

## **Contact-related Language Change and Variability in the Intonation Patterns of Turkish-German Bilinguals in Germany**

ROBIN QUEEN  
*University of Michigan*

### **0. Introduction: Language Contact and Language Change**

The study of language change (including contact-related change) is central to theories of language because it provides a crucial link between internal aspects of language (“I-language” in generative terms) and aspects of language tied to actual production and reception (“E-language” in generative terms). Language learners are exposed to the systematic variation present in the communities in which they are acquiring language, and it is within this systematic variation that the seeds of language change are planted (Weinreich, et al. 1968; Labov 1994). With respect to contact-related change, Thomason and Kaufman (1988:35) go so far as to claim that it is “the sociolinguistic history of speakers, and not the structure of their languages, that is the primary determinant of contact-induced language change.” In making this claim, Thomason and Kaufman implicitly align contact-related language change with change as studied primarily by sociolinguists.

Despite their radical claim, Thomason and Kaufman do little to specifically address how or why the sociolinguistic histories of speakers matter most for explaining the linguistic outcomes of language contact, nor do they provide any explicit mechanisms beyond borrowing and interference for modeling the importance of sociolinguistic histories. In this paper, I use the example of the intonation patterns of Turkish-German bilinguals in Germany to show why and how the sociolinguistic history of speakers might matter for contact-related language change, at least in cases involving bilingualism. I argue that the reason sociolinguistic histories matter is that they have a direct effect on bilingualism within communities involved in language contact. Thus, it is ultimately the nature of bilingualism within a community that steers the outcome of contact-related language change rather than the sociolinguistic histories per se.

### **1. Bilingualism and Language Change**

Most studies of language contact that focus on issues related to language change typically do so from a largely diachronic viewpoint, looking at the outcome of

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language contact rather than the process itself. Conversely, while bilinguals are generally either presupposed or explicitly built in to models highlighting language contact, for the most part their contribution is tied to more general processes of language shift/death and code-switching than to language change, and few studies of bi- or multilingual communities examine those communities from the perspective of ongoing language change independently of shift (see however Silva-Corvalán 1994). Yet, it is precisely in such communities that we should expect to find the ordering of linguistic variation as tied to language change.

Situations involving stable bilingualism typically involve language alternation that can be organized into three broad patterns. First, there is alternation that involves conventional pragmatic associations in which language codes are tied to specific domains (Fishman 2000). In these cases, whole linguistic systems become semiotically linked to particular groups of people, particular situations, or particular genres. In these cases, language users make conventionalized associations between language form and social function. A second pattern of language alternation involves contextualization. With this pattern, the alternation between languages provides a cue to conversational inference (Gumperz 1992, Auer 1995). The third common pattern of language alternation involves alternation which itself is the unmarked norm.

Situations involving community-wide stable bilingualism typically have a profile in which language alternation is unmarked. In this paper, I argue that the presence of this third pattern not only entails the presence of the other two (as well as of patterns of lexical borrowing/insertion), but also that sociolinguistic situations in which this third pattern occurs are precisely the kinds of sociolinguistic situations in which the seeds of contact-related language change are planted. To demonstrate a case of language change within a stable bilingual community, I turn to Turkish communities in Germany, which have a well-documented sociolinguistic history and which have involved community-wide stable bilingualism for approximately the last 25 years.

While there are a number of contact-related changes evident in the German (and Turkish) used in these communities, in this paper I focus specifically on intonation. Most of the work that has examined intonation in the context of bi- or multilingualism has done so from the perspective of language learning (e.g. Chun 2002) or from the perspective of individual bilinguals, usually children (e.g. Gut 2001). Only a very few studies have focused on the question of intonational contact, and most of that work is relatively recent (Queen 2001; Birkner 2004; Colantani and Gurlekian 2004; Queen, in press). Much of this research focuses on situations in which communities had or were in the process of shifting to another language. Of the few that examine dynamic situations of intonational contact, all have presented the results of a single study done at one point in time. In contrast to this work, the data reported on here come from an extremely dynamic situation of language contact and come from two points in time separated by ten years.

The change in question involves the realization of phrase-final rises as produced by 2<sup>nd</sup> and 3<sup>rd</sup> generation Turkish-German bilinguals living in Germany.

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These speakers produce two phonetically and phonologically distinct rises, one of which appears more canonically Turkish and the other of which appears more canonically German. Further, the occurrence of the two rises has been stable across a time depth of ten years, with the first data sample being collected from 10-12 year old children in 1994 and the second data sample being collected in 2004 from 20-35 year olds.

#### **2. Turkish Populations in Germany**

Turkish populations in Germany arose out of labor contracts between Germany and Turkey during the 1960s in which workers were hired to come to Germany for a period of 1-3 years, after which time they were expected to return to Turkey. Rather than leave, however, these populations remained and began forming communities. There are currently approximately 2 million Turks living in Germany and roughly half a million German citizens of Turkish ethnic heritage. Turks generally live in densely populated urban areas of Germany. The majority of the Turkish population in Germany (ca. 60%) is under 35 and of those just over half were born in Germany (AiD 2003).

Most of the discourse around Turkish populations in Germany still refers to Turks as a migrant population, even into the 3<sup>rd</sup> and 4<sup>th</sup> generations. Turkish people in Germany still tend to use Turkey as their point of reference for ethnic affiliation, and few consider themselves “German,” regardless of their citizenship status (Kaya 2001, Dirim and Auer 2004). Conversely, few, particularly among those born in Germany, consider themselves to be Turkish in the conventional sense and stress that they are Turks from Germany (Kaya 2001). Whereas the Turkish communities of the 70’s and 80’s were largely dominated by the fact of migration and those of the late 80’s and 90’s by the fact of increasing bilingualism, more contact with the wider German-speaking communities, and acculturation, Turkish communities in the late 90’s and early 00’s are primarily characterized by the shift from being a migrant population to being a stable minority population within Germany.

Turkish and German remain vibrant in most Turkish-German communities, and bilingualism and code-switching are the unmarked norm (Queen 1996, Dirim and Auer 2004). The only Turkish monolinguals in Germany are members of the first generation or more recent migrants.<sup>1</sup> There are German monolinguals among the younger generations, and there is some class-based stratification within these communities, with middle- and upper-middle-class Turkish families being more likely to have children who are monolingual in German (or passively bilingual) than do working-class families. Among the young Turkish-German speakers with whom I conducted research in 2004, there was unanimous agreement that both

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<sup>1</sup> Since Germany stopped recruiting labor migrants in 1973, most Turkish migration to Germany has involved family members of people in Germany or, more recently, Turkish-born spouses of 2<sup>nd</sup> and 3<sup>rd</sup> generation Turks.

Turkish and German were necessary and, importantly, these speakers also recognized a variety of German that they called *Türkisch-Deutsch* (Turkish-German).

### 3. Data and Method

The data discussed here are drawn primarily from a sociolinguistic interview conducted with three Turkish-German bilingual children in 1994 and a controlled narrative task conducted with four Turkish-German bilingual adults in 2004. The 1994 data were gathered in Hessen while the 2004 data were gathered in Berlin. All participants were born in Germany to parents who had migrated from Turkey as adults, and all participants had received their education entirely in Germany. The three children, all girls, were ten years old at the time of recording. The adults were evenly matched for sex (two men and two women) and education level (two with university educations and two without university educations) and were between 22-32 years old.

The 1994 data come from a twenty-minute recording in which I elicited narratives from the children concerning holiday celebrations. The 2004 data come from the narration of a picture book (Mercer Mayer's *Frog, Where are you?*). The 1994 data were recorded in analog, and the 2004 data were recorded as .wav files on a Marantz solid-state recorder (PMD 670). The data were transcribed and then analyzed auditorily for phrasing and final edge contours. As much as possible, phrasing junctures were determined independently of pitch movement and were based primarily on a combination of syntactic constituency and prosodic disjuncture (primarily pausing; see Beckman and Ayers 1997). They were then analyzed acoustically using the pitch tracking algorithm in PRAAT (Boersma and Weenink 1992-2004) to verify the initial coding of final contour. The rises were further analyzed for their duration and pitch trajectory, which were measured from the first acoustically detectable rise in pitch following the final prominently stressed syllable of the phrase. The reliance on the prominently stressed syllable is in keeping with both autosegmental/metrical and contour-based approaches to intonational description in which only those syllables that are prominently stressed are assumed to be tied to the intonational grammar (Ladd 1996, Wennerstrom 2001).

The data are analyzed using the model based on the initial work of Liberman (1975) and Pierrehumbert (1980) and codified in the transcription system known as the Tone and Break Index (ToBI; see Beckman and Ayers 1997 for a full description). This model is based on metrical and autosegmental theories of phonology and represents intonation as the sequencing of three tonal events and four degrees of prosodic juncture. Prosodic phrasing is indicated through varying degrees of juncture (the breaks), and tones align with prominently stressed syllables (pitch accents, indicated by "\*" in ToBI), phonological phrases (phrase accents, indicated by "-" in ToBI) or intonational phrases (boundary tones, indicated by "%" in ToBI).

As a transcription system, ToBI has been adapted to a number of languages, including German (see Baumann, et al. 2001 for German). In this analysis, I focus

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exclusively on boundary tones as they occur in intonational phrases (IPs). The intonational grammar for Turkish-German bilinguals includes two rises, a level contour, and a falling contour as its final boundary contours. Phonologically, the four contours can be specified as X\*H-H% (Rise 1), L%H% (Rise 2), X\*H-L% (Level), and X\*L-L% (Fall). “X” in these cases indicates either a H(igh), L(ow) or bitonal pitch accent. Of critical interest is the fact that Rise 2 is independent of stressed syllables (and thus pitch accents) and always occurs on the final syllable of the IP. Queen (1996, 2001) hypothesizes that this rise has its ontology in Turkish intonation and represents a contact-related change for Turkish-German bilinguals.

These four rises work as a system available to bilinguals and, despite its ontology in Turkish intonation, Rise 2 generally gains meaning through its juxtaposition with the other three contours. Although a detailed description of the pragmatic functions of these edge phenomena is beyond the scope of this paper, in general, falls indicate some degree of structural or discursive finality. Level contours generally indicate either hesitation between IPs or occur between IPs with close syntactic relationships, such as conjoined verb phrases or modifying prepositional phrases. Rise 1 functions, as do rises in many languages, to signal structural or discursive continuation. Rise 2, on the other hand, is generally reserved for IPs that have particular narrative or pragmatic importance. It also typically occurs between the orientation and the first action within a narrative (see Queen, in press, for details).

#### **4. Findings**

As the data below demonstrate, the two data sets are strikingly similar in terms of the acoustic profiles of the two rises and the frequencies of occurrence of the four contours.

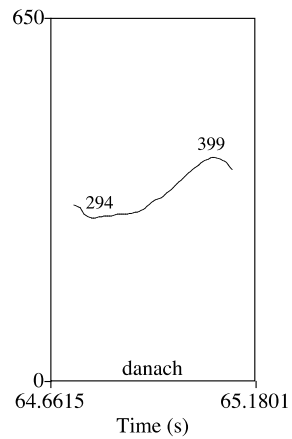
##### **4.1. Acoustic Picture of the Two Rises**

Examples (1)-(6) below show pitch tracks of the two rises. (1) and (2) show the two rises as produced by a child in the 1994 data, and (4) and (5) show the two rises as produced by an adult in the 2004 data. (3) and (6) provide intonational minimal pairs.

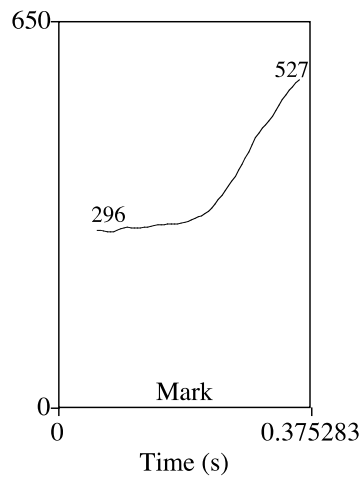
(1) below illustrates an example of Rise 1. In this example the rise begins at the onset of the final, stressed syllable /nax/ following a brief dip on the initial syllable /da/.

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- (1) Example of Rise 1 from 1994 data



- (2) Example of Rise 2 from 1994 data

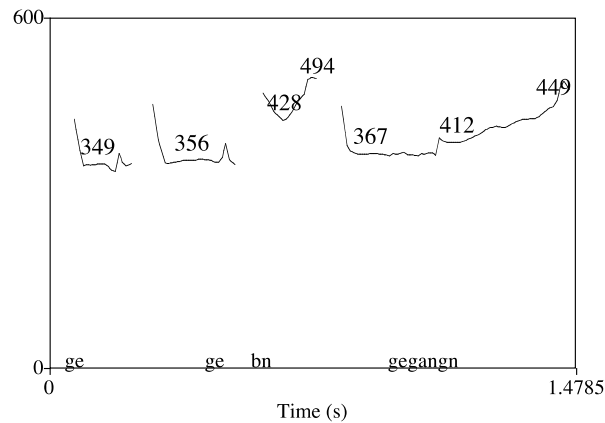


In (2), the onset of the rise comes relatively late in the syllable and the whole contour is relatively short (.28 seconds as compared to .52 seconds for the rise in (1)). Most striking about this contour, however, is the steep slope of the rise, with a trajectory more than twice as long as the rise in (1).

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The differences in the two rises can be further seen in (3), which provides an intonational “minimal pair” in which two past participles with roughly the same phonemic and metrical structures occur with the two different rises. In this example, the rise on *gegeben* ‘gave’ does not begin until the start of the final (unstressed) syllable whereas the rise on *gegangen* ‘went’ begins on the second (stressed) syllable of the word. The rise on *gegeben* is also significantly steeper, with a trajectory that moves 138 Hz in the span of a single syllable as compared to the more modest rise of 87 Hz over the course of two syllables in *gegangen*.

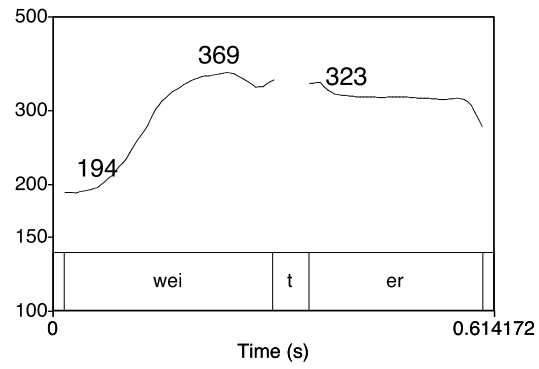
(3) Intonational minimal pair from the 1994 data



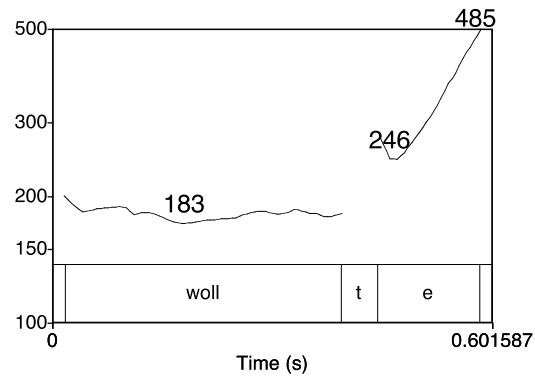
The pitch tracks from the 2004 data look quite similar to those from the 1994 data, as (4)-(6) below demonstrate. Like the rise in (1), the rise in (4) begins with a slight dip at the onset of the final, stressed syllable /wai/. The contour plateaus on the final, unstressed syllable /tə/. This contrasts with the rise in (5), in which the onset of the rise comes on the second, unstressed syllable and the overall contour is quite steep. (4) and (5) are particularly good examples, as the prosodic structure of the words is identical, while the contour shapes are quite distinct.

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(4) Rise 1 from the 2004 data



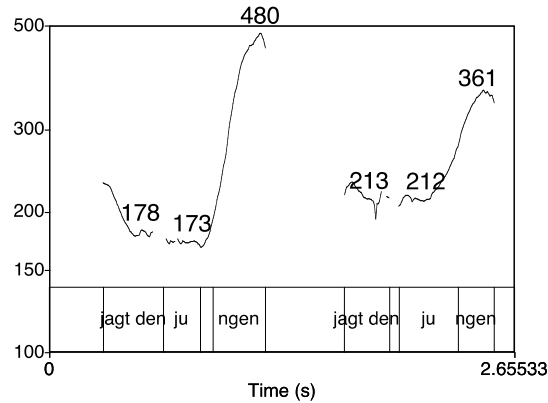
(5) Rise 2 from the 2004 data



Finally, in (6), the speaker produces an intonational minimal pair.

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(6) Intonational minimal pair from 2004 data



In this example, the rise on the first occurrence of *Jungen* ‘boy’ has a steep slope and aligns with the final, unstressed syllable /ɲən/. The rise on the second *Jungen* begins on the stressed syllable /yʊŋ/ and is less steep and with a shorter overall trajectory. These two phrases occurred one right after the other and the second was clearly intended as a repetition of the first in which the speaker considered the next bit of narrative, thus indicating a pragmatic distinction as well as an acoustic one (see Queen, in press, for further details of the pragmatic distinctions between the two rises).

**4.1.2. Acoustic Profile of the Two Rises**

As the figures in (1)-(6) above show, speakers in both data sets produced two distinct rises. The differences between the acoustic characteristics of these two rises are further illustrated in (7) and (8).

(7) Comparison of the acoustic characteristics of Rise 1 and Rise 2 in 1994 data

	Rise 1	Rise 2
Interquartile Range	61 Hz (56-115 Hz)	104 Hz (152-245 Hz)
Median	80 Hz*	211 Hz*
Standard Deviation	49 Hz	91 Hz
Average duration	470 ms	340 ms
Average slope	.205 Hz*	.764 Hz*

\* = Sig at .002 or better.

These data verify that Rise 2 generally has a steeper slope (determined by dividing the trajectory of a rise by its duration), which is a consequence of a generally shorter duration and greater trajectory as compared to Rise 1. Further, the data in (7) and (8) show that the differences between Rise 1 and Rise 2 are

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basically identical between the two data samples, suggesting that the pattern found among children was still present among adults ten years later.

(8) Comparison of the acoustic characteristics of Rise 1 and Rise 2 in 2004 data

	Rise 1	Rise 2
Interquartile Range	103 Hz (67-169 Hz)	166 Hz (135-300 Hz)
Median	106 Hz*	203 Hz*
Standard Deviation	66 Hz	86 Hz
Average duration	596 ms*	254 ms*
Average slope	.237 Hz*	.703 Hz*

\*= Sig at .0001 or better.

#### 4.2. Relative Frequencies of Occurrence of the Four Edge Contours

In addition to the acoustic similarities between the two rises in the 1994 and 2004 data, the relative frequency of occurrence for all four contours is also quite similar, with Rise 2 being relatively more restricted in its occurrence than either Rise 1, falls, or levels.

(9) Relative frequency of occurrence of the four contours in the 1994 data

	Gönül	Meral	Pınar	Total
Rise 1	15 (29%)	12 (29%)	16 (36%)	43 (32%)
Rise 2	7 (13%)	6 (15%)	7 (16%)	20 (15%)
Level	10 (20%)	13 (32%)	12 (27%)	35 (26%)
Fall	19 (37%)	10 (24%)	9 (20%)	38 (28%)
Total	51 (38%)	41 (30%)	44 (32%)	136

$\chi^2$  8.397, df=1, p<.004

There were no significant differences of time for determining the frequency of any of the edge contours, and 6 of the 7 speakers had the lowest frequencies of occurrence for Rise 2, with the other three contours occurring between 23% and 35% of the time.

(10) Relative frequency of occurrence of the four contours in the 1994 data

	Devrim	Zeynep	Memet	Faruk	Total
	F, U	F, NU	M, U	M, NU	
Rise 1	38 (31%)	37 (50%)	27 (31%)	29 (32%)	131 (35%)
Rise 2	10 (8%)	12 (16%)	12 (14%)	9 (10%)	43 (12%)
Level	40 (33%)	7 (10%)	24 (27%)	15 (17%)	86 (23%)
Fall	31 (26%)	18 (24%)	25 (28%)	38 (42%)	112 (30%)
Total	119 (32%)	74 (20%)	88 (24%)	91 (24%)	372 (100%)

$\chi^2$  56.541, df=3, p<.000

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Taken together, the figures in (1)-(6) and the tables in (7)-(10) show a remarkable similarity between the 1994 and 2004 data in terms of the acoustic profile of the two different rises and in terms of the frequency of occurrence of the four edge contours. This degree of similarity suggests that the emergence of these two rises forms a pattern of contact-related language change that has remained stable through a ten-year period in which bilingualism in these communities was also stable.

#### **5. Conclusions**

In this study, I have shown that Turkish-German bilinguals include two distinct rises in their repertoire of boundary tones and that the frequency and function of these rises has remained relatively similar across a ten-year span of time and across different speakers. In linking this particular change to the sociolinguistic situation in which its users are embedded, I have also shown one way in which the sociolinguistic history of speakers plays a role in ongoing situations of contact-related language change. Certainly, this is only one such change and continued research and exploration of the language patterns of this population will no doubt lead to other, equally exciting discoveries.

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Robin Queen  
Linguistics Department, 1140 Undergraduate Science Building  
University of Michigan  
Ann Arbor, MI 48109-1285

rqueen@umich.edu