The Texas German Dialect Archive as a tool for analyzing sound change

Hans C. Boas

Department of Germanic Studies
E.P.Schoch 3.102, C 3300
University of Texas at Austin
Austin, TX 78712-1190, U.S.A.
hcb@mail.utexas.edu

Abstract

This paper describes technical features of the Texas German Dialect Project (TGDP) whose goal is to record and document the remnants of the rapidly eroding Texas German dialect spoken in central Texas. At the center of the project's current activities is the creation of the Texas German Dialect Archive (TGDA), an on-line archive of interviews with native speakers of Texas German that have been recorded since January 2002. Once the first 100 hours of interviews are archived by the TGDA, a database will be created that covers the entire inventory of Texas German phonemes including their respective allophones in different environments. Each database entry will be linked to sound files serving as examples. At the next stage, a second database will be created which will contain corresponding historical information for each phoneme and its allophones based on descriptions (and, when available, historical recordings) from the 1950s and 1960s. Once the two databases are linked, researchers will be able to conduct on-line research on sound change in Texas German.

1. Introduction

The Texas German speakers who live in a thirty-one-county area of central Texas are in large part the descendants of settlers who emigrated from middle and northern Germany. The first large wave of settlers arrived between 1844-1848 and founded New Braunfels and Fredericksburg, among others (Biesele, 1928; Jordan, 1961). Because of their isolation on the western frontier, these towns became important regional centers that enabled German immigrants and their descendants to maintain their culture and language for an exceptionally long time (Salmons, 1983; Guion, 1996).

Due to the wave of anti-German sentiment caused by the two World Wars, the prestige of German in the U.S. suffered severe blows and the generally stable linguistic situation of Texas German began to collapse (Salmons, 1983). The social, demographic, and economic changes that took place in central Texas following WW II led to schooling exclusively in English in a culture that had an extensive system of schools in which the language of instruction was German. Moreover, English gained prestige among younger speakers because of the practical and economic advantages associated with being primarily English speaking (Salmons, 1983; Boas, in press).

In consequence, Texas German was no longer transmitted to children to any significant extent. Whereas for generations Texas German was acquired at home in early childhood, this form of transmission disappeared in the years following WW II. The continuation of these trends over last five decades has resulted in a sharp decrease in the number of fluent Texas German speakers, thereby causing a rapid language shift to English in the Texas German community (Salmons, 1983; Guion, 1996; Boas, in press). At present, English has become the primary language for most Texas Germans in both private and public domains, whereas the reverse would still have been true as late as the 1940s.

The remaining number of fluent and semi-fluent Texas German speakers, most of whom are age 70 and older, is estimated to be between 6-8000 (compared to ca. 70,000 in the early 1960s, according to Gilbert (1965, 1972)). If the current decrease of fluent Texas German speakers continues – and there is no sign that it will not – the dialect is expected to go extinct within the next 25 years.

The goal of the Texas German Dialect Project (TGDP) hosted at the University of Texas at Austin is to record, document, and analyze the remnants of the rapidly eroding Texas German dialect (see Boas, in press).[1] At the center of this ongoing effort is the creation of the Texas German Dialect Archive (TGDA), a web-based database that allows on-line access to audio and video field recordings as well as their transcriptions and translations.[2]

The remainder of the paper is structured as follows. Section two describes the individual steps taken to create an on-line archive of field recordings of Texas German (the TGDA). Section three outlines the design of a database that is still in its planning stage. It will cover the current phoneme inventory of Texas German. It also discusses the procedures for implementing a second database which will contain entries for the phoneme inventory of Texas German as it was spoken four decades ago. Finally, it is shown how the two databases will be used to conduct on-line research on sound change in Texas German.

2. The Architecture of the Texas German Dialect Archive (TGDA)

The data contained in the TGDA are excerpts from sociolinguistic interviews that have been conducted with native speakers of Texas German at three selected sites throughout central Texas (New Braunfels, Fredericksburg, and Freyburg) since January 2002. The interviews (45 – 60 minutes in length) are recorded using digital video and

[2] The Texas German Dialect Archive (TGDA) web site is part of the larger Texas German Dialect Project (TGDP) web site that also contains information about settlement history and culture of the Texas Germans. The web site will be publicly available by the end of August 2002.

audio equipment.[3] Each recording, or part thereof, is first transcribed, then translated into English, and finally stored in digital format (.mp3 for audio, .mov for video) in the TGDA database.

Users will be able to access the TDGA by logging on to its home page over the World Wide Web. Starting with a map of central Texas displaying the names of locations of different fieldwork sites, users will click on the name of a location. This will open for that fieldwork site a drop-down window displaying the names and types of available files including their length and size.

The TGDA contains two types of digitized files, namely audio-only, and audio in combination with video. Once users select a file name from the drop-down window, an additional window containing the transcription and text of the interview (or portion thereof) pops up in the top left screen. At the same time, a Quicktime-player window pops up on the right side of the screen, playing either the audio and video portions of the interview - or only the audio portion. The combined delivery of audio, video, and text files is advantageous because it enables users who are not proficient in Texas German to understand the content of the interview by reading the transcript and translation while the recording is playing. Users may re-play the entire interview - or mark only certain portions for re-playing.

In addition to offering a combined delivery of audio, video, and text for each interview on-line, the TGDA also allows its users to gather geographical information about where interviews were recorded. The information provided by maps taken from Gilbert's (1972) Linguistic Atlas of Texas German is useful for conducting research on patterns of dialect contact between different sub-varieties of Texas German.

As more interviews are conducted by members of the TGDP at the Fredericksburg, New Braunfels, and Freyburg locations, the archive will grow in size and scope. Once the project receives additional funding, the number of field sites will be extended to cover more Texas German speech communities across central Texas. The TGDA is currently in its last test phase and will be available over the web to a wider audience at the end of August 2002.

3. The phoneme database

3.1. Analysis of the 2002 field recordings

Besides preserving the remnants of Texas German in the TGDA, one of the central goals of the TGDP is to compare data about the current stage of the dialect with data from four decades ago. The results of this investigation are expected to contribute to our understanding of how fast Texas German has been eroding since the last in-depth studies were conducted in the 1950s and 1960s. The results will also help to answer the question of whether change in dialect death is differentiated from other types of language change (Hill, 1989; Wolfram & Schilling-Estes, 1996).

In order to analyze this shift, a preliminary phonetic analysis of the 2002 field recordings was conducted and its results contrasted with comparable data reported by

Eikel (1966) and Gilbert (1972). The comparison reveals that a large part of the inventory of Texas German sounds has undergone significant changes over the last four decades. The following sections illustrate a number of representative changes observed.

3.1.1. Diphtongization and nasalization of vowels

In his description of Texas German vowels, Eikel (1966) records for the third person singular of *gehen* ('to go') the long mid-high front vowel [e:] as in (1) in Table 1. The 2002 field recordings, however, show that this vowel has become diphtongized to [ey].

Another change has taken place in environments in which vowels precede nasals. For example, Eikel (1966) reports for *siebzehn* ('seventeen') a regular [e:] as in example (2).[4] In comparison, the 2002 field recordings reveal that this vowel has become nasalized. While nasalization in this environment is a commonly expected phenomenon (Hock, 1991), it is not entirely clear at this point of the data analysis what the exact conditioning environment for nasalization of long vowels is.

Based on a preliminary analysis of the available data, nasalization also occurs without this conditioning environment as the examples in (3) and (4) illustrate. For the noun *Vieh* ('cattle'), Eikel (1966) records a long high-front unrounded open vowel [i:] as in (3). The 20002 field recordings reveal for a great number of speakers a nasalized version of this vowel in *Vieh*.

A similar pattern is found with the long open unrounded vowel [a:], described by Eikel (1966: 254) as "somewhat fronted and raised." Eikel's (1966: 254) description of this vowel in *Tag* ('day') does not include any nasal quality. However, in a number of 2002 interviews, informants produce a nasalized version of [a:] in *Tag*.

	Eikel (1966)	2002	
(1)	[ge:t]	[geyt]	'goes'
(2)	[si:ptse:n]	[si:ptsẽyn]	'seventeen'
(3)	[fi:]	[fĩ:]	'cattle'
(4)	[ta:x]	[tã:x]	'day'

Table 1: Diphtongization and nasalization of vowels

3.1.2. Consonant cluster reduction and simplification

Other changes that have occurred in Texas German include consonant cluster reduction in word-initial position as in (5) - (7) in Table 2. In each case, the "original" German pronunciation has given way to an English-sounding pronunciation because of intensive language contact between Texas German and English.

	Eikel (1966), Gilbert (1972)	2002	
(5)	[tsimər], [simər]	[ziməɹ]	'room'
(6)	[tsviʃən]	[zviʃən]	'between'
(7)	[ʃvimən]	[svimən]	'to swim'

Table 2: Consonant cluster reduction and simplification

---

[3] As of early April 2002, The TGDA contains interviews with 24 informants (totalling about 30 hours).

[4] Examples are from Eikel (1966: 254) and Eikel (1966: 257).

The examples in (5) include Gilbert's (1972: 62) description of the word-initial consonant in *Zimmer* ('room') as having two variants, namely the voiceless affricate [ts] and the voiceless alveolar fricative [s]. The 2002 recordings contain very few examples of the two voiceless variants of the word-initial consonant in *Zimmer*. Instead, the majority of informants produce the voiced alveolar fricative [z], indicating that the word-initial consonant has undergone voicing assimilation with respect to the vowel that follows it.

Similar observations can be made for the word-initial voiceless affricate [ts] in *zwischen* ('between') in the examples in (6). This consonant has undergone voicing assimilation and simplification and is now produced as a voiced alveolar fricative [z] by the majority of informants.

The examples in (7) illustrate the change of the voiceless palato-alveolar fricative [ʃ] in word-initial position. Whereas Eikel (1966: 258) reports this consonant to occur word-initially in words such as *schwimmen* ('to swim'), the majority of informants do not produce this form in this environment any more. Instead, in environments in which [ʃ] is followed by a voiced labio-dental fricative, this consonant is now realized as a simple voiceless alveolar fricative [s].[5]

Our overview of a selected number of sound changes observed for Texas German is by no means detailed enough or complete as it only reports a preliminary analysis of a few hours of recent field recordings. Nevertheless, the discussion shows that a number of Texas German sounds have undergone significant changes over the past four decades. At this stage, it is not clear what the full range of conditioning environments for the individual changes are.

In order to support the theoretical, descriptive, and historical linguistic study of the inventory of Texas German phonemes and their different realizations, the TGDP is currently in the planning stages for creating a comparative database of Texas German. The following sections outline the design of a future database for storing and accessing historical data on the sounds of Texas German.

3.2. Design of the phoneme database

The phoneme database will consist of two separate databases that will be linked to each other by a common structural "backbone". This structural "backbone" will consist of a list of the entire inventory of Texas German phonemes as recorded by Eikel (1966) and Gilbert (1972). Each phoneme will be assigned a unique number that will serve as an indexing mechanism to link the two databases.

3.2.1. Historical data

The first database will contain a complete inventory of the different surface realizations of the phonemes of Texas German as recorded by Eikel (1966) and Gilbert (1972). More specifically, each database entry of an allophone

will consist of a data structure specifying the phoneme of which it is a surface realization. This is done by referring to the index number of its corresponding phoneme in the structural "backbone" of the phoneme database. In addition, the data structure representing individual allophones will include transcriptions of example words taken from Eikel (1966) and Gilbert (1972) in order to illustrate the different surface realizations of the underlying phonemes in various environments. Ideally, the data structure for each allophone should also contain a sound file of the historical recordings on which the transcriptions are based. However, at this point the intellectual property rights surrounding an inclusion of such historical recordings are not entirely clear and need to be resolved.

3.2.2. Data from 2002 recordings

The second database linked to the structural "backbone" will include a complete inventory of Texas German allophones based on the 2002 field recordings. As in the first database, each database entry for an allophone will consist of a data structure that is indexed with the underlying phoneme of the structural "backbone" which links the two databases. In addition, each data structure will include transcriptions of all the words from the 2002 field recordings that contain the respective allophone. Finally, the data structure will contain a sound file of the respective words underlying the transcriptions.

3.2.3. Linking the databases

Figure 1 illustrates how the two databases will be linked to each other by means of the structural "backbone" containing the list of phonemes of Texas German. Each phoneme will be assigned a unique number which in turn will be indexed with the data structures representing the individual allophones in the two databases.
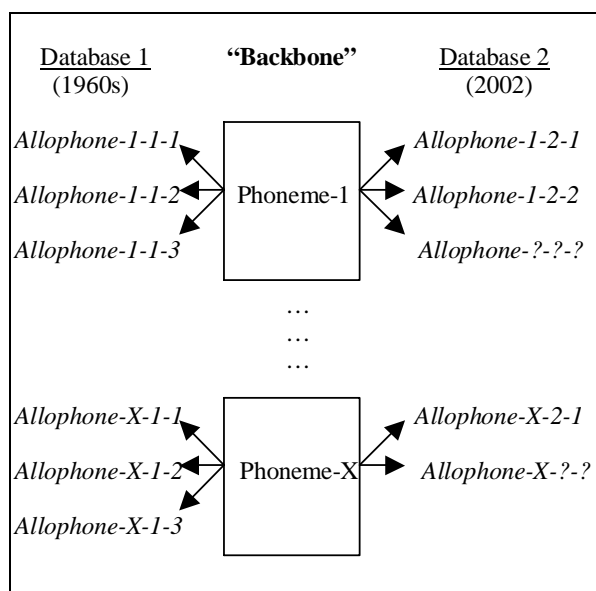

Figure 1. Linking the two databases

---

[5] Based on preliminary data analysis, the conditioning environments influencing the change of [ʃ] are not entirely clear. That is, besides producing the pattern in (7), some informants also produced a voiceless labio-dental fricative instead of a voiceless palato-alveolar fricative in other environments such as [su:l]/[su:lə], *Schul(e),* ('school'), for example.

3.3. Tools for database access

In order to access the database, a number of web-based database query and retrieval tools will be created to perform multi-faceted searches. Users of the phoneme database will thus have various options to access the comparative data.

The first option will be to start with historical data by choosing a specific phoneme from the "backbone" phoneme inventory and requesting a list of its allophones. This search will produce a list of data structures for each allophone associated with the phoneme in the first (historical) database. As outlined above, each data structure contains a representation of the allophone as well as a list of representative examples of the allophone in context as recorded by Eikel (1966) and Gilbert (1972).

The second option allowed by the database will be to start with current data by choosing a specific phoneme from the "backbone" phoneme inventory and requesting a list of data structures associated with its allophones.

The third option will allow users to query the database about phonemes contained in the "backbone" database and to get an output that includes data structures for both historical as well as current data. The option of comparing the two data structures simultaneously will make it possible to study in detail the individual environments that have triggered sound change. Since the database containing the 2002 data will include the full range of words containing the respective allophones in the transcripts, this comparative query feature is expected to yield valuable results for research on sound change in Texas German.

4. References

Biesele, R.L., 1928. *A History of the German Settlements in Texas*. Ph.D. thesis, University of Texas at Austin.

Boas, H.C., (in press). Tracing Dialect Death: The Texas German Dialect Project. In Berkeley Linguistics Society (ed.), *Proceedings of the 28th Annual Meeting of the Berkeley Linguistics Society*. Berkeley, CA: University of California at Berkeley Linguistics Department.

Eikel, F., 1966. New Braunfels German: Part II. *American Speech*, 4: 254-260.

Gilbert, G., 1963. *The German Dialect spoken in Kendall and Gillespie Counties, Texas*. Ph.D. thesis, Harvard University.

Gilbert, G., 1965. English Loanwords in the German of Fredericksburg, Texas. *American Speech*, 2:102-112.

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

Guion, S., 1996. The death of Texas German in Gillespie County. In P.S. Ureland and I. Clarkson (eds.), *Language contact across the North Atlantic*. Tübingen: Niemeyer, 443-463.

Hill, J.H., 1989. The social functions of relativization in obsolescent and non-obsolescent languages. In N.C. Dorian (ed.), *Investigating obsolescence: Studies in language contraction and obsolescence*. Cambridge: CUP, 347-354.

Hock, H.H., 1991. *Principles of Historical Linguistics*. Mouton de Gruyter, 2nd edition.

Jordan, T.G., 1961. *The German Element of Gillespie County, Texas*. M.A. thesis, University of Texas at Austin.

Salmons, J., 1983. Issues in Texas German Language Maintenance and Shift. *Monatshefte,* 75(2): 187-196.

Viereck, W., 1969. German dialects spoken in the United States and Canada and problems of German-English language contact, especially in North America. *Orbis*, 16: 549-568.

Wolfram, W., and N. Schilling-Estes, 1996. Dialect change and maintenance in a post-insular island community. In E. Schneider (ed.), *Varieties of English Around the World: Focus on the USA*. Amsterdam and Philadelphia: John Benjamins, 103-148.