Methodological considerations in the study of sociophonetic variation in an underdocumented minority language: Somali Bantu Kizigua as a case study

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Abstract This paper presents an example of how research can be done on sociophonetic variation within a community of speakers of an underdocumented minority language. The paper begins with a discussion and critique of the Labovian sociolinguistic interview, which has formed the basis of a large body of work on variation. Current research on Somali Bantu Kizigua, a minority language from East Africa, is discussed. A modified Labovian sociolinguistic interview was implemented for collecting data on the language. Results from this study reveal evidence of a sound change in which a historically voiceless prenasalized velar stop, */nk/, becomes a voiceless glottal fricative, /h/, with uvular consonants as intermediate stages. This change appears to confirm speaker's intuitions about age as a major factor in variation within the community. The paper concludes with a discussion of opportunities for increased collaboration between documentary linguists and sociolinguists.

Keywords: sociolinguistics, documentary linguistics, obsolescence, sound change, fieldwork, Zigula, Mushunguli

1 Introduction

Variation and variability have long been central concerns of sociolinguistics. Yet, as much as variation has defined the particular branch of sociolinguistics known as variationist sociolinguistics, there has ironically been little variation in the range of languages and in the range of communities studied. Stanford and Preston (2009), for example, discuss the lack of quantitative variationist sociolinguistics research in indigenous minority language communities even as there is increasing interest among researchers in other areas of linguistics in working on them. Meyerhoff and Nagy (2008) have also highlighted a monolingual bias in variationist sociolinguistics. In their survey of two leading journals, they found that only 11% of articles in *Language Variation and Change* and 28% of articles in the *Journal of Sociolinguistics* focus on more than one language. While Stanford and Preston (2009) as well as Meyerhoff and Nagy (2008) discuss different but not necessarily mutually exclusive types of communities, indigenous minority communities in the former and multilingual communities in the latter, both volumes highlight the need for more variationist sociolinguistics research in a greater variety of communities. Meyerhoff and Nagy (2008) suggest that one reason why there is not more diversity in the communities researched by sociolinguists is hegemonic monolingualism in North America, where a majority of sociolinguists are trained. Even if this really does account for the research gap, however, hegemonic monolingualism has clearly not been a hurdle in the increasing interest in work on endangered languages among documentary and theoretical linguists. Nagy (2012) highlights this disparity by showing that 83% of articles in the journal *Phonology* are focused on languages other than English. In contrast, this is the case for 47% and 38% of articles in *Language Variation and Change* and in the *Journal of Sociolinguistics* respectively.

In this paper I argue that research on basic variationist questions in a minority language does not require fluency in the language, although it would be highly desireable. I present an example of how this can be accomplished by discussing current research on Kizigua[1], an underdocumented minority language spoken within a multilingual community of Somali Bantu refugees in the US. While sociophonetic variation is the main focus of the current project, documentation of the speech of an individual consultant still proved essential in gaining background knowledge of the language and in identifying parts of the phonological system worth further study. A modified Labovian sociolinguistic interview was implemented that revealed evidence of community-wide sound changes in progress. By discussing the results, I argue that variation can and should be studied at an early stage of language documentation. Doing so provides opportunities for greater collaboration between documentary linguists[2] and sociolinguists with mutual benefits for both parties and opportunities to fill in a major research gap.

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[1] Various names and spellings for Kizigua have been used in the literature including Zigula, Seguha, Wayombo, Wazegua, Zeguha, Zegura, Zigoua, Zigwa, and Chizigula. In addition, Mushungulu and Mushunguli are alternate names for the language used in Somalia. The dialect discussed in this paper is referred to as Somali Bantu Kizigua to distinguish it from more conservative varieties of Somali Kizigua.

[2] Many terms have been used to describe work on undocumented languages. Aside from "documentary linguistics", other terms include "field linguistics", "descriptive linguistics", and "anthropological linguistics". In this paper, all of these terms are treated as synonymous. What is most crucial is that sociolinguistics is widely viewed as a field of inquiry distinct from documentary linguistics as Munro (2008: 130) mentions.

2 Paradoxes in Sociolinguistic Research Methodology

The basis of sociophonetic data collection has long been the Labovian sociolinguistic interview, which generally consists of at least two parts: a casual conversation with the subject and structured elicitation tasks such as word lists and reading passages. These different parts were designed to elicit different styles of speech with the assumption that speech varies along a single dimension. On one end is "vernacular" style, which involves the least conscious attention paid to speech. On the other end is "formal" style, which involves the most attention paid to how one speaks. As Labov (1984) discusses, "vernacular" style is the most desireable for sociolinguists because it is the most natural way of speaking. Formal speech, on the other hand, is described as less natural because it is easily affected by conscious attention paid to speech. Labov used the term "Observer's Paradox" (1972) to describe the fact that the goal of the sociolinguist to get data on how speakers speak when they are not being observed runs directly at odds with the fact that the researcher can only get this data by observing the speaker. The casual conversation part of the interview was, thus, designed to make subjects feel as comfortable as possible so that they can speak with a more vernacular style and not think about the fact that they are being recorded. For sociophonetic analysis, however, casual speech does not always produce enough samples of the variable of interest. So, word lists and reading tasks are included to ensure that at least a few tokens of the variables of interest are collected even if read in a more formal style.

In the context of working on an underdocumented minority language, a major problem with variationist research is the fact that the sociolinguistic interview was not designed for use in working on a minority language or in a multilingual setting. For example, having a conversation with subjects in an attempt to gather naturalistic phonetic data is not possible unless the researcher is fluent in the language. Thus, there is an inherent problem in the design of the sociolinguistic interview that makes it difficult to increase the number of studies of underrepresented languages unless there is an increase in the number of researchers proficient in these languages. While one could argue that the best research methodology should always depend on the given context and the specific questions, some methodological consistency is also desireable for ensuring comparability between different studies. Does this mean that sociophonetic research on a language can only proceed if the researcher or interviewer is proficient in the language? Are language documentation and the study of sociophonetic variation two incompatible goals?

First of all, assuming that language documentation and the study of sociophonetic variation need to be two separate projects and that complete documentation must occur first assumes that language documentation can only involve describing a language as a static entity without any internal variation. This, however, would be a view of language that would be untenable for an increasing number of researchers across all the language sciences. Although it would be desirable for the researcher to be as proficient as possible in the language of interest, there is the question of how proficient the researcher needs to be to carry out such research. Even if the researcher were fluent in the language, however, there would still be a certain degree of unnaturalness in the context of an interview. Minority languages are spoken by a small community, which means that there is often a tighter link between the social meaning of speaking in the language and one's ethnic identity. The researcher's identity as an outsider could be virtually impossible to overcome in many situations. Furthermore, in a multilingual context, the most "natural" way for a minority language speaker of communicating with a researcher would be to use a lingua franca rather than the language of interest.

Although minority languages have been researched using sociolinguistic techniques, very few of these studies have focused on sociophoentic variation within the context of questions about language variation and change. There have been some studies that have examined variation and change in the context of language obsolescence, however, such as Schmidt's (1985) study of Young People's Dyirbal and Dorian's (1978) study of East Sutherland Gaelic. Both of these studies focused on the type of structural changes that occur when languages are in a near death situation. The research presented in this paper, however, differs from these studies in several ways. First of all, obsolescence is not the main focus of the present study. All of the speakers interviewed for this study are fully proficient in the language. Although obsolescence is occuring in the youngest generation of speakers of the Somali Bantu dialect, the language is still generally much more robust than Dyirbal and East Sutherland Gaelic. Secondly, much less prior documentation on Kizigua exists than what was available for Dorian (1978) and Schmidt (1985). In the next section, I present relevant background information on the little that is known about the sociolinguistic context of Kizigua.

3 Background on Somali Bantu Kizigua

The history of the Kizigua language as well as the social history of its speakers is a complex one that involves two major periods of geographical displacement in the past two centuries. As a Bantu language related to Swahili, Kizigua traces its origins to Northeastern Tanzania where it is still spoken today by the Zigua tribe. Ethnologue reports an estimated 355,000 speakers present in Tanzania (Lewis, 2009). Beginning in the 1840's and continuing through the end of the 19th Century, however, Arab-Omani traders brought people from various East African tribes including the Zigua to Somalia where they were forced to work as slaves. Between 1865 and 1895, an estimated 20,000 slaves managed to escape (Eno and Eno, 2007). Without the practical means to return to their homelands, however, fugitive slave communities were formed primarily in the Lower Juba River Valley area of Southern Somalia. These communities have remained in Somalia ever since.

The second major displacement of the Zigua people occurred in the 1990's with the outbreak of the Somali Civil War. At this time, the Zigua as well as members of other oppressed minority groups, fled across the border to Kenya where they lived in UN refugee camps for many years. These refugees became collectively known as the "Somali Bantu". Some of them were subsequently able to resettle in other countries including the US, which accepted 12,000 Somali Bantu refugees in 1999 (Besteman, 2012). Major Somali Bantu communities are now present in various American cities including San Diego (California), Boise (Idaho), Columbus (Ohio), Buffalo (New York), and Pittsburgh (Pennsylvania).

With all of this history of movement in less than two centuries, it should be no surprise to find the Kizigua spoken by the Somali Bantu refugees and the Kizigua spoken in present-day Tanzania to be different. The uncertain question is how different and whether or not they are still mutually intelligible. In Somalia, the Zigua came in contact with speakers of various Cushitic languages including Somali, Maay, and Oromo. Many Somali Bantu refugees also report having learned Swahili when they lived in Kenyan refugee camps. All of these languages may have contributed in varying degrees to divergence from Tanzanian Kizigua although the extent to which this occurred is currently unknown. Furthermore, given the lack of documentation on the language and the lack of face-to-face contact between Somali Bantu refugees and the Zigua in Tanzania, the degree of mutual intelligibility is also unknown. Crevatin (1993), however, describes the Kizigua in Somalia as generally well preserved from Tanzanian Kizigua based on fieldwork in Somalia conducted between 1986 and 1988. The

few differences identified were lexical and phonological. Since Crevatin (1993), the only other known studies of Somali Kizigua are works in progress by Temkin Martinez (2011) and Odden (2013). Both of these studies involve speakers in the US. The literature on Tanzanian Kizigua is only a little bit more plentiful. This includes a recently published dictionary (Mochiwa, 2008), a dictionary published at the turn of the 20th Century (Kisbey, 1906), and various articles on the tonal phonology of the language (Kenstowicz, 1988; Kenstowicz, Kisseberth 1990; Kisseberth, 1992).

4 The Data

4.1 Field Methods Work and Motivation for Current Study

The current project developed as part of a Field Methods course at the University of Pittsburgh, which took place between January and April 2012. This course met with a native speaker of Kizigua, who was compensated for a total of 3 hours per week and for meeting with smaller groups for a total of three additional hours per week outside of the regularly scheduled class time. The consultant was a 21-year old female native-speaker of Kizigua who has a personal history quite similar to that of many other Somali Bantu refugees. She was born in Somalia and fled across the border to Kenya when she was little to escape the Somali Civil War. After spending some time in Kenyan refugee camps, she was able to resettle in the US in 2004. The consultant has continued using Kizigua as her primary language at home although she has also been able to gain a good level of proficiency in English. She also learned a little bit of Maay, Somali, and Swahili while growing up in East Africa.

During the course of the four months of working with the consultant, a corpus of recorded materials was created. These recordings include pronunciations of lexical items, sentences, stories, and other samples of connected speech. All of them were made using a Marantz solid state recorder and a headset with an attached Shure Microphone. The sampling frequency used for all recordings was 10,000 Hz. A total lexicon of about 700 words was also compiled.

Upon consulting sources of Tanzanian Kizigua, one of the major differences noted between the consultant's speech and the language described by Kisbey (1906) was the pronunciation of the reflexes of the voiceless prenasalized stops. Crevatin's (1993) study of Somali Kizigua in the 1980's also noted a sound change described as follows in which all of the voiceless prenasalized stops become voiceless aspirated stops:

(1) *mp, *nt, *nk > p^h, t^h, k^h

For the historic prenasalized labial stop, there were too few examples elicited to be able to make any broad generalizations. Examples of the reflexes of coronal prenasalized stops, though, are more plentiful. Unlike what Crevatin (1993) reported, however, the coronal prenasalized stops appear to be more retroflex than alveolar with a trill-like aspiration. The phonetic and phonological properties of these stops are worth further investigation. Of more crucial relevance for this paper are the reflexes of the voiceless prenasalized velar stop. As shown in Table 1 below, the reflex of *nk is not /k^h/ as reported by Crevatin (1993) but either a voiceless uvular stop, /q/, or a voiceless glottal fricative, /h/. While /h/ seems restricted to word-initial position, /q/ can be found both word-initially and word-medially. Word-initially, however, the historic nasal is lost while it is retained with the presence of a uvular stop in word-medial position as in [kui**nq**a] and [ci**nq**o].

Consultant's Speech	Tanzanian Kizigua	English Gloss
kui**nq**a	kui**nk**a	'to give'
kunu**nq**a	kunu**nk**a	'to smell'
ci**nq**o	ki**nk**o	'elbow'
qumbito	**nk**umbito	'eyebrows'
hanɋe	**nk**ande	'food'
honɋe	**nk**onde	'action of planting'
-**h**unɋu	-**nk**undu	'red'
hunɋe	**nk**unde	'bean'

Table 1: Examples of words with historic **/nk/ and their reflexes

The question that arises from this data is whether the consultant's distribution of /q/ and /h/ is unique or whether it can also be found more broadly across all present-day Somali Bantu Kizigua speakers. Could there be variation based on demographic factors such as age, gender, or proficiency in Cushitic languages?

4.2 Additional Subjects

Following completion of the Field Methods course, additional speakers of Kizigua were sought to determine whether the prenasalized stop reflexes have the same realization among all speakers of Somali Bantu Kizigua or whether they are unique to the speech of the consultant. Three volunteers were eventually recruited for interviews lasting between one and two hours. The recruitment method used was to contact a local organization involved with the Somali Bantu community for assistance. All three of these subjects were male and ranged in age from 23 to 30 at the time of interview. All of them also have very similar histories of migration. Like the consultant, all of them were born in Somalia and fled across the border to Kenya where they settled in refugee camps until they were able to move to the US in 2004. All subjects are also proficient in the same set of languages including Maay, Somali, and Swahili as well as English.

5 Methodology

The methodology of this study was designed to address the question of whether or not there is variation in the phonetic production of the historic prenasalized stops in Somali Bantu Kizigua and whether or not this variation correlates with demographic factors. It involved a three-part interview that included the following: (1) an elicitation task, (2) a word-list task, and (3) a semi-structured interview to obtain sociological information. All recordings were made using the same equipment used for the Field Methods consultant discussed in Section 4.1. The researcher served as the interviewer.

5.1 The Pear Film Elicitation Task

The first part involved showing each interviewee *The Pear Film* (Chafe, 1980) and asking the interviewee to re-tell the story in Kizigua. *The Pear Film* is a 6-minute video created by a team of linguists interested in cross-linguistic similarities and differences in the way people talk about things that they have experienced. Its original purpose was to create a stimulus that

can be used for speakers of any language so that it would be possible to study how people with different linguistic backgrounds talk about the same events. For the purpose of this study, the video was used simply to elicit a sample of naturalistic speech. The recorded speech sample can later be used for acoustic analysis. The version of the film used was downloaded from the Chinese Pear Stories website (Erbaugh, 2001). The film was played on a laptop and shown in its entirety to each subject. The subject was then recorded re-telling the entire story from memory.

5.2 Word Lists

As in the Labovian sociolinguistic interview, a word list task was also included. Presenting the word list in written form as in the Labovian sociolinguistic interview, however, would not work since there is no official orthography for Kizigua. Instead, the words were elicited using pictures as prompts. Although English could have been used, pictures were used instead to ensure a consistent methodology for cases in which the subject does not speak English. Subjects were asked to say each word three times followed by a carrier phrase containing the word of interest. The carrier phrase was as follows:

(2) Silonga naho 'X'. ('I say X again').

The word list included all the words shown in Table 1 as well as other words that historically have a prenasalized stop for a total of 77 words. An attempt was made to select words that can easily and unambiguously be represented in visual form. This, of course, meant that the word list was generally limited to nouns. Speakers, however, sometimes varied in their interpretation of the pictures. In these cases, the researcher made an effort to elicit alternate words but if it was clear a particular word is not present in an individual speaker's lexicon, the researcher would continue on to the next word. Due to these individual differences, the total number of words recorded for each speaker was not the same.

5.3 Semi-structured Interview

Finally, the third and final part involved a semi-structured interview that consisted of questions about language use within their families, contact with speakers of other languages, communication with relatives, and their thoughts and observations about variation in Kizigua. This interview was conducted in English. This made it possible to collect information that would be relevant for understanding the possible sociological factors that may be at play in accounting for variation without requiring the researcher to be fluent in Kizigua. Unlike for the Labovian sociolinguistic interview, this conversation did not need to be acoustically analyzed and was designed for information collection purposes only. Concerns about the Observer's Paradox were, thus, not relevant since speech content was more important than speech form.

6 Results and Evaluation of Methodology

6.1 The Pear Film Elicitation

The Pear Film proved to be quite successful in eliciting naturalistic speech as evidenced in the frequent reduction of consonant and vowel segments for all speakers. Interestingly, all speakers took about the same amount of time to re-tell the entire story. The average length of about 2 minutes, however, was too short to elicit an adequate number of tokens for statistical

analysis. While there were plenty of tokens of words containing reflexes of */nt/, primarily due to the frequent use of the word [nʈangulu] (‘basket’), there were hardly any words containing reflexes of */nk/. Getting enough tokens of the variables of interest is, of course, the same problem with the casual conversation part of the Labovian sociolinguistic interview. For this reason, the word list as supplemental data proved to be crucial for this study.

6.2 Word List

While the word list task was sucessful at getting a small sample of words that contain reflexes of historic */nk/, one shortfall of this technique was that subjects did not always produce the intended target word since the pictures sometimes opened room for multiple interpretations. Getting stable pronunciations in the carrier phrase was also a challenge. Subjects sometimes lost track of the number of repetitions and occasionally changed their rate of speech to compensate for time lost once they realized they made a mistake. Subjects also occasionally varied the form of the carrier phrase suggesting that they attempted to think about the task in a communicative way rather than as simply a phrase that they were supposed to fill in as a consistent frame. In spite of these challenges, the Word List Task still proved successful at revealing evidence for a change in the historic */nk/ as shown in Table 2 below.

Subject 2 (b. 1982)	Subject 1 (b. 1984)	Subject 3 (b. 1989)	Consultant (b. 1991)	English Gloss
not recorded	ku**inq**a	ku**inq**a /ku**inh**a	ku**inq**a	‘to give’
not recorded	ci**nq**o	ci**nχ**o	ci**nq**o	‘elbow’
not recorded	**h**umbito / **q**umbito	**h**umbito / **q**umbito	**h**umbito / **q**umbito	‘eyebrows’
qanɖe / **χ**anɖe	**q**anɖe	**q**anɖe / **h**anɖe	**h**anɖe	‘food’
qonɖe	**q**onɖe	**h**onɖe / **q**onɖe	**h**onɖe	‘action of planting’
-qunɖu	**-h**unɖu / **q**unɖu	**-h**unɖu	**-h**unɖu	‘red’
qunɖe / **χ**unɖe	**q**unɖe / **h**unɖe	**h**unɖe	**h**unɖe	‘bean’

Table 2: Pronunciation of reflexes of */nk/ for all subjects

The table indicates how each subject pronounced the reflex of historic */nk/ in a selection of words that is also included in Table 1. The columns are ordered from oldest speaker on the left to the youngest speaker on the right. If a speaker had two different pronunciations during the Word List Task, both variants are listed. Otherwise, if the speaker was consistent, only one form is listed. As can be seen, the consultant was the most stable. This could be due to the fact that she had more experience with working with linguists and made a more conscious effort to accomodate. Even so, she pronounced 4 of the 7 words consistently with the glottal fricative /h/ while the oldest speaker consistently produced these same words with a voiceless uvular, although the exact realization varied between a stop, /q/, and a fricative, /χ/. The second oldest speaker did not have any words that were consistently pronounced with /h/ while the second youngest did. Thus, what we see in the Table above is evidence for a sound change in progress that appears to be proceeding as in (3) below. Also included in (3), but not attested in the speech of any of the subjects is /k^h/, which was reported by Crevatin (1993).

(3) *nk > k^h > q > χ > h

6.3 Semi-structured Interview

The interview revealed useful sociological information to contextualize the use of the language. One question that was asked of all subjects that seems most relevant for this paper was whether or not they recognize different ways of speaking Kizigua. All subjects consistently mentioned age as the biggest source of variation. They discussed a high rate of language obsolescence among the youngest members of the community. This would include children who were born in the US or who came to the US at a very young age. Some of the subjects also mentioned anecdotes of children who have completely shifted to English and are unable to communicate with their non-English speaking grandparents. The subjects interviewed for this study appear to be part of a generation sandwiched between a younger generation that is quickly losing the language and an older generation that generally has less proficiency in English and speaks what is described as a more "pure" form of Kizigua. They consciously recognize that some of the words they use are borrowed from Somali, Swahili, and other languages. They also recognize that their parents would sometimes use words that are different from the borrowed words that they would use.

7 Discussion

What seems most remarkable about the results of this study is evidence of a rather abrupt sound change. While it seems phonetically plausible for /q/ to weaken to /h/, the speed at which this occurs seems rather quick given the fact that there is only a nine-year age difference between the oldest and youngest speakers. Assuming a similar pattern holds for other speakers, the best possible explanation is perhaps the Somali Civil War, which began in the 1990's. This was when the two youngest speakers were born and when the the oldest speakers entered their teenage years. It seems quite likely that acquiring language during this politically unstable time may account for why the two youngest speakers exhibit a different pattern from the two oldest speakers. For all 4 speakers, the 1990's were a time during which they and their families moved around frequently to escape the violence of the Civil War.

One question to ask about the change from /q/ to /h/ is whether or not this leads to a loss in phonological contrast in word-initial position. /h/ was historically present in Tanzanian Kizigua (Kisbey, 1906) and is retained in Somali Bantu Kizigua so it seems possible. Actual minimal pairs, however, are completely lacking in the data. There is also one piece of evidence that suggests that a phonological merger has not taken place. The word for 'damage' in Tanzanian Kizigua is [hasala] (Kisbey, 1906; Mochiwa, 2008) and is pronounced by the youngest speaker as [qasara]. This is the only example of a word that historically began with /h/ that is pronounced as /q/. Data on this word from the other three speakers is unavailable. Other words that historically began with /h/ are largely function words and morphemes that seem to retain their pronunciation as /h/ for all of the four speakers interviewed. A possible direction of change that seems to be emerging is that nouns that historically began with */nk/ (or /q/ for the oldest speakers interviewed) are being pronounced with /h/ while nouns that historically began with */h/ are being pronounced as /q/. Thus, this appears to be a reversal of /q/ and /h/ leading to the maintenance of a phonological contrast rather than a merger. There may also be some interaction with the morphology, which would account for different patterns of change that seem to vary based on lexical category. More data is needed before any further claims can be made. What is clear from the data collected so far is that there is change occuring in the reflexes of historic */nk/ that may involve various factors.

8 Conclusion and Future Research Directions

One of the goals of this paper was to illustrate an example of how research on variation can take place on an underdocumented language at an early stage of the documentation process. In this case, a significant pattern worth further investigation was identified through consultant work. The results of this study show evidence of a sound change in progress in Somali Bantu Kizigua. The sample size is small, but it proved adequate in showing an age-based pattern that matches the intuitions that subjects have about age being the most salient factor in accounting for variation. The next step would be to collect more data from speakers of different ages to see if this pattern holds. More samples of connected speech would also be helpful. Recruiting native speaker interviewers or simply recording two speakers having a conversation with each other is also a possibility. This would allow for collection of longer speech samples.

While communicative competence for the researcher was clearly not needed to identify a pattern, some background knowledge was still essential. This background was gained through consultant work with a native speaker. This highlights an opportunity for more sociolinguists to work with documentary linguists, who, of course, have already become the experts in learning about minority languages from scratch. Documentary linguists have already built up a large repertoire of techniques used to elicit linguistic data. Sociolinguists can benefit from adopting some of these techniques in their study of variation, which would also be helpful in learning more about the structure of languages of interest. Although variation has not been completely ignored by documentary linguists, it has also not been a major focus. Thus, documentary linguists can also benefit from working with sociolinguists by doing more to study variation as part of the documentation process. Such collaboration can work towards filling in a major research gap.

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