very clear pattern of clustering by region
- Below are the Questionnaire results for the word "Pumpkin" by the same speakers
- We can use this as a comparison case with *rst-* clusters

Bungis	*Pumpkin*	*Kurbis*	*Galawas*	**Other**
52% (n=70)	31% (n=41)	6% (n=8)	5% (n=7)	6% (n=8)

Variants of Texas German 'Pumpkin'



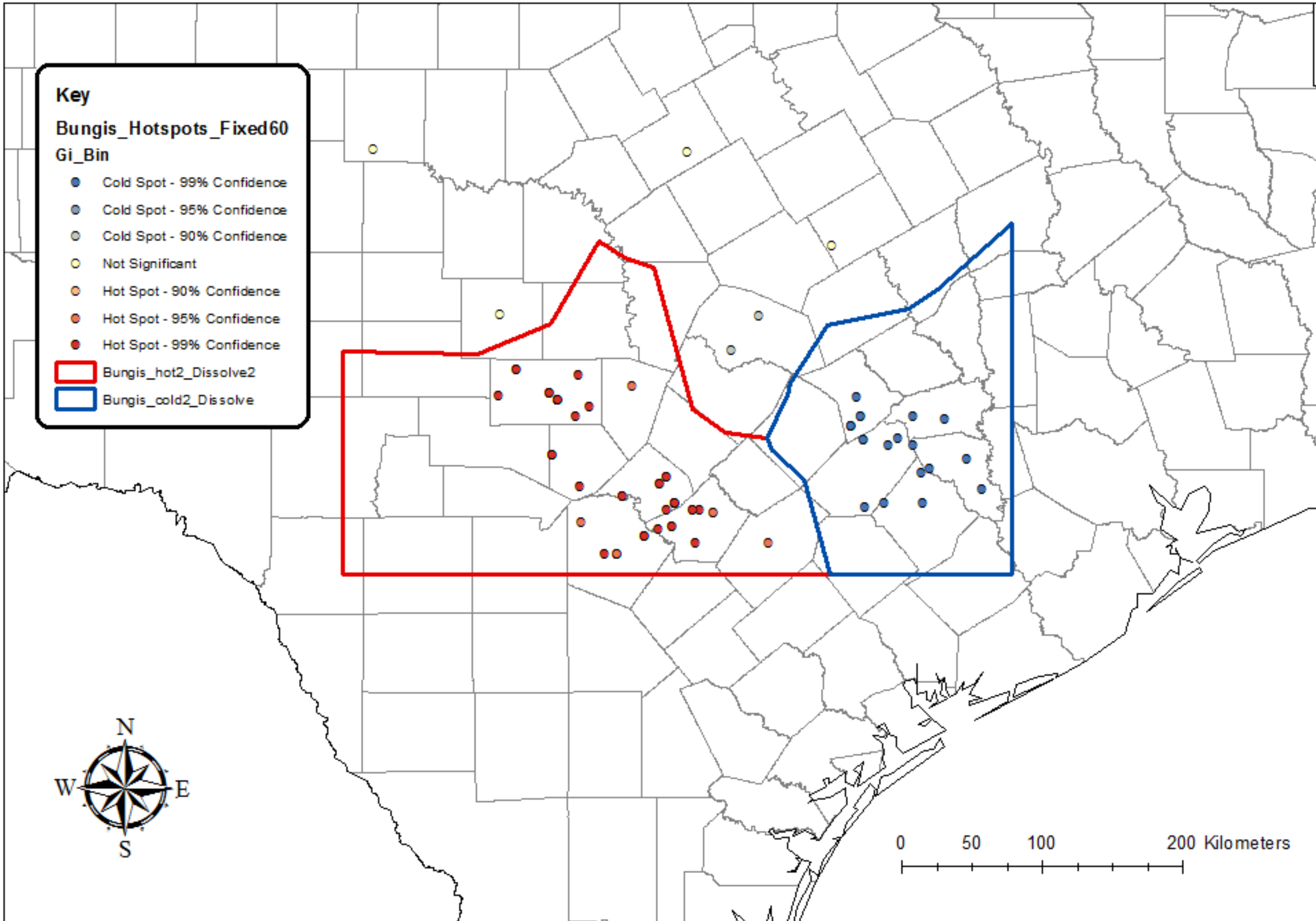
Grieve's Method

- Step 1: Global Autocorrelation with the Global Moran's *I* statistic
  - Testing at different cut-off distances
  - County resolution: ~60 km
  - German belt resolution: ~200 km
  - -1 (Dispersed) < 0 (Random) < 1 (Clustered)
  - If a global pattern is detected…
- Step 2: Local Autocorrelation with Getis-Ord Gi*
  - "Hotspot" analysis shows degree to which each point is surrounded by statistically similar points
  - Calibrated to the highest cut-off distance from Step 1
  - Boundary created (Thiessen polgons) around points with a 95% or greater confidence interval

Global Autocorrelation for *Bunkis/Pumpkin*

Cutoff (km)	Moran's *I*	z-score	p-value	Result
20	0.209271	8.032487	<0.000001	highly clustered
40	0.218946	11.149148	<0.000001	highly clustered
60	0.226641	13.125318	<0.000001	highly clustered
80	0.242965	16.107117	<0.000001	highly clustered
100	0.207658	21.200864	<0.000001	highly clustered
120	0.186511	26.457181	<0.000001	highly clustered
140	0.155158	25.892242	<0.000001	highly clustered
160	0.126054	23.967244	<0.000001	highly clustered
180	0.098621	20.688795	<0.000001	highly clustered
200	0.039101	12.580116	<0.000001	highly clustered

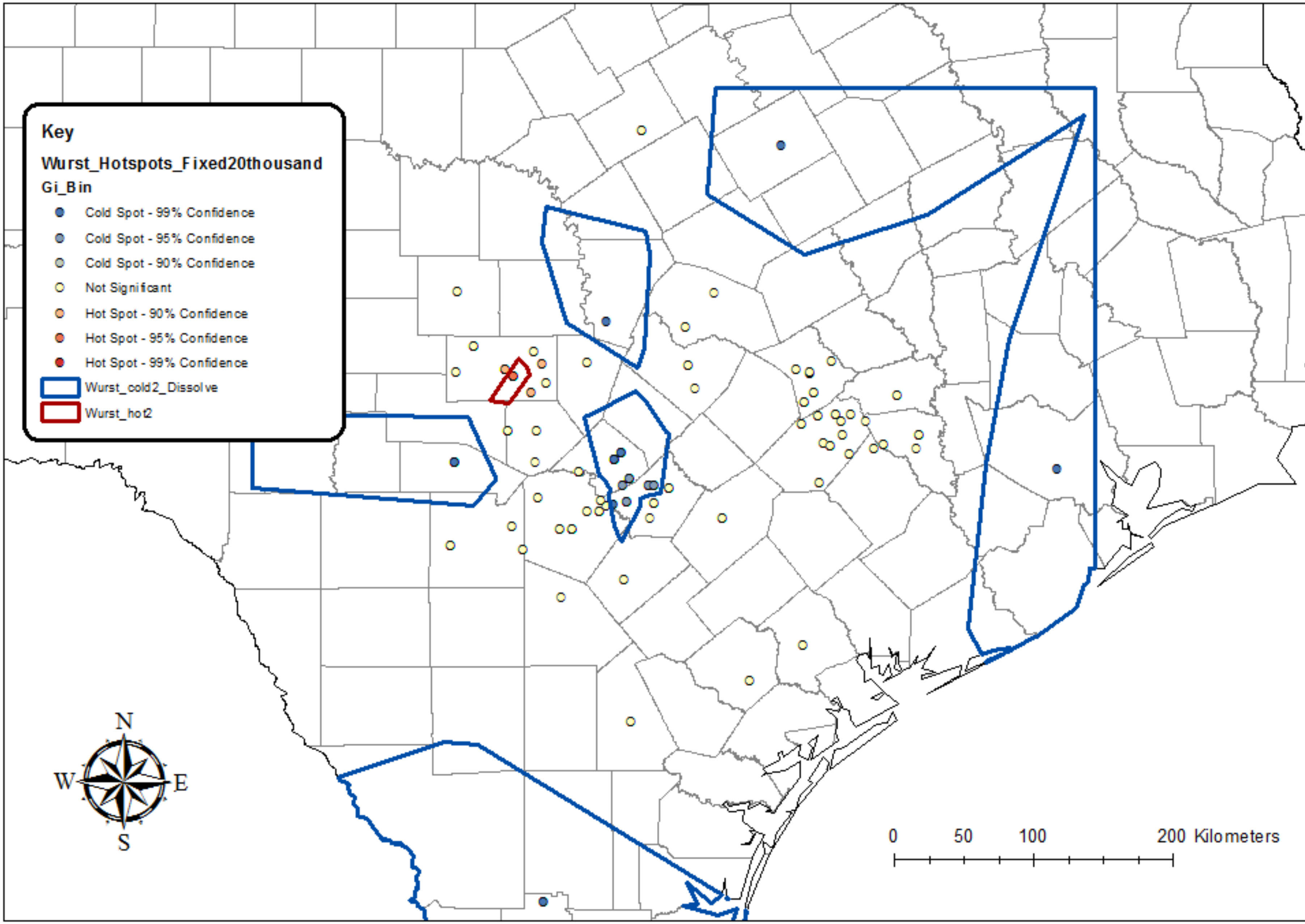
Local Autocorrelation for *Bunkis/Pumpkin*



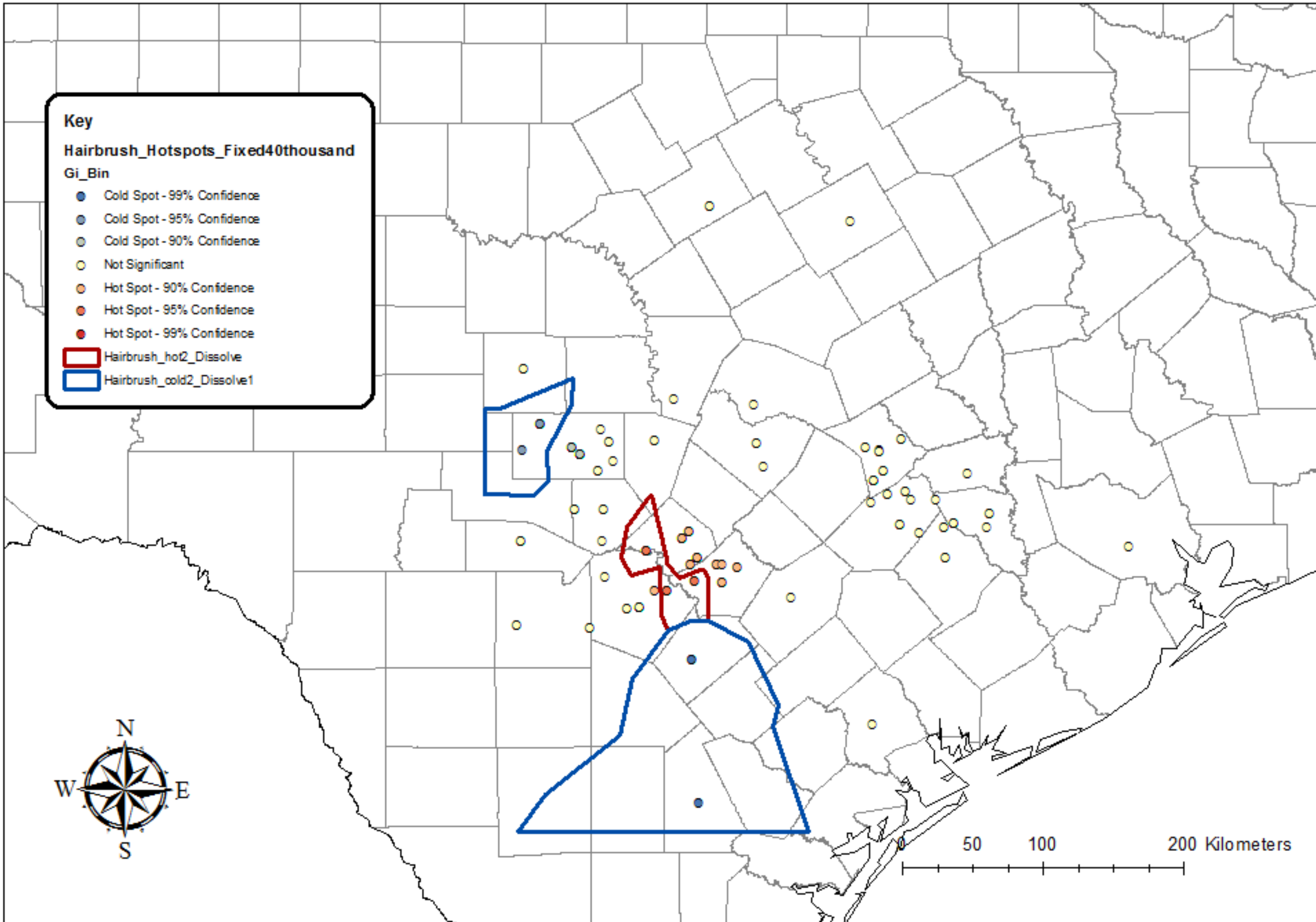
Back to *rst*-clusters

- Because Word is significant, separate analyses for each vocabulary item:
  - Moran's *I* (20-200 km) for:
    - *Donnerstag* - **random** pattern at every cut-off distance (20-200 km)
    - *Haarbürste* - **highly clustered** pattern at around 40 km and randomness elsewhere
    - *Wurst* - **highly clustered** pattern at around 20 km and randomness/dispersal elsewhere

Local Autocorrelation for *Wurst*



Local Autocorrelation for *Haarbürste*



Conclusions

- The *rst*-cluster variation is comparatively homogenous:
  - Cold spots on the outer edges of the map represent noisy single judgments on the periphery
  - The Eastern settlements are remarkably homogenous
  - Single cold spots at New Braunfels settlement (*Wurst*) and Fredericksburg (*Haarbürste*).
  - However, the lower percentages in these places are not dramatic. For both, the overall average is ~95%:
    - Fredericksburg: *Haarbürste* (91%)
    - New Braunfels: *Wurst* (83%)

Conclusions

- For this particular feature, variation in Texas German is homogenous and appears to be stable across time (not correlated with speaker age)
- Thus the existence of this variation is consistent with Texas German being a **fully-formed koiné**
- However, this is an analysis based on a single variant. In order to make definitive statements about the nature of Texas German, it will be necessary to utilize this methodology to study other aspects of variation in Texas German
  - Clearly certain vocabulary items are more resistant to homogenization

Conclusions

- Grieve's methodology can be used to analyze variation in instances of new dialect formation
- The mere presence of variation does not necessarily indicate the failure of dialect formation
- It would be helpful to analyze other examples of successful and unsuccessful koiné formation

References

Akaike, H. (1974). A new look at the statistical model identification. *IEEE Transactions on Automatic Control*, 19(6):716–723.

Baxter, G. J., Blythe, R. A., Croft, W., and McKane, A. J. (2009). Modeling language change: An evaluation of Trudgill's theory of the emergence of New Zealand English. *Language Variation and Change*, 21(02):257–296.

Biesele, R. L. et al. (1930). *The history of the German settlements in Texas, 1831-1861.* Press of Von Boeckmann-Jones Company.

Boas, H. C. (2002). The Texas German Dialect Archive as a tool for analyzing sound change. In *Proceedings of the international workshop on resources and tools in field linguistics,* pages 28.1–28.4.

Boas, H.C. (2009). *The life and death of Texas German*. Publication of the American Dialect Society. Duke University Press for the American Dialect Society.

Clardy, C. (1954). *A Description and Analysis of German Language Spoken in New Braunfels, Texas.* PhD thesis, University of Texas at Austin.

Dorian, N. C. (1973). Grammatical change in a dying dialect. *Language*, pages 413–438.

Dorian, N.C. (1983). Natural second language acquistion from the perspective of the study of language death. *Pidginization and creolization as language acquisition,* pages 158-167.

Dorian, N. C. (1994). Varieties of variation in a very small place: Social homogeneity, prestige norms, and linguistic variation. *Language,* pages 631–696.

Eikel, F. (1954). *The New Braunfels German Dialect.* PhD thesis, Johns Hopkins University.

Gilbert, G. (1963). *The German Dialect Spoken in Kendall and Gillespie Counties,* Texas. University of Texas Press.

Gilbert, G. (1972). *Linguistic Atlas of Texas German*. University of Texas Press.

Grieve, J. Speelman, D., and Geeraerts, D. (2011). A statistical method for the identification and aggregation of regional linguistic variation. *Language Variation and Change,* 23(2):193-221.

References

Guion, S. (1996). The death of Texas German in Gillespie County. *Language Contact across the North Atlantic,* pages 443-463.

Johannessen, J. B. and Salmons, J. C. (2015*). Germanic Heritage Languages in North America: Acquisition, Attrition and Change,* volume 18. John Benjamins Publishing Company.

Guion, S. (1996). The death of Texas German in Gillespie County. *Language Contact across the North Atlantic,* pages 443-463.

Jordan, T. G. (1977). The German element in Texas: An overview. *Rice Institute Pamphlet-Rice University Studies*, 63(3).

Jordan, T.G. (1966). *German Seed in Texas Soil: Immigrant farmers in nineteenth-century Texas.* University of Texas Press.

Kerswill, P. (2002). Koinéization and accommodation. In Trudgill, P. and Schilling-Estes, N., editors, *The Handbook of Variation and Change*, pages 669–701. Blackwell.

Kerswill, P. and Trudgill, P. (2005). The birth of new dialects*. Dialect change: Convergence and divergence in European languages,* 196.

Nützel, D. (2009). The East Franconian dialect of Haysville, Indiana: a study in language death. Regensburg: Edition Vulpes.

Nützel, D. and Salmons, J. (2011). Language contact and new dialect formation: evidence from German in North America. *Language and Linguistics Compass*, 5(10):705–717.

Ord, J.K. and Getis, A. (2001). Testing for local spatial autocorrelation in the presence of global autocorrelation. *Journal of Regional Science,* 41(3):411-432.

Pierce, M., Boas, H.C., Roesch, K., Bondi Johannessen, J., and Salmons, J.C. (2015). The history of front rounded vowels in New Braunfels German*. Germanic heritage languages in North America,* page 117.

Salmons, J. C. and Lucht, F. A. (2006). Standard German in Texas*. Studies in contact linguistics: Essays in honor of Glenn G. Gilbert*, pages 165–86.

Sasse, H.-J. (1992). Theory of language death*. Contributions to the Sociology of Language,* 64:7–7.

References

Schmidt, J.E., Herrgen, J. and Kehrein, R. (Hrsg.) (2008): Regionalsprache.de (REDE). Forschungsplattform zu den modernen Regionalsprachen des Deutschen. [Research platform for the modern German regional languages]. Bearbeitet von Dennis Bock, Brigitte Ganswindt, Heiko Girnth, Simon Kasper, Roland Kehrein, Alfred Lameli, Slawomir Messner, Christoph Purschke, Anna Wolańska. Marburg: Forschungszentrum Deutscher Sprachatlas.

Siegel, J. (2001). Koine formation and creole genesis. *Creole Language Library*, 23:175– 198.

Tamminga, M. (2013). Phonology and morphology in Dutch indefinite determiner syncretism: Spatial and quantitative perspectives. *Journal of Linguistic Geography*, 1(2):115–124.

Trudgill, P. (2004). New-dialect formation: The inevitability of colonial Englishes. Oxford University Press, USA.

Trudgill, P. (2011). Sociolinguistic typology: Social determinants of linguistic complexity. Oxford University Press.

Wenker, Georg (1888–1923): Sprachatlas des Deutschen Reichs. Handgezeichnetes Original von Emil Maurmann, Georg Wenker und Ferdinand Wrede. [Linguistic atlas of the German Empire. Hand-drawn original by Emil Maurmann, Georg Wekner and Ferdinand Wrede]. Marburg. Publiziert als Digitaler Wenker-Atlas (DiWA). [Published as the Digital Wenker-Atlas (DiWA)]; URL <www.regionalsprache.de>.

Wilson, J. (1960). The Texas German of Lee and Fayette counties. Rice University Studies, 63(3).

Wilson, J. (1977). The German language in central Texas today. Rice University Studies, 47(1).

Wood, J., Horn, L., Zanuttini, R., and Lindemann, L. (2015). The Southern Dative Presentative meets Mechanical Turk. *American Speech,* 90(3):291–320.

Zanuttini, R. and Horn, L. (2014). Micro-syntactic Variation in North American English. Oxford University Press.

Zanuttini, R., Wood, J., Zentz, J., and Horn, L. (2018). The Yale Grammatical Diversity Project: Morphosyntactic variation in North American English. *Linguistics Vanguard*, 4(1).

Appendices

Successful Feature Leveling: Age Graded Distribution of Rounded/Unrounded Front Vowels in New Braunfels (Boas 2009:109)

Generation	Speakers	Percentage (n=24)
1		
(b. 1855-1875)	rounded	33.3%
	unrounded	33.3%
	mixed	33.3%
2		
(b. 1880-1910)	rounded	0.0%
	unrounded	0.0%
	mixed	100.0%
3		
(b. 1910-1930)	rounded	100.0%
	unrounded	100.0%
	mixed	100.0%

Pronunciation of *Wurst* in Immigrant Donor Dialects

Regional Pronunciation	Map Regions	Eastern TX Settlements	Western TX Settlements
Primarily s-variant	1,2,3,4,5	26%	23%
Primarily ʃ-variant	6,7,8,9,10	19%	41%
"Unspecified Prussia"	1,3,5,6,7	54%	46%

Consult map of the German Empire for region numbers; information compiled from Jordan (1966)

Generalized Linear Model/Mixed Effect Model Comparison

Generalized Linear Model

Coefficients:	Estimate	Std. Error	z value	Pr(> |z|)
(Intercept)	2.6311	0.2533	10.389	<2e-16 ***
Word-Hairbrush	0.3146	0.4096	0.768	0.443
Word-Thursday	-1.5988	0.2830	-5.649	1.96e-08 ***
Gender-unspec	-0.1693	1.1529	-0.147	0.883
Gender-M	0.4843	0.2585	1.873	0.061
YOB.z	0.2158	0.1319	1.635	0.102
Long.z	-0.1399	0.1386	-1.009	0.313
Lat.z	0.1761	0.1202	1.465	0.143

AIC: 462.9

Generalized Linear Mixed-Effect Model

Coefficients:	Estimate	Std. Error	z value	Pr(> |z|)
(Intercept)	5.6260112	0.0007137	7882.9	<2e-16***
Word-Hairbrush	1.1374962	0.0007137	1593.9	<2e-16***
Word-Thursday	-2.6047295	0.0007137	-3649.8	<2e-16***
Gender-unspec	0.6621558	0.0007137	927.8	<2e-16***
Gender-M	0.8512719	0.0007137	1192.8	<2e-16***
YOB.z	0.6175153	0.0007137	865.3	<2e-16***
Long.z	-0.3556039	0.0007137	-482.5	<2e-16***
Lat.z	0.4296658	0.0007137	582.9	<2e-16***

AIC: 412.9

Models compared by AIC statistic Akaike (1974)

Mixed Effect Model is superior

Most Successful Nested Mixed Effects Model: Word, YOB, Longitude, Latitude

Fixed Effects:	Estimate	Std. Error	Z value	Pr(>|z|)
(Intercept)	10.40003	1.60598	6.476	9.43e-11 ***
Word-Hairbrush	0.99697	0.61419	1.623	0.105
Word-Thursday	-4.34782	0.83999	-5.176	2.27e-07 ***
YOB.z	0.43592	0.439	0.993	0.321
Long.z	-0.09205	0.42917	-0.214	0.83
Lat.z	0.23536	0.44855	0.525	0.6

AIC: 404.2

Only significant Variable: **Word**

Coefficient Correlation Confidence Intervals: Bootstrap Resampling of 1000 intervals

	2.5 %	97.5%
(Intercept)	14.7652199	26.100204
WordHairbrush	-1.275258	8.317408
WordThursday	-14.37048	-6.553844
YOB.z	-0.7918391	1.044521
Long.z	-1.9747366	0.767494
Lat.z	-0.9443762	1.183687

Significant variable:
Word

(range is positive to positive)

Moran's *I* for *Donnerstag*

Cutoff (km)	Moran's *I*	z-score	p-value	Result
20	-0.010989	-0.383959	0.701009	random
40	-0.014479	-0.789144	0.430028	random
60	-0.015409	-0.994469	0.319994	random
80	-0.012347	-0.846987	0.397002	random
100	-0.00779	-0.508061	0.61141	random
120	-0.006698	-0.469308	0.638849	random
140	-0.004648	0.061823	0.950704	random
160	-0.005101	0.083419	0.933519	random
180	-0.010989	-0.383959	0.701009	random
200	-0.014479	-0.789144	0.430028	random

Moran's *I* for *Haarbürste*

Cutoff (km)	Moran's *I*	z-score	p-value	Result
20	0.019814	1.902257	0.057138	slightly clustered
40	0.026318	3.049959	0.002289	highly clustered
60	0.018005	2.543024	0.01099	clustered
80	0.004375	1.194792	0.232168	random
100	-0.001207	0.666598	0.505029	random
120	-0.004391	0.032663	0.973943	random
140	-0.006171	-0.547831	0.583808	random
160	-0.001924	0.947839	0.343211	random
180	-0.000887	1.471142	0.141253	random
200	-0.00665	-0.857155	0.391359	random

Moran's *I* for *Wurst*

Cutoff (km)	Moran's *I*	z-score	p-value	Result
20	0.024888	3.375601	0.000737	highly clustered
40	0.007624	1.637967	0.101429	random
60	0.010968	2.462766	0.013787	clustered
80	-0.002704	0.001356	0.998918	random
100	-0.007685	-1.663147	0.096283	slightly dispersed
120	-0.004355	-0.00271	0.417146	random
140	-0.005356	-1.511036	0.130779	random
160	-0.004537	-1.170381	0.241848	random
180	-0.00554	-1.971882	0.048623	dispersed
200	-0.003101	-0.336099	0.736796	random